



USAID
DEL PUEBLO DE LOS ESTADOS
UNIDOS DE AMÉRICA

USAID ECONOMIC COMPETITIVENESS PROJECT

Report: Final Report

Consultancy: Technical Services to Develop Updated
Sectoral Studies and Financial Incentives to Attract
Investments to El Salvador

Presented by: IOS Partners, Inc.

MARCH 2022

This publication was produced for review by the United States Agency for International Development. It was prepared by Palladium International.

USAID Economic Competitiveness Project

Report: Final Report

Technical Services to Develop Updated Sectoral Studies and Financial Incentives to Attract Investments to El Salvador

Presented by: IOS Partners, Inc.

March 2022

Presented: March 2022

Contract: AID-519-C-17-00001

Contractor: Palladium International

Sub-Contractor: IOS Partners, Inc.

COR: Carlos Arce
Contracting Officer's Representative
USAID El Salvador
Economic Growth Office
Final Boulevard Santa Elena
Antiguo Cuscatlán, Depto. La Libertad, El Salvador, Central America
carce@usaid.gov

Produced by: Robert Hans, Senior Managing Director
311 Mendoza Avenue
Coral Gables, FL 33134
rhans@iospartners.com

VERSION HISTORY

Version #	Developed by	Date	Description
1.0	IOS Partners, Inc.	<01/07/2022>	Draft Final Report
2.0	IOS Partners, Inc.	<03/02/2022>	Final Report

This report is made possible by the support of the United States people through the United States Agency for International Development (USAID). The content of this report is the sole responsibility of Palladium International, LLC and does not necessarily reflect the views of USAID or the United States Government.

TABLE OF CONTENTS

Contents

ACKNOWLEDGEMENTS	14
DISCLAIMER	14
ACRONYMS	15
1 INTRODUCTION	18
2 EXECUTIVE SUMMARY	18
2.1 <i>Remote Business Services and Software/IT Development Sector</i>	19
2.2 <i>Pharmaceutical Chemistry</i>	22
2.3 <i>Medical Devices Sector</i>	23
2.4 <i>Fiscal, Financial, and Regulatory Incentives Plan</i>	24
3 SECTOR STUDY: REMOTE BUSINESS SERVICES AND SOFTWARE/IT DEVELOPMENT	29
3.1 <i>Introduction</i>	29
3.2 <i>Overview and Global Trends in the Remote Business Services & Software/IT Development Sectors</i>	30
3.2.1 <i>Section Overview</i>	30
3.2.2 <i>Trends in the Remote Business Services/ BPO Industry</i>	30
3.2.3 <i>Trends in the Software and IT Development Industry</i>	33
3.3 <i>FDI Flow Trends in the ICT Sector</i>	35
3.3.1 <i>State of Global FDI Flows</i>	35
3.3.2 <i>State of FDI Flows in Latin America and the Caribbean</i>	37
3.3.3 <i>State of FDI Flows for El Salvador and Competitors</i>	38
3.3.4 <i>Notable BPO/Software M&A Deals in El Salvador and its Competitors</i>	40
3.3.5 <i>Section Summary</i>	43
3.4 <i>Sector and Subsector Definitions/Characterization of the Sectors</i>	44
3.4.1 <i>Section Overview</i>	44
3.4.2 <i>Defining Remote Business Services/ BPO</i>	44
3.4.3 <i>Defining Software and IT Development</i>	45
3.4.4 <i>Characterization of the BPO and software industries</i>	46
3.4.5 <i>Key Programming Demands</i>	47
3.5 <i>Competitive Benchmarks</i>	48
3.5.1 <i>Introduction</i>	48
3.5.2 <i>-Methodology</i>	48

3.5.3	Global FDI Trends - 2020	49
3.5.4	FDI inflows and outflows and top host economies	49
3.5.5	Key trends in 2020 include:	49
3.5.6	FDI into Latin America and the Caribbean.....	50
3.5.7	Central America FDI announcements 2020.....	50
3.5.8	Key Economic Data Trends in 2020 include:.....	51
3.5.9	Stability and Ease of Doing Business	52
3.5.10	Internet, Mobile & Fixed Broadband Comparison and ICT Index.....	53
3.5.11	Transportation & Infrastructure	54
3.5.12	Human Capital	55
3.5.13	Real Estate	56
3.5.14	Labor Climate	56
3.5.15	Starting a Business score and Time-Man (days) Doing Business Index, 2020	57
3.5.16	Electricity prices comparison by Country	58
3.5.17	Quality of electricity comparison by Country.....	59
3.5.18	Minimum Wage Comparison by Country	59
3.5.19	Comparison of Total Population and Labor Force	60
3.5.20	The Human Capital Index (HCI), 2020.....	60
3.5.21	Quality of Life in a Country Comparison.....	61
3.5.22	Summary	62
3.6	<i>El Salvador Investment Profile</i>	63
3.6.1	Section Overview	63
3.6.2	Overview/ Local Investment Environment El Salvador	63
3.6.3	Remote Business Services and Software/IT Development.....	64
3.6.4	International Services Law Applications.....	65
3.6.5	Remote Business Services	66
3.6.6	Remote Business Services Profile	66
3.6.7	Software/IT Development	67
3.6.8	Software/IT Development Profile.....	67
3.6.9	Stakeholders	68
3.6.10	SWOT Analysis	69
.....		70
3.7	<i>Investment Readiness</i>	70
.....		71
3.7.1	Remote Business Services	71
3.7.2	Software/IT Development	71
3.7.3	Role of Government	72
3.8	<i>Target Market Analysis</i>	72
3.8.1	Section Overview.....	72
3.8.2	Target Market Analysis – Remote Business Services.....	73
3.8.3	Top Target Markets	74

3.8.4	Target Market Analysis – Software and IT Development	82
3.8.5	Target Market Analysis – Crypto	92
.....		100
3.9	<i>Recommendations</i>	100
3.9.1	Sector Value Propositions	101
3.9.2	Business Process Outsourcing Proposition.....	101
3.9.3	Suggested Marketing Initiatives	102
3.10	<i>Annex II - Remote Services & IT Meeting Notes</i>	106
4	SECTORAL STUDY: PHARMACEUTICAL CHEMISTRY	121
4.1	<i>Introduction</i>	121
4.2	<i>General Overview and Global Trends</i>	121
4.2.1	Pharma Global Market Size and Forecast.....	121
4.2.2	Cosmetics and Personal Care global market size and forecast	127
4.2.3	Latin American Market	130
4.2.4	Trends/Insights	133
4.2.5	Outsourcing	133
4.2.6	Formulation	134
4.2.7	Routes of Administration	134
4.2.8	Therapy Area	134
4.2.9	Prescription	135
4.2.10	Age Group.....	135
4.2.11	Global Top Companies.....	136
4.2.12	Pharma driving and restraining factors	137
4.2.13	Financial Activity Trends for OEM’s: FDI, Mergers & Acquisitions and Expansions	137
4.3	<i>Characterization of the Pharmaceutical and Cosmetics Sectors</i>	140
4.3.1	Definition	140
4.3.2	Classification.....	141
4.3.3	Drugs	141
4.3.4	Cosmetics Personal Care Products	143
4.3.5	Cosmeceuticals	145
4.3.6	Dietary Supplement.....	146
4.3.7	The European regulatory systems for medicines	146
4.3.8	U.S. Pharmaceutical regulatory standard	147
4.3.9	El Salvador Pharmaceutical Manufacturing Regulation	147
4.3.10	U.S. Cosmetics Personal Care regulatory system	148
4.3.11	EU Cosmetics Personal Care Regulatory System	149
4.3.12	Central America	149
4.3.13	Future Trends in the Pharmaceutical Industry	150
4.3.14	Global Value Chain (GVC) Pharmaceutical and Cosmetics	152
4.3.15	Chemical-Pharmaceutical Value Chain	152

4.3.16	Cosmetics and personal care industry value chain.....	154
4.3.17	The Ecosystem.....	155
4.4	<i>El Salvador Profile</i>	156
4.4.1	General Profile.....	156
4.4.2	El Salvador Pharmaceutical chemical industry overview	158
4.4.3	Cosmetic Personal Care	160
4.4.4	Benchmark.....	160
4.4.5	Human Capital	161
4.4.6	Stability and ease of doing business.....	165
4.4.7	Investment Incentives, Market Access, and Regulatory Environment	166
4.4.8	Infrastructure costs and quality and logistics	168
4.4.9	Transportation Network.....	171
4.5	<i>Presence of Suppliers and Manufacturers</i>	172
4.6	<i>Stakeholders</i>	174
4.7	<i>SWOT Analysis</i>	174
4.8	<i>Investment Readiness – The Opportunities</i>	176
4.8.1	Competitors Landscape	176
4.8.2	Companies	178
4.9	<i>Recommendations</i>	179
4.9.1	The Opportunities	180
4.9.2	Target Events.....	181
4.9.3	Target Markets	184
4.10	<i>ANNEX I - Pharma Chemical Associations and Publications</i>	184
4.11	<i>ANNEX IV - Interviews</i>	188
4.12	<i>ANNEX V – Investment News</i>	189
4.12.1	Sinovac instalará en Chile planta de producción de vacunas para Latinoamérica	189
4.12.2	Tres empresas invertirán 170 millones de dólares en Guatemala	189
4.12.3	La farmacéutica colombiana que llegará a las grandes ligas en Wall Street	190
4.12.4	Tecnoquímicas compra Bayer ES.....	190
4.12.5	Colombian medical cannabis company receives country’s first approval to begin launching CBD and THC products ¹⁹⁰	
4.12.6	Bayer Buys Properties for its Long-Term Project in Costa Rica	191
4.12.7	Balaxi Pharma’s Dubai arm fully acquires Balaxi Healthcare Honduras	191
5	Sectoral Study: Medical Devices	193
5.1	<i>Introduction</i>	193
5.2	<i>General Overview and Global Trends</i>	193
5.2.1	Medical Devices global market size and forecast.....	193
5.2.2	FDI Trends.....	196
5.2.3	Medical Devices driving and restraining factors.....	201
5.2.4	Financial Activity Trends for OEM’s: Mergers & Acquisitions and Expansions 2020 and 2021	201
5.3	<i>Characterization of the MD Sector and Subsectors</i>	207

5.3.1	Definition and Classification	207
5.3.2	MD Sub-Sectors	210
5.3.3	MD Regulatory Environment	212
5.3.4	Future Trends in MD Industry	215
5.3.5	MD – Global Value Chain (GVC).....	218
5.3.6	MD Key Ecosystem Players.....	220
5.4	<i>El Salvador Profile</i>	226
5.4.1	Country Profile	226
5.4.2	Benchmark.....	228
5.4.3	Stakeholders.....	240
5.4.4	SWOT Analysis.....	241
5.5	<i>Investment Readiness – The Opportunities</i>	242
5.5.1	Competitor’s landscape.....	242
5.5.2	Local supplier network and presence of other manufacturers	245
5.5.3	Companies	246
5.6	<i>Recommendations</i>	249
5.6.1	The Opportunities	249
5.6.2	Target Events.....	251
5.6.3	Target Markets	253
5.7	<i>ANNEX I - Bibliography</i>	253
5.8	<i>ANNEX II – MD Associations and Industry Publications</i>	255
5.9	<i>ANNEX III – Harmonized Codes</i>	256
5.10	<i>ANNEX IV - Interviews</i>	259
5.11	<i>ANNEX V – Investment News</i>	259
	<i>Guatemala</i>	259
	<i>Dominican Republic Free Zone approved companies in 2021</i>	260
	<i>Noticias Honduras</i>	261
	<i>Costa Rica nueva inversión de Coloplast</i>	261
	<i>Baylis Medical Opens MedTech Facility in Costa Rica</i>	262
	<i>Costa Rica nueva inversión de Terumo</i>	262
	<i>Costa Rica nueva inversión de NACS</i>	263
	<i>Costa Rica nueva inversión de Nitrile Gloves</i>	264
	<i>Colombia nuevas inversiones 2021</i>	264
6	FISCAL, FINANCIAL, AND REGULATORY INCENTIVES PLAN	266
6.1	<i>Introduction</i>	266
6.2	<i>Summary of Global FDI Incentives</i>	266
6.3	<i>Investors’ Requirements</i>	269
6.4	<i>Competitive Analysis – 5 Countries</i>	271
6.4.1	COSTA RICA.....	271
6.4.2	HONDURAS.....	281

6.4.3	GUATEMALA	289
6.4.4	DOMINICAN REPUBLIC	295
	295
6.4.5	COLOMBIA	303
6.4.6	EL SALVADOR.....	311
6.4.7	Comparative Tax Assessment.....	319
6.4.8	Trade Agreements	320
6.4.9	Incentives Processing	322
6.4.10	Summary of Comparative Assessment	328
6.4.11	Summary of Incentives – El Salvador.....	329
6.5	<i>Strategic Evaluation El Salvador</i>	331
6.6	<i>El Salvador Strategic Proposal for Fiscal, Financial and Regulatory Incentives Plan:</i>	332
6.7	<i>Approval and Governance Model</i>	333
6.8	<i>Summary/Conclusions</i>	335
7	BIBLIOGRAPHIES	338

INDEX OF TABLES

Table 3-1: Announced greenfield projects, by sector and selected industries, 2019–2020	36
Table 3-2: Announced greenfield projects in Latin America, 2019–2020	37
Table 3-3: Latin America and the Caribbean: growth rates of GDP, trade and FDI, 2013–2021 (%)	38
Table 3-4: New FDI (Greenfield FDI) in Central America by number of projects, 2015–2020	38
Table 3-5: Notable BPO/Software M&A Deals In El Salvador And its Competitors	40
Table 3-6: BPO Explanation	44
Table 3-7: GICS Classification for BPO and Software Industries	46
Table 3-8: Most Popular Programming Languages	47
Table 3-9: Key Economic Trends in 2020 for El Salvador and its Competitors	51
Table 3-10: Stability and Ease of Doing Business for El Salvador and its Competitors	52
Table 3-11: ICT Trends for El Salvador and its Competitors	53
Table 3-12: Transportation and Infrastructure Trends for El Salvador and its Competitors	55
Table 3-13: Human Capital Trends for El Salvador and its Competitors	55
Table 3-14: Real Estate for El Salvador and its Competitors	56
Table 3-15: Labor Trends for El Salvador and its Competitors	56
Table 3-16: US Salaries	60
Table 3-17: Quality of Life Comparison between El Salvador and its Competitors	61
Table 3-18: New FDI (Greenfield FDI) in Central America by number of projects, 2015–2020	63
Table 3-19: International Service Law Applications	65
Table 3-20: Remote Business Services Profile	66
Table 3-21: Software and IT Development Profile	67
Table 3-22: Stakeholder Name and Role	68
Table 3-23: SWOT Analysis	69
Table 3-24: SWOT Analysis	70
Table 0-1: Top Remote Business Services Companies and Providers	73
Table 0-2: Company Examples India	75
Table 0-3: Events in India	77
Table 0-4: Company Examples in the US	77
Table 0-5: Events in the USA	78
Table 0-6: Company Examples in Europe	80
Table 0-7: Events in Europe	81
Table 0-8: Top Global Software Companies	83
Table 0-9: Company Examples in the United States	84
Table 0-10: Events in the United States	85
Table 0-11: Canada’s Information and Communications Technologies (ICT) Industry Structure	86
Table 0-12: Company Examples in Canada	87
Table 0-13: Events in Canada	87
Table 0-14: Company Examples in India	89
Table 0-15: Events in India	90
Table 0-16: Summary of Recommendations	91
Table 0-17: Key General Crypto Service Providers	95
Table 0-18: Crypto Blockchain Companies	96
Table 0-19: Crypto Mining Companies	97
Table 0-20: Global Crypto Player Meetings	99
Table 4-1. Pharmaceutical and Cosmetics sector: Driving and Restraining factors	137
Table 4-2. The top 10 largest biopharma M&A deals in 2020	139
Table 4-3. Pharma and Biopharma Drugs Classification	141
Table 4-4. Main Categories of products in the Cosmetics Personal Care Industry	144
Table 4-5. Pharmaceutical and Cosmetics Ecosystems Participants	155
Table 4-6. Competitiveness, Ease of Doing Business, and Governance Indicators by Country, 2019	165
Table 4-7. Foreign Trade and Investment Incentives comparison by Country	167
Table 4-8. Transportation network indicators comparison by Countries	171
Table 4-9. Companies in the supply chain of the pharmaceutical and cosmetics sector	172

Table 4-10. Key stakeholders Pharmaceutical - Cosmetics Personal Care	174
Table 4-11. SWOT Analysis	175
Table 4-12. Pharmaceutical and Cosmetics Comparative Analysis by Country	176
Table 4-13. Proposed Areas of Opportunities	180
Table 4-14. Target Events.....	182
Table 4-15. Target Markets.....	184
Table 5-1. Top medical devices noteworthy changes 2020 and 2021	195
Table 5-2. Medical Devices sector: Driving and Restraining factors.....	201
Table 5-3. Top MedTech companies' profile including M&A's and Expansions.....	204
Table 5-4. Main categories of medical technologies.....	207
Table 5-5. Medical devices by product type, user, function	209
Table 5-6. Medical devices by class and regulatory controls.....	209
Table 5-7. Medical Devices classification by finished products.....	209
Table 5-8. Type by Therapeutic Area by end market segment and Top Players	211
Table 5-9. Clean Room Classification.....	213
Table 5-10. Future impact of innovative technologies across the care journey	217
Table 5-11. The ecosystem participants in the medical devices sector.....	220
Table 5-12. Employee Profile for Select Segments of the Value Chain (Gereffi).....	224
Table 5-13. El Salvador Engineering and Technical Graduates (2014 - 2018).....	231
Table 5-14. Technical Centers and Universities by Country.....	231
Table 5-15. Technical Training Institute by Country.	232
Table 5-16. Quality of Life in a country comparison	232
Table 5-17. Competitiveness, Ease of Doing Business, and Governance Indicators by Country, 2019	233
Table 5-18. Foreign Trade and Investment Incentives comparison by Country.....	236
Table 5-19. Transportation network indicators comparison by Countries	240
Table 5-20. Key stakeholders to the MD sector	241
Table 5-21. SWOT analysis	241
Table 5-22. Medical Devices Sector: Comparative Analysis by Country	242
Table 5-23. Proposed areas of work.....	249
Table 5-24. Target events.....	252
Table 5-25. Target markets.....	253
Table 6-1: Incentive Categories	266
Table 6-2: Incentive Program Examples	267

INDEX OF FIGURES

Figure 1: Annual Contract Value of Managed Services and As-a-service Markets for H1-2021 Globally.....	31
Figure 2: Annual Contract Value of Managed Services (ITO + BPO) from Q1-2019 to Q2-2021 Globally.....	31
Figure 3: Annual Contract Value of BPO from Q1-2019 to Q2-2021 Globally.....	32
Figure 4: Annual Contract Value of the As-a-Service market from H1-2019 to H2-2021 Globally.....	34
Figure 5: Annual Contract Value of the As-a-Service market from Q1-2019 to Q2-2021 Globally.....	34
Figure 6: Announced greenfield projects, cross-border M&As and international project -finance deals, 2011–2020 (Billions of dollars and number).....	36
Figure 7: Greenfield & Expansionary FDI projects in Central America’s ITO sector, 2015-2020.....	39
Figure 8: Distribution of investment in the Software & IT sector as a percentage of CAPEX & number of projects, 2015-2020.....	39
Figure 9: FDI Inflow in US\$ B and GDP Growth.....	50
Figure 10: Central America FDI announcements 2020.....	50
Figure 11: Doing Business Index, 2020.....	58
Figure 12: Electricity Price kWh \$.....	58
Figure 13: Quality of Electricity Score (1-7).....	59
Figure 14: Minimum Wage US\$ Annual.....	59
Figure 15: Population, Labor force, Adult Literacy Rate by Country.....	60
Figure 16: Human Capital Index (HCI).....	61
Figure 17: Quality of Life in a Country Comparison.....	62
Figure 18: El Salvador map.....	63
Figure 19: Total Cryptocurrency Market Capitalization, April 28, 2013 to September 20, 2021.....	93
Figure 20: Bitcoin Percentage of Total Crypto Market Cap., April 28 2013 to September 20 2021.....	93
Figure 21: Value Chain Analysis.....	94
Figure 22: Investment Attraction Phases.....	101
Figure 23. Revenue of the worldwide pharmaceutical market from 2001 to 2020.....	123
Figure 24. World Pharmaceutical Market Sales by Region (2020).....	124
Figure 25. Global Spending on Medicines.....	124
Figure 26. Sales of New Medicines by Region (2015 -2020).....	125
Figure 27. Number of New Chemical and Biological Entities (2001 – 2020).....	126
Figure 28. Pharma Sector All Deal Activity by Value and Volume (2020 -2021).....	126
Figure 29. Pharma Sector Overall Deal Activity by Region (2020 -2021).....	127
Figure 30. Annual growth of the global cosmetics market from 2004 to 2020.....	127
Figure 31. Cosmetic and Beauty Products Manufacturing in the US – Market Size.....	128
Figure 32. Top online stores in the Personal Care segments in the U.S. in 2019, bye-commerce net sales (in million U.S. dollars).....	129
Figure 33. European Market for Cosmetic Products (€ Billion) in 2019.....	129
Figure 34. Impact of the Cosmetics and Personal Care Industry in jobs creation in Europe (2019).....	130
Figure 35. Sales volume of the pharmaceutical industry in selected countries in Latin America as of 2019 (in billion units).....	131
Figure 36. Estimated market share of generic drugs for 2029 in Latin America.....	132
Figure 37. Percentage of sales (2019) in pharmaceutical market of Latin America.....	132
Figure 38. Pharmaceutical Sales Distribution in Latin America (2020).....	133
Figure 39. The top 20 pharma companies’ comparison by revenue (US\$ Bn, 2020).....	136
Figure 40. Revenue of the leading 10 beauty manufacturers worldwide in 2020(in billion U.S. dollars).....	136
Figure 41. M&A trends in the first half of 2021. Global Health Industries Deal Volumes and Values.....	139
Figure 42. Generics Pharmaceutical Market Sales by European Country (Percentage %).....	143
Figure 43. Cosmetics Products most widely used.....	145
Figure 44. Top 10 Pharma Industry Trends & Innovations (2021).....	150
Figure 45. The Chemical-Pharmaceutical Global Value Chain.....	152
Figure 46. Cosmetics and Personal Care Value Chain.....	154
Figure 47. El Salvador Country Profile.....	156
Figure 48. El Salvador Map.....	158
Figure 49. El Salvador Pharmaceutical Imports (2011 – 2020).....	159

Figure 50. El Salvador Pharmaceutical Exports (2014 – 2019)	159
Figure 51. Critical Factors for Creating Favorable Conditions for Biopharmaceutical Technological Transfers	161
Figure 52. Comparison of total population and labor force (In millions), and literacy rate (%) by Country	162
Figure 53. The Human Capital Index (HCI), 2020	163
Figure 54. Quality of Life in a Country Comparison	163
Figure 55. Quality of Life Comparison in five subject areas.....	164
Figure 56. Health Indicators Comparison by Countries	164
Figure 57. Preferential Market Access from El Salvador to the World	166
Figure 58. Starting a Business score and Time -Men (days) Doing Business Index, 2020	168
Figure 59. Electricity prices comparison by Country	169
Figure 60. Quality of electricity comparison by Country	169
Figure 61. Minimum wage comparison by Country (US\$ annual)	170
Figure 62. Pay and Productivity comparison by Country	170
Figure 63. World medical technology market by area and sales growth 2017-2024.....	194
Figure 64. Medical Devices market growth by geography.....	195
Figure 65. Top global medical device markets by forecast revenues in 2030	195
Figure 66. Foreign direct investment inflows, top 20 host economies, 2019 and 2020 (Billions of dollars)	197
Figure 67. Foreign direct Investment outflows, top 20 home economies, 2019 and 2020 (Billions of dollars).....	198
Figure 68. Latin America and the Caribbean by Project Numbers 2020	199
Figure 69. Latin America and the Caribbean: FDI flows, top 5 host economies, 2020 (Value and change)	200
Figure 70. M&A medical devices deals by region in Q4 2020	202
Figure 71. US medical devices industry M&A deals: value and volume trend – April 2020 to April 2021	203
Figure 72. Connectivity is transforming the MedTech industry	208
Figure 73. Costa Rica: exports of MD by level of sophistication.....	210
Figure 74. Top Medical Device Therapeutic Area.....	211
Figure 75. FDA Regulatory Process Approval	215
Figure 76. Medical Devices Technology Roadmap to 2030 KPMG	216
Figure 77. Medical Devices Global Value Chain mapping	218
Figure 78. Medical Devices in Costa Rica: Participation in the Global Chain Value (2019)	221
Figure 79. GS1 global supply chain standards for identification	225
Figure 80. El Salvador Country Profile	226
Figure 81. Map of El Salvador	227
Figure 82. Comparison of total population and labor force (In millions), and literacy rate (%) by Country	229
Figure 83. The Human Capital Index (HCI) by country, 2020	230
Figure 84. Quality of Life Comparison in five subject areas.....	233
Figure 85. Starting a Business score and Time -Men (days) Doing Business Index, 2020	237
Figure 86. Electricity prices comparison by Country	237
Figure 87. Quality of electricity comparison by Country	238
Figure 88. Minimum wage comparison by Country	238
Figure 89. Pay and Productivity comparison by Country	239
Figure 90. Latin America and the Caribbean (26 countries) trade balance of essential medical products for the fight against COVID-19, 2018 (In billions of dollars).....	245

ACKNOWLEDGEMENTS

This document was prepared by **IOS Partners, Inc.**, an international economic development consultancy firm. This report presents the fourth and last deliverable under this project and intends to provide the results of the consultancy. The Project has been funded by USAID.

We would like to express our appreciation for the excellent collaboration received since project inception, specifically from **ECP**, **PROESA**, and **USAID**. In particular, we would like to extend special thanks to Mr. Carlos Arce, Contracting Officer's Technical Representative of USAID; Mr. Luis Soto, Project Director; Mr. Javier Galdámez, Investment Director of PROESA; Ms. Claudia Dubon de Morales, Economic Growth Lead of ECP; as well as the members from the **ECP** and **PROESA** teams – Mr. Victor Palacios, Ms. Rebeca Flores Martinez, Dr. Jose Marquez, Ms. Jessica Bukele, Ms. Celia Hernandez, Ms. Vanesa Bandak, and other relevant stakeholders.

DISCLAIMER

The findings, interpretations, and conclusions expressed in this document are entirely those of the authors and should not be attributed in any manner to USAID, ECP, or PROESA. USAID, ECP, or PROESA do not guarantee the accuracy of the data included in this document nor do they accept responsibility for any consequence of its use.

ACRONYMS

ACV	Annual Contract Value
ADM	Application Development and Maintenance
AIDC	Automatic Identification and Data Capture
BPM - GMP	Buenas Prácticas de Manufactura – Good Manufacturing Practice
BPO	Business Process Outsourcing
CC	Call Center
CAFTA-DR	Central American/Dominican Republic Free Trade Agreement
CAGR	Compound Annual Growth Rate
CDMO	Contract Development and Manufacturing Organization
CIT	Corporate Income Tax
CLV	Certificado de Libre Venta – Free Sales Certificate
CM	Contract Manufacturer
COMISCA	Consejo de Ministros de Salud de Centroamérica
CPF	Certificado de Producto Farmacéutico – Pharmaceutical Product Certificate
CPO	Creative Process Outsourcing
CRM	Customer Relationship Management
DAR	Departamento de Asuntos Regulatorios – Regulatory Affairs Department
DNM	Dirección Nacional de Medicamentos
DPA	Depósitos para Perfeccionamiento de Activos
DSM	National Medicine Directorate
ECP	USAID Economic Competitiveness Project
ECLAC	Economic Commission for Latin America and the Caribbean
EFPIA	The European Federation of Pharmaceutical Industries and Associations
EFTA	European Free Trade Area
EMA	Agencia Europea de Medicamentos – European Medicine Agency
EPZ	Export Processing Zone
FDA	Agencia de Administración de Alimentos y Medicamentos de Estados Unidos de América. Food and Drug Administration Agency
FDI	Foreign Direct Investment
FD&C Act	Federal Food, Drug, and Cosmetic Act
FTZ	Free Trade Zone
FTZR	Free Trade Zone Regime
FY	Fiscal Year
GDP	Gross Domestic Product
GICS	Global Industry Classification System
GMA	Greater Metropolitan Area
GMP	Good Manufacturing Practices
GVC	Global Value Chain
HCI	Human Capital Index
HRO	Human Resource Outsourcing
IaaS	Infrastructure as a Service
INA	National Training Institute

INVESTSV	PROESA's document updating El Salvador's Investment Promotion Strategy
INFOTEP	Governmental Training Institution
INSAFORP	Instituto Salvadoreño de Formación Profesional
INVESTSV	PROESA's document updating El Salvador's Investment Promotion Strategy
IPA	Investment Promotion Agency
IPRS	Inward Processing Relief System
IRR	Internal Rate of Return
ISG	Information Services Group
IT	Information Technology
ITBIS	Impuesto sobre Transferencia de Bienes Industrializados y Servicios
ITO	Information Technology Outsourcing
IVD	In-Vitro Diagnostic Products
KPO	Knowledge Process Outsourcing
LAC	Latin America and the Caribbean
LPO	Legal Process Outsourcing
M&A	Mergers and Acquisitions
MD	Medical Devices
MMP/MLP	Manufacturing Medium/Large Projects
MNC	Multi-National Corporation
MSME	Micro, Small and Medium-Sized Enterprises
MW	Megawatt
OECD	Organization for Economic Co-operation and Development
OEM	Original Equipment Manufacturer
OMS - WHO	Organización Mundial de Salud – World Health Organization
OPS - PAHO	Organización Panamericana de la Salud – Panamerican Health Organization
PIT	Personal Income Tax
PMA	Premarket Approval
PROCOMER	Promotora del Comercio Exterior
PROINDUSTRIA	Center for Development and Industrial Competitiveness
PROESA	The Export and Investment Promotion Agency of El Salvador
PYPL	PopularitY of Programming Language
R&D	Research and Development
RIT	Régimen de Importación Temporal
ROI	Return on Investment
RTCA	Reglamento Técnico Centroamericano
SaaS	Software as a Service
SICA	Sistema de Integración Centroamericana
SME	Small and Medium-Sized Enterprises
STEM	Science, Technology, Engineering, Math

SWOT	Strengths, Weaknesses, Opportunities, Threats
TBD	To be determined
TOR	Terms of Reference
UNCTAD	United Nations Conference on Trade & Development
USAID	United States Agency for International Development
WHT	Withholding Tax
VAT	Value Added Tax
VPN	Virtual private network
ZDEEP	Special Public Economic Development Zones
ZIP	Zona Industrial de Procesamiento
ZOLIC	Zona Libre de Industria y Comercio
ZOMAC	Zones Most Affected by the Armed Conflict (Colombia)
510K	Premarket Notification

1 INTRODUCTION

This is the final report of the “Technical Services Study to Develop Updated Sectoral Studies and Financial Incentives to Attract Investment” consultancy, executed by IOS Partners, Inc. It includes a compendium of the main deliverables already prepared which outline the key results of the consultancy.

This consultancy is developed within the framework of the USAID Economic Competitiveness Project (ECP). The ECP, funded by USAID/El Salvador, implemented by Palladium International, LLC, seeks to increase El Salvador's competitiveness in key economic sectors by strengthening the capacities of micro, small and medium enterprises (MSMEs) to compete in domestic and international markets; at the same time it seeks to improve the business climate at the local and national level to promote public sector investment, innovation and business expansion to boost economic growth, employment generation and improve the quality of life in at least 26 municipalities with the participation of men, women and minority groups. The ECP Project seeks to generate economic impact in El Salvador with the generation of 42,000 new jobs and US\$315 million in new sales, facilitate the development of 100 new businesses and integration of innovative products and processes within at least 3,700 MSMEs, over five years of the project (2017-2022).

To ensure sustainability, the Project will strengthen key local actors supporting economic development: national and municipal government, business development service providers, private sector associations, academia, and financial institutions.

In this document, we provide a comprehensive review and analysis of the four economic sectors identified and selected for their potential for further development as well as their current importance within El Salvador's economy.

In our study, we focused on the identification of the main trends within these sectors and the key factors to be considered by investors when evaluating where to invest.

In line with the Terms of Reference (TOR), this study's aim is to inform the ongoing efforts to promote and attract FDI into El Salvador, outlining the readiness in the sectors and identifying the specific messages to the target FDI audience. These sectors are:

- **Pharmaceuticals and Cosmetics**
- **Medical Devices**
- **Remote Business Services**
- **IT/Software Development**

2 EXECUTIVE SUMMARY

The methodology used for the development of this consultancy was designed to advance the objectives of the ECP Project to increase the competitiveness of Salvadoran MYPIMEs by increasing sales, creating new jobs, strengthening institutions and facilitating the investment climate. To achieve these objectives, the present consultancy having updated key sectoral information for the main economic sectors and having developed a proposal for financial and regulatory incentives has contributed positively by positioning El Salvador as an ideal place for the establishment of new foreign investment. Likewise, the development of this consultancy and the methodologies used have allowed us to identify a number of key lessons, including, for example, the importance of the coordination of efforts between relevant institutions and stakeholders, which when adopted, will facilitate institutional strengthening and sustainability, the improvement of their services to the companies and the continuous improvement of the entrepreneurial ecosystem. Additional key findings include:

- There are significant opportunities for El Salvador to attract FDI, in particular by capitalizing on the new trend to shorten and restructure global value chains, commonly referred to as “nearshoring”.
- El Salvador is well positioned to attract FDI. It has strategic strengths and competitive advantages as well as attractive incentive programs which are being improved.
- However, there are weaknesses in the Investment Climate, including bureaucratic hurdles that impose unnecessary complication on businesses and allow competitors to take away investment projects that El Salvador would otherwise have won.

In this regard, this consultancy recommends that:

- El Salvador needs to focus on removing obstacles that affect the “business/investment climate” in aspects such as: communications and connectivity; land and port accessibility; cost of energy; customs procedures; labor availability, skills, cost and flexibility; preferential market access and finally, fostering stability and certainty in the business climate.
- El Salvador needs to strengthen its FDI promotion efforts. There is a need to formulate a coherent strategy and provide funds, personnel and resources to implement it. It is key to promote synergies between the main stakeholders, such as the Secretariat of Commerce and Investments, the Ministry of Economy and PROESA, to present a common face of El Salvador in the market.
- El Salvador needs to establish a Governance and Approval System for FDI projects, based on “one stop shops” which simplify and speed up the process while maintaining adequate levels of control.

Please note that as this report is a compendium of the previous key deliverables, for ease of reference we have excerpted herein the Executive Summary sections of our main deliverables.

2.1 Remote Business Services and Software/IT Development Sector

The COVID-19 pandemic has had an unprecedented impact on the entire world over the last 19 months and has created downturns in terms of Foreign Direct Investment (FDI) growth and significant demand in terms of services. We are pleased to submit this document that provides a sector review and suggestions for the services sectors which include Remote Business Services and Software/IT Development as it relates to attracting foreign direct investment into El Salvador.

This report focuses on Remote Business Services and Software/IT Development and addresses how El Salvador can best position itself, in the current and post-COVID environment, to attract more foreign direct investment in these key service sectors. Below is a summary of some of the key findings in this report.

❖ Global Trends

FDI has significantly slowed across the globe and in the region due to COVID:

- FDI inflows to South America decreased from \$112.7 billion in 2019 to \$51.9 b in 2020 (-52%)
- FDI inflows to Central America from \$43.8 billion in 2019 to \$33.1 b 2020 (-24.4%)
- FDI inflows to El Salvador from \$636 million in 2019 to \$200 million in 2020 (-68.5%)

COVID has also driven major changes in the services sectors, creating growth in business demand in both Business Process Outsourcing (BPO) and Software/IT Development as well as increased demand for more activities in the Americas. Below is a short summary of the highlights.

a. Business Process Outsourcing

Globally, outsourcing contract growth reached a record of \$36.3 billion in the first half (H1) of 2021. In the Americas, it reached \$18.1 billion for the same period with \$5.1 billion going to Information Technology Outsourcing (ITO) and \$1.9 billion going to BPO activities. The main drivers for growth are:

- Movement to the cloud
- Digital transformation
- Growth due to cost efficiencies:
 - Lower operating costs
 - Improved automation
 - More flexibility in scaling
 - Access to experts and technology
 - Smarter analytics on both consumers and products

b. Software Development

Globally outsourced software development and services are predicted to grow 21% in 2021. In the Americas contract values had grown to \$18.1 billion and Infrastructure as a Service (IaaS) reach a record of \$7.4 billion up 24% and Software as a Service (SaaS) reached \$3.7 billion up 15% in the first half of 2021. Growth can be attributed to a massive shift to online and “as a service” products. Key development products include:

- Collaboration software
- E-commerce software
- Live chat software
- Video conferencing software
- E-learning software
- VPN (virtual private network) software

❖ Defining the sectors and activities

Based on the market data and inputs from companies in the sectors, we see **a huge opportunity for El Salvador** to continue to attract additional foreign direct investment. We have broken down the sectors and defined the subsegments and activities in both Remote Business Services and Software/IT development. This information, in addition to the key programming demands, will help PROESA fine-tune its targeting activities. This information will also be used in the second project to identify investment leads.

❖ Competitor Comparison

We have prepared a competitor analysis between **El Salvador and Colombia, Costa Rica, Dominican Republic, Guatemala, and Honduras** with an aim to compare the countries in key elements that are important for remote Business Services and Software/IT Development. Below are the key data segments used to compare the countries.

- Key Economic Data
- In-flow of FDI
- Human Capital Indicators
- Ease of doing business

- Transportation infrastructure
- Talent Availability

Overall El Salvador falls below average in the rankings, at 4th or 5th place based in comparative scoring. With this said, there are some bright spots that coincide with feedback from the investors. El Salvador ranked third in the group in the World Bank Human Capital Index which tracks societal health and education programs. In addition, **El Salvador had the second lowest minimum wage** which is a key measure for investment in addition to average wage rates at various skill levels.

❖ Business Environment

To review the business environment for foreign direct investment in the Remote Business Services and Software/IT Development sectors, we gathered information through interviews and desk research and developed a SWOT (Strengths, weaknesses, Opportunities and Threats) and investment readiness assessment for both. We also identified the key stakeholders and defined their roles for supporting a competitive foreign investment environment.

a. Remote Business Services

Remote Business Services has a strong position in the Salvadoran economy and delivers 70,000 jobs. The sector is in a growth mode and there is clear demand for additional investment into El Salvador. There is also room for the addition of higher value activities such as KPO (Knowledge Process Outsourcing) and ITO. Key challenges include:

- limited available workforce with qualified English skills,
- education/training institutions are not in sync with and have limited capacity to teach the skills required by business,
- a difficult security situation, and
- a government that is inconsistent in its support for business.

b. Software/IT Development

Software/IT Development is in a development phase. The sector is small and has limited resources. However, the sector does have promise as demand for outsourced software development in the Americas is very strong. In addition, several BPOs present in El Salvador are moving into ITO. Based on the industry growth indicators, it is **critical to build an ecosystem for software development** that can **create more qualified programmers with English skills** for both existing firms and foreign prospects. Consistent government support for business and security issues will be key challenges for this sector as well.

❖ Target Market Analysis

Based on an understanding of the assets in the two sectors in El Salvador, we have **identified target markets and companies for investment attraction activities.** A short summary of these findings is outlined below.

a. Remote Business Services

The analysis identified **key source markets as the United States, Europe and India** for Remote Business Services. In addition, **key target companies** have been identified with a rationale. Lastly, **key sector trade shows and events** have been identified to facilitate business development activities.

b. Software/IT Development

The analysis identified key source markets for Software/IT Development. These include:

- United States with focus on California, Texas, New York, Virginia, and Florida

- Canada with a focus on Toronto, Waterloo, Calgary, Montreal, and Vancouver
- India with a focus on Bangalore, Hyderabad Chennai and Mumbai

In addition, key target companies have been identified with a rationale. Lastly, key sector trade shows and events have been identified to facilitate business development activities.

Given El Salvador's commitment to implement crypto currency for payments, we have provided some insight into focusing on **blockchain related development opportunities** which could drive some foreign direct investment projects. A list of target companies has been included in this report.

❖ Recommendations

In the recommendations section we provide a series of observations and suggestions focused on the key phases of investment attraction process. We also provide value propositions for both sectors as well as suggested marketing initiatives, and a list of improvements for the business climate including the stability of the government and pro-business legislation, increased education support for technical and English skills development and lastly improvement of the security situation.

2.2 Pharmaceutical Chemistry

The Covid-19 pandemic had an unprecedented impact on the world in 2020 and the global economy is still suffering as we enter the final quarter of 2021. Communities across the globe came together and looked to the pharmaceutical industry to create solutions. This led to many pharma companies successfully developing drugs and vaccines against Covid-19 and these have been rolled out across the world.

Fueled by new product launches and an aging population, the global pharmaceutical industry continues to grow and total revenues grew to an impressive US\$1.27 trillion in 2020.

The North American market (USA & Canada) remained the world's largest market with a 49.0% share, well ahead of Europe, China, and Japan. Important emerging markets include middle and low-income countries such as Brazil, India, Russia, Colombia, and Egypt, to name a few. Despite increasing revenues globally, the Latin American region accounts for the lowest share of the global pharmaceutical market's revenues.

Amongst the key factors that contribute to the growth of the pharmaceutical market, in Latin America include

- significant foreign investments,
- the expansion of geriatric population,
- the reform of the regulatory framework, and
- the increase in trade agreements with other countries such as the United States, Canada, and various European countries.

The market for generic drugs worldwide is expected to continue to quickly grow. For example, the Brazil generic drug market reached revenues of US\$ 16.6 Billion in 2020. Looking forward, IMARC Group expects the market to grow at a CAGR of 7.7% during 2021-2026.

A regional analysis of the market for generic drugs in the region, reveals that for 2028, Brazil will have the highest number of sales of generic products. In the biosimilar¹ market, notwithstanding the COVID pandemic, revenues are also expected to continue growth worldwide.

In this context, El Salvador's pharmaceutical sector is one of the few that in the first half of the year managed to increase its exports, and in some cases the production plants have had to work double shifts to satisfy demand. It is one of main export sectors and there are over 30 Good Manufacturing Practices (GMP) Certified laboratories.

Brazil and Mexico are the dominant countries in pharmaceuticals in Latin America. El Salvador has a recognition in the Central American region for its quality and number of GMP Certified laboratories by its National Medicine Directorate (DSM).

The country has a series of opportunities in the short to long term scenarios, but it must improve its investment incentives as a priority task, improvements to the Free Zone and DPA should also be considered to attract FDI.

Other critical aspects should also be enhanced. These include the facilitation process, procedures and customs support, amongst others. Supply chain interruptions, increasing prices and difficult access to raw materials as well as growing imports of low-price drugs from China and India and the consolidation of other clusters in the region should be considered as some of the industry's main threats.

The recommendations provided in the area of opportunities cover both the area of services and manufacturing.

The value proposition for this sector highlights the following strengths:

- Pharmaceutical industry track record (over 30 GMP Certified Laboratories).
- Exports of high-quality medicines (branded generics).
- Strategic location and Free Trade Agreements.
- Well established ecosystem (manufacturers, academia, government support, suppliers).
- Competitive costs.
- Reliable infrastructure.

2.3 Medical Devices Sector

The global impact of COVID-19 has been unprecedented and staggering, with medical devices witnessing a negative impact across all regions amid the pandemic. In 2020, the pandemic impacted the global medical device industry by causing the deferral of elective procedures and shifting the priority of hospitals' purchasing departments to the diagnosis, treatment, and prevention of COVID-19. The dramatic decline of elective procedures led to revenue losses for device manufacturers as well as hospitals. Nonetheless, a few segments such as IVD, diabetes care, medical and hospital supplies to manage patients suffering with coronavirus, witnessed significant market growth.

The United States of America continues to be the largest medical technologies market, followed by China. Emerging countries, such as India and Russia, represent an important business opportunity for this sector. Developed countries are growing at a slower pace.

Mergers & Acquisitions (M&A) and Initial Public Offering (IPO) activity was high in 2020 and 2021, pointing to long-term growth in the Original Equipment Manufacturers Industry. Connectivity is transforming the industry and new opportunities are arising in the MedTech space.

Foreign Direct Investment (FDI) projects in the medical devices sector are focused on efficiency-seeking opportunities. Location selection for these global production facilities varies based on a variety of factors, including presence of qualified human capital, cost, established presence of supply chain actors and distance to market, investment incentives, reliable infrastructure, among others, depending on the product category. Mexico, Costa Rica, and the Dominican Republic are the MD leaders in the region.

El Salvador offers significant advantages – competitive wages, the second lowest amount of time needed to start a business, Free Zone incentives as well as low inflation, a good Human Capital Index, and market access by means of Free Trade Agreements (FTAs), strong textile/pharma/plastics sector. All these attributes could lead to the development of short-mid-long-term initiatives to attract FDI projects in areas such as Class I devices, low risk, general control disposables and/or high-volume commodities, “low-tech” products, to move forward on an aspirational basis into the MD sector. Thus, stakeholders need to work together to improve the human capital, the business climate, and to build a strong image (currently unknown) to attract FDI in this sector.

Initial opportunities should come from the established foreign companies (distributors, representatives) as short-term wins. For example, recently, specialized textiles have been in high demand for hospital supplies, as well as products for use in areas such as ostomy and urology due to the experience that some companies already have in the country. A mid-long-term strategy should aim to attract Contract Manufacturers, and Original Equipment Manufacturers, dental instruments and tools, as a scaling up process from Class I to Class II a. Local suppliers should upgrade their manufacturing and regulatory process to be able to join the global value chain, in areas such as packaging, cables and connectors, sensors, and plastics.

2.4 Fiscal, Financial, and Regulatory Incentives Plan

Key Findings and Recommendations

Globally, countries compete vigorously to attract Foreign Direct Investment (FDI). In doing so, on the one hand, they take advantage of their natural competitive advantages, such as location, political stability, and natural resources and, on the other, strive to create an attractive business and investment climate (including the introduction of incentives), and to differentiate themselves from regional and other global competitors. Studies show that the effectiveness of these incentive programs is greatest when coupled with a strong investment climate.

Most countries offer a mix of conditions, which make it easier or more attractive for companies to select them as a prospective site to invest and operate successfully. This Report will comprehensively review these factors and propose a fiscal, financial and regulatory incentives plan to position El Salvador as an ideal location for companies in the Remote Business Services, Software and IT Development, Pharmaceutical Chemistry, Medical Devices, and Textiles and Clothing sectors.

In order to offer an investment friendly environment, countries typically develop an investment promotion strategy, which includes the provision of a mix of fiscal, financial, economic, and regulatory incentives aimed at differentiating them vis à vis other competing countries with similar conditions.

FDI is a major contributor to economic development worldwide. Incentives are offered by almost every country in the world and can play a key role for countries to compete in the FDI attraction game. The first part of the Report discusses a list of the most common incentives, which are provided by countries in different parts of the world, to attract FDI.

Usually, FDI incentives apply equally to all sectors, but, in some cases, countries grant specific incentives for strategic sectors, larger projects, or locations within the country, for example.

Additionally, countries holding a more established position as successful FDI sites top off their incentive programs with stimuli to reduce the initial, up-front investment. Chief among these are grants for training, employment, R&D, education, and the development of local suppliers.

As part of the ongoing technical assistance, the IOS' team, together with PROESA, determined a list of the main countries that compete head-on with El Salvador in the five sectors of this study, namely, Medical Devices; Pharmaceutical/Chemical; Remote Business Services; Software development and IT, and Textiles and Apparel. These countries are: Colombia, Costa Rica, Dominican Republic, Guatemala, and Honduras.

This Report describes a profile for each of these countries, including a comparison of their investment attraction incentives. These profiles include the following sections of information:

- Tax Credits and Incentives overview;
- Applicable Legislation and Regulations;
- Free zones;
- Requirements for qualification;
- Other incentives;
- Trade Agreements; and
- Tax Structure.

The Report also includes a profile for El Salvador itself to enable and facilitate a benchmark comparison with the five principal competitors.

The subsequent section of the Report provides a Comparison of Taxes, Trade Agreements, Incentive Processing and Free Zone Incentives and Eligibility Requirements.

Finally, for a more vivid comparison, El Salvador is compared with each of the five competitor countries in terms of:

- Free zones;
- Import tariffs;
- Tourism;
- Renewable energy;
- Digital Nomads;
- Targeted lesser developed regions;
- Innovation/R&D; and
- Employment.

In summary:

- Positively, laws and regulations in El Salvador are relatively transparent, tend to foster competition and are consistent with international norms.
- However, bureaucratic hurdles can affect routine transactions and regulatory and local government sometimes impose unnecessary complications on businesses.
- Insofar as overall incentives in general, **El Salvador does better than Guatemala and Honduras, is on par with the Dominican Republic, but falls short when compared with Colombia and Costa Rica.**

To its credit, the current government has been keen on attracting FDI and has taken steps to streamline bureaucratic requirements and improve security conditions in light of the COVID-19 Pandemic.

Our Report presents a very comprehensive summary of the FDI Incentives offered by El Salvador, most of which are contained in the following key laws:

- Free Trade Zones Law;
- International Services Law;
- Tourism Law; and
- Renewable Energy Incentives Law.

We believe El Salvador fares well in most areas; however, other incentives could be offered that would help improve the country's competitiveness, namely:

- Innovation/R&D incentive that are available in the Dominican Republic and Colombia; and
- Digital Nomad incentives that Costa Rica has in place.

From our analysis of the other countries in this study, we conclude that, a competitive, stable and transparent business environment with less red tape and single window clearance, may be more valuable to attract FDI than several incentives that tend to evaporate over time, if other investment climate policies are not in place. Therefore, it is recommended for El Salvador to look at the overall picture, and focus on developing a comprehensive program, including critical investment climate issues as well as ensuring competitiveness in incentives.

Furthermore, the Report provides a Strategic Evaluation of El Salvador, by means of a SWOT Analysis vs. the five selected competitor countries. The SWOT Analysis outlines a list of Strengths and Opportunities, which are quite considerable, but, at the same time, exposes competitive Threats and, most importantly, the main Weaknesses that need to be addressed in order to really improve the attractiveness of the country as a location for FDI.

In Section 6 presents a **Strategic Proposal** for improving the fiscal, financial, economic and regulatory incentives plans, including basic/general items as well as sectoral ones that could have a significant impact. The Report includes specific systemic actions to be addressed in the following four key areas:

- Fiscal/Financial;
- Regulatory;
- Business Climate; and
- Promotion.

Finally, the Report presents a proposed Approval and Governance Model for incentives. The most important aspects in this regard are a) simplifying; and b) speeding up the individual steps and procedures, while maintaining control of the whole FDI incentive process.

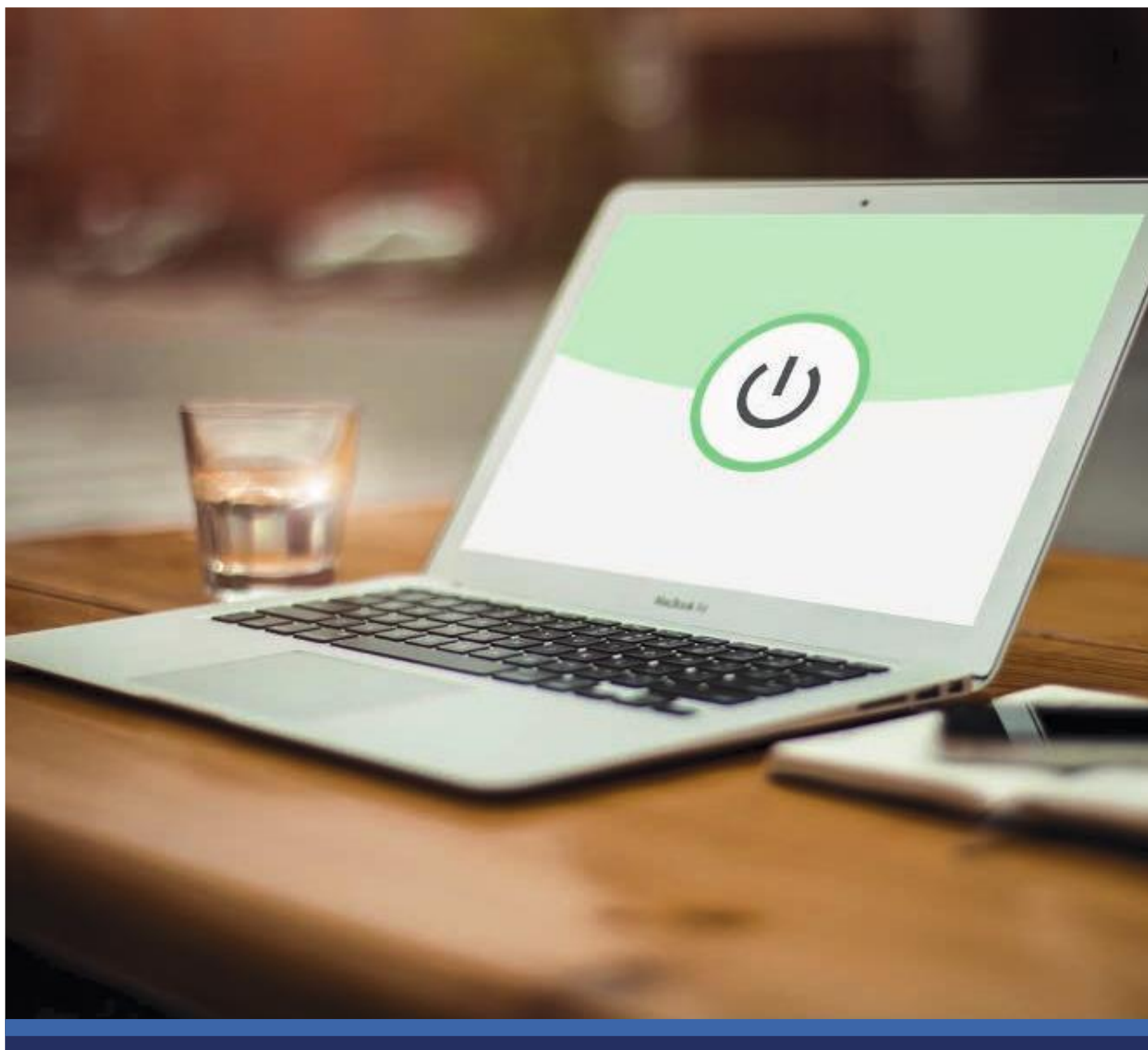
We recommend that El Salvador establishes new and/or enhances and strengthens existing one-stop-shops. In many cases, "single-windows" can be established on top of existing administrators by developing incentives frameworks that allow for a single system, that touches all the legacy players. As part of this arrangement, memoranda of understanding can be established to bring all the parties together under one umbrella, and service level agreements need to be put in place to ensure that approvals and administrative procedures are completed in a timely manner.

We further recommend minimizing as much as possible any "discretionary" incentives, which require the involvement of particular individuals in the approval and/or governance of the transaction.

In summary, incentives should support and reflect the strategic objectives of the country. The best governance model is to have a one-stop-shop/online system for all incentive programs with as much transparency as possible. Incentive programs, at a minimum, must have clear deliverables for both parties and be clearly stated in an incentive agreement that is monitored for compliance on an annual basis.

Our general conclusion is that El Salvador is generally well positioned for attracting FDI and has strategic strengths that should allow the country to take advantage of the significant opportunities that are out there, particularly, in light of the new trend to shorten and restructure the global product value chains.

Of course, the country also has weaknesses, which are clearly identified, and can be neutralized or even eliminated by the application of smart, well focused investment climate improvement policies.



Remote Business Services and Software/ IT Development Sector

3 SECTOR STUDY: REMOTE BUSINESS SERVICES AND SOFTWARE/IT DEVELOPMENT

3.1 Introduction

The purpose of this document is to provide a comprehensive review and analysis of the Remote Business Services and IT/Software development Sectors as priority investment target sectors for El Salvador in line with the USAID ECP Terms of Reference (TOR) to support the ongoing efforts to promote and attract foreign direct investment into El Salvador.

Based on the TOR we have reviewed detailed information provided by the El Salvador project team, visited El Salvador, and met (in-person and virtual) with key stakeholders across government, industry, and related associations. We have also gathered additional information via desk research and interviews with key contacts in the Central America and around the globe. All of the information gathered has been reviewed and analyzed to develop a clear picture of the investment environment in El Salvador and its competitors as it relates to Remote Business Services and Software/IT Development. Our objective is to provide information that is relevant for investment attraction into El Salvador. Thus, we have:

- Investigated and provided an overview and global trends of the Remote Business Services and Software/IT Development Sectors
- Provided sector and subsector definitions and characterizations of the sectors
- Developed a comparative analysis of identified competitor countries:
 - Colombia
 - Costa Rica
 - Dominican Republic
 - Guatemala
 - Honduras
- Built an investment profile of El Salvador with
 - Stakeholders and roles in investment attraction
 - SWOT analysis
 - Local environment analysis
 - Investment readiness
- Undertook a target market analysis looking at key
 - Target countries for investment attraction
 - Target companies in the target markets
- Developed recommendations based on the findings above

The intent of this document and future presentations is to provide a detailed understanding of the opportunities in the target sectors of Remote Business Services and Software/IT Development and to provide insight into how PROESA can leverage these opportunities through implementable actions in the short, medium and long term. We also identify challenges and risks to the investment environment that require attention and provide ideas for addressing these issues.

We look forward to discussing the findings and recommendations of this report and assisting in building an actionable investment attraction strategy going forward.

3.2 Overview and Global Trends in the Remote Business Services & Software/IT Development Sectors

3.2.1 Section Overview

This section addresses the global business trends in remote business services and Software/IT Development. These trends give insight into how each of the business sectors are growing and what the demand side will be for attracting foreign direct investment. Also included are the foreign direct investment trends in the two sectors. This provides a clear picture on how companies in these target sectors have been expanding at the global, regional and national level.

- Trends in the Sectors

Trends in the Remote Business Services/ BPO Industry

- Trends in the Software and IT Development Industry
- FDI Flow Trends in the ICT Sector
- State of Global FDI Flows
- State of FDI Flows in Latin America and the Caribbean
- State of FDI Flows for El Salvador and Competitors.

3.2.2 Trends in the Remote Business Services/ BPO Industry

Data from the ISG (Information Services Group) Index, which measures commercial outsourcing contracts with annual contract value (ACV) of \$5 million or more, show 2nd-quarter ACV for the combined global market (both as-a-service and managed services) reached a record \$19.1 billion, up 32% versus a soft quarter last year, when demand was sharply lower amid the onset of the pandemic. Global ACV this quarter was up 11% versus Q1, which, like the quarter before it, established a record high for the global IT and business services market.

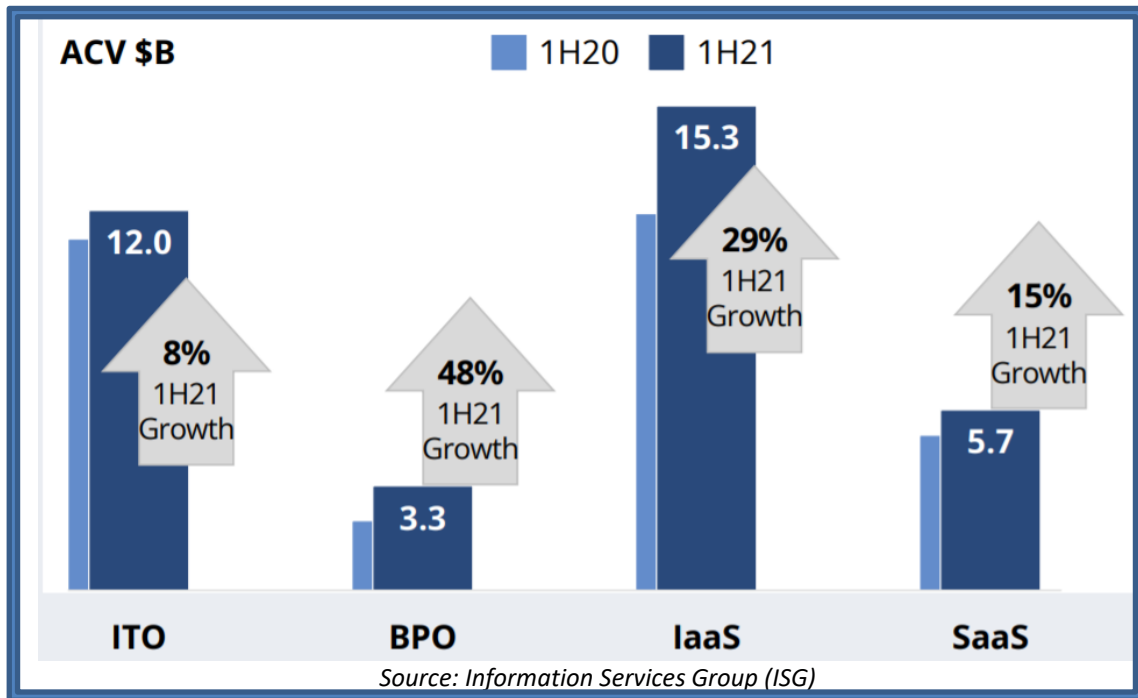
The global market today is driven by two mega-trends which COVID has accelerated by 3 to 5 years:

1. the move to the cloud, and
2. digital transformation.

For the first half of 2021, the combined global market generated a record \$36.3 billion of ACV, up 20%:

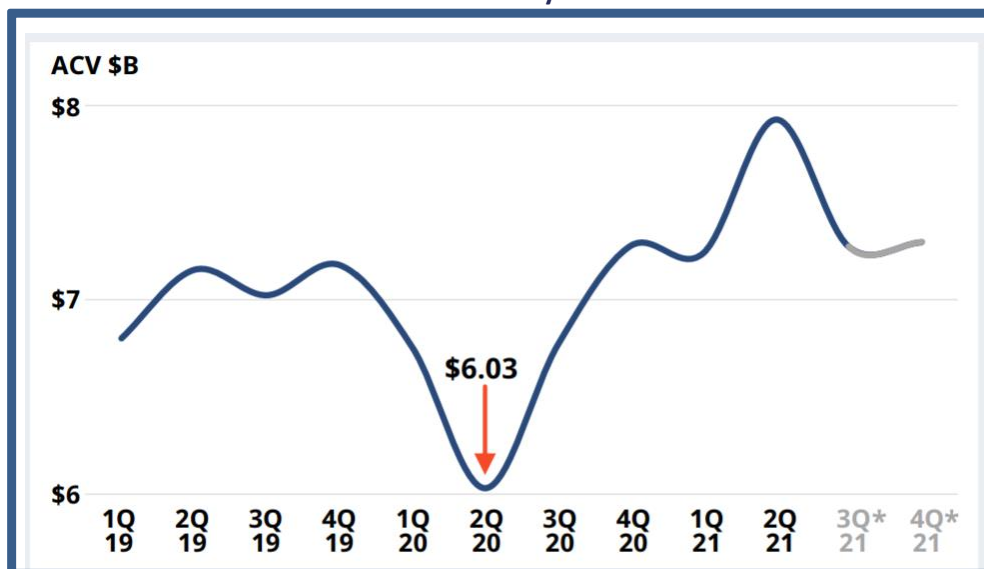
- As-a-service, at a record \$21.0 billion, was up 25%
 - Infrastructure-as-a-service (IaaS) reached a record \$15.3 billion, up 28.5%,
 - Software-as-a-service (SaaS) hit a record \$5.7 billion, up 15%.
- Managed services, at a record \$15.3 billion, was up 15%
 - IT outsourcing (ITO) was at a record \$12.0 billion, up 8%,
 - Business process outsourcing (BPO) reached \$3.3 billion, up 48%.

Figure 1: Annual Contract Value of Managed Services and As-a-service Markets for H1-2021 Globally



The managed service market has recovered from the COVID-19 Dip. Demand has returned despite 2Q/2020 seeing a 17% drop in ACV. Managed services are being used as investments to reduce costs in order for transformation deals to achieve ROI (return on investment) goals. It is also important to note that almost 60% of the ITO market is now application services. ISG is forecasting that managed services will grow to 9% in 2021 globally, up from its prior forecast of 5%.

Figure 2: Annual Contract Value of Managed Services (ITO + BPO) from Q1-2019 to Q2-2021 Globally

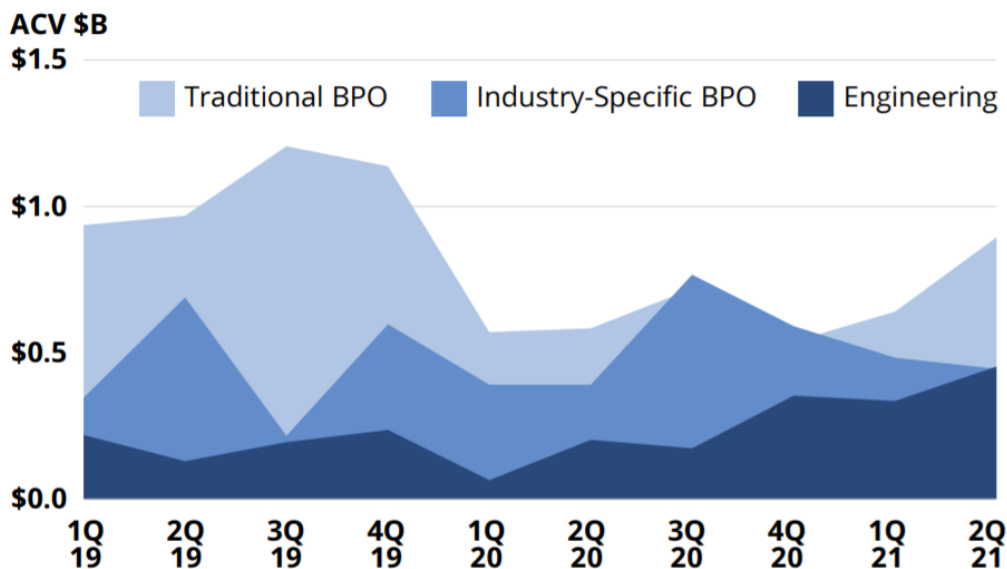


Source: Information Services Group (ISG)

*Denotes ISG's forecast

BPO is also in the process of recovering but is being redefined. Traditional BPO remains soft with CRM (Customer Relationship Management) and Facilities Management still struggling to achieve pre-pandemic levels. It is important to highlight that: (1) Industry Specific BPO is experiencing increased investments and (2) Engineering is rising at 30% CAGR (Compound Annual Growth Rate).

Figure 3: Annual Contract Value of BPO from Q1-2019 to Q2-2021 Globally



Source: Information Services Group (ISG)

*Denotes ISG's forecast

The Americas ISG Index™, which measures commercial outsourcing contracts with annual contract value (ACV) of \$5 million or more in the Americas.

For the first half of 2021, the Americas combined market generated a record \$18.1 billion of ACV, up 14%:

- Managed services, at \$7.0 billion, was up 5% over the prior year.
 - ITO was \$5.1 billion, down 3%, although within ITO, application development and maintenance (ADM) generated a record \$3.1 billion, up 22%.
 - BPO reached \$1.9 billion, up 39%, its best first half since 2009, spurred by strong demand for industry-specific, finance and accounting, and engineering and R&D (research and development) services.

For the 2nd quarter of 2021, the Americas combined market generated a record \$9.5 billion of ACV, up 25% versus last year, when the market was stalled by the onset of the pandemic, and up 10% sequentially over the first quarter this year. As-a-service now accounts for 61% of the combined market in the Americas:

- Managed services, at \$3.6 billion, was up 14% over the prior year.
 - ITO was \$2.6 billion, up 5%,
 - BPO reached \$1.1 billion, up 44%
 - A total of 246 contracts were awarded during the quarter, up 6.5% from the prior year, including a record 115 deals in the \$10 million to \$40 million range.

A number of significant deals were reported during the second quarter. Within the ITO space, Accenture won an ADM contract with a large pharmaceutical company, and Capgemini secured an ADM and Infrastructure extension with a large utility. In BPO, WNS signed a contract with McCain Foods for a finance and accounting transformation in a competitive takeover.

In terms of outsourcing, BPO is among the fastest-growing sectors. **Price sensitivity is driving the industry** and provoking growth. However, **businesses also realize efficiency gains, lower risk, shorten the product development cycle, and foster innovation**. Concrete benefits of BPO include:

- Lower Operating Costs
- Improved Automation
- More Flexibility in Scaling
- Access To Experts and Technology
- Smarter Analytics about both Consumers and Products

In the last two decades, developing nations that have made investments in infrastructure and education are set to reap the advantages of the global movement of BPO. For the BPO sector, a confluence of factors has led to significant growth: a large pool of educated, English-speaking labor, paired with high-speed wireless network penetration has meant that working across borders, space and time has never been easier or more cost-effective.

Economies of scale have also contributed to the profit potential for the BPO sector. The BPO sector has capitalized on the wage differential between the Global South and North so that companies in the North and West can take advantage of lower costs.

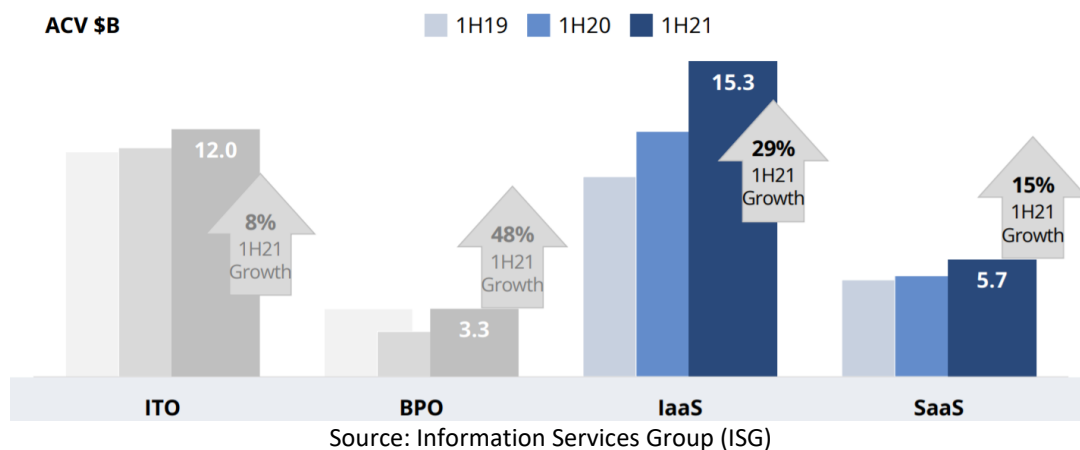
BPO conforms to the comparative advantage theory, which states that countries benefit by exporting goods and services when cheaper to be made in the home country and benefit by importing goods and services from countries where they are affordable.

The BPO phenomenon has also been driven by demographics. As populations in the Global north and west age, and as populations in the south and east are younger, a massive pool of skilled workers represents the enormous potential for the growth of BPO. Price sensitivity as a result of the 2008 recession has led to the development of the BPO sector amongst this skilled workforce.

3.2.3 Trends in the Software and IT Development Industry

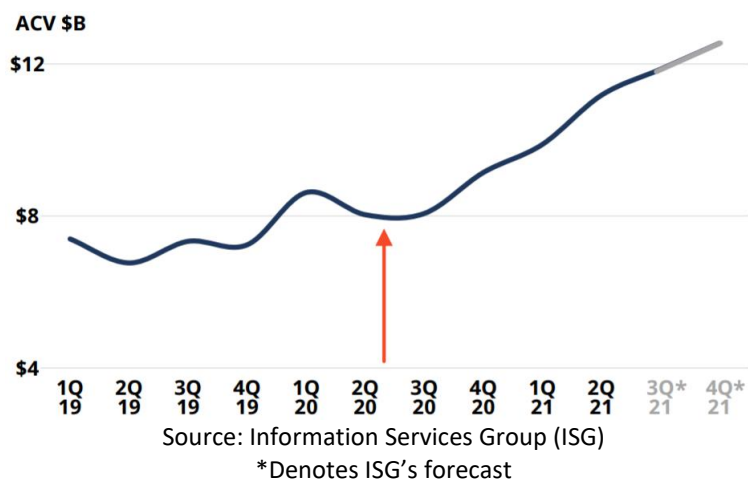
The disruptions of 2020 shattered reliable business expectations and sent industries around the globe scrambling to pivot and reprioritize. Software buyers' needs changed overnight as emergency safety protocols shuttered stores and offices, and employers and employees alike struggled to adjust to a fully remote experience. As a result, COVID accelerated growth in the "As-a-Service" market:

Figure 4: Annual Contract Value of the As-a-Service market from H1-2019 to H2-2021 Globally



There was a slight dip in ACV in the As-a-Service Market with the onset of the COVID pandemic as organizations focused on work-from-home strategies. However, the segment continues to grow at 20%+ CAGR with Cloud leading the way. Moreover, ISG is forecasting the market for cloud-based services (IaaS and SaaS) will grow 21% globally in 2021, up slightly from its 18% growth forecast last quarter.

Figure 5: Annual Contract Value of the As-a-Service market from Q1-2019 to Q2-2021 Globally



The Americas ISG Index™, which measures commercial outsourcing contracts with annual contract value (ACV) of \$5 million or more in the Americas.

For the first half of 2021, the Americas combined market generated a record \$18.1 billion of ACV, up 14%:

- As-a-service, at a record \$11.1 billion, was up 21%,
 - IaaS reached a record \$7.4 billion, up 24%
 - SaaS hit a record \$3.7 billion, up 15%.

For the 2nd quarter of 2021, the Americas combined market generated a record \$9.5 billion of ACV, up 25% versus last year, when the market was stalled by the onset of the pandemic, and up 10% sequentially over the first quarter this year. As-a-service now accounts for 61% of the combined market in the Americas:

- As-a-service, at a record \$5.9 billion, was up 33% over last year
 - IaaS reached a record \$3.9 billion, up 33%
 - SaaS hit a record \$1.9 billion, up 31%.

The Americas had a stellar quarter in Q2, topping \$9 billion in combined market ACV for the first time ever and recording its best year-over-year growth since 2018. Enterprise demand for all things digital is strong and shows no signs of slowing down. This market momentum is expected to continue in the second half, reflecting both pent-up demand and a structural shift to more cloud adoption and digital transformation coming out of the pandemic.

A number of significant deals were reported during the second quarter. In IaaS, Google signed a significant long-term deal with Univision to tie its cloud offering to other solutions. Google Cloud also signed a multiyear agreement with HCA and agreed to expand its collaboration with Whirlpool. In the SaaS arena, key deals in the quarter include Google migrating its internal financial software to SAP in a competitive takeaway. Salesforce contracted with Honeywell for a Sales Cloud engagement, and Xerox signed with ServiceNow.

Leaving little untouched, the acute disruption of 2020 also affected software adoption trends. When Gartner Digital Markets asked business leaders about the software they adopted in response to the pandemic, there was a consistent, global movement to software best suited for a sudden shift to virtual business practices. Instead of classic software categories such as HR and accounting, 2020 induced a spike in video conferencing and live chat software adoption.

According to Gartner Digital Markets, the six software categories most frequently adopted by businesses in response to 2020's disruptions:

- Collaboration software,
- E-commerce software,
- Live chat software,
- Video conferencing software,
- E-learning software,
- VPN software.

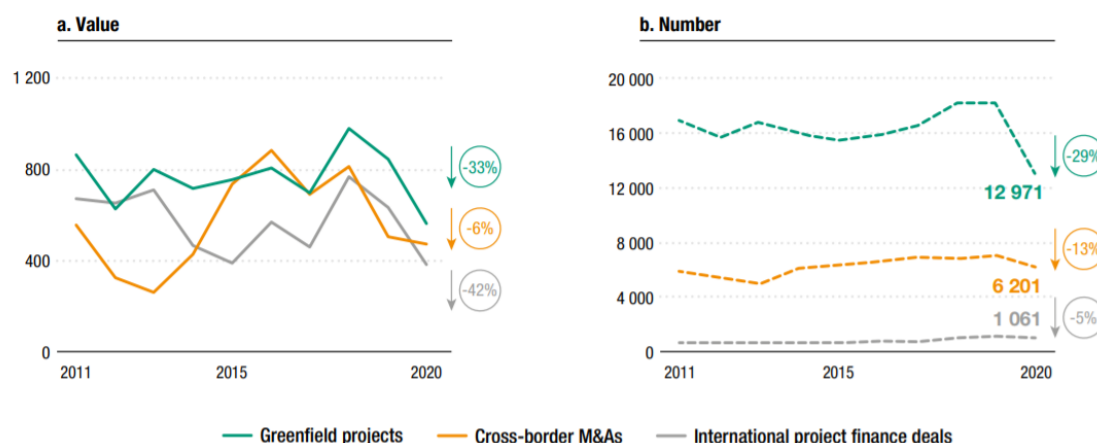
3.3 FDI Flow Trends in the ICT Sector

3.3.1 State of Global FDI Flows

The pandemic had a sizeable impact across all types of FDI in 2020, affecting investment in all regions and industries (Graph 3-1):

- The value of net cross-border M&As (mergers decreased by 6% and the number of deals by 13%, as the sharp decline in the first half of the year was mostly offset by a surge in the last quarter of 2020.
- International project finance volumes were also affected – declining by 42% – although the number of project finance deals (more indicative of the trend) slowed by only 5%.
- Greenfield project announcements decreased in volume and number, by 33% and 29%, respectively.

Figure 6: Announced greenfield projects, cross-border M&As and international project –finance deals, 2011–2020 (Billions of dollars and number)



Source: UNCTAD, cross-border M&A database (www.unctad.org/fdistatistics) for M&As, information from the Financial Times Ltd, fDi Markets (www.fDimarkets.com) for announced greenfield FDI projects and Refinitiv SA for international project finance deals.

The value of announced greenfield investment projects fell to \$564 billion in 2020 (exhibit 7), the lowest level ever recorded. The geographical focus of foreign investors shifted to developed economies. Consequently, **developing countries like El Salvador faced an unprecedented downturn in greenfield FDI projects.**

- The contraction in the number of greenfield project announcements was most pronounced in the manufacturing sector. The services sector, which represents half of the value of global greenfield projects in 2019, was less affected.
- The pandemic boosted demand for digital infrastructure and services globally. This led to higher values of greenfield FDI project announcements targeting the ICT industry, rising by more than 22% to \$81 billion. Although the number of announced projects decreased by 13%, the ICT industry attracted the largest share of projects.

Table 3-1: Announced greenfield projects, by sector and selected industries, 2019–2020

Sector/industry	Value (Billions of dollars)		Growth rate (%)	Number		Growth rate(%)
	2019	2020		2019	2020	
Total	846	564	-33	18 261	12 971	-29
Primary	21	11	-47	151	100	-34
Manufacturing	402	237	-41	8 180	5 139	-37
Services	422	315	-25	9 930	7 732	-22
<i>Top 10 industries in value terms</i>						
Energy and gas supply	113	99	-13	560	529	-6
Information and communication	66	81	22	3 332	2 903	-13
Electronics and electrical equipment	53	46	-14	1 201	862	-28
Chemicals	47	40	-15	752	442	-41
Construction	66	35	-47	437	319	-27
Automotive	62	33	-47	1 022	558	-45
Coke and refined petroleum	94	30	-69	109	54	-50
Transportation and storage	43	26	-39	764	627	-18
Trade	22	23	5	688	572	-17
Finance and insurance	24	19	-19	1 028	715	-30

Source: UNCTAD, based on information from the Financial Times Ltd, fDi Markets (www.fDimarkets.com).

3.3.2 State of FDI Flows in Latin America and the Caribbean

FDI flows to Latin America nearly halved from \$160 billion in 2019 to \$88 billion in 2020, the sharpest decline among developing regions. Moreover, the number of announced greenfield projects declined 43% in Latin America, because of fewer commitments in the automotive, hospitality and energy industries (exhibit 8). The region suffered the highest per capita COVID-19 death rate in the world to date, and its economies faced a collapse in export demand, a fall in commodity prices and the disappearance of tourism.

- FDI inflows to South America: 2019 - \$112.7 billion; 2020 - \$51.9 billion
- FDI inflows to Caribbean²: 2019 - \$3.9 billion; 2020 - \$2.5 billion
- FDI inflows to Central America: 2019 - \$43.8 billion; 2020 - \$33.1 billion
- FDI inflows to El Salvador: 2019 - \$636 million; 2020 - \$200 million

Table 3-2: Announced greenfield projects in Latin America, 2019–2020

Sector/Industry	Value (Millions of dollars)		Number	
	2019	2020	2019	2020
Total	112 315	56 540	1 832	1 042
Primary	8 026	944	24	19
Manufacturing	41 204	19 764	935	405
Services	63 084	35 832	873	618
<i>Top industries by value</i>				
Energy	25 701	16 458	126	102
Information and communication	9 272	6 525	270	199
Automotive	10 087	4 537	152	55
Hospitality	6 691	3 787	77	26
Coke and refined petroleum	2 024	3 473	16	8
Paper and paper products	5 521	3 419	20	7

Source: UNCTAD, based on information from the Financial Times Ltd, fDi Markets (www.fDimarkets.com).

FDI to Central America fell 24% to \$33 billion. Inflows to Mexico, which was already suffering a recession in 2019, were relatively resilient compared with the rest of the region and dipped by only 15%, to \$29 billion. FDI to Costa Rica declined by 38% to \$1.7 billion, owing to lower external demand, the collapse of tourism and other pandemic-related factors. FDI flows to Panama shrank 86% to \$589 million, the lowest level in almost two decades.

In 2020, FDI in the Caribbean region, excluding the offshore financial centres, declined 36% to \$2.5 billion. The overall contraction was mainly caused by a 15% decline in FDI to the Dominican Republic, the major recipient in the region, to \$2.6 billion which was mainly due to divestments in telecommunication (-\$122 million) and lower investment in SEZ (-11%, to \$232 million) and mining (-90%, to \$21 million).

Further to UNCTAD's *World Investment Report 2021*, in 2021, FDI to the region is expected to remain stagnant (exhibit 9), challenged by many downside risks, including economic and policy uncertainties. The recovery of inflows will vary across countries and industries, with foreign investors set to target clean energy, pushed by a worldwide drive towards a sustainable recovery. Other industries showing signs of a rebound include information and communication, electronics and medical device manufacturing. In the services sector, the information and communication industry is expected to continue to show dynamism, especially in software production, business process outsourcing services and fintech.

² Excluding the financial centers in the Caribbean (Anguilla, Antigua and Barbuda, Aruba, the Bahamas, Barbados, the British Virgin Islands, the Cayman Islands, Curaçao, Dominica, Grenada, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Sint Maarten and the Turks and Caicos Islands).

Table 3-3: Latin America and the Caribbean: growth rates of GDP, trade and FDI, 2013–2021 (%)

Variable	2013	2014	2015	2016	2017	2018	2019	2020	2021*
GDP	2.8	1	0.1	-1.2	0.9	0.5	-0.3	-7.3	4.3
Trade	1.1	1.3	4.7	1.8	3.7	3.6	0.4	-7.7	8.4
FDI	-7.0	-13.7	-2.8	-13.3	15.1	-4.0	6.9	-45.4	(-5 to 5)

Source: UNCTAD, FDI/MNE database for FDI; UN (2021) for GDP and trade

*Forecasted.

3.3.3 State of FDI Flows for El Salvador and Competitors

FDI Markets identifies a total of 406 greenfield investment projects for El Salvador and its selected competitors during the 2015-2020 period of which 40 projects were in the software & IT services (exhibit 10).

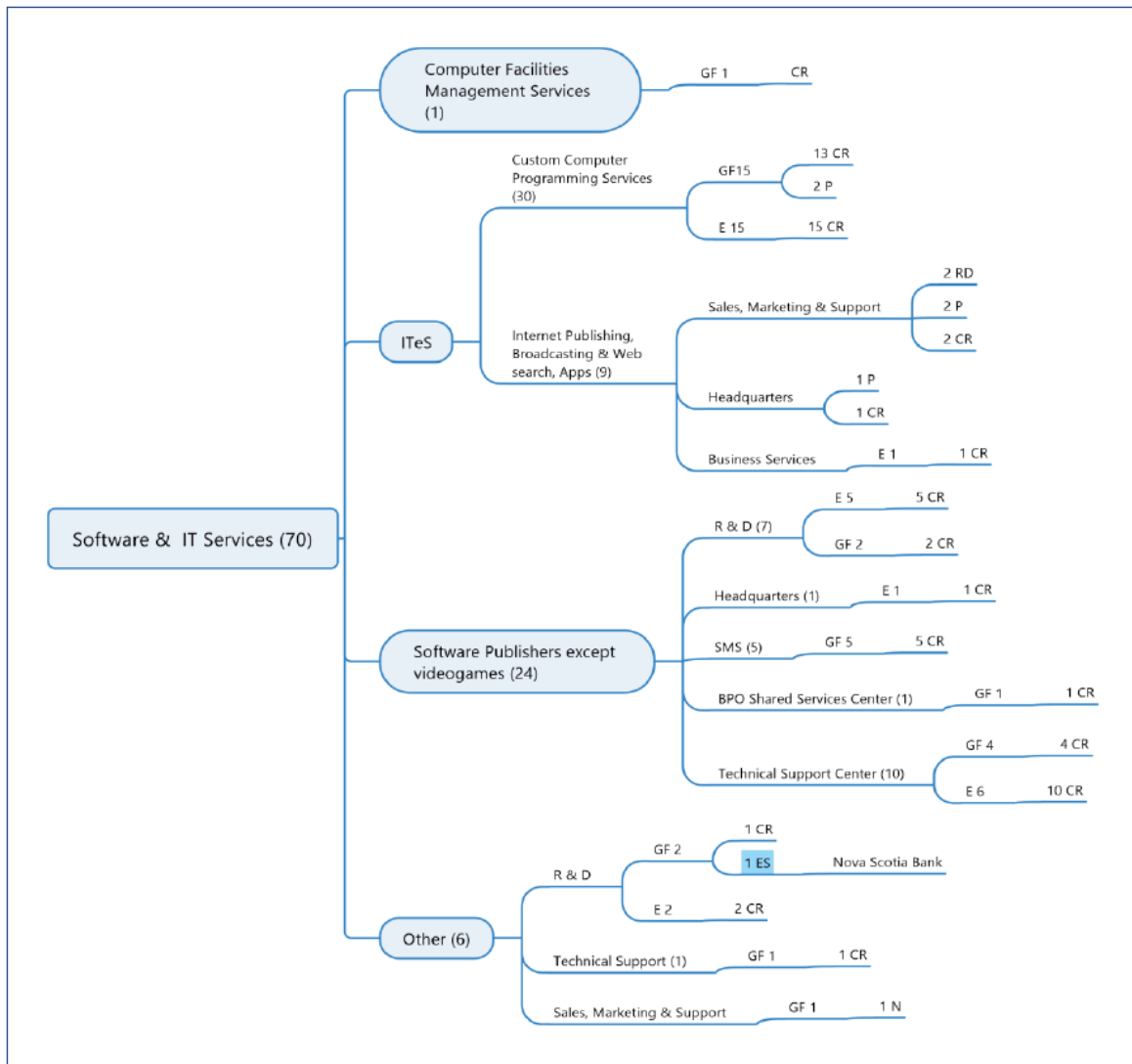
In the software & IT services sector, FDI Markets identifies 70 FDI projects during the same period of which 40 were greenfield investments and 30 were expansionary investments (exhibit 11). It is therefore important to note that El Salvador only had 1 greenfield investment in this segment from Scotia Bank. Thus, El Salvador must compete aggressively and consistently with countries such as Costa Rica, Panama and the Dominican Republic (exhibit 12).

Table 3-4: New FDI (Greenfield FDI) in Central America by number of projects, 2015-2020

Destination countries	Business services	Communications	Hotels & tourism	Software & IT services	Food & Beverages	Transportation & Warehousing	Renewable energy	Financial services	Chemicals	Medical devices	Real estate	Building materials	Electronic components	Textiles	Industrial equipment	Coal, oil & gas	Pharmaceuticals	Plastics	Business machines & equipment	Automotive components	Total
Costa Rica	20	9	7	31	12	8	3	3	12	5	1	5	4	5	1	2	1	129			
Dominican Republic	5	8	26	2	5	5	6	5	1	2	1	1	1	3	71						
El Salvador	5	6	1	1	3	5	2	4	1	1	1	1	1	31							
Honduras	8	2	1	2	4	3	2	1	5	1	2	1	32								
Nicaragua	8	3	1	1	8	2	3	3	1	1	2	2	1	1	2	39					
Panama	16	15	6	5	4	10	11	11	3	1	6	4	3	3	1	3	1	1	104		
Total	62	43	42	40	31	30	27	24	16	15	13	13	11	8	7	6	5	5	4	4	406
Share of projects SV %	8%	14%	2%	3%	0%	10%	19%	8%	25%	0%	0%	8%	9%	0%	14%	17%	0%	0%	0%	0%	8%

Source: Based on information from the Financial Times Ltd, fDi Markets (www.fDimarkets.com).

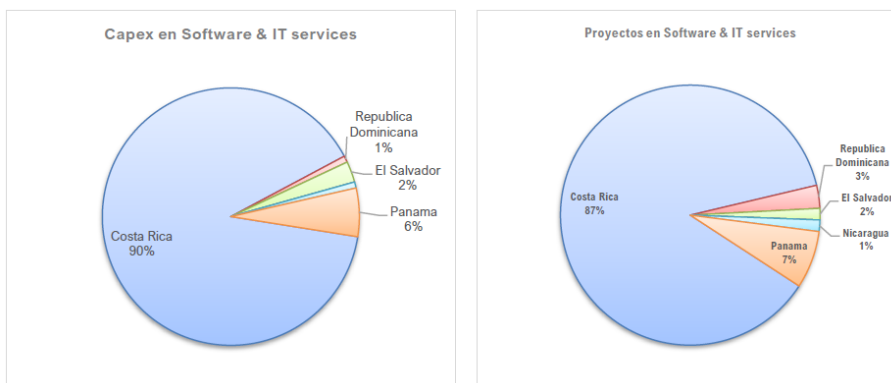
Figure 7: Greenfield & Expansionary FDI projects in Central America’s ITO sector, 2015-2020



Note: GF: Greenfield, E: Expansion, ES: El Salvador; CR: Costa Rica, P: Panama, H: Honduras, G: Guatemala, RD: Dominican Republic

Source: Based on information from the Financial Times Ltd, fDi Markets (www.fDimarkets.com).

Figure 8: Distribution of investment in the Software & IT sector as a percentage of CAPEX & number of projects, 2015-2020



Source: Based on information from the Financial Times Ltd, fDi Markets (www.fDimarkets.com).

3.3.4 Notable BPO/Software M&A Deals in El Salvador and its Competitors

The table below illustrates relevant M&A deals in the BPO and Software development industries since 2018. The region of analysis includes Colombia, Costa Rica, Dominican Republic, Guatemala, Honduras and El Salvador. It is important to note that 10Pearls, LLC and SoftwareONE AG tend to be repeat buyers in the region.

Table 3-5: Notable BPO/Software M&A Deals In El Salvador And its Competitors

Notable M&A Deals				
Transactions Announced Date	Target	Buyers	Business Description [Target]	Geographic Locations [Target]
08-04-2021	Proximity Costa Rica LLC	10Pearls, LLC	Proximity Costa Rica LLC provides outsourcing solutions, such as custom software development, app development and maintenance, QA and testing services, and UI/UX experience design. The company was founded in 2008 and is based in San José, Costa Rica. As of August 4, 2021, Proximity Costa Rica LLC operates as a subsidiary of 10Pearls, LLC.	Costa Rica
07-13-2021	OneLink	Webhelp SAS	OneLink provides business process outsourcing (BPO) services in North and Latin America. Its services include customer relationship management, sales, technical support, finance and accounting, logistics, supply chain, and other back-office services. The company serves clients in consumer, telecom, technology, travel, and leisure sectors. OneLink was founded in 2014 and is headquartered in Ciudad de Guatemala, Guatemala with locations in San Salvador, El Salvador; Managua, Nicaragua; and Bello, Colombia.	Guatemala & El Salvador
06-30-2021	Innova Consulting Group S A S/Gamma Engineers & Consultants	Amazonas Florestal, Ltd (OTCPK:AZ FL)	As of July 8, 2021, Innova Consulting Group S A S/Gamma Engineers & Consultants was acquired by Amazonas Florestal, Ltd. Innova Consulting Group S A S/Gamma Engineers & Consultants represents combined operations of Innova Consulting Group S A S and Gamma Engineers & Consultants in their sale to Amazonas Florestal, Ltd. Innova Consulting Group S A S offers integration of technological solutions, product development, software services, and infrastructure and security services. Gamma Engineers & Consultants is an engineering and design firm that focuses on cannabis cultivation and processing facilities. The companies are based in Colombia.	Colombia
02-02-2021	PrimeStone S. A.	Trilliant Networks, Inc.	PrimeStone S. A., a software development company, develops and supplies smart grid applications and solutions for data collection, validation, management, control, and information exchange between meters and other devices. It offers PrimeRead Energy Suite, a multi-vendor and multi-network meter data collection system for C&I and residential meters that centralizes information in a relational database; PrimePDA, a meter data collection engine used for on-site data download of electricity meters; and PrimeWeb, a Web	Colombia

			<p>presentment tool for publishing to the Internet load profile, registers, events, and power quality readings. The company also provides PrimeGuard that automatically detects user defined errors and exceptions in the incoming readings and triggers notifications where actions are taken; and PrimeGrid that automatically calculates energy balances for controlling power losses. In addition, it offers database administration, training, outsourcing, and custom reports services. The company serves electric cooperative or municipality, IOU, and the power industry. PrimeStone S. A. was founded in 1990 and is based in Bogotá, Colombia. It has satellite offices and authorized distributors in the United States and internationally. As of January 5, 2021, PrimeStone S. A. operates as a subsidiary of Trilliant Networks, Inc.</p>	
11-24-2020	Equinox Teleservices SRL	Upco International Inc. (CNSX:UPCO)	Equinox Teleservices SRL offers outsourced multilingual staffs to companies in the telecommunications and internet industry. The company is based in Santo Domingo, Dominican Republic.	Dominican Republic
11-10-2020	InterGrupo S.A.	SoftwareONE AG	InterGrupo S.A. provides integrated IT solutions in Colombia, and Latin America. Its IT infrastructure and managed services include strategic planning in IT infrastructure, network operating system solutions, security and planning, security -threat assessments, messaging and collaboration, unified communications, and monitoring and infrastructure management, as well as security audits, control, and compliance; and software engineering services comprise enterprise application architecture consulting, enterprise application development, business intelligence, and software development methodology consulting. The company serves insurance and financial, services, manufacturing, retail, and government sectors. The company was founded in 1995 and is based in Santafé de Antioquia, Colombia with additional offices in Bogota, Barranquilla, and Cali, as well as subsidiaries in the United States, Spain, Ecuador, Peru, and Dominican Republic.	Colombia
08-17-2020	Digitex Servicios Bpoyo S A	Digitex Internacional S A S	Digitex Servicios Bpoyo S A provides business process outsourcing (BPO) services, including call centre telephone services. The company is based in Bogotá, Colombia. Digitex Servicios Bpoyo S A operates as a subsidiary of Digitex Internacional S A S.	Colombia

08-13-2020	Isthmus Software	3Pillar Global, Inc.	Isthmus Software provides software development services. The company was founded in 2003 and is headquartered in San Joaquín, Costa Rica. As of August 13, 2020, Isthmus Software operates as a subsidiary of 3Pillar Global, Inc.	Costa Rica
06-17-2020	Productora De Software S.A.S.	Perficient, Inc. (NasdaqGS:PRFT)	PRODUCTORA DE SOFTWARE S.A.S. provides custom applications and software development services. The company was founded in 1985 and is based in Medellín, Colombia. As of June 17, 2020, Productora De Software S.A.S. operates as a subsidiary of Perficient, Inc.	Colombia
10-11-2019	Su Temporal and Servi-Oportunos	Jobs and Talent S.L.	Su Temporal and Servi-Oportunos offers temporary staffing and outsourcing services. The company is based in Colombia. As of October 11, 2019, Su Temporal and Servi-Oportunos operates as a subsidiary of Jobs and Talent S.L.	Colombia
09-05-2019	Business Process Outsourcing of Suppla Group	Iron Mountain Incorporated (NYSE:IRM)	Business Process Outsourcing of Suppla Group comprises information management service business. The asset is located in Colombia.	Colombia
06-04-2019	InterGrupo S.A.	SoftwareONE AG	InterGrupo S.A. provides integrated IT solutions in Colombia, and Latin America. Its IT infrastructure and managed services include strategic planning in IT infrastructure, network operating system solutions, security and planning, security -threat assessments, messaging and collaboration, unified communications, and monitoring and infrastructure management, as well as security audits, control, and compliance; and software engineering services comprise enterprise application architecture consulting, enterprise application development, business intelligence, and software development methodology consulting. The company serves insurance and financial, services, manufacturing, retail, and government sectors. The company was founded in 1995 and is based in Santafé de Antioquia, Colombia with additional offices in Bogota, Barranquilla, and Cali, as well as subsidiaries in the United States, Spain, Ecuador, Peru, and Dominican Republic.	Colombia
02-28-2019	InfoFactor	10Pearls, LLC	InfoFactor engages in the development and deployment of custom software, enterprise web and mobile applications, technology staff augmentation, and data-centric solutions. The company is based in Medellin, Colombia. As of February 28, 2019, InfoFactor operates as a subsidiary of 10Pearls, LLC.	Colombia

12-27-2018	Centercom Global, S.A. de C.V	SurgePays, Inc. (OTCPK: SURG)	Centercom Global, S.A. de C.V provides bilingual customer service, sales conversions, provisioning information technology solutions, software development, graphic design, and programming services to clients. The company was founded in 2017 and is headquartered in San Salvador, El Salvador.	El Salvador
09-10-2018	SQL Software S.A	Softland Inversiones S.L.	SQL Software S.A develops and implements software solutions for payroll and human resource management. The company was founded in 1990 and is based in Bogotá, Colombia. As of September 7, 2018, SQL Software S.A operates as a subsidiary of Softland Inversiones S.L.	Colombia
05-22-2018	Ability Data Services SA	Gigas Hosting, S.A. (BME:GIGA)	Ability Data Services SA provides cloud computing solutions, business information technology (IT) solutions, consulting services, outsourcing services, and professional services. The company was founded in 2000 and is based in Bogotá, Colombia. As of May 22, 2018, Ability Data Services SA operates as a subsidiary of Gigas Hosting, S.A.	Colombia

3.3.5 Section Summary

For the first half of 2021, the combined global market for As-a-service and managed services generated a record \$36.3 billion of ACV of which \$18.1 billion derived from the Americas.

The global As-a-service and managed services market today is driven by two mega-trends which COVID has accelerated by 3 to 5 years:

1. the move to the cloud, and
2. digital transformation.

The pandemic had a sizeable impact across all types of FDI in 2020, affecting investment in all regions and industries.

- The value of net cross-border M&As decreased by 6% and the number of deals by 13%, as the sharp decline in the first half of the year was mostly offset by a surge in the last quarter of 2020.
- International project finance volumes were also affected – declining by 42% – although the number of project finance deals (more indicative of the trend) slowed by only 5%.
- Greenfield project announcements decreased in volume and number, by 33% and 29%, respectively.

FDI to Central America fell 24% to \$33 billion. Inflows to Mexico, which was already suffering a recession in 2019, were relatively resilient compared with the rest of the region and dipped by only 15%, to \$29 billion. FDI to Costa Rica declined by 38% to \$1.7 billion, owing to lower external demand, the collapse of tourism and other pandemic-related factors. FDI flows to Panama shrank 86% to \$589 million, the lowest level in almost two decades.

Analysis of recent relevant M&A deals in the BPO and Software development industries indicate that LLC and SoftwareONE AG tend to be repeat buyers in the region. These two companies should be considered for future strategic purposes.

In 2021, FDI to the region is expected to remain stagnant, challenged by many downside risks, including economic and policy uncertainties. The recovery of inflows will vary across countries and industries, with foreign investors set to target clean energy, pushed by a worldwide drive towards a sustainable recovery. Other industries showing signs of a rebound include information and communication, electronics and medical device manufacturing. In the services sector, the information and communication industry is expected to continue to show dynamism, especially in software production, business process outsourcing services and fintech.

3.4 Sector and Subsector Definitions/Characterization of the Sectors

3.4.1 Section Overview

This section provides definitional detail on the Remote Business Services and Software/IT Development. We address the definitions and characterization of the sectors and subsectors. Lastly, we address the key programming demands in software/IT development.

- Defining the Sectors
- Characterization of the BPO and Software Industries
- Key Programming Demands

3.4.2 Defining Remote Business Services/ BPO

Table 3-6: BPO Explanation

Business Process Outsourcing		
	Call Center	Knowledge Process Outsourcing (ITO, LPO, CPO, HRO)
Definition	CCs provide services like customer care, technical support through voice processes, tele-marketing, sales, etc.	KPO provides in-depth knowledge, expertise and analysis on complex areas like Legal Services, Business and Market Research, etc.
Requires	Good communication skills and basic computer knowledge	Specialized knowledge
Services	Lower end services	High end services
Process	Pre-defined process	Requires application and understanding of business
Employees	Lower skilled employees	Skill and expertise on knowledge employees
Expertise in	Process Languages (English etc.)	Knowledge
Relies on	Cost arbitrage	Knowledge arbitrage
Driving force	Volume driven	Insights driven

Source: Tractus Research

Remote business services is an umbrella term and is best defined by the following segments:

- **Business Process Outsourcing (BPO)** is a method of subcontracting various business-related operations to third-party vendors. Although BPO originally applied solely to manufacturing entities, such as soft drink manufacturers that outsourced large segments of their supply chains, BPO now applies to the outsourcing of services, as well. BPO services have been classified as either front-end or back-end. BPO has spawned subsets: Knowledge Process Outsourcing (KPO), Creative Process Outsourcing (CPO), Legal Process Outsourcing (LPO), Information Technology Outsourcing (ITO), Robotic Process Outsourcing (RPO), Human Resource Outsourcing (HRO). These subsets categorize and organize a wide range of highly specialized services that can potentially be outsourced to third-party service providers.

- **Call Center (CC)** is a subset of BPO, and the services of a Call Centre are primarily voice-based services. Call Centre services help businesses to stay connected with its customers through Inbound & Outbound calls. The key difference between BPO and CC is that a BPO Company performs the back-office tasks of any business customer support or accounting functions, whereas a CC Company handles just telephone calls.
- **Creative Process Outsourcing (CPO)** is a subset of KPO. CPO allows a company to divest its marketing and advertising needs to a third party. Through these B2B relationships, the work is of a higher quality and completed at a lower cost. Depending on the specifics of the project, program, or product, some companies outsource the more mechanical or technical aspects of their creative work while keeping the creative direction in-house. Outsourcing of tasks that a company does not specialize in, such as graphic design, photo-editing, and video creation, is also common. It is not unusual for large multinationals to outsource their entire creative workflow to augment and complement in-house marketing teams.
- **Human Resource Outsourcing (HRO)** is a subset of KPO. Outsourcing HR allows a company to take advantage of knowledgeable HR professionals who have expertise in contracting, salary, promotion, employee rights, evaluation, and professional development. HR is comprised of more than just hiring. The HR process includes payroll management, training, staffing, benefits administration, travel, expenses management, retirement, benefits planning, risk management, compensation consulting, etc.
- **Information Technology Outsourcing (ITO)** is a subset of KPO. ITO is a practice where a company hires individuals outside their organization to perform its information technology (IT) operations. This subset of outsourcing covers various IT services, from infrastructure, maintenance, and support to software development and programming.
- **Knowledge Process Outsourcing (KPO)** is a subset of BPO. KPO involves outsourcing of core functions which may or may not give cost benefit to the parent company but surely helps in value addition. The processes which are outsourced to KPOs are usually more specialized and knowledge based as compared to BPOs. Services included in KPO are related to R&D, Capital and insurance market services, legal services, biotechnology, animation and design, etc. are the usual activities that are outsourced to KPOs.
- **Legal Process Outsourcing (LPO)** is a subset of KPO. LPO services include a comprehensive menu of offerings: patents, legal research, pre-litigation documentation, advising, licensing agreements, and drafting distribution agreements.

3.4.3 Defining Software and IT Development

Software development refers to a set of computer science activities dedicated to the process of creating, designing, deploying and supporting software. Software itself is the set of instructions or programs that tell a computer what to do. It is independent of hardware and makes computers programmable. There are four basic types:

- **System software** to provide core functions such as operating systems, disk management, utilities, hardware management and other operational necessities.
- **Programming software** to give programmers tools such as text editors, compilers, linkers, debuggers and other tools to create code.

- **Application software** (applications or apps) to help users perform tasks. Office productivity suites, data management software, media players and security programs are examples. Applications also refers to web and mobile applications like those used to shop on Amazon.com, socialize with Facebook or post pictures to Instagram.
- **Embedded systems software** is used to control machines and devices not typically considered computers — telecommunications networks, cars, industrial robots and more. These devices, and their software, can be connected as part of the Internet of Things (IoT).

The software development sector includes business which develop software for specialized system software, programming software and application software for the business, healthcare and consumer markets. This includes enterprise and technical software, cloud-based software, systems software, database management software and interactive gaming products.

3.4.4 Characterization of the BPO and software industries

The distinctive nature or features of the BPO and Software Industries can best be described by selecting the appropriate sub-industries from the Global Industry Classification System (GICS) as detailed in exhibit 14 below.

Table 3-7: GICS Classification for BPO and Software Industries

GICS Sub-Industry and Code	Description	BPO/Software
Health Care Services 35102015	Providers of patient health care services not classified elsewhere. Includes dialysis centers, lab testing services, and pharmacy management services. Also includes companies providing business support services to health care providers, such as clerical support services, collection agency services, staffing services and outsourced sales & marketing services.	BPO
IT Consulting & Other Services 45102010	Providers of information technology and systems integration services not classified in the Data Processing & Outsourced Services or Internet Software & Services Sub-Industries. Includes information technology consulting and information management services.	BPO
Data Processing & Outsourced Services 45102020	Providers of commercial electronic data processing and/or business process outsourcing services. Includes companies that provide services for back-office automation.	BPO
Health Care Technology 35103010	Companies providing information technology services primarily to health care providers. Includes companies providing application, systems and/or data processing software, internet-based tools, and IT consulting services to doctors, hospitals or businesses operating primarily in the Health Care sector.	Software
Application Software 45103010	Companies engaged in developing and producing software designed for specialized applications for the business or consumer market. Includes enterprise and technical software, as well as cloud-based software. Excludes companies classified in the Interactive Home Entertainment Sub-Industry. Also excludes companies producing systems or database management software classified in the Systems Software Sub-Industry.	Software

Systems Software 45103020	Companies engaged in developing and producing systems and database management software.	Software
Interactive Home Entertainment 50202020	Producers of interactive gaming products, including mobile gaming applications. Also includes educational software used primarily in the home. Excludes online gambling companies classified in the Casinos & Gaming Sub-Industry.	Software

Source: S&P Global

3.4.5 Key Programming Demands

Key programming demands can be represented by the following 4 indexes:

- **Popularity of Programming Language (PYPL)** Index is created by analyzing how often language tutorials are searched on Google. The more a language tutorial is searched, the more popular the language is assumed to be. It is a leading indicator. The raw data comes from Google Trends. The PYPL index can help individuals decide which language to study, or which one to use in a new software project if you believe in collective wisdom.
- **TIOBE Programming Community** index is an indicator of the popularity of programming languages. The index is updated once a month. The ratings are based on the number of skilled engineers world-wide, courses and third-party vendors. Popular search engines such as Google, Bing, Yahoo!, Wikipedia, Amazon, YouTube and Baidu are used to calculate the ratings. It is important to note that the TIOBE index is not about the best programming language or the language in which most lines of code have been written.
- **StackOverflow's 2021 Developer Survey Uncovers New Trends in Tech and Work.** Stackoverflow's 2021 developer survey focuses mostly on work outside the traditional office. For almost a decade, Stack Overflow's annual Developer Survey held the honor of being the largest survey of people who code around the world. The 2021 report was taken by nearly 83,439 software developers from 181 countries around the world of which 58,153 respondents were software developers by profession.
- **GitHub** is the largest code host in the world, with 40 million users and more than 190 million repositories as of January 2020. By analyzing how languages are used in GitHub it's possible to understand the popularity of programming languages among developers and to discover the unique characteristics of each language. GitHub provides a public API to interact with its huge dataset of events and interaction with the hosted repositories.

Table 3-8: Most Popular Programming Languages

Rank	PYPL (Sept. 2021)	TIOBE (Aug. 2021)	StackOverflow (2021)	GitHub (2020)
1	Python	C	JavaScript	JavaScript
2	Java	Python	HTML/CSS	Python
3	JavaScript	Java	Python	Java
4	C#	C++	SQL	TypeScript
5	PHP	C#	Java	C#
6	C/C++	Visual Basic	Node.js	PHP
7	R	JavaScript	TypeScript	C++
8	TypeScript	PHP	C#	C
9	Swift	Assembly Language	Bash/Shell	Shell
10	Objective-C	SQL	C++	Ruby

Source: PYPL, TIOBE, StackOverflow, GitHub, Tractus Research

In the last several years, Python has seen enormous growth in demand with no sign of slowing down. As illustrated in exhibit 15, programming language ranking site PYPL has ranked Python as the number one programming language with a considerable popularity gain in 2021. Another programming language ranking site TIOBE has ranked Python the 2nd most popular language whereas the annual StackOverflow developer survey has ranked Python as the 3rd most popular programming language in 2021. Lastly, Python has surpassed Java and became the 2nd most popular language according to GitHub repositories contributions.

3.5 Competitive Benchmarks

3.5.1 Introduction

In this section, we analyze the competitive landscape and benchmarking certain countries against El Salvador in sectors; Remote Business Services/Business Process Outsourcing (BPO) and Software and IT Development. Competitive benchmarking enables narrow locations best suited for investment projects and helps a region find gaps and work on improving these. Investment promotion intermediaries use benchmarking to better understand their locations' competitiveness for foreign direct investment (FDI) and to develop marketing messages.

The countries in focus for this study are Colombia, Costa Rica, Dominican Republic (DR), Guatemala, and Honduras and we will benchmark the performance of El Salvador (SV) against these five countries. The countries analysed in this study were selected in consultation with stakeholders in the region and the indicators used for this benchmarking study include:

- Key Economic Data
- In-flow of FDI
- Human Capital Indicators
- Ease of doing business
- Transportation infrastructure
- Talent Availability

3.5.2 Methodology

- Desk-based Research: research was conducted to collect data on critical site selection factors—including infrastructure, human capital, real estate, access to markets, and the general business environment using online and published sources.
- Interviews with Investment Promotion Agency (IPA's) in all the five countries in focus.
- Interviews with stakeholders in El Salvador

3.5.3 Global FDI Trends - 2020

The coronavirus pandemic (COVID-19) in 2020 heavily affected investments of multinationals and Foreign direct investment (FDI) inflows globally. Global FDI flows dropped by 35 percent to \$1 trillion, from \$1.5 trillion in 2019. The impact of the pandemic on global FDI had a major impact during the first half of 2020 and some recovery was seen during the second half across cross-border M&As and international project finance deals. However, greenfield investments that are important for developing countries indicated a negative trend throughout 2020 and into the first quarter of 2021.

IN 2020...

- Greenfield FDI projects dropped by 33%
- Capital Investment declined 34%
- The number of jobs created declined 40%

3.5.4 FDI inflows and outflows and top host economies

In 2020, both the number of FDI projects and capital investment in FDI plummeted by a third from 2019's levels according to fDi Markets reports

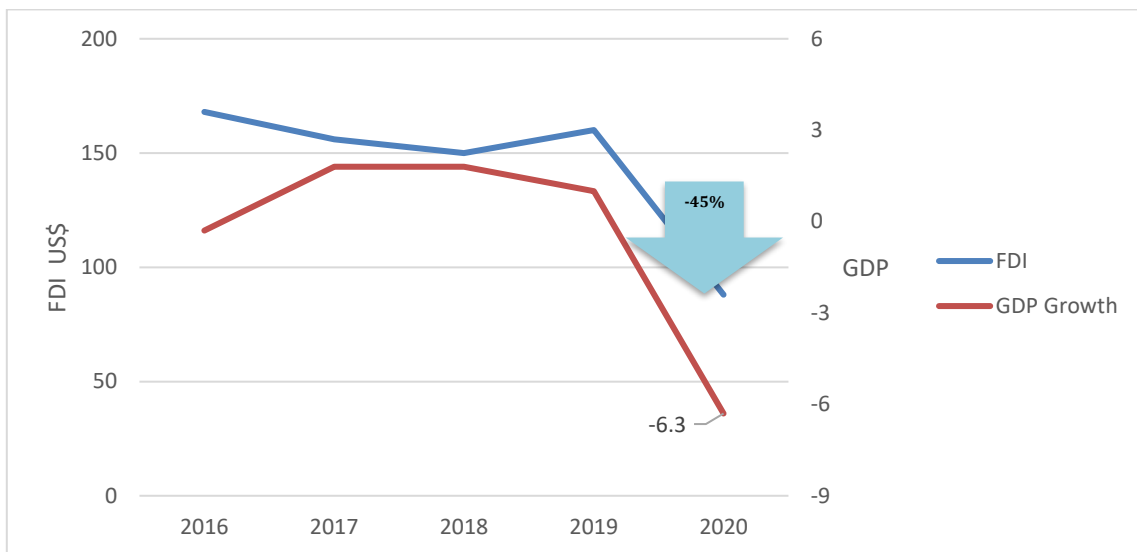
- The US has retained its spot as the top destination country, attracting \$61 Billion of FDI.
- China, which ranked second in 2019, dropped into the third position in 2020 attracting 40% less capital investment.
- Asia-Pacific FDI capital investment stood at \$162 Billion despite a 37% decline from the previous year.
- Western Europe attracted the highest number of FDI projects with 3,882 announcements and was the leading source region for FDI in 2020, accounting for \$221 Billion in capital investments.

3.5.5 Key trends in 2020 include:

- The software & IT services sector attracted the most projects in 2020, with the 2,226 investments secured representing a market share of 20%.
- The communications sector attracted capital investment for \$ 56 Billion, up by 41% from a year earlier.
- Renewable energy replaced coal, oil & gas as the top sector by capital investment, accounting for \$87 Billion.
- The global hotels and tourism sector experienced a 67% decline in FDI project numbers. Compared to 2019, when companies announced 522 projects, only 174 investments were announced.

3.5.6 FDI into Latin America and the Caribbean

Figure 9: FDI Inflow in US\$ B and GDP Growth



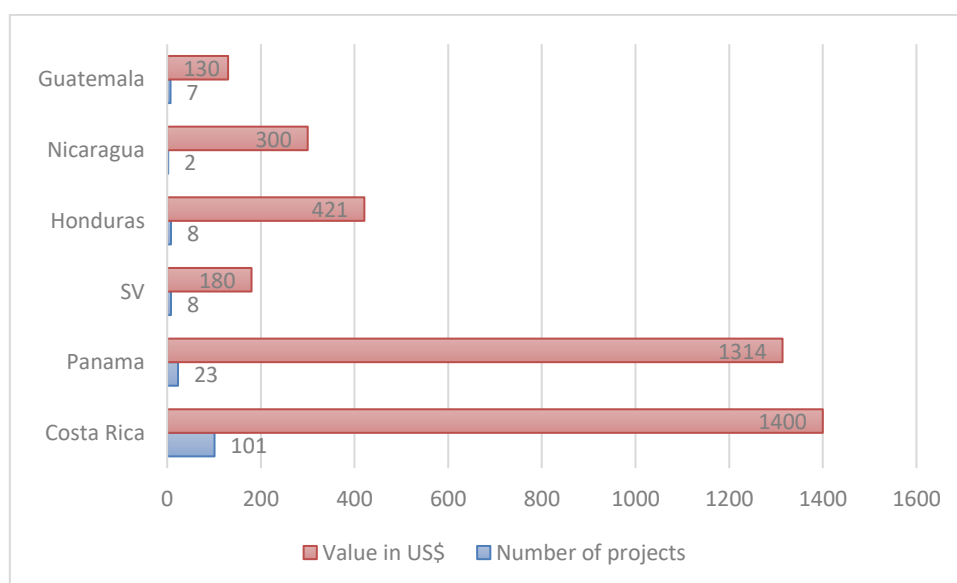
Source: Economic Commission for Latin America and the Caribbean (ECLAC), based on UNCTAD 2021 <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2020&locations=ZJ&start=2016>

FDI into Latin America and the Caribbean (LAC) during 2020 stood at \$ 88 Billion, which was lower by 45% when compared with 2019 levels of \$160 Billion.

This was the lowest inflow of FDI into this region during the last decade and is comparable to the year 2009 levels when the world was hit by the subprime crisis (global financial meltdown). Moreover, the effect of the pandemic had an impact on the Gross Domestic Product (GDP) across LAC and was down from \$5.8 trillion in 2019 to \$ 4.8 trillion in 2020, a 17% decline. Almost all the countries in focus for this study exhibit a negative GDP growth for the year 2020 with Honduras as the laggard at -9%.

3.5.7 Central America FDI announcements 2020

Figure 10: Central America FDI announcements 2020



Source: Economic Commission for Latin America and the Caribbean (ECLAC), based on Financial Times, fDi Markets [online database] <https://www.fdimarkets.com>

During 2020, 149 investments were announced across Central America, for a total value of \$ 3.7 billion and manufacturing and services were the top sectors with the highest investments. Within Central America, Costa Rica is tops with over 100 projects and an investment of \$ 1.4 billion. Panama ranked second, with 23 projects and \$ 1.3 billion. Of the 101 investment announcements in Costa Rica, the majority were from sectors including pharmaceutical, medical devices, and information and communication technology.

Costa Rica's admission to the Organization for Economic Cooperation and Development (OECD) in May 2021 and the country's renewed focus on medical device manufacturing are expected to bolster FDI in the coming years.

In 2020, FDI flows to El Salvador contracted by 68% to \$ 200 million. Foreign investment in services and manufacturing helped offset the decline suffered across other sectors. In September 2020, the Mexican telecommunication company, América Móvil canceled its plan to acquire Telefónica Móviles (El Salvador) after assessing the regulatory conditions imposed to obtain a final authorization from the Competition Superintendent.

3.5.8 Key Economic Data Trends in 2020 include:

In this section, we have tried to capture the economic indicators of the focus countries. The trade data is from 2019 as the Covid-19 had an impact on trade across the world in 2020 and won't represent the correct picture.

Table 3-9: Key Economic Trends in 2020 for El Salvador and its Competitors

2020	SV	Colombia	Costa Rica	DR	Guatemala	Honduras
FDI Inward Flow	\$ 200 M	\$ 7,690 M	\$ 1,711 M	\$ 2,554 M	\$ 915 M	\$ 420 M
FDI Stock	\$ 10 B	\$ 213 B	\$ 46 B	\$ 45 B	\$ 17 B	\$ 17 B
FDI in Services	\$ 256 M	\$ 4,905 M	\$ 650 M	\$ 2097 M	\$ 631 M	\$ 343 M
Main FDI source	USA, Mexico, Guatemala	USA, Panama, Spain, England, Switzerland	USA, Canada, Mexico	USA, Canada, Spain, China, Mexico	USA, Mexico, Colombia, Luxembourg	USA, Canada, Mexico
Top FDI Sectors	Textiles, Auto parts, Agro, Tourism, Telecommunication	Oil, Mining, Financial & professional services, Manufacturing	High-tech medical equipment, Manufacturing, Infrastructure, Eco-tourism	Financial services, Renewable energy, and Medical devices	Manufacturing, Telecommunications, Auto, Electricity	Textile, Transport, Storage, Telecommunications
Population	6.5 M	50 M	5 M	11 M	17 M	10 M
GDP	\$ 25 B	\$ 271 B	\$ 61 B	\$79 B	\$ 78 B	\$ 24 B
GDP Growth	-7.9%	-6.8%	-4.5%	-6.7%	-1.7%	-9%
Unemployment	7%	15.4%	17.1%	8.9%	4.7%	9.4%
Inflation (2011-20)	1.04%	3.7%	2.5%	3.4%	3.8%	4.4%
Employment by Sector Agriculture, Industry & Services	A – 16.3 I – 22.5 S – 61.2	A – 15.8 I – 20.1 S – 64.1	A – 12 I – 18.8 S – 69.2	A – 8.8 I – 18.8 S – 72.4	A – 31.3 I – 18.7 S – 50	A – 29.5 I – 21.4 S – 49.1

Import Services	\$ 2 B	\$ 14 B	\$ 4 B	\$ 1.7 B	\$ 4 B	\$ 2.4 B
Export Services	\$ 2.5 B	\$ 10 B	\$ 9 B	\$ 1 B	\$ 3 B	\$ 1.2 B
Import products	\$ 11 B	\$ 51 B	\$ 15 B	\$ 18 B	\$ 20 B	\$ 12 B
Export products	\$ 6 B	\$ 40 B	\$ 13 B	\$ 10 B	\$ 12 B	\$ 8 B
Export Countries	USA, Guatemala, Honduras, Nicaragua, Costa Rica	USA, China, Panama, Ecuador, Brazil	USA, Netherlands, Belgium, Guatemala, Panama	USA, Switzerland, Canada, India, China	El Salvador, Honduras, Mexico, Nicaragua	USA, El Salvador, Guatemala, Nicaragua, Canada
Import Countries	China, Guatemala, Mexico, Honduras	USA, China, Brazil, Germany	USA, China, Mexico, Guatemala, Japan	USA, China, Brazil, Spain, Mexico	USA, China, Mexico, El Salvador, Panama	USA, China, El Salvador, Guatemala, Mexico

DR - Dominican Republic, SV - El Salvador

FDI flows to El Salvador accounted for \$ 200 million in 2020, down from \$ 636 million in 2019, due to the global economic and crisis triggered by the Covid-19 pandemic. In terms of FDI inflow and FDI stock, El Salvador is behind all the five countries in focus. Even in the services sector, the FDI received is lowest among other countries in the study.

It is critical for El Salvador to focus on recovering foreign capital that was on its way before the advent of Covid-19 and a long-term strategic plan needs to be designed by the Investment Promotion Agency to attract foreign capital. On a positive note, El Salvador has seen single-digit inflation for over a decade, and lower than the rest of LAC, this should be highlighted.

El Salvador also should speed up the Covid-19 vaccination drive for a quicker rebound of its economy. The majority of the county's workforce is in the services and manufacturing sectors and industry cannot be productive by following social distancing norms for a prolonged period.

3.5.9 Stability and Ease of Doing Business

The ease of doing business score captures the gap between an economy's performance and a measure of best practice followed globally. When looking overseas for new sites, the geography of markets to be served will delimit the initial search territory. Among key factors will be trading blocks, tariffs, enforcing contracts, other operating costs, infrastructure, labor legislation, potential/social risk, available sites, economic zones, and accessibility.

Table 3-10: Stability and Ease of Doing Business for El Salvador and its Competitors

Indicator	SV	Colombia	Costa Rica	DR	Guatemala	Honduras
Starting a Business	148	95	144	112	99	170
Dealing with Construction Permits	168	89	78	80	118	158
Getting Electricity	87	82	25	116	46	138
Registering Property	79	62	49	74	89	101
Getting Credit	25	11	15	119	15	25

Protecting Minority Investors	140	13	110	143	153	120
Paying Taxes	70	148	66	150	104	167
Trading across Borders	46	133	80	66	82	130
Enforcing Contracts	126	177	111	133	176	154
Resolving Insolvency	92	32	137	124	157	143
Political Stability Absence of Violence (2019)	42.86	15.71	60.48	48.57	25.24	31.03
Overall Rank	91	67	74	115	96	133

Source: World Bank: <https://www.doingbusiness.org/en/rankings>

El Salvador with an overall 91 points, scores third among the six countries in focus. El Salvador's position in some of the above indicators is weak and policies should be streamlined which will help move up the score and have investor attention. Some of the improvements made by El Salvador in the last years include:

- Eliminating the requirement to obtain a feasibility study for rainwater drainage for land plots under 1,000 square meters;
- Elimination of foreign exchange risk has lowered real interest rates and provided greater certainty for investors and firms benefit from lower financial and transaction costs;
- Made exporting easier by introducing an intermediate customs post for shipments transiting through the Anguiatú land border;
- Getting electricity easier by accepting electrical plans at the same time as connection requests;
- The nation's investment law allowing equal treatment to domestic/foreign investors; and
- Membership in the DR-CAFTA (Dominican Republic-Central America Free Trade Agreement), as well as its reinforced integration into the C4 countries (Central America-4 Border Control Agreement between El Salvador, Guatemala, Nicaragua, and Honduras), will improve the ranking and help in promoting FDI.

However, low household purchasing power, scarcity of natural resources, and the limited size of the domestic market are real obstacles to some investors and efforts should be made to improve on these factors.

3.5.10 Internet, Mobile & Fixed Broadband Comparison and ICT Index

Easy communication by citizens can play a major role and address the region's development trap. This will improve households' quality of life, jobs, and learning. The digital transformation can rapidly and transparently address public demands and help improve governance and the functioning of public institutions. Every country needs to have strong infrastructure and cut the digital divide. This section analyzes the communication competitiveness of all six countries in focus and how each of them adopts information and communication technology (ICT) systems and also how they compare on cyber security, innovation, and export of high technology products.

Table 3-11: ICT Trends for El Salvador and its Competitors

Communications Indicator	SV	Colombia	Costa Rica	DR	Guatemala	Honduras
Percentage of population using Internet % - 2018	34	64	73	75	41	32
Broadband subscriptions per 100 inhabitants -2018	7.7	13.5	16.6	7.5	3.1	-
Fixed broadband subscriptions - 2019	500,000	7 M	900,000	950,000	550,000	400,000

Secure Internet servers per 1 million people - 2020	135	406	1,320	127	107	99
Population using social media %	66	76.4	76.2	64.2	51.4	48.1
Mobile - July 2021						
Rank	99	120	75	77	86	89
Download mbps	23.22	18.18	33.08	32.13	28.90	27.18
Upload mbps	10.19	10.20	10.33	8.61	16.24	11.17
Latency ms	29	50	29	37	25	42
Fixed Broadband – July 2021						
Rank	117	65	79	107	128	122
Download mbps	26.11	65.16	51.21	31.26	22.91	25.26
Upload mbps	8.30	30.99	13	11.00	6.65	11.53
Latency ms	39	26	16	24	27	28
ICT Index						
High-technology exports (% of manufactured exports) -2018	6.1	7.3	18.5	8.6	5.3	
ICT patent applications filed under the Patent Coopération Treaty (per million people) - 2016	0.01	0.26	0.5	0.05	0	
Global Cyber Security Index (ITU) -2018	0.12	0.57	0.22	0.43	0.25	
ICT adoption score 1-100(best)	40.6	49.9	60	51.8	37.7	

*Certain data on Honduras not available

With an average download speed of 26.11 Mbps for fixed broadband internet, El Salvador ranks 117th in the 2020 Speedtest® evaluation by Ookla. The upload rate of only 8.30 Mbps is significantly lower when compared to the countries in this study and ranks fifth, just below Guatemala. In mobile internet, El Salvador's rank and download speed are at fifth compared to the other countries in this study. Mobile penetration is at 9.5 million which is 1.5 times the population of El Salvador and this is remarkably greater than for Latin America and the Caribbean.

El Salvador continues to make progress in digital innovation and access for all, but a gap remains in the overall digital ecosystem. Despite improvements, active mobile broadband subscriptions are below Latin American and Caribbean averages. El Salvador's performance in enabling digital innovation remains subdued with a low number of patent applications filed. The country should focus on controlling online privacy and improve its global cyber security index. Overall, the digital network needs much more progress and improvement to be at par with its neighbors.

3.5.11 Transportation & Infrastructure

Efficient transport infrastructure provides economic and social benefits by improving market accessibility and productivity, ensuring regional economic development. This section highlights the transportation and basic infrastructure indicators and mainly we are focusing on air connectivity as the focus sectors are remote services and software development.

Table 3-12: Transportation and Infrastructure Trends for El Salvador and its Competitors

Transportation Indicator	SV	Colombia	Costa Rica	DR	Guatemala	Honduras
Number of ports	2 in the Pacific	8 in the Caribbean and 2 in the Pacific	2 in the Caribbean and 1 in the Pacific	8	2 in the Atlantic and 1 in the Pacific	4 in the Atlantic and 1 in the Pacific
Number of international airports	1	8	2	8	2	5
Countries served - direct flights	23 countries	23 countries	37 countries	30 countries	25 countries	9 countries
Air connectivity Global Ranking - 2019	88	87	91	55	96	112
The efficiency of air transport services 1–7 (best)	4.5	4.5	4.8	5.1	4.1	4.3
Electricity access % of population	96%	97%	99.3%	97.1%	92%	75%
Road connectivity 0–100 (best)	73.4	65.4	63.3	74.8	38	55.7

El Salvador is in a strategic geographical location and is a bridge between North and South America which allows air travel to all major cities in North and South America in less than 5 hours. El Salvador has direct flights to other 23 countries and is fairly well positioned when compared to other LAC. In terms of air and roads connectivity, El Salvador ranks second (amongst the selected competitors) with a score of 73.4 behind Dominican Republic.

3.5.12 Human Capital

In this section, we are comparing the availability of talent in the focus countries. We are also benchmarking the number of graduates and software engineers available and also the quality of the education system and labor skill sets.

Table 3-13: Human Capital Trends for El Salvador and its Competitors

Human Capital	SV	Colombia	Costa Rica	DR	Guatemala	Honduras
BPO/Shared Services sector employment	29,000	605,000	55,000	24,000	45,000	20,000
Software development employment	4,300	120,000	6,000		8,000	3,500
Number of graduates	23,000	80,000	15,000		14,000	13,000
Number of graduate engineers (IT/Computer Science/Software)	2,200	20,000	3,000		6,000	2,500
Skillset of graduates 1–7 (best)	3.6	4.3	4.9	3.8	4.1	4
Ease of finding skilled employees 1–7 (best)	3.8	4.3	4.8	4.1	4.2	4
Quality of	3.8	3.4	4.7	2.6	2.7	3.2

the educational system 1–7 (best)						
Quality of math/science education in schools 1–7 (best)	3.4	3.3	4.4	2.1	2.5	2.9
English Proficiency Index	483	448	530	499	476	498
Median age in years	27	31	33	28	23	24

With a median age of 27 years and 23,000 annual graduates and 2200 software engineers, El Salvador offers a young and skilled labor force and is at a strategic geographical position on U.S. Central Standard Time (CST, GMT -6) making it ideal for remote business services operations. Compared to offshore countries, El Salvador is only a two to four-hour plane ride away from North America. Companies in the US and Canada have easier access to their outsourced team being in El Salvador.

Even though the country churns out 27,300 graduates (23,000+ 4,300) every year, only 29,000 are working in the BPO segment, and a small number of 4,300 working in the software development space. Colombia on the other hand has over 600,000 working in the BPO sector and a whopping 120,000 catering to the software demands. El Salvador ranks better in the quality of education system, quality of math and science, and English proficiency than Colombia, and the country should work on highlighting the positives to global companies looking to invest in LAC.

A highly agile, skilled, well-educated, and growing workforce is an essential consideration by businesses globally, and finding the right talent is the most pressing challenge for the decision-makers while shortlisting a location. Therefore, choosing a problematic labor market constitutes one of the biggest risks in remote business service operations and the software development industry.

3.5.13 Real Estate

We are comparing the lease rates for grade A/B buildings suitable for remote service or software development operations. The real estate prices offered by El Salvador are competitive with the other countries in focus.

Table 3-14: Real Estate for El Salvador and its Competitors

Real Estate	SV	Colombia	Costa Rica	DR	Guatemala	Honduras
No of dedicated free zones for ICT	NA	4	3	5	2	3
Lease rates for Grade A/B in \$ m ²	\$23-26	\$12-16	\$16-24	\$15-30	\$10-16	\$12-18

3.5.14 Labor Climate

In this section, we are comparing some of the key labor-related practices in the following countries. El Salvador offers 'business friendly' taxation, with the lowest employer social contributions and scores fairly in hiring and firing practices and also ease of recruiting foreign labor which is critical for remote services and software development sector.

Table 3-15: Labor Trends for El Salvador and its Competitors

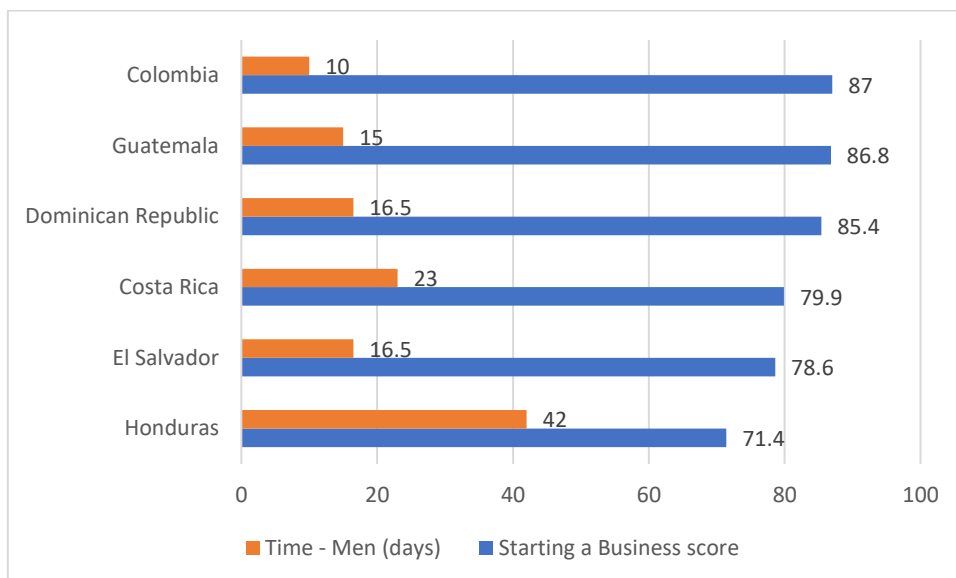
Labor Climate	SV	Colombia	Costa Rica	DR	Guatemala	Honduras
---------------	----	----------	------------	----	-----------	----------

Hiring and firing practices 1–7 (best)	3.1	3.2	3.6	3.7	3.8	3.7
Ease of hiring foreign labor 1–7 (best)	4.2	4.1	4	4.3	4.4	4.5
Ratio of wage and salaried female workers to male workers %	0.51	0.75	0.64	0.93	0.39	0.46
Employer Social Contributions % of salary	7.5%	21%	26.33%	15.21%	12.67%	10%
Working Hours	Should not exceed 44 hours per week	Should not exceed 48 hours per week	Should not exceed 48 hours per week for day shift and 36 hours for night shift	Should not exceed 44 hours per week	Should not exceed 44 hours per week for day shift and 36 hours for night shift	Should not exceed 44 hours per week
Overtime	200% of the regular pay	25% of the regular pay and 100% working on public holidays	50% of regular pay and 100% working public on holidays	35% of regular pay and 100% working public on holidays	50% of regular pay and 100% working public on holidays	137.5% of pay and 200% working on public holidays

3.5.15 Starting a Business score and Time-Man (days) Doing Business Index, 2020

This section highlights the number of man-days to start a business in the following countries.

Figure 11: Doing Business Index, 2020



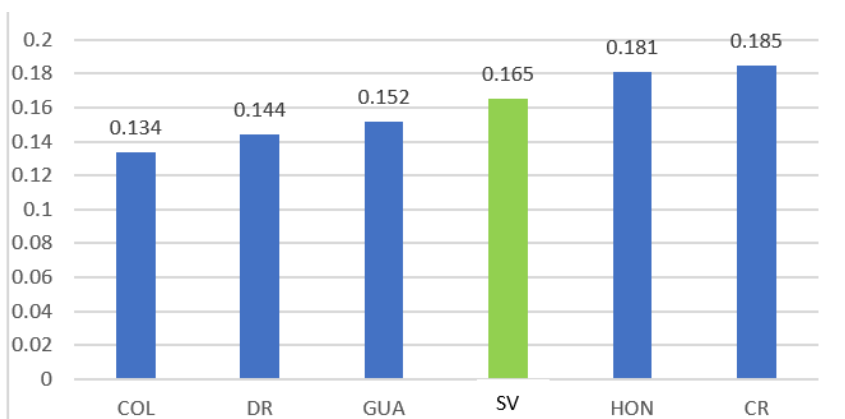
Source: World Bank, Doing Business project (doingbusiness.org).

According to the 2020 World Bank report, Honduras with 42 days received the lowest score in starting a business. With 16.5 days, El Salvador matches with the Dominican Republic and more effort needs to be put in and reduce the number of days to lower two-digit numbers in lines of Colombia. It is understood that the government is taking measures to shorten the timeframe.

3.5.16 Electricity prices comparison by Country

This section shows the price of electricity for households and businesses and the prices are per kWh.

Figure 12: Electricity Price kWh \$



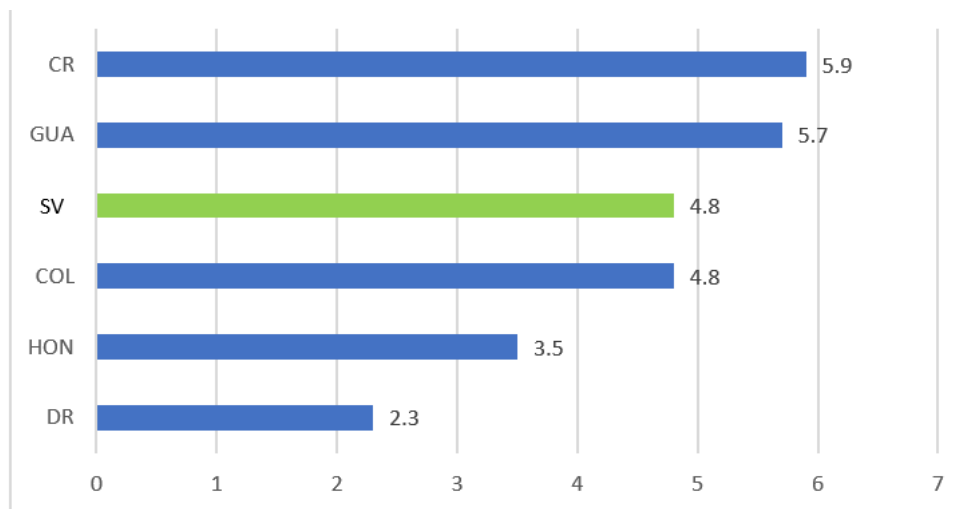
Source: <https://www.globalpetrolprices.com/countries/>

Energy is comparable across all the country in focus with Costa Rica at the top. Innovative ways to reduce the price of electricity and having green energy solutions could be another competitive factor that will favor El Salvador among investors.

3.5.17 Quality of electricity comparison by Country

This index benchmarks countries on their current energy system performance and also provides a forward-looking lens as it measures their readiness for the energy transition.

Figure 13: Quality of Electricity Score (1-7)



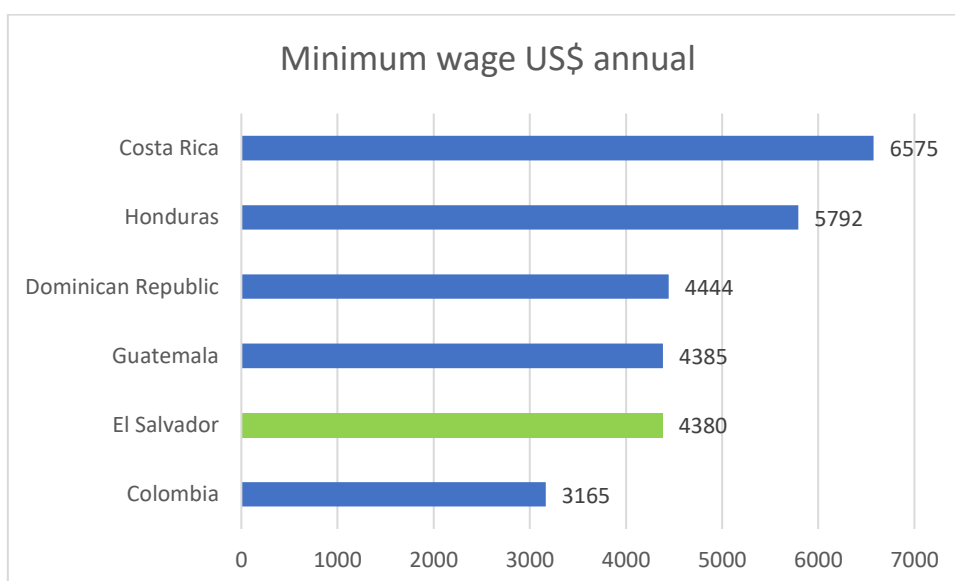
Source: 2.07 Quality of electricity supply - World Economic Forum 2018

Quality and uninterrupted supply of energy are very important for remote services and software development functions as most of the teams work 24/7 and power cuts and poor quality can affect the performance of the teams.

3.5.18 Minimum Wage Comparison by Country

This benchmarks the annual minimum wage as per the labor policy of these countries.

Figure 14: Minimum Wage US\$ Annual



Costa Rica reports the highest minimum wage annually for 2021 and Colombia the lowest from the list of countries in focus. El Salvador is competitively positioned being the second lowest.

Table 3-16: US Salaries

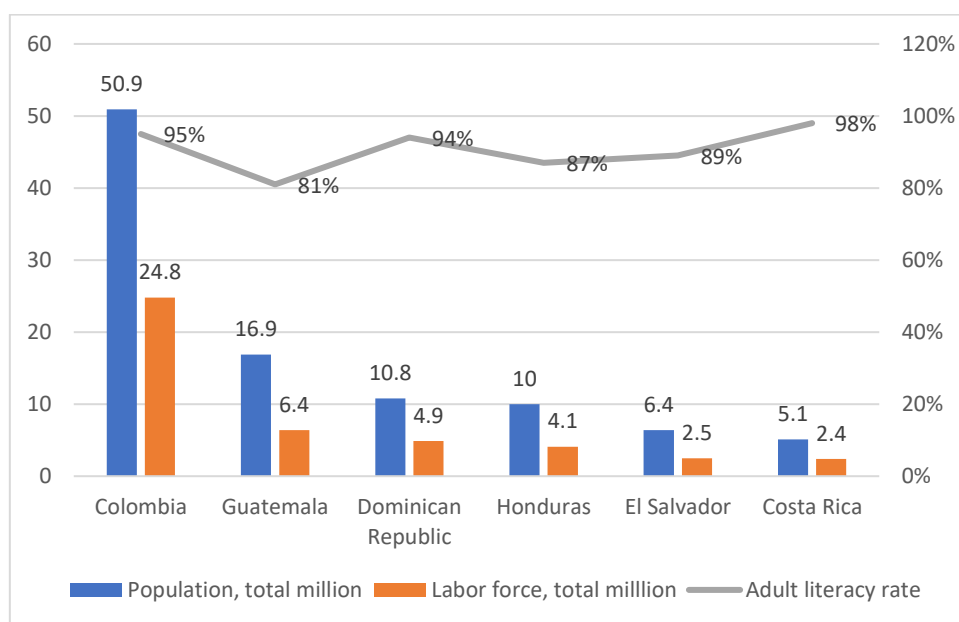
	Salary in US\$ (2-5 years of experience)					
	Colombia	CR	DR	Guatemala	Honduras	SV
BPO	\$ 1000-1500	\$ 960-2030	\$ 1200-1800	\$ 650-2000	\$ 312 - 1700	\$720
Software Engineers	\$ 1300-2400	\$ 1600-3200	\$ 2800-3500	\$ 750-3000	\$ 555 - 1600	\$ 1000 - 1900

Source: IPA interviews and <https://www.salaryexplorer.com/>

In terms of average wages for 2-5 years of experience, El Salvador is very competitive in the BPO space, and middle of wages spectrum for software development. From a cost perspective El Salvador competes well. The main issue is how many staff are available.

3.5.19 Comparison of Total Population and Labor Force

Figure 15: Population, Labor force, Adult Literacy Rate by Country



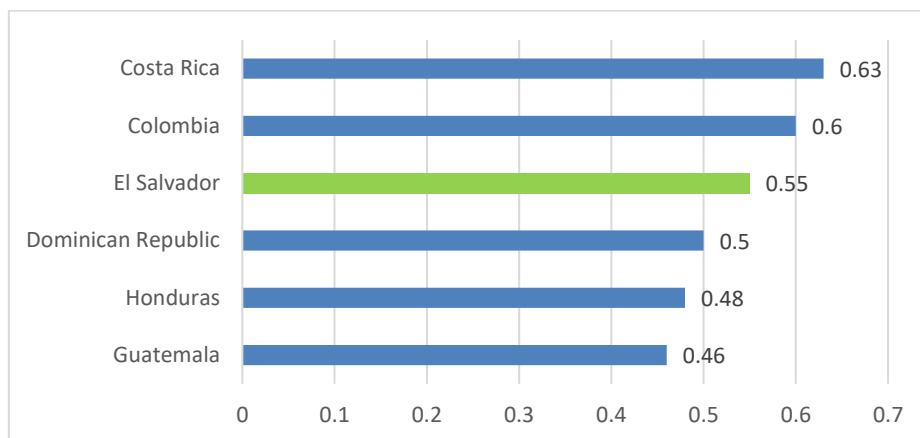
Source: World Bank, 2020. Data World Bank indicators

Colombia and Guatemala have by far the largest populations and labor force, but Guatemala has the lowest adult literacy rate. El Salvador has a similar size labor force to Costa Rica.

3.5.20 The Human Capital Index (HCI), 2020

The Human Capital Index (HCI) ranges between 0 and 1. The HCI highlights how current health and education outcomes shape the productivity of the next generation of workers. In this way, it underscores the importance for governments and societies of investing in the human capital of their citizens.

Figure 16: Human Capital Index (HCI)



Source: World Bank calculations based on 2020

Under this indicator, El Salvador ranks #3 above the Dominican Republic, Honduras, and Guatemala. Reference to indicators like this one should be included in the value proposition strategy given the favorable score received.

3.5.21 Quality of Life in a Country Comparison

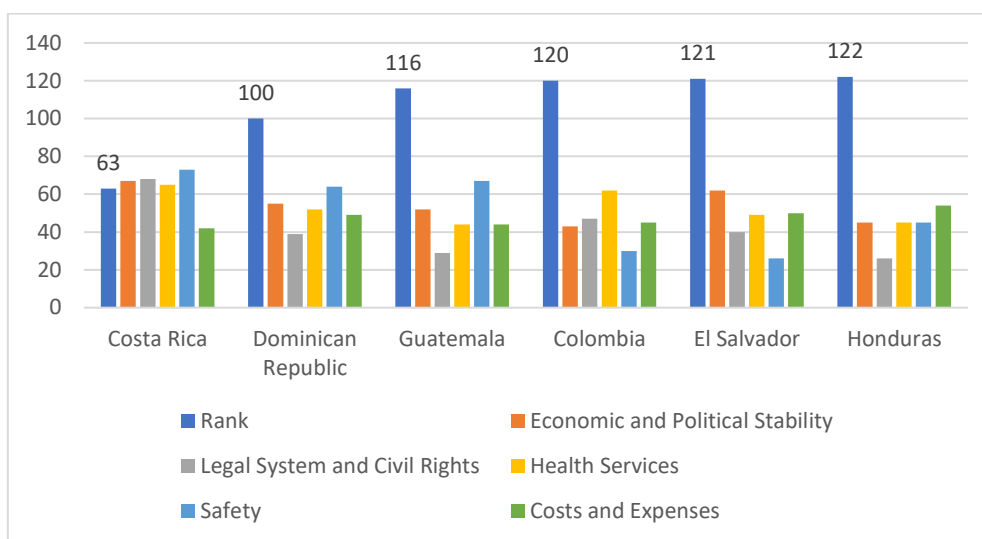
Quality of life in a country comparison. A total of 37 factors were included in the calculation of the overall index, which was divided into 7 subject areas here (for this analysis climate and popularity were not included). This table applies primarily to residents who also receive their income and pay taxes in the respective country.

Table 3-17: Quality of Life Comparison between El Salvador and its Competitors

Rank	Country	Economic and Political Stability	Legal System and Civil Rights	Health Services	Safety	Costs and Expenses	Total
121	El Salvador	62	40	49	26	50	45
116	Guatemala	52	29	44	67	44	46
120	Colombia	43	47	62	30	45	45
63	Costa Rica	67	68	65	73	42	56
100	Dominican Republic	55	39	52	64	49	50
122	Honduras	45	26	45	45	54	45

Source: <https://www.worlddata.info/quality-of-life.php>

Figure 17: Quality of Life in a Country Comparison



Source: <https://www.worlddata.info/quality-of-life.php>

Costa Rica ranks the best in quality of life among the competitors in this benchmark, followed by the Dominican Republic, and Honduras ranks the lowest. One of the lowest scores for El Salvador is safety. El Salvador, Colombia, and Honduras have the same total score of 45, but the difference lies in specific areas of analysis.

3.5.22 Summary

EL Salvador falls below average (4-5th rank) across most of the factors we have benchmarked in this study. Some of the focus points to be successful in attracting remote service and software development include:

Human Capital

- Reskilling current workers that face the direct competition of new technologies
- Sketch the skills shortage, identify the gap or mismatch of talent in El Salvador vs Colombia and Costa Rica.
- Training systems within firms should be updated regularly to cope with the rapid technological change
- High school and college-level syllabuses should regularly check changes in technology and labor market requirements and adapt
- English proficiency and computer programming skills should be inculcated from the high school level.

Collaboration

- Connect with local software development firms across industries in North America to understand their existing contracts and how local companies based in El Salvador could support
- Work closely with industry to know about the changing market dynamics
- Set up an ICT public agency that can anticipate labor challenges across LAC and reform the current skills development institutes and existing workforce
- Set up Software Technology Parks (STP), Export Oriented Units and for the existing ones add more infrastructure.

Improve Ease of Doing Business

- One of the reasons for El Salvador to be pulled down in the ease of doing business ranking is due to the low score on certain indicators such as construction permits, time to start a business, and enforcing contracts. If improvements can be worked to these parameters and reduce the overall

paperwork and make flexible procedures to get things done the current rank should fall in the range of 60-75.

3.6 El Salvador Investment Profile

3.6.1 Section Overview

This section provides an overview and analysis of El Salvador in the Remote Business Services and Software/IT Development sectors. In addition, we provide insight into the investment readiness of the country as it relates to the sectors and highlight opportunities and threats for future FDI attraction. Below is listing of the key elements to be addressed.

- Overview/Environment
 - Remote Business Services
 - Software/IT Development
- Stakeholders
- SWOT analysis
- Investment readiness

Figure 18: El Salvador map



3.6.2 Overview/ Local Investment Environment El Salvador

El Salvador despite being one of the smaller countries in Latam, has had some success with regard to FDI attraction over the years. The chart below compares the investment by country and sector.

Table 3-18: New FDI (Greenfield FDI) in Central America by number of projects, 2015-2020

Destination countries	Business services	Communications	Hotels & tourism	Software & IT services	Food & Beverages	Transportation & Warehousing	Renewable energy	Financial services	Chemicals	Medical devices	Real estate	Building materials	Electronic components	Textiles	Industrial equipment	Coal, oil & gas	Pharmaceuticals	Plastics	Business machines & equipment	Automotive components	Total
Costa Rica	20	9	7	31	12	8	3	3	12	5	1	5	4	5	1	2	1	129			
Dominican Republic	5	8	26	2	5	5	6	5	1	2	1	1	1	3	71						
El Salvador	5	6	1	1	3	5	2	4	1	1	1	1	1	31							
Honduras	8	2	1	2	4	3	2	1	5	1	2	1	32								
Nicaragua	8	3	1	1	8	2	3	3	1	1	2	2	1	1	2	39					
Panama	16	15	6	5	4	10	11	11	3	1	6	4	3	3	1	3	5	5	1	1	104
Total	62	43	42	40	31	30	27	24	16	15	13	13	11	8	7	6	5	5	4	4	406
Share of projects SV %	8%	14%	2%	3%	0%	10%	19%	8%	25%	0%	0%	8%	9%	0%	14%	17%	0%	0%	0%	0%	8%

Source: Financial Times Ltd, fDi Markets (www.fDimarkets.com)

The country has many of the core elements required to attract foreign direct investment. They are:

Workforce

- 3.1 million workers

- Productive/solutions oriented
- Close affiliation with the US
- Young workforce - 54% is under 40 years old
- Universities and technical education – 186,000 students – 24 universities

Competitive Costs

- Average income is about \$4,000 per year
- Cost competitive telecommunications and electricity
- FDI Markets ranked San Salvador as one of the most cost-effective cities in Latam
- Monetary stability using the US Dollar since 2001

Location/Market Access/Infrastructure

- Proximity to the US and Latin American markets
- Same time zone as US Central Time
- Developed air and sea routes
- Strong road network with connections to the US
- Free trade agreements 42 countries (1.2 billion consumers) including Dr-CAFTA, EU etc
- Competitive telecommunications and energy

Government Support

- Free Zones Law
- International Service Law
- Tourism Law
- Renewable Energy Incentives Law
- Public Private Partnerships Law
- Law of Legal Stability for Investments
- Investment Funds Law
- Established investment track record



3.6.3 Remote Business Services and Software/IT Development

In addition to the above general conditions for attracting foreign direct investment, the International Service Law plays a critical role in creating the right conditions for remote business service and Software/IT Development companies to operate successfully in El Salvador. Below is an overview of the Program.

3.6.4 International Services Law Applications

Table 3-19: International Service Law Applications

ACTIVITIES TO OPERATE ONLY WITHIN SERVICE PARKS	ACTIVITIES TO OPERATE IN SERVICE PARKS/SERVICE CENTERS	ACTIVITIES TO OPERATE IN PORTS OR AIRPORTS
INTERNATIONAL DISTRIBUTION Storage, gathering, consolidation and de-consolidation of third parties' merchandise with the purpose of being exported or re-exported	INTERNATIONAL CALL CENTERS OR CONTACT CENTERS	MAINTENANCE AND REPAIR OF AIRPLANES
INTERNATIONAL LOGISTICS OPERATIONS Planning, control and handling of inventories, selection, packing, crating, dividing, classification, ticketing, labeling, signaling, invoicing, inspection of cargo and others	BUSINESS PROCESSING OUTSOURCING (BPO)	MAINTENANCE AND REPAIR OF MARITIME VESSELS
RESEARCH AND DEVELOPMENT	INFORMATION TECHNOLOGIES Design and development of software, systems and IT applications	MAINTENANCE AND REPAIR OF CONTAINERS
INTERNATIONAL FINANCIAL SERVICES Financial institutions management process outsourcing	MEDICAL AND HOSPITAL SERVICES	SPECIALIZED SERVICES TO AIRCRAFT Services provided to passenger or cargo airplanes to supply nonalcoholic beverages, prepared meals, consumable and disposable products inventory administration; organization, laundry and cleaning of reusable items in aircraft. ⁽⁷⁾
TECHNOLOGICAL EQUIPMENT REPAIR	ELDERLY & CONVALESCENT CARE	
	TELEMEDICINE Post-checkup medical advice and specialized consultation, laboratory tests, pathological and image-based studies, clinical history management and treatment support	
	CINEMATOGRAPHY Post-production services carried out on recorded material, that may include subtitling and translation, among other services.	

International Services Law Benefits:

- **Full exemption from customs duties and other taxes** on the import of machinery, equipment, tools, replacement parts, accessories, furniture and office equipment, and other goods required for the execution of the incentivized activity
- **Total exemption from income tax**, exclusively for income deriving from the incentivized activity during the period of operation in the country

- **Total exemption from municipal taxes** on company assets during the period of operation in the country

3.6.5 Remote Business Services

The remote business services is a strategic sector for El Salvador. This established segment provides approximately 30,000 jobs and has the potential to grow by two to three times if the right conditions can be met in El Salvador. There is a huge focus on outsourcing, and many firms are rethinking the amount of investment made in locations like India and the Phillipines. Latam offers a location that is close to the US and sits in the same time zone range, along with competitive costs and strong performance. El Salvador can continue to benefit from these advantages but must also realize that it needs to maintain a productive investment environment and enhance its competitiveness going forward. There are many countries in Latam offering similar services as well as the right conditions for investment. In fact, many outsourcing projects are split across countries in Latam to ensure that there is some contingency. Below is a profile of the sector.

3.6.6 Remote Business Services Profile

Table 3-20: Remote Business Services Profile

Profile Element	DATA
Number of Companies	70 COMPANIES
EMPLOYMENT	30,000
KEY ACTIVITIES	CALL CENTERS BACK OFFICE PROCESSING IT OUTSOURCING (ITO) KNOWLEDGE PROCESS OUTSOURCING (KPO)
KEY CLIENT SETS	COMMUNICATIONS FINANCE & INSURANCE TECHNICAL SUPPORT TRAVEL SALES
VALUE PROPOSITION	SERVICE/SOLUTION-ORIENTED STAFF STRONG PERFORMANCE KPIS COMPARED TO OTHER LOCATIONS US AFFINITY NEUTRAL ENGLISH ACCENT THAT IS UNDERSTANDABLE CLOSE TO THE US COST EFFICIENT STRONG TELECOMMUNICATIONS AND ENERGY INFRASTRUCTURE US DOLLAR ECONOMY FLEXIBLE WORK ENVIRONMENT – WORK FROM HOME
COMPETITIVE COSTS	MONTHLY WAGES - \$450-\$690 SOCIAL COSTS ARE LOWER IN THE REGION AT 30% COMPETITIVE TELECOM AND ELECTRICITY RATES
INTERNATIONAL SERVICES LAW	INCOME TAX 30%. Total exemption from income tax, for income that comes from the incentivized activity. MUNICIPAL TAXES. Total exemption from municipal taxes on the assets of the company. IMPORT TARIFFS ON MACHINERY. Exemption of import tariffs for machinery, and equipment necessary for the incentivized activity.
KEY INVESTORS	SYKES, TELEPERFORMANCE, TELUS, CONCENTRIX, USSIST.ME, BLACK HAWK NETWORK, UBIQUITY GLOBAL SERVICES ETC.

3.6.7 Software/IT Development

The IT/Software sector represents a strong opportunity for El Salvador. The sector is relatively young and the scale is quite small compared to remote business services and other sectors in terms of employment – 4,300 employees. Like remote business services, there is a huge focus on outsourcing software development and related activities, and many firms are rethinking the amount of investment made in locations like India and the Philippines. Latam offers a location that is close to the US and sits in the same time zone range, along with competitive costs and strong performance. Most of the companies in El Salvador are home grown firms at present. It should also be noted that a number of the BPOs are beginning to launch ITO operations that will support the growth of the sector. Below is a profile of the sector.

3.6.8 Software/IT Development Profile

Table 3-21: Software and IT Development Profile

Profile Element	DATA
Number of Companies	240 COMPANIES
EMPLOYMENT	4,300
KEY ACTIVITIES/FUNCTIONS	DEVELOPMENT PROJECTS DEBUGGING SCRUM MASTER WEB OPS MOBILE DEVELOPMENT UX/UI QA
KEY CLIENT SETS	OUTSOURCE SOFTWARE DEVELOPMENT STAFF AUGMENTATION BANKS/FINTECH RETAIL MEDIA SALES
TECHNOLOGIES/PROGRAMS	SAAS CRM WEB MOBILE APPS – IOS, ANDROID JAVA PHP PYTHON .NET
VALUE PROPOSITION	SERVICE/SOLUTION-ORIENTED STAFF US AFFINITY NEUTRAL ENGLISH ACCENT THAT IS UNDERSTANDABLE CLOSE TO THE US COST EFFICIENT STRONG TELECOMMUNICATIONS AND ENERGY INFRASTRUCTURE US DOLLAR ECONOMY FLEXIBLE WORK ENVIRONMENT – WORK FROM HOME GROWING BASE OF IT SKILLS
COMPETITIVE COSTS	MONTHLY WAGES - \$493- \$3,000 SOCIAL COSTS ARE LOWER IN THE REGION AT 30% COMPETITIVE TELECOM AND ELECTRICITY RATES

INTERNATIONAL SERVICES LAW	<p>INCOME TAX 30%. Total exemption from income tax, for income that comes from the incentivized activity.</p> <p>MUNICIPAL TAXES. Total exemption from municipal taxes on the assets of the company.</p> <p>IMPORT TARIFFS ON MACHINERY. Exemption of import tariffs for machinery, and equipment necessary for the incentivized activity.</p>
KEY COMPANIES	<p>APPLAUDO STUDIOS, ELANIIN, RULESWARE, PROXIMITY SOFTWARE, TECNOIN, BITWORKS, UASSIST.ME/HELPDESK, TELUS INTERNATIONAL</p>

3.6.9 Stakeholders

Table 3-22: Stakeholder Name and Role

PROESA	<p>PROESA is a very important stakeholder in the investment attraction ecosystem. They provide investor establishment and aftercare services on regular basis, attending specific topics regarding information on changes in regulatory approvals, legal framework, procedures; matchmaking suppliers; network support with governmental institutions such as customs, electricity, construction permits, educational programs, and others. PROESA is also a critical advocacy voice for the existing and potential investors with various government agencies to ensure that measures are being taken improve the investment environment in El Salvador.</p>
Chambers, Associations	<p>CasaTIC – acts as a key industry association for IT related initiatives in El Salvador and is managed by the private sector.</p> <p>AMCHAM – is a multi-industry chamber of commerce with a dedicated committee to represent the BPO sector.</p> <p>Both organizations represent remote business services and Software/IT Development in advocacy with the government and promotion and collaboration in the international markets.</p>
Foreign Ministry	Responsible for providing access to the international network of Embassies and Consulates for in-market investment attraction activities.
Secretariat of Commerce and Investment	Responsible for investment attraction initiatives.
Ministerio de Economía	In charge of policies and economic strategies for incentives to develop a long-term vision for competitiveness
Ministerio de Educación /Academy	<p>A major partner to develop medical devices industry, to facilitate policies towards training in specific areas of demand</p> <p>Universities and Technical Centers, Institutes</p>
INSAFORP	Key partner for the development of technical skills and language training - English
Ministry of Labor	Policies and strategies for human resources development, wages, legal framework
Infrastructure	<p>SIGET – Power and communications</p> <p>Private telecom companies</p> <p>Public transportation</p> <p>Real Estate – buildings and business parks – Free Zones</p>

Companies	All key companies in the Remote Business Services and Software/IT Development sectors
------------------	---

Stakeholder coordination and management is a critical component of a national level strategy to build a competitive ecosystem for attracting foreign direct investment. Stakeholder management should be part of an annual operational plan for PROESA. Part of the plan is developing a workable framework that can be implemented. The framework should be established in a governance document that is agreed on by the stakeholders and becomes part of a memorandum of understanding that sets out the relationships, the roles and the commitments of each party. This effort is not easy in any country, but when implemented and allocated the right amount of resource, it can produce significant results in terms of building the right ecosystem and attracting critical foreign direct investment to El Salvador.

3.6.10 SWOT Analysis

REMOTE BUSINESS SERVICES

Table 3-23: SWOT Analysis

<p>STRENGTHS</p> <ul style="list-style-type: none"> International Business Services Law Geographical and time zone proximity with the United States & Canada Infrastructure – robust/competitive electric and telecom services Competitive regional labor costs Scale of the sector Strong track record in BPO services with many of the top companies in place Strong demand for more outsourced activities beyond call centers Neutral English accent Strong affinity with the US Salvadorans are solutions oriented INSAFORP capabilities to provide specialized training PROESA guides investors through all business-related issues 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> Not enough English-speaking workers Security issues Attrition of employees Rising employment costs Stability of the government Increased bureaucracy for companies International perception of El Salvador/Northern Triangle Lack of FDI promotion Educational programs don’t address current business needs Small population Highly competitive regional FDI environment
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> High growth rates and strong demand for BPO services globally Companies are focusing more on the Americas and away from India and the Phillipines US government focus on the Northern Triangle – Call to Action Diversification of BPO services to higher value activities such as ITO and KPO Stakeholders have an opportunity to unite and build a more competitive BPO offering based on established ecosystem Cryptocurrency 	<p>THREATS</p> <ul style="list-style-type: none"> Regional competition Pace of educational reform to meet business needs Limitation of English skills Government stability Perception of El Salvador Increased bureaucracy Constitutional reform Security situation Consolidation of companies through M&A Cryptocurrency Size of the country

SOFTWARE/IT DEVELOPMENT

Table 3-24: SWOT Analysis

<p>STRENGTHS</p> <ul style="list-style-type: none"> International Business Services Law Geographical and time zone proximity with the United States & Canada Infrastructure – robust/competitive electric and telecom services Competitive regional labor costs Strong demand for more outsourced software development activities Strong affinity with the US Salvadorans are solutions oriented INSAFORP capabilities to provide specialized training Large university population CasaTIC can play a role in growing the sector PROESA guides investors through all business-related issues 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> Not enough workers with the right technical skills Not enough English-speaking workers Security issues Lack of a track record in software development Few companies with the right experience Stability of the government Increased bureaucracy for companies International perception of El Salvador/Northern Triangle Lack of FDI promotion – no promotional materials Educational programs don’t address current business needs Small population Highly competitive regional FDI environment
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> High growth rates and strong demand for outsourced software development services globally Companies are focusing more on the Americas and away from India and the Phillipines US government focus on the Northern Triangle – Call to Action Diversification of BPO services to higher value activities such as ITO Stakeholders have the opportunity to unite and build an ecosystem Cryptocurrency – blockchain development 	<p>THREATS</p> <ul style="list-style-type: none"> Regional competition is strong Pace of educational reform to meet business needs Limitation of English skills Government stability Perception of El Salvador Increased bureaucracy Constitutional reform Security situation Consolidation of companies through M&A Cryptocurrency Size of the country

3.7 Investment Readiness

Evaluating investment readiness requires a look into the assets of a country and a particular sector and comparing them to the requirements of the target investors and the competitor offering. There are many locations around the world that promote sectors for investment where they actually do not have a competitive position. It is therefore important that locations do the analysis for each sector that they are promoting and gain an understanding of the investment readiness. The sectors with the highest probability of attracting investment are those that sit in the sweet spot. Not all sectors are equal or at the same stage of development. In this case within El Salvador’s services segment, we have remote business services with a strong, established position, and Software/IT Development which is in a developmental stage. Each offers different challenges and opportunities as identified in the SWOT analysis above. This section addresses the state of investment readiness for each sector. In the recommendations section we will address ideas for improving positioning and promotion of each sector.



3.7.1 Remote Business Services

El Salvador has a strong and established position in the BPO sector with more than 70 companies and several of the world’s largest firms present in the country. On the business side, the sector has many of the right elements in place to attract further investment as well as expansion from the existing firms.

The demand side of the business is very strong at the moment with more and more companies looking to add activities in Latin America, and this places El Salvador in a very good position given what has been achieved to date in the country.

It must be recognized that El Salvador sits in a very competitive region with many countries competing for the same investment. It was also made clear through the stakeholder interviews that the companies will take a portfolio approach to the region and not place all of their investments in one country. This is one of the reasons why investment has been moving away from countries like the Philippines and India. Investors are seeking to diversify their operations in order to ensure business continuity.

El Salvador cannot rest on its laurels and must continue to develop the offering by developing propositions that target not only BPO but also ITO and KPO operations. This requires a coordinated effort across the ecosystem to catalogue and promote the offering. Please consult the suggestions section for more information.

3.7.2 Software/IT Development

The Software/IT Development Sector in El Salvador is in the development stage. While there are hundreds of companies in the country directly involved in IT, only about 10-20 are directly involved in international software development services. There are currently no international companies that have invested to

establish software development services in El Salvador. Companies with key international development contracts are home-grown firms such as Elaniin and Applaudo Studios. In addition, there are several BPOs that are beginning to move into IT outsourcing (ITO) including Telus International and Uassist.me. **Dedicated companies plus the BPOs creates the beginning of a software development sector in El Salvador.**

On the demand side, there is a great deal of momentum in outsourcing software development to Latin America. Many of the drivers and considerations in the BPO sector are prevalent in software development. The main issue is that El Salvador is unknown in this space and there are many questions about the available skill sets. Lastly, it is clear that the software firms in El Salvador do not share much information as they are competing for clients and local skills.

There is much more work to do on the development side in terms of bringing the stakeholders together and focusing on the key issues – mostly skills development. With increased technical skills available, the existing indigenous base can grow and build a reputation for software development in

El Salvador along with incremental growth within some of the BPOs in terms of ITO. These initiatives will help to build a small cluster with key reference clients which will in turn begin to drive some investment. Software development should be viewed as a small contributor in the short term and more of a medium-term play provided that the ecosystem becomes more organized.

3.7.3 Role of Government

In order to offer an attractive investment environment, the ecosystem must have a business-friendly environment where the government is seen to be backing the business sectors in terms of supportive legislation, strong educational initiatives, and stability. El Salvador has much to gain from a business-friendly environment and can create growth in the economy by attracting more foreign direct investment which will create jobs, increase government collections and transfer knowledge to the country. Given the history of the country and the current conditions, El Salvador is required to work harder to offset past and current conditions. This requirement places a huge demand on organizations like PROESA to be able to convince foreign investors that their investment is secure. Corporate investors are risk adverse and often seek reasons for elimination of locations on the long list. In order to offset the long-term risk, El Salvador must implement additional measures to demonstrate a commitment to stability and transparency. Please see the recommendations section for more detail.

3.8 Target Market Analysis

3.8.1 Section Overview

This section presents a target group and target market analysis of the region, with the goal of evaluating existing priority target sectors and highlighting new opportunity areas to focus on. Below is an overview of the key topics covered in this section.

- Target Market Analysis – Remote Business Services
- Important Players in the Remote Business Services/ BPO Market Globally
- Top Target Markets
 - India
 - The United States
 - Europe
- Recommendations for Remote Business Services/ BPO
- Target Market Analysis – Software and IT Development
- Top Global Software Companies
- Top target markets

- United States
- Canada
- India
- Recommendations for Software and IT Development
- Summary of Recommendations.

3.8.2 Target Market Analysis – Remote Business Services

Important Players in the Remote Business Services/ BPO Market Globally

Large companies play a significant role in the FDI remote business services industry, as they tend to invest in locations internationally. Investment promotion in the remote business services industry can either occur in the form of targeting internationally known largest industry players or targeting markets with sizeable remote business services clusters. We have analyzed and presented the top industry players in the remote business services industry below.

The following table provides the names of the top remote business services companies and providers around the world, in terms of market capitalization.

Table 0-1: Top Remote Business Services Companies and Providers

Company Name	Total Revenue (LTM*, Historical rate)	Headquarters – City, Country
International Business Machines (NYSE:IBM) www.ibm.com	\$74.4 billion	New York, USA
Accenture plc (NYSE:ACN) www.accenture.com	\$47.9 billion	Dublin, Ireland
Tata Consultancy Services Limited (NSEI:TCS) www.tcs.com	\$23 billion	Mumbai, India
Cognizant (NasdaqGS:CTSH) www.cognizant.com	\$17.4 billion	New Jersey, USA
Automatic Data Processing (NasdaqGS:ADP) www.adp.com	\$15 billion	New Jersey, USA
Infosys Limited (NSEI:INFY) www.infosys.com	\$14.2 billion	Bengaluru, India
Wipro Limited (BSE:507685) www.wipro.com	\$8.7 billion	Bengaluru, India
Computacenter plc (LSE:CCC) www.computacenter.com	\$8.5 billion	Hatfield, UK
Teleperformance SE (ENXTPA:TEP) www.teleperformance.com	\$7.6 billion	Paris, France
Tech Mahindra Limited (NSEI:TECHM) www.techmahindra.com	\$5.2 billion	Pune, India

Concentrix Corporation (NasdaqGS:CNXC) www.concentrix.com	\$5.1 billion	Fremont, USA
TIS Inc. (TSE:3626) www.tis.com	\$4.1 billion	Tokyo, Japan
Genpact Limited (NYSE:G) www.genpact.com	\$3.8 billion	Hamilton, Bermuda
TietoEVRY Oyj (HLSE:Tieto) www.tietoevry.com	\$3.3 billion	Espoo, Finland
TELUS International (Cda) Inc. (NYSE:TIXT) www.telusinternational.com	\$1.9 billion	Vancouver, Canada
Sykes Enterprises, Incorporated www.sykes.com	\$1.7 billion	Tampa, USA
Sitel Worldwide Corporation www.sitel.com	\$1.4 billion	Nashville, USA
Resolve Corporation	\$1.2 billion	Mississauga, Canada
Almaviva S.p.A. www.almaviva.it/it	\$1 billion	Rome, Italy
ExlService Holdings, Inc. (NasdaqGS:EXLS) www.exlservice.com	\$1 billion	New York, USA
Hinduja Global Solutions Limited (BSE:532859) https://hgs.cx/	\$794 million	Bengaluru, India
New Omaha Holdings L.P.	\$677 million	New York, USA
ALJ Regional Holdings, Inc. (NasdaqGM:ALJJ) www.aljregionalholdings.com http://faneuil.com/	\$466 million	New York, USA
Keywords Studios plc (AIM:KWS) www.keywordsstudios.com	\$457 million	Dublin, Ireland
Dalian Hi-Think Computer Technology, Corp. www.dhc.com.cn	\$415 million	Dalian, China

Source: S&P CapIQ

*LTM denotes latest revenue figure over "Last Twelve Months"

3.8.3 Top Target Markets

Investment promotion can be done through targeting countries/regions with large industry clusters. For this reason, India, the United States and Europe were chosen as target industries and further analyzed. It is also important to note that several BPO companies in the three aforementioned countries are headquartered in the US and Europe.

INDIA

Overview: It is the two Asian territorial and population giants – India and China – that lead the way as prime outsourcing destinations, with the former outpacing the latter by a noticeable margin.

India has excellence in a range of BPO services and has enjoyed a position as the undisputed leader in the field for more than a decade. In terms of scale and skill level, India has demonstrated superiority. Not only do 69% of surveyed workers feel comfortable working six days a week, but the Indian government also has various incentives for those working in the IT sector.

According to the India Brand Equity Foundation (IBEF) report, the Indian IT industry will contribute 10% of the countries entire GDP by 2025. There are currently over 5300 tech startups in the country, and the IT and BPO industries are estimated to grow from USD 191 billion in 2020 to USD 350 billion in 2025. India also has an impressive 55% of the market share in service sourcing, with 38% of the global BPO market.

GEOGRAPHIC CLUSTERS IN INDIA

India's BPO clusters are located in:

- Bengaluru
- Karnataka
- Maharashtra
- Tamil Nadu
- Telengana

For Investment Attraction, we recommend that all regional clusters should be pursued separately as target markets, due to their size.

The list below are company examples located in India. While not comprehensive, this list provides some insight on how company research for those markets may look like.

Table 0-2: Company Examples India

Company	Total Revenue (LTM*, Historical rate)	Description
Cybage Software Private Limited www.cybage.com Headquarters Cybage Towers Survey No 13A/ 1+2+3/1 Wadgaon Sheri Pune, Maharashtra 411014	\$139 million	Cybage Software Private Limited operates as a technology consulting company and provides outsourced product engineering services. The company offers product engineering services that include software development, maintenance, and re-engineering; e-learning services that comprise learning technology, content design, and technology advisory; support services that consist of technical support, ITeS and BPO, and remote infrastructure management; user experience design services in the areas of usability, visual design, and branding; and documentation services in the categories of technical documentation, content writing, and Internet marketing.
National Informatics Centre Services Incorporated www.nicsi.com Headquarters 6th Floor Hall No. 2 & 3 NBCC Tower 15 Bhikaji Cama Place New Delhi, Delhi 110066	\$131 million	National Informatics Centre Services Incorporated offers information and communication technology-based products and services primarily to central and state government organizations, PSUs, and government aided organizations in India. The company offers E-Government consultancy, GIS manpower, roll out, call center, scanning and digitization, and roll out services.

Inspira Enterprise India Limited www.inspiraenterprise.com Headquarters Unit No. 23, Kalptaru Square Level 2 Kondivita Lane Ramakrishna Mandir Road, Andheri (East) Mumbai, Maharashtra 400059	\$110 million	Inspira Enterprise India Limited provides cyber security and digital transformation services in India and internationally. The company offers cyber security services, such as cyber defense, Microsoft cyber security, managed security, cybersecurity advisory, cloud security, and secured infrastructure services; and cloud services, including cloud adopt, cloud innovation, cloud modernization, hybrid cloud, and cloud managed services. It also provides big data and business analytics services
BLS International Services www.blsinternational.com Headquarters 912, Indra Prakash Building 21 Barakhamba Road New Delhi, Delhi 110001	\$84 million	BLS International Services Limited provides outsourcing and administrative task of visa, passport, and consular services to various diplomatic missions. The company offers citizen and front-end services, e-visa, bio metric and identity management; verification and attestation; and convenience services. In addition, it offers passport and government services. The company operates in Asia, Africa, Europe, South America, North America, and the Middle East.
ValueLabs Services Private Limited www.valuelabs.com Headquarters Plot 41 HITEC City Phase II Hyderabad 500 081	\$46 million	ValueLabs Services Private Limited operates as a global technology company which specializes in digital enablement and product development. The company provides software product development, testing, and knowledge process outsourcing services. It offers services in the areas of offshore product development, application development, quality assurance and testing, maintenance and support, and remote infrastructure management. It serves various companies in the United States and the Middle East/Africa.
CES Limited www.cesltd.com Headquarters Ramky Selenium Tower A 7th Floor Nanakramguda, Gachibowli Hyderabad 500032	\$43 million	CES Limited provides information technology (IT) and business process management (BPM) services in India and internationally. The company operates in two segments, IT Services and IT Enabled Services (ITES). It offers technology services, including product engineering, cloud and infrastructure, data analytics, digital commerce, and enterprise applications, such as Oracle, Salesforce, SAP, EHR/EMR, and Workday.
Trianz Holdings Pvt. Limited https://www.trianz.com/ Headquarters 6th Floor Kalyani Magnum 165/2 Doraisani Palya IIM Post Bannerghatta Road Bengaluru, Karnataka 560 076	\$33 million	Trianz Holdings Pvt. Limited offers Information Technology (IT) consulting and Business Process Outsourcing (BPO) services. The company was incorporated in 2006 and is based in Bengaluru, India.

Source: S&P CapIQ

*LTM denotes latest revenue figure over "Last Twelve Months"

EVENTS IN INDIA

Industry events around the world are finding ways of coping with the COVID-19 pandemic and its halt of traveling services. Thus, although we recommend events in the BPO industry for attendance, for the near future a lot of these events will more likely be conducted virtually. In the case of non-attendance, we recommend reviewing the attendance and exhibitor list of the largest remote business services companies attending the events. The lists can also be used for networking and lead generation purposes.

Table 0-3: Events in India

Event Name	Website	Date	Description
World Intelligent Robotic Process Automation Summit	https://rpaconferences.com/bangalore/	Oct. 28-29, 2021 Online	Robotic Process Automation enables you with tools to create your own software robots to automate any business process. They log into many applications and more. RPA is also non-intrusive in nature, helping cut through the complexity of legacy systems, which are difficult and costly to replace. The Conference will be one of the largest gatherings of its kind for Business stakeholders, RPA Program Leads, RPA developers and IT professionals in India.
BPO Tech Summit	https://10times.com/bpo-tech-summit-bengaluru	May 27-28, 2022 Bengaluru	BPO Tech Summit is one of the largest gatherings of BPO Professionals to re-imagine the business process for actionable insights. Re-discover the new ways to improve your business strategy at "BPO Tech Summit 2021" which is scheduled at The Ritz-Carlton, Bangalore.

THE UNITED STATES

Overview: The BPO sector has grown dramatically since the 1980s in United States, as businesses recognize the benefits of outsourcing their business operations. Through remote staffing, firms discovered that they can reduce prices, enhance productivity and provide better customer service – operating with a limited capital.

Over the past decade, the United States' BPO Services industry has grown significantly. Between 2016 and 2021, the market size of the BPO industry in the US has grown 0.5% per year on average. The market size, measured by revenue, of the Business Process Outsourcing Services industry in the United States is \$54.8bn in 2021 and is expected to increase by 0.4% in 2021.

Finance, banking and insurance companies constitute the greatest demand for BPO services. Companies in these industries are responsible for large amounts of sensitive client and proprietary data. As a result, many employees are required to conduct essential back-office functions related to record maintenance, settlements and regulatory compliance. Companies in these sectors have increasingly outsourced many of these functions, supporting industry revenue. Demand from finance and insurance companies is expected to increase in 2021, representing a potential opportunity for the industry.

GEOGRAPHIC CLUSTERS IN THE US

Some of the major BPO cluster markets in the US are located in:

- Texas
- North Carolina
- Kentucky
- Pennsylvania

Table 0-4: Company Examples in the US

Company	Total Revenue (LTM*, Historical rate)	Description
Rose International, Inc. https://www.roseint.com/	\$358 million	Rose International, Inc. provides workforce and technology solutions to corporations and government agencies in the

Headquarters 600 Parker Square Suite 201 Flower Mound Dallas, Texas 75028		United States. Its workforce solutions include named resource and IC compliance programs; and call center, and brand leveraged talent and staffing solutions.
ASEC International Inc. www.asecinteractive.com Headquarters 267 Riverchase Way Lexington, South Carolina 29072	\$237 million	ASEC International Inc. operates as a business process outsourcing partner. It offers services in the areas of data, graphic design, Web design, search engine optimization, accounting, legal, recruiting, customer contact, and more. The company was founded in 1985 and is based in Lexington, South Carolina with operations in the United States, India, and the Philippines.
Bucher & Christian Consulting, Inc. www.bcforward.com Headquarters 9777 North College Avenue Indianapolis, Indiana 46280	\$191 million	Bucher & Christian Consulting, Inc., doing business as BC Forward, provides consulting, outsourcing, and staff augmentation services in systems administration, project management, software development, and strategic IT planning. The company’s solutions include application lifecycle management, project management, quality management, business intelligence, outsourcing, and advisory services. The company is based in Indianapolis, Indiana with operations in North America, Europe, and Asia.
Soin, LLC www.soinintl.com Headquarters 3500 Pentagon Boulevard Suite 460 Dayton, Ohio 45431	\$136 million	Soin, LLC is a holding company. The company, through its subsidiaries, engages in information technology (IT) and BPO services, large aluminum and steel parts and electromechanical assemblies fabrication and manufacturing, equity investment, and residential land development businesses. The company was founded in 1998 and is headquartered in Dayton, Ohio with additional offices in North America, Europe, and India.
Nityo Infotech Corporation, Inc. www.nityo.com Headquarters 2652 Hidden Valley Drive Suite 303 Pittsburgh, Pennsylvania 15241	\$115 million	Nityo Infotech Corporation, Inc. operates as a management consulting, technology services, and outsourcing company. The company offers an integrated portfolio of software-led information technology (IT), remote infrastructure management, engineering, and business process outsourcing (BPO) services to customers in various industries. It has locations in the United States, Canada, the United Kingdom, South Africa, India, Malaysia, Singapore, Japan, Thailand, the Philippines, and Australia.

Source: S&P CapIQ

*LTM denotes latest revenue figure over “Last Twelve Months”

EVENTS IN THE USA

Table 0-5: Events in the USA

Event Name	Website	Date/Location	Description
25th Annual Shared Services & Outsourcing Week	https://www.ssonetwork.com/events-sharedservicesweek?mac=SSON-Events-Title-Listing&utm_medium=Portal&utm_source=the-shared-services-outsourcing-network	Sept. 20-23, 2021 Orlando, Florida	Over the last 25 years, The North American Shared Services and Outsourcing Week has become a household name for shared services, outsourcing, GBS, automation, and transformation executives. The largest event in the world for this audience crosses functions, regions, processes, industry and company size and is where future trends are

			announced, current needs are addressed, and relationships are built and renewed.
International Customer Management Institute's Contact Center Expo	https://www.icmi.com/contact-center-expo-conference	Oct. 6 - 7, 2021 Online	With rapid change affecting contact centers more than ever before, there's one thing call center professionals can be sure of: the knowledge you gain at ICMI's Contact Center Expo: A Digital Experience will help you move your contact center forward. Here, you will find 40+ sessions, roundtables and resources covering both the latest industry topics, from chatbots to COVID-19, and the insights you seek on essential areas, including WFO and leadership, to ensure you deliver on your business' strategic goals.
Shared Services Select	https://www.ssonetwork.com/events-shared-services-select?mac=SSON_OnlineEvents_Title_Listing	Nov. 9-10, 2021 Online	In periods of great economic upheaval such as businesses are going through right now, the business services are looked at as "back bone" instead of "back-office" as they supply crucial efficiencies to the greater business. Shared Services Select is for those driving business services strategy within their organization, who need to ensure operational successes while keeping their eyes on what will keep their stakeholders engaged, motivated and happy in the current climate.
Customer Contact Week	https://www.customercontactweekdigital.com/events-customercontactweek	Dec.13-16, 2021 Las Vegas, Nevada	CCW is the #1 customer contact event to attend in 2021 and the only event this year featuring nearly 200 industry exhibitors, an incredible speaker line up, actionable and impactful session content, and unmatched benchmarking and team building opportunities. The program also includes the CCWomen Summit, Diversity & Inclusion Summit, a Financial Services Intensive, and focuses on training, hiring and retaining top talent.
Call & Contact Center Expo US	https://www.callandcontactcenterexpo.us/	Mar.16-17, 2022 Las Vegas, Nevada	The Call & Contact Center Expo US is the leading customer engagement and business intelligence event, showcasing the most innovative technologies, solutions and insights to advance customer support, contact, and communication!

EUROPE

Overview: Although the BPO market is under pressure due to the COVID-19 pandemic, Europe continues to offer relatively good opportunities. BPO allows European companies to focus on their core tasks and reduce costs. As prices in nearshore countries in for example Eastern Europe rise, offshoring to developing countries

becomes more attractive. The presence of diaspora in Europe can provide a further basis for offshore BPO activities.

With global BPO contract values of €6.8 billion in 2019, the European market accounted for about 43%. This is a considerable increase from 2018 (29%) and 2017 (38%), thanks to the strong performance in 2019. Between 2015 and 2017, the European BPO market fluctuated around €2.5 billion worth of contracts per year. After a relatively low Annual Contract Value (ACV) of €1.8 billion in 2018, the market rebounded strongly in 2019. BPO contract values reached €2.9 billion, an annual increase of 61%. It should be noted however, that the average combined value of 2018 and 2019 is comparable to that of 2015-2017.

GEOGRAPHIC CLUSTERS IN EUROPE

BPO clusters in Europe are located in:

- United Kingdom
- France
- Italy
- Netherlands

Table 0-6: Company Examples in Europe

Company	Total Revenue (LTM*, Historical rate)	Description
Computacenter plc (LSE:CCC) www.computacenter.com Hatfield Avenue Hatfield Business Park Hatfield, Hertfordshire AL10 9TW United Kingdom	\$8.5 billion	Computacenter plc provides information technology (IT) infrastructure services in the United Kingdom, Germany, France, the United America, and internationally. The company offers endpoint, infrastructure, cyber security, information security management, and identity and access management solutions. In addition, the company offers property investment, international call centre, and employee share scheme trustee services.
Capita plc (LSE:CPI) https://www.capita.com/ Headquarters 65 Gresham Street London, Greater London EC2V 7NQ United Kingdom	\$4.5 billion	Capita plc provides consulting, digital, and software products and services to clients in the private and public sectors. It operates through six divisions: Software, People Solutions, Customer Management, Government Services, Technology Solutions, and Specialist Services. It provides people solutions, including human resources advisory and digitally enabled services comprising learning, resourcing, pensions, and HR outsourcing services. It also provides customer management services, such as customer engagement, remediation, complaints management, collections, and regulated services. It operates in the United Kingdom, Ireland, Europe, the United States, India, South Africa, and the United Arab Emirates.
Inetum SA https://gfi.world/fr-fr/ Headquarters 145 Boulevard Victor-Hugo Saint-Ouen, Ile-de-France 93400 France	\$1,7 billion	Inetum SA provides digital and IT services in France, Spain, Portugal, Latin America, Benelux, Switzerland, Africa, East of Europe, and internationally. The company offers infrastructure, outsourcing, and subcontracting; consulting; and application services, as well as support and integration services for enterprise software. The company was founded in 1970 and is based in Saint-Ouen, France. Inetum SA operates as a subsidiary of Mannai Corporation Q.P.S.C.
Reply S.p.A. (BIT:REY) www.reply.com/en/ Headquarters Corso Francia, 110 Turin, Turin 10143	\$1.6 billion	Reply S.p.A. provides consulting, system integration, application management, and business process outsourcing services in Italy and internationally. The company implements solutions based on communication channels and digital media. It offers business process outsourcing services in the areas of finance and

Italy		administration, human resources, and pharmaceutical, and CFO services. Reply has an agreement with Amazon Web Services. The company was founded in 1995 and is headquartered in Turin, Italy.
Almaviva S.p.A. www.almaviva.it/it Headquarters Via di Casal Boccone, 188-190 Rome, Rome 00137 Italy	\$1. billion	Almaviva S.p.A. provides information technology services. It offers ICT services, such as software development, ICT outsourcing, application and infrastructure management, and service assurance; cloud computing solutions. The company was founded in 2005 and is based in Rome, Italy. It has subsidiaries in Italy; Belgium; USA, Riyadh, Saudi Arabia, Brazil, Colombia, Tunisia and Romania. Almaviva S.p.A. operates as a subsidiary of Almaviva Technologies Srl.
Comdata France SAS https://france.comdatagroup.com/fr 1, avenue du Général de Gaulle Gennevilliers, Ile-de-France 92230 France	\$215 million	Comdata France SAS provides outsourced customer relationship services in Europe. It offers services in the areas of acquisition of new clients; off-site sale of products and services; and development of customer loyalty and assistance. It operates call centers across France and Morocco. The company also manages calling platforms; conducts telemarketing and telesales campaigns; and provides back-office solutions. Comdata France SAS was formerly known as BUSINESS SUPPORT SERVICES - b2s, SAS. The company was founded in 1996 and is based in Gennevilliers, France. As of August 1, 2017, Comdata France SAS operates as a subsidiary of Comdata S.p.A.

Source: S&P CapIQ

*LTM denotes latest revenue figure over "Last Twelve Months"

EVENTS IN EUROPE

Table 0-7: Events in Europe

Event Name	Website	Date/Location	Description
SSOW Europe 2021	https://www.ssonetwork.com/events-ssoweek-online	May 5-6, 2021 Online	Continuing with the digital set up, SSOW Europe 2021 will push the boundaries of innovation on event formats and look to tackle these urgent topics to continue driving and re-imagining the future of the GBS and Shared Services industry together with our community.
CCW Europe 2022	https://www.ccw.eu/en/	Mar 21-24, 2022 Berlin, Germany	CCW is the leading event for call center business in Europe. It is an international conference and trade show for innovative customer dialogue

RECOMMENDATIONS FOR REMOTE BUSINESS SERVICES/ BPO

- **The US, India and Europe were chosen as target BPO markets and further analysed.** The US was chosen due to being home to the largest tech and BPO company headquarters. In addition, India and Europe were chosen as they were the biggest industry players globally, with the largest BPO clusters. The BPO industry in these regions are likely to further expand internationally as demands for their services increases, making them potential markets for investment promotion.
- Recommendations for the United States:
 - **The US is home to the largest tech and BPO companies in the world.** Those companies are likely to consider Central America for international expansion due to the increasing demand for outsourcing activities. These factors make the US a suitable location for investment promotion and attraction.

- **Attending events and networking with local players in the US** can provide many beneficial insights on the state of the industry and their investment plans, specifically from a global perspective.
- **US-based BPO companies will consider Central America for international expansion.** In this case, price competitiveness, infrastructure readiness and ease of doing business should be taken into consideration for the purposes of investment promotion.
- Recommendations for India:
 - **India is home to the largest number of call centers globally with companies seeking to expand into a different time zone**, making it a suitable location for investment promotion and attraction. Companies in India needing to move closer to the US and Canada will find advantages in the Central American BPO ecosystem.
 - **Although Bangalore is home to the largest number of tech firms, the industry is not heavily concentrated in one location.** Thus, in terms of clusters, we recommend that investment promotion should remain on the national level with a specific emphasis and focus on Bangalore.
 - **India has a long history and experience in the BPO industry, backed by a strong tech industry.** Attending events and networking in the market provides beneficial insights about the state of this industry, specifically from an **Indian** perspective.
- Recommendations for Europe:
 - **Europe** is home to **many BPO headquarters**, making it a suitable location for investment promotion and attraction. Companies who have increasing demand for BPO services may look for expansion opportunities in Latin America.
 - For the purpose of investment promotion, focusing efforts on **Western Europe due to the higher concentration of BPO headquarters** is efficient as **Eastern Europe contains more BPO operations.**
 - Attending events and networking with local players in **Western Europe** can provide many beneficial insights on the state of the industry and their investment plans, specifically from a global perspective.

3.8.4 Target Market Analysis – Software and IT Development

Investment promotion can be done through targeting countries/regions with large industry clusters. For this reason, the United States, India and Canada were chosen as target industries and further analyzed. It is also important to note that several Software and IT companies in the three aforementioned countries are headquartered in the US and Europe.

In this section, we will identify top target markets for El Salvador to focus on when conducting investment attraction activities for the Software and IT Development industry.

TOP GLOBAL SOFTWARE COMPANIES

We have highlighted several of the largest Software and IT Development companies worldwide to gain an overall understanding of how these companies are spread out globally.

Table 0-8: Top Global Software Companies

Company Name	Total Revenue (LTM*, Historical rate)	Headquarters – City, Country	Software Type
Microsoft Corporation (NasdaqGS:MSFT) www.microsoft.com	\$168 billion	Washington, USA	Systems
Oracle Corporation (NYSE:ORCL) www.oracle.com	\$40 billion	Austin, USA	Systems
SAP SE (XTRA:SAP) www.sap.com	\$32 billion	Walldorf, Germany	Application
salesforce.com, inc. (NYSE:CRM) www.salesforce.com	\$23 billion	San Francisco, USA	Application
Nintendo Co., Ltd. (TSE:7974) www.nintendo.co.jp	\$15 billion	Kyoto, Japan	Gaming
Adobe Inc. (NasdaqGS:ADBE) www.adobe.com	\$14 billion	San Jose, USA	Application
VMware, Inc. (NYSE:VMW) www.vmware.com	\$12 billion	Palo Alto, USA	Systems
Intuit Inc. (NasdaqGS:INTU) www.intuit.com	\$9.6 billion	Mountain View, USA	Application
Activision Blizzard, Inc. (NasdaqGS:ATVI) www.activisionblizzard.com	\$8.9 billion	Santa Monica, USA	Gaming
Sea Limited (NYSE:SE) www.sea.com	\$6.8 billion	Singapore, Singapore	Gaming
Electronic Arts Inc. (NasdaqGS:EA) www.ea.com	\$5.7 billion	Redwood City, USA	Gaming
ServiceNow, Inc. (NYSE:NOW) www.servicenow.com	\$5.1 billion	Santa Clara, USA	Systems
Constellation Software Inc. (TSX:CSU) www.csisoftware.com	\$4.5 billion	Toronto, Canada	Application
Palo Alto Networks, Inc. (NYSE:PANW) www.paloaltonetworks.com	\$4.2 billion	Santa Clara, USA	Systems
Zoom Video Communications, Inc. (NasdaqGS:ZM) www.zoom.us	\$3.6 billion	San Jose, USA	Systems
Fortinet, Inc. (NasdaqGS:FTNT) www.fortinet.com	\$2.9 billion	Sunnyvale, USA	Systems

Atlassian Corporation Plc (NasdaqGS:TEAM) www.atlassian.com	\$2 billion	Sydney, Australia	Application
CrowdStrike Holdings, Inc. (NasdaqGS:CRWD) www.crowdstrike.com	\$1.1 billion	Sunnyvale, USA	Systems
Unity Software Inc. (NYSE:U) www.unity.com	\$930 million	San Francisco, USA	Application

Source: S&P CapIQ

*LTM denotes latest revenue figure over "Last Twelve Months"

TOP TARGET MARKETS

We have chosen to focus on Canada, India and the US as top target markets for investment attraction activities due to the high concentration of software companies and events taking place in these geographies.

UNITED STATES

Overview: The software industry continued to be a key driver of the US economy through the coronavirus pandemic, supporting jobs all across the country. In 2020, software supported more than 15.8 million jobs in total—an increase of 5.9 percent since 2018.

- In 2020, 3.3 million people worked directly in software jobs in the United States— up 7.2 percent over 2018.
- Software contributed \$1.9 trillion to total US value added GDP in 2020— a 17.1 percent increase in two years.
- The software industry directly contributed \$933 billion to the US economy in 2020—a 15.1 percent increase since 2018.
- The software industry invested more than \$103 billion in R&D in 2018—more than 27 percent of all domestic business R&D in the United States.

GEOGRAPHIC CLUSTERS AND COMPANIES SITUATED IN THE UNITED STATES

- California
- Texas
- New York
- Virginia
- Florida

Table 0-9: Company Examples in the United States

Company	Total Revenue (LTM*, Historical rate)	Description
V.L.S Systems, Inc. www.vls-systems.com Headquarters 4080 Lafayette Center Drive Suite 300 Chantilly, Virginia 20151	\$74 million	V.L.S Systems, Inc. provides software products, contingent IT staffing, custom software development, and IT solutions to federal and state governments, Fortune 500 companies, and growth businesses.
Pivot Systems, Inc. www.pivotsys.com Headquarters 2480 North First Street	\$74 million	Pivot Systems, Inc. provides software development services and solutions for small, large, and mid-size companies. It offers software and systems product development, systems integration, application development, software re-engineering, and engineering services. It

Suite 150 San Jose, California 95131		provides its solutions in the United States, Europe, and the Asia-Pacific. The company was founded in 1997 and is based in San Jose, California with development facilities and offices in the United States and India.
ValueMomentum, Inc. www.valuemomentum.com Headquarters 220 Old New Brunswick Road Suite 100 Piscataway, New Jersey 08854	\$69 million	ValueMomentum, Inc. provides professional services and pre-packaged IT solutions to the insurance and financial services industries. It offers solutions for money management in the areas of settlements, and offshore software development and maintenance services. ValueMomentum is based in Piscataway, New Jersey with delivery centers in South Plainfield, New Jersey; and Hyderabad, India. The company also has additional offices in Chicago, Illinois; Sunnyvale, California; and Hyderabad, India.
Information & Computing Services, Inc. www.icsfl.com Headquarters 1650 Prudential Drive Suite 300 Jacksonville, Florida 32207	\$37 million	Information & Computing Services, Inc. provides software development solutions. The company offers RF-SMART, a mobile barcoding and inventory management solution for distributors, manufacturers, and retailers. It serves customers ranging from emerging companies to Fortune 1000 companies in wholesale distribution, consumer packaged goods, high-tech and electronics, retail, life sciences and medical devices, and services worldwide.
Chetu, Inc. www.chetu.com Headquarters 10167 West Sunrise Boulevard Suite 200 Plantation, Florida 33322	\$37 million	Chetu, Inc. provides custom software development services worldwide and caters to start-ups, SMBs, and Fortune 5000 companies. The company offers application maintenance, backup and disaster recovery, custom application development, implementation and deployment, infrastructure support, migrations and upgrades, product lifecycle management, SLA production support, staffing, software security, systems integration, and quality assurance and testing services.

Source: S&P CapIQ

*LTM denotes latest revenue figure over "Last Twelve Months"

MAJOR EVENTS IN THE UNITES STATES:

The following US events have been identified

Table 0-10: Events in the Unites States

Event	Description	Date / Location
Blockchain Expo North America https://blockchain-expo.com/northamerica/	The Blockchain Expo North America is an online technology conference and event, consisting of top-level content and thought leadership discussions looking at the Blockchain ecosystem. Taking place virtually this event is aimed at the ambitious enterprise technology professional, seeking to explore the latest innovations, implementations and strategies to drive businesses forward.	Sept. 29-30, 2021 Online
QCon https://qconnewyork.com/	QCon Plus is an online international software development conference spaced over 2 weeks for senior software engineers, software architects and team leaders. Focus on the topics that matter in software development right now. Deep dive with 64+ world-class software leaders. Discover how they are applying emerging trends. Learn their use cases and best practices. Identify the tech, patterns and practices you should adopt.	Nov. 1-12, 2021 Online

<p>Microsoft Ignite https://myignite.microsoft.com/home</p>	<p>The Microsoft Ignite conference is Microsoft’s annual meeting specifically for enterprise professionals, services, and products Ignite offers its 25,000+ attendees priority access to technical training, new and innovative tools, and opportunities to network with peers and experts in the tech community.</p>	<p>Nov. 2-4, 2021 Online</p>
<p>Developer Week https://www.developerweek.com/</p>	<p>DeveloperWeek is one of the largest expo conferences for developers in the world, with regular attendance of more than 8,000 professionals every year. This year, DevWeek moves online at a significantly lower price point, and it continues to offer several separate events.</p>	<p>Feb. 2-4, 2021 Online / Oakland, USA</p>
<p>Apple WWCD22 https://developer.apple.com/wwdc21/</p>	<p>The Apple Worldwide Developers Conference (WWCD) is Apple’s largest event for developers—it dominates the tech scene and garners the attention of press, industry experts, customers, and developers. It offers unique insight into the future of iOS, iPadOS, macOS, watchOS, and tvOS.</p>	<p>June 2022 TBC</p>

CANADA

Overview: There are over 44,000 companies in the Canadian Information and Communications Technologies (ICT) sector and the large majority (over 40,000) fall within the software and computer services industries. The ICT sector consists mainly of small companies, with approximately 37,600 of them employing fewer than 10 people. There are just 119 large companies employing over 500 individuals, including subsidiaries of foreign multinational corporations. Manufacturing stands out as the sub-sector with a larger share of large firms. In 2020, 9.7% of ICT manufacturing companies had more than 100 or more employees, while across the whole ICT sector this share was only 1.9%.

Table 0-11: Canada’s Information and Communications Technologies (ICT) Industry Structure

<p>ICT manufacturing</p> <p>(2% of companies) Computer and peripheral equipment Communications equipment Electronic components Audio and video equipment Magnetic and optical media</p>	<p>Software and computer services</p> <p>(91% of companies) Software publishers Computer systems design Data processing Electronic and precision equipment repair and maintenance</p>
<p>ICT wholesaling</p> <p>(4% of companies) Computer, computer peripheral and prepackaged software merchant wholesalers Electronic components, navigational and communications equipment and supplies merchant wholesalers</p>	<p>Communications services</p> <p>(3% of companies) Wireless telecommunications carriers Wired telecommunications carriers Cable and other program distribution</p>

GEOGRAPHIC CLUSTERS AND MAJOR COMPANIES SITUATED IN CANADA

The identified software clusters in Canada are:

- Toronto
- Waterloo
- Calgary
- Montreal
- Vancouver

Table 0-12: Company Examples in Canada

Company	Total Revenue (LTM*, Historical rate)	Description
SOTI Inc. www.soti.net Headquarters 6975 Creditview Rd Unit 4 Mississauga, Ontario L5N 8E9	\$185 million	SOTI Inc. develops a suite of business mobility and IoT solutions. SOTI Inc. was incorporated in 1995 and is based in Mississauga, Canada with additional offices in United Kingdom, Sweden, France, Germany, Austria, Switzerland, Poland, Hungary, Spain, Portugal, Italy, Australia, India, Dubai, and Tokyo.
Matrox Electronic Systems Ltd. www.matrox.com Headquarters 1055 Saint Regis Boulevard Dorval, Quebec H9P 2T4	\$178 million	Matrox Electronic Systems Ltd. designs software and hardware solutions for graphics, video, and imaging/machine vision applications. Matrox Electronic Systems Ltd. was founded in 1976 and is based in Dorval, Canada with representation and offices in the Americas, Europe, and Asia.
Bitfarms Ltd. www.bitfarms.com Headquarters 18 King Street East Suite 902 Toronto, Ontario M5C 1C4	\$83 million	Bitfarms Ltd., a blockchain infrastructure company, mines for cryptocurrency coins and tokens in North America. The company owns and operates server farms comprising computers that primarily validate transactions on the Bitcoin Blockchain and earning cryptocurrency from block rewards and transaction fees. It also provides electrician services to commercial and residential customers in Quebec, Canada. It also provides hosting of third-party mining hardware. The company was founded in 2017 and is headquartered in Toronto, Canada.
GIRO Inc. www.giro.ca Headquarters 75, rue de Port-Royal Est bureau 500 Montreal, Quebec H3L 3T1	\$61 million	GIRO Inc. develops and implements integrated solutions for planning and managing transport-related operations. It serves customers in the Americas, Europe, Australia, and Asia with a focus on public transit and postal operations. GIRO Inc. was founded in 1979 and is based in Montreal, Canada.
Celero Solutions Inc. www.celero.ca Headquarters 350 North 8500 Macleod Trail SE Calgary, Alberta T2H 2N1	\$58 million	Celero Solutions Inc. provides financial technology integration solutions to financial institutions. It offers information technology planning, systems integration, hosting, support, and maintenance solutions. It has strategic alliances with Open Solutions, IBM, Microsoft, and Stack Fintech Inc. Celero Solutions Inc. was founded in 2003 and is based in Calgary, Canada.

Source: S&P CapIQ

*LTM denotes latest revenue figure over "Last Twelve Months"

MAJOR EVENTS IN CANADA

The following events are effective in meeting major software and IT development industry players in Canada:

Table 0-13: Events in Canada

Event	Description	Date / Location
Big Data x AI Toronto Conference https://www.bigdata-toronto.com/	Since 2016, our tech conference and expo has been providing a unique platform for IT decision-makers and data innovators. Big Data and AI Toronto allows them to explore and discuss insights, showcase the latest innovative projects, and connect with other data and analytics professionals.	Oct. 13-14, 2021 Virtual

Canadian Telecom Hybrid Summit https://www.telecomsummit.com/	Now in its 20th year, The Canadian Telecom Summit is Canada’s leading ICT event, attracting the most influential people who shape the future direction of communications and information technology in Canada. For 3 full days, The Canadian Telecom Summit delivers thought-provoking presentations from the thought leaders of the industry. This is your chance to hear from and talk with them in both a structured atmosphere of frank discussion and high-octane idea exchange and networking in a more relaxed social setting of genial conversation.	Nov. 15-17, 2021 Toronto
World Summit AI Americas 2021 https://americas.worldsummit.ai/	An exclusive gathering of the major influencers in AI globally across business, science and tech for mind boggling innovation, heated discussions on AI4good, applied solutions for enterprise, hands-on workshops and the development of plans for advancing the application of AI in the coming year.	May 4-5, 2022 Montreal
Collision Conference https://collisionconf.com/	Globally recognised as "The Olympics of tech", the annual Collision conference welcomes market leaders, tech gurus and the media for a trend-defining meeting. After two consecutive years of hosting the show digitally, the Collision 2022 organisers are preparing for a return to Enercare Centre in Toronto. The show dates have been set as 20 – 23 June 2022 and are expected to welcome over 35,000 attendees.	Jun 20 - 23, 2022 Toronto

INDIA

Overview: The IT industry accounted for 8% of India’s GDP in 2020. Exports from the Indian IT industry are expected to increase by 1.9% to reach US\$ 150 billion in 2021. In 2020, the IT industry recorded 138,000 new hires. According to STPI (Software Technology Park of India), the software exports by its registered units increased by 7% YoY to reach \$67.40 billion in 2021 from \$62.82 billion in FY20, driven by rapid digitization and the IT industry’s timely transition to remote working environments that helped to keep up the industry’s growth amid the coronavirus pandemic.

The domestic revenue of the IT industry is estimated at US\$ 45 billion and export revenue is estimated at US\$ 150 billion in FY21. According to Gartner estimates, IT spending in India is estimated to reach US\$ 93 billion in 2021 (7.3% YoY growth) and further increase to US\$ 98.5 billion in 2022.

The Indian software product industry is expected to reach US\$ 100 billion by 2025. Indian companies are focusing to invest internationally to expand global footprint and enhance their global delivery centres. In line with this, in February 2021, Tata Consultancy Services announced to recruit ~1,500 technology employees across the UK over the next year. The development would build capabilities for TCS to deliver efficiently to the UK customers.

Leading Indian IT firms like Infosys, Wipro, TCS and Tech Mahindra are diversifying their offerings and showcasing leading ideas in blockchain and artificial intelligence to clients using innovation hubs and research and development centres to create differentiated offerings.

GEOGRAPHIC CLUSTERS AND MAJOR COMPANIES SITUATED IN INDIA

- Bangalore
- Hyderabad
- Chennai
- Mumbai

Table 0-14: Company Examples in India

Company	Total Revenue (LTM*, Historical rate)	Description
Tanla Platforms Limited www.tanla.com Headquarters Tanla Technology Centre Hi-Tech City Road Madhapur Hyderabad 500081	\$338 million	Tanla Platforms Limited, together with its subsidiaries, provides cloud communication services for mobile operators and enterprises in India and internationally. Further, it provides Trubloq, a block chain enabled communication platform as a service (CPaaS) stack; and wisely, which delivers communication services for CPaaS ecosystem.
Tally Solutions Pvt. Ltd. www.tallysolutions.com Headquarters AMR Tech Park II No. 23 & 24, Hongasandra Hosur Main Road Bangalore, Karnataka 560 068	\$69 million	Tally Solutions Pvt. Ltd. develops and delivers business management software solutions for organizations in India and internationally. Tally Solutions Pvt. Ltd. has a strategic alliance with DELL. The company was formerly known as Peutronics Pvt., Ltd. and changed its name to Tally Solutions Pvt. Ltd. in January 1988. Tally Solutions Pvt. Ltd. was founded in 1986 and is based in Bengaluru, India.
Netcore Solutions Pvt. Ltd. www.matrox.com Headquarters 8th Floor Peninsula Towers Peninsula Corporate Park G. K. Marg, Lower Parel (West) Mumbai, Maharashtra 400 013	\$67 million	Netcore Solutions Pvt. Ltd. develops enterprise communication and digital marketing solutions. The company offers an enterprise communication suite that includes on-premise and on-cloud messaging, archiving, email, collaboration, SMS, and voice delivery solutions. It has branch offices in New Delhi, Bengaluru, Chennai, Hyderabad, Gandhinagar, and Pune, India; and additional offices in Nigeria, Malaysia, Indonesia, the United Arab Emirates, Philippines, the United States, Singapore, and Thailand.
SecureKloud Technologies Limited www.8kmiles.com Headquarters Srinivas Towers IIInd Floor No. 5, Cenotaph Road Teynampet Chennai, Tamil Nadu 600018	\$48 million	SecureKloud Technologies Limited provides information and technology services in the United States, India, the Middle East, North America, and internationally. In addition, the company provides cloud transformation, identity access management, Big data, cloud data analytics, managed, and UI/UX services. It serves healthcare and pharma industries.

Source: S&P CapIQ

*LTM denotes latest revenue figure over "Last Twelve Months"

EVENTS IN INDIA

The following events are effective in meeting major software and IT development industry players in India:

Table 0-15: Events in India

Event	Description	Date / Location
The World Developers Online Summit, 2021, India https://1point21gws.com/developersummit/bangalore/	“The World Developers Online Summit, 2021, India” is a Program being curated based on guidelines from industry experts, with a target of about 100+ delegates. Our goal is to bring together bright minds to give insightful talks pertaining to API, DevOps & Architecture, RPA, Cognitive and AI and Testing practice that are solution-focused, and foster learning and inspiration	Sept. 16-17, 2021 Online
Convergence India https://www.convergenceindia.org/	Convergence India has been at the forefront of India’s digital revolution, bringing together under one roof the latest technology innovations and trends from the Telecom & Mobile industry, IT & Security, IoT, Broadcast & Digital Media, Embedded Technologies, as well as emerging technologies & enterprise solutions. Launched in 1992, the Convergence India series of expos is widely credited as India’s leading Technology Show. The 3-day international trade Exhibition & Conference provides a valuable opportunity for industry leaders and influencers to discuss the latest trends and disruptions impacting various industry verticals.	Mar.22 -25, 2022 New Delhi

RECOMMENDATIONS FOR SOFTWARE AND IT DEVELOPMENT

El Salvador is expected to continue to attract software development services from large tech Multinational Corporations (MNC) expanding in Latin America.

- **Define unique selling point for software development group:** El Salvador’s strategic location acts as a great gateway and provides service companies easy access to the large economies in North and South America, namely the US, Canada, Mexico, Colombia, Peru, and Brazil. It can position itself as a lower cost labor location with excellent connectivity to major regional and international ports and airports
- **Communicate with local software development firms in various industries to understand their existing contracts:** Gaining an understanding of how established companies in El Salvador handle software development will identify opportunities for PROESA to address when approaching tech MNCs.
- **Improve infrastructure assets to increase cost savings associated with locating in El Salvador and enhance El Salvador’s software development attractiveness to tech MNCs:** Improving the population’s English proficiency and software programming skills will result in significant cost savings and larger market access for tech MNCs. Cost reduction is still the primary investment driver for tech MNCs seeking software development services.

El Salvador should target its investment attraction activities within specific US, Canadian and Indian markets

- **The US is a priority market** that El Salvador should target when approaching the software development market due to the presence of not only some of the largest software development firms worldwide, but also Tier 2 and Tier 3 software firms that are in the process of expanding internationally.
- **Attending US, Canadian and Indian events** is an effective way of meeting with major C-level executives within the software development market. The process of generating a lead in software development is long term, so establishing contact and introducing the region early on is crucial for long term success.

- **Connecting with the appropriate key decision maker is crucial** to developing a lead in the software development industry. Tech MNCs tend to have multiple branches and functions within their parent company. It is important to connect with C-level executives in charge of segments of the firm that are of interest for the Central America or El Salvador, to find out if there are future expansion plans in the region.
- **Most software companies are international in nature** as can be seen from the same software companies having a presence in most software development clusters. However, software development companies are also known as serial investors as they are constantly scouting out market opportunities in countries with low labor costs and a population with high English proficiency and computer programming skills. The growth of the software industry in El Salvador will encourage the development of software service provision in El Salvador.

SUMMARY OF RECOMMENDATIONS

Table 0-16: Summary of Recommendations

Recommendations
<p>Remote Business Services/BPO</p> <ul style="list-style-type: none"> • Large enterprises and industry players play a significant role in the BPO industry, as they are the ones who invest in multiple locations internationally. Investment Promotion in the BPO industry can either occur in the format of targeting internationally known largest industry players or targeting markets with sizeable BPO clusters. • The US, India and Europe were chosen as target BPO markets and were further analysed. The US was chosen due to being home to the largest tech and BPO company headquarters. In addition, India and Europe were chosen as they were the biggest industry players globally, with the largest BPO clusters. The BPO industry in these regions are likely to further expand internationally as demands for their services increases, making them potential markets for investment promotion. <p>Recommendations for the United States:</p> <ul style="list-style-type: none"> • The US is home to the largest tech and BPO companies in the world. Those companies are likely to consider Central America for international expansion due to the increasing demand for outsourcing activities. These factors make the US a suitable location for investment promotion and attraction. • Attending events and networking with local players in the US can provide many beneficial insights on the state of the industry and their investment plans, specifically from a global perspective. • US-based BPO companies will consider Central America for international expansion. In this case, price competitiveness, infrastructure readiness and ease of doing business should be taken into consideration for the purposes of investment promotion. <p>Recommendations for India:</p> <ul style="list-style-type: none"> • India is home to the largest number of call centers globally with companies seeking to expand into a different time zone, making it a suitable location for investment promotion and attraction. Companies in India needing to move closer to the US and Canada will find advantages in the Central American BPO ecosystem. • Although Bangalore is home to the largest number of tech firms, the industry is not heavily concentrated in one location. Thus, in terms of clusters, we recommend that investment promotion should remain on the national level with a specific emphasis and focus on Bangalore. • India has a long history and experience in the BPO industry, backed by a strong tech industry. Attending events and networking in the market provides beneficial insights about the state of this industry, specifically from an Indian perspective. <p>Recommendations for Europe:</p>

- Europe is home to many BPO headquarters, making it a suitable location for investment promotion and attraction. **Companies who have increasing demand for BPO services may look for expansion opportunities in Latin America.**
- For the purpose of investment promotion, focusing efforts on Western Europe due to the higher concentration of BPO headquarters is efficient as Eastern Europe contains more BPO operations.
- Attending events and networking with local players in Western Europe can provide many beneficial insights on the state of the industry and their investment plans, specifically from a global perspective.

Software and IT Development

El Salvador is expected to continue to attract software development services from large tech MNCs expanding in Latin America.

- **Define unique selling point for software development group:** El Salvador's strategic location acts as a great gateway and provides service companies easy access to the large economies in North and South America, namely the US, Canada, Mexico, Colombia, Peru, and Brazil. It can position itself as a lower cost labor location with excellent connectivity to major regional and international ports and airports
- **Communicate with local software development firms in various industries to understand their existing contracts:** Gaining an understanding of how established companies in El Salvador handle software development will identify opportunities for PROESA to address when approaching tech MNCs.
- **Improve infrastructure assets to increase cost savings associated with locating in El Salvador and enhance El Salvador's software development attractiveness to tech MNCs:** Improving the population's English proficiency and software programming skills will result in significant cost savings and larger market access for tech MNCs. Cost reduction is still the primary investment driver for tech MNCs seeking software development services.

El Salvador should target its investment attraction activities within specific US, Canadian and Indian markets

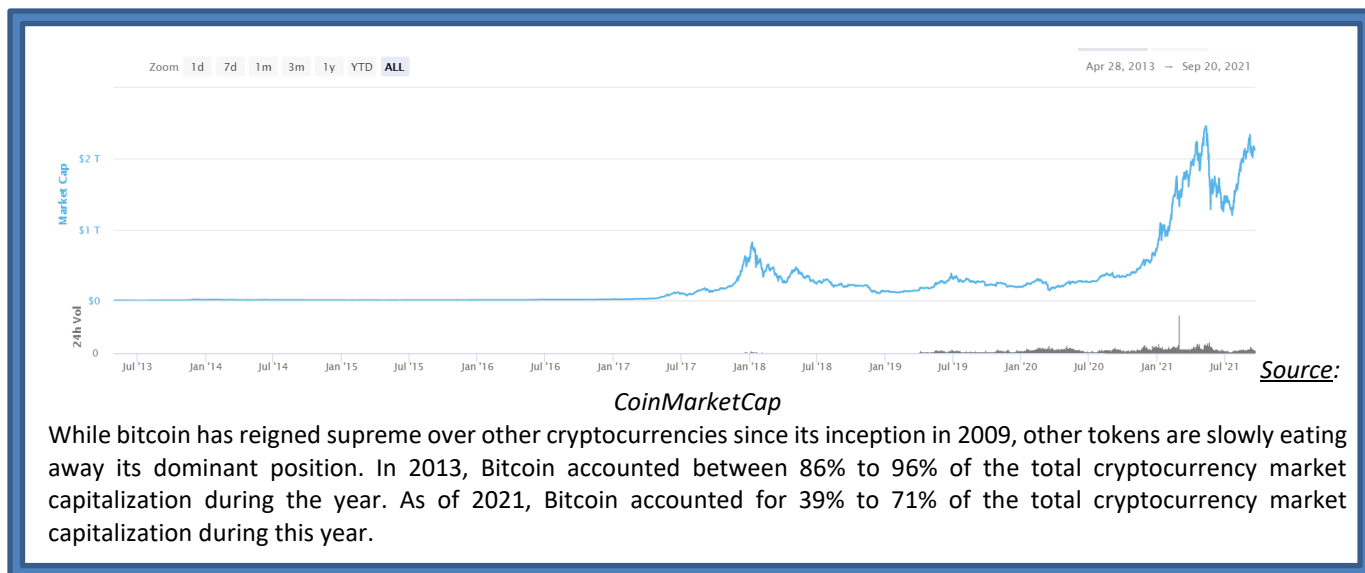
- **The US is a priority market that El Salvador should target** when approaching the software development market due to the presence of not only some of the largest software development firms worldwide, but also Tier 2 and Tier 3 software firms that are in the process of expanding internationally.
- **Attending US, Canadian and Indian events is an effective way of meeting with major C-level executives within the software development market.** The process of generating a lead in software development is long term, so establishing contact and introducing the region early on is crucial for long term success.
- **Connecting with the appropriate key decision maker is crucial to developing a lead in the software development industry.** Tech MNCs tend to have multiple branches and functions within their parent company. It is important to connect with C-level executives in charge of segments of the firm that are of interest for the Central America or El Salvador, to find out if there are future expansion plans in the region.
- **Most software companies are international in nature as can be seen from the same software companies having a presence in most software development clusters.** However, software development companies are also known as serial investors as they are constantly scouting out market opportunities in countries with low labor costs and a population with high English proficiency and computer programming skills. The growth of the software industry in El Salvador will encourage the development of software service provision in El Salvador.

3.8.5 Target Market Analysis – Crypto

The total cryptocurrency market capitalization, or the value of all cryptocurrencies in existence, peaked in May 2021 at about \$2.4 trillion, up from around \$200 billion in 2019. Even during the crypto bubble in 2018, the

market only ever reached about \$720 billion. As of September 2021, the total crypto market cap remained above \$1.9 trillion.

Figure 19: Total Cryptocurrency Market Capitalization, April 28, 2013 to September 20, 2021



While bitcoin has reigned supreme over other cryptocurrencies since its inception in 2009, other tokens are slowly eating away its dominant position. In 2013, Bitcoin accounted between 86% to 96% of the total cryptocurrency market capitalization during the year. As of 2021, Bitcoin accounted for 39% to 71% of the total cryptocurrency market capitalization during this year.

Figure 20: Bitcoin Percentage of Total Crypto Market Cap., April 28 2013 to September 20 2021



Source: CoinMarketCap

The cryptocurrency market size is expected to grow from \$1.6 billion in 2021 to \$2.2 billion by 2026, at a CAGR of 7.1%. Moreover, the cryptocurrency market size is expected to reach \$4.94 billion by 2030. Transparency or distributed ledger technology and growth in venture capital investments are the key factors driving the growth of the market.

Cryptocurrency is known as virtual currency. It is a form of currency that exists digitally only and has no central issuing or regulating authority above. It uses blockchain technology to authenticate the transactions. Blockchain is a decentralized technology spread across many computers that manages and records

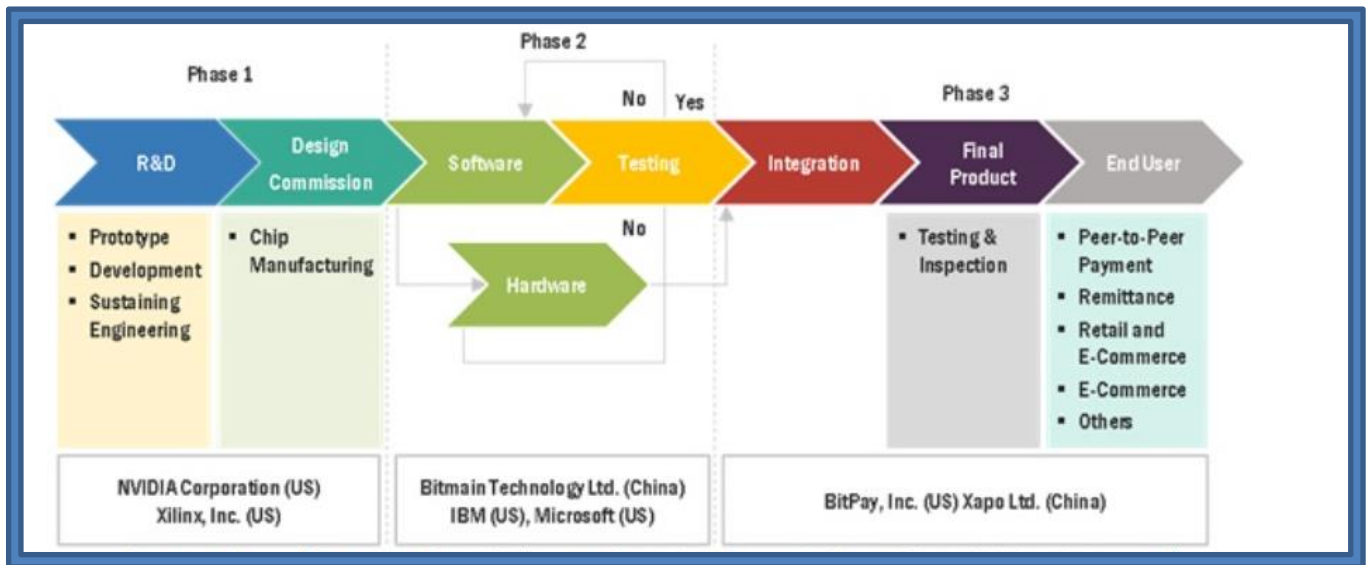
transactions. Furthermore, it does not rely on banks to verify the transactions but is used as peer-to-peer system that enable users to send and receive payments from anywhere in the world.

The COVID-19 pandemic has had a huge impact on the global economy. With the virus spreading across 188 countries, a number of businesses were shut down and many people lost their jobs. The virus mostly affected small businesses, but large corporations felt the impact as well. Apple closed all of its stores outside of China temporarily and Bloomingdale’s did the same with all of its 56 locations. Against the backdrop of the uncertainty raised by COVID-19, Bitcoin, Ethereum, and other digital currencies have garnered significant attention. Even banks have started buying crypto for the first time. Banks in the US are creating their own blockchain-based systems, including digital currencies, to enable B2B cryptocurrency payments between their customers. Also, in October 2020, PayPal announced that its customers will be able to buy, sell, and hold Bitcoin and cryptocurrencies using their PayPal accounts, allowing customers to buy things from the 26 million sellers who accept PayPal. In 2021, PayPal is planning to allow cryptocurrency to be used as a funding source.

Cryptocurrency market dynamics:

- Driver: Transparency of distributed ledger technology
- Restraint: Uncertain regulatory status
- Opportunity: Significant growth opportunities in emerging and developed markets
- Challenge: Concerns regarding security, privacy, and control

Figure 21: Value Chain Analysis



Source: MarketandMarkets

TOP CRYPTO COMPANIES

We have highlighted general crypto service providers, crypto blockchain developers and crypto mining companies worldwide to gain an overall understanding of how these companies are spread out globally.

Table 0-17: Key General Crypto Service Providers

Company	Total Revenue (LTM*, Historical rate)	Description
Coinbase Global, Inc. (NasdaqGS:COIN) www.coinbase.com Headquarters 1209 Orange Street Wilmington, Delaware 19801 United States	\$4.9 billion	Coinbase Global, Inc. provides financial infrastructure and technology for the crypto economy. It offers the primary financial account in the crypto-economy for retail users; a marketplace with a pool of liquidity for transacting in crypto assets for institutions; and technology and services that enable ecosystem partners to build crypto-based applications and securely accept crypto assets as payment. The company was founded in 2012 and is based in Wilmington, Delaware.
Galaxy Digital Holdings LP www.galaxydigital.io Headquarters 107 Grand Street 8th Floor New York, New York 10013 United States	\$1.1 billion	Galaxy Digital Holdings LP, a diversified financial services and investment management company, operates in the digital asset, cryptocurrency, and blockchain technology sectors. It operates through five segments: Trading, Principal Investments, Asset Management, Investment Banking, and Mining. The Trading segment invests in and trades in cryptocurrency and other liquid digital assets. The Principal Investments segment operates a portfolio of private principal investments across the blockchain ecosystem, including early- and later-stage equity, pre-ICO contributions, and other structured alternative investments. The Asset Management segment manages capital on behalf of third parties. The Investment Banking segment offers general corporate advisory, mergers and acquisition, transaction advisory, restructuring, and capital raising services. The Mining segment provides financial tools for North American miners. Galaxy Digital Holdings GP LLC serves as the general partner of the company. Galaxy Digital Holdings LP was founded in 2018 and is headquartered in New York, New York.
Cellebrite DI Ltd. (NasdaqGS:CLBT) www.cellebrite.com Headquarters 94 Shlomo Shmelzer Road P.O.B 3925 Petah Tikva 4970602 Israel	\$223 milion	Cellebrite DI Ltd. provides digital intelligence solutions for the public and private sectors worldwide. The company offers Cellebrite Crypto Tracer that provides evidence against individuals who use Bitcoin and other cryptocurrencies for money laundering, terrorism, drug and human trafficking, weapon sales, and other crimes. Further, it provides training and advisory; advanced digital data access and collection; technical workshops; solution deployment; crypto investigations; value realization; and technical customer support services. The company was founded in 1999 and is headquartered in Petah Tikva, Israel.
BTC Korea.Com Co., Ltd. www.bithumb.com Headquarters Yeogsamdong	\$201 million	BTC Korea.Com Co., Ltd. operates a bitcoin trading platform. The company is headquartered in Seoul, South Korea. BTC Korea.Com Co., Ltd. operates as a subsidiary of BTC KoreaCom Corporation.

Gangnamgu Seoul 135-080 South Korea		
Dunamu Inc. www.dunamu.com Headquarters 5th fl., Mirim Tower 14, Teheran-ro 4-gil Gangnam-gu Seoul 06232 South Korea	\$162 million	Dunamu Inc. offers blockchain and securities services. It operates UPbit, a global crypto asset exchange; UBCI, a cryptocurrency market index; and Luniverse that offers blockchain as a service. The company provides securities information service via Stockplus. In addition, it provides investment services. The company also offers its services through a mobile application. The company was founded in 2012 and is based in Seoul, South Korea.
Bitcoin Well Inc. (TSXV:BTCW) bitcoinwell.com Headquarters 10142 82 Avenue NW Edmonton, Alberta T6E 1Z4 Canada	\$86 million	Red River Capital Corp. operates as a bitcoin ATM company in Canada. It provides online and in-person solutions to buy and sell bitcoin and other cryptocurrencies. The company also offers a suite of web-based transaction services to buy and sell bitcoins. As of June 17, 2021, it owned and operated approximately 140 cryptocurrency ATMs. The company was founded in 2013 and is headquartered in Edmonton, Canada.

Source: S&P CapIQ

*LTM denotes latest revenue figure over "Last Twelve Months"

Table 0-18: Crypto Blockchain Companies

Company	Total Revenue (LTM*, Historical rate)	Description
Overstock.com, Inc. (NasdaqGM:OSTK) www.overstock.com Headquarters 799 West Coliseum Way Midvale, Utah 84047 United States	\$2.8 billion	Overstock.com, Inc. operates as an online retailer in the United States. It operates through Retail, tZERO, and Medici Ventures segments. Further, it focuses on the development and management of financial applications of blockchain technologies.
Joint Stock Company "AetSoft" www.aetsoft.by Headquarters Zheleznodorozhnaya 33A/1-6 Minsk, Minskaya vobl. 220089 Belarus	\$2.6 billion	Joint Stock Company "AetSoft" operates as a blockchain development company. The company provides blockchain development services, such as data science consulting, artificial intelligence consulting, image recognition consulting, and facial recognition consulting services. It offers blockchain solutions in the areas of banking and finance, healthcare, supply chain management and logistics, real estate, legal, and insurance industries. The company is based in Minsk, Belarus.
QuickBit eu AB (publ) (NGM:QBIT) home.quickbit.eu Headquarters Norrandsgatan 12	\$300 million	QuickBit eu AB (publ), a fintech company, develops technology solutions for cryptocurrencies and blockchain worldwide. It offers solutions for e-merchants to be paid in cryptocurrency, and user-friendly and secure solutions

Stockholm, Stockholm County 111 43 Sweden		for customers. The company was founded in 2016 and is based in Stockholm, Sweden.
nCipher Security Limited www.ncipher.com Headquarters One Station Square Cambridge, Cambridgeshire CB1 2GA United Kingdom	\$64 million	nCipher Security Limited designs and develops cryptographic and security solutions for general purpose hardware, cloud, blockchain, and digital payments applications. The company was incorporated in 2018 and is based in Cambridge, United Kingdom. nCipher Security Limited operates as a subsidiary of Thales S.A. As of June 7, 2019, nCipher Security Limited operates as a subsidiary of Entrust Datacard Corporation.
KSIGN Co.,Ltd. (KOSDAQ:A192250) www.ksign.com Headquarters EG Building, 11 11, Teheran-ro 98-gil Gangnam-gu Seoul 06621 South Korea	\$33 million	KSIGN Co.,Ltd. develops and supplies software products primarily in South Korea. It offers integrated authentication, system account management, PKI digital signature, mobile electronics signature, encryption key management, data encryption, mobile security, mobile verification, blockchain electronic wallet, malware analysis, malware response, and Internet of Things security products. The company was founded in 1999 is based in Seoul, South Korea.
Ground1 Corp. www.ground1.xyz Headquarters EG Building, 11 11, Teheran-ro 98-gil Gangnam-gu Seoul 06621 South Korea	\$27 million	Ground1 Corp. develops Klaytn, a blockchain that provides UX/UI and developer experience environment for developers to create blockchain services. The company was incorporated in 2018 and is based in Seoul, South Korea. As of December 15, 2020, Ground1 Corp. operates as a subsidiary of Klaytn PTE. Ltd.

Source: S&P CapIQ

*LTM denotes latest revenue figure over “Last Twelve Months”

Table 0-19: Crypto Mining Companies

Company	Total Revenue (LTM*, Historical rate)	Description
BIT Mining Limited (NYSE:BTM) www.btcgroup.com Headquarters 100 Cyberport Road Core F, Cyberport 3 Units 813 & 815, Level 8 Hong Kong	\$450 million	BIT Mining Limited operates as a cryptocurrency mining company. It holds three hydroelectric cryptocurrency mines with combined electric power capacity of 435MW; and mining pool business, including the domain name and the cryptocurrency wallet of BTC.com, as well as purchases and deploys bitcoin mining machines. The company was formerly known as 500.com Limited and changed its name to BIT Mining Limited in April 2021. BIT Mining Limited was founded in 2001 and is headquartered in Hong Kong.
Bit Digital, Inc. (NasdaqCM:BTBT) bit-digital.com Headquarters 33 Irving Place	\$93 million	Bit Digital, Inc. engages in the bitcoin mining business. The company was formerly known as Golden Bull Limited and changed its name to Bit Digital, Inc. in September 2020. Bit Digital, Inc. was incorporated in 2017 and is headquartered in New York, New York.

New York, New York 10003 United States		
Bitfarms Ltd. (TSXV:BITF) www.bitfarms.com Headquarters 18 King Street East Suite 902 Toronto, Ontario M5C 1C4 Canada	\$83 million	Bitfarms Ltd., a blockchain infrastructure company, mines for cryptocurrency coins and tokens in North America. The company owns and operates server farms comprising computers that primarily validates transactions on the Bitcoin Blockchain and earning cryptocurrency from block rewards and transaction fees. It also provides electrician services to commercial and residential customers in Quebec, Canada. It also provides hosting of third-party mining hardware. The company was founded in 2017 and is headquartered in Toronto, Canada.
Canaan Inc. (NasdaqGM:CAN) canaan-creative.com Headquarters QianFang Science Building C 1-2/F, No. 27 Zhongguancun Software Park No. 8 Dongbeiwang West Road Haidian District Beijing 100193 China	\$69 million	Canaan Inc. engages in the research, design, and sale of integrated circuit (IC) final system products by integrating IC products for bitcoin mining and related components primarily in the People's Republic of China. It is also involved in the assembly of system products; and supply chain and distribution of system products. The company has a strategic cooperation with Northern Data AG in the areas of artificial intelligence development, blockchain technology, and datacenter operations. The company was founded in 2013 and is based in Hangzhou, the People's Republic of China.
Hut 8 Mining Corp. (TSX:HUT) canaan-creative.com Headquarters 130 King Street West Suite 1800 Toronto, Ontario M5X 2A2 Canada	\$68 million	Hut 8 Mining Corp. operates as a cryptocurrency mining company in North America. The company engages in industrial scale bitcoin mining operations. It also owns and operates 38 BlockBoxes in Drumheller, Alberta; and 56 BlockBoxes in Medicine Hat, Alberta. The company is headquartered in Toronto, Canada.
Riot Blockchain, Inc. (NasdaqCM:RIOT) www.riotblockchain.com Headquarters 202 6th Street Suite 401 Castle Rock, Colorado 80104 United States	\$65 million	Riot Blockchain, Inc., together with its subsidiaries, focuses on cryptocurrency mining operation in North America. The company primarily focuses on bitcoin mining. As of December 31, 2020, it operated a fleet of 7,043 miners. The company was formerly known as Bioptix, Inc. and changed its name to Riot Blockchain, Inc. in October 2017. Riot Blockchain, Inc. was incorporated in 2000 and is based in Castle Rock, Colorado.
Argo Blockchain plc (LSE:ARB) www.argoblockchain.com Headquarters 16 Great Queen Street 9th Floor London, Greater London WC2B 5DG United Kingdom	\$54 million	Argo Blockchain plc, together with its subsidiary, Argo Blockchain Canada Holdings Inc., engages in the crypto asset mining services worldwide. The company was formerly known as GoSun Blockchain Limited and changed its name to Argo Blockchain plc in December 2017. The company was incorporated in 2017 and is headquartered in London, the United Kingdom.
Marathon Digital Holdings, Inc. (NasdaqCM:MARA) www.marathondh.com Headquarters	\$42 million	Marathon Digital Holdings, Inc. operates as a digital asset technology company that mines cryptocurrencies with a focus on the blockchain ecosystem and the generation of digital assets in United States. The company was

1180 North Town Center Drive Suite 100 Las Vegas, Nevada 89144 United States		formerly known as Marathon Patent Group, Inc. and changed its name to Marathon Digital Holdings, Inc. in February 2021. Marathon Digital Holdings, Inc. was founded in 2010 and is headquartered in Las Vegas, Nevada.
Greenidge Generation Holdings Inc. (NasdaqGS:GREE) www.greenidge.com Headquarters 590 Plant Road Dresden, New York 14441 United States	\$40 million	Greenidge Generation Holdings Inc. owns and operates bitcoin mining and power generation facilities in New York. It owns and operates data centers for bitcoin mining and blockchain services. As of July 31, 2021, the company had approximately 14,300 miners. It also generates and distributes electricity through a natural gas power generation facility with an installed capacity of 106 megawatt located in New York. The company was founded in 1937 and is based in Dresden, New York.
HIVE Blockchain Technologies Ltd. (TSXV:HIVE) www.hiveblockchain.com Headquarters 555 Burrard Street Vancouver, British Columbia V7X 1M8 Canada	\$39 million	HIVE Blockchain Technologies Ltd. operates as a cryptocurrency mining company in Canada, Sweden, and Iceland. It is involved in the mining and sale of digital currencies, such as Ethereum, Ethereum Classic, and Bitcoin. The company was formerly known as Leeta Gold Corp. and changed its name to HIVE Blockchain Technologies Ltd. in September 2017. HIVE Blockchain Technologies Ltd. was incorporated in 1987 and is headquartered in Vancouver, Canada.

Source: S&P CapIQ

*LTM denotes latest revenue figure over "Last Twelve Months"

GLOBAL TOP CRYPTO EVENTS

The following events are effective in meeting crypto players globally:

Table 0-20: Global Crypto Player Meetings

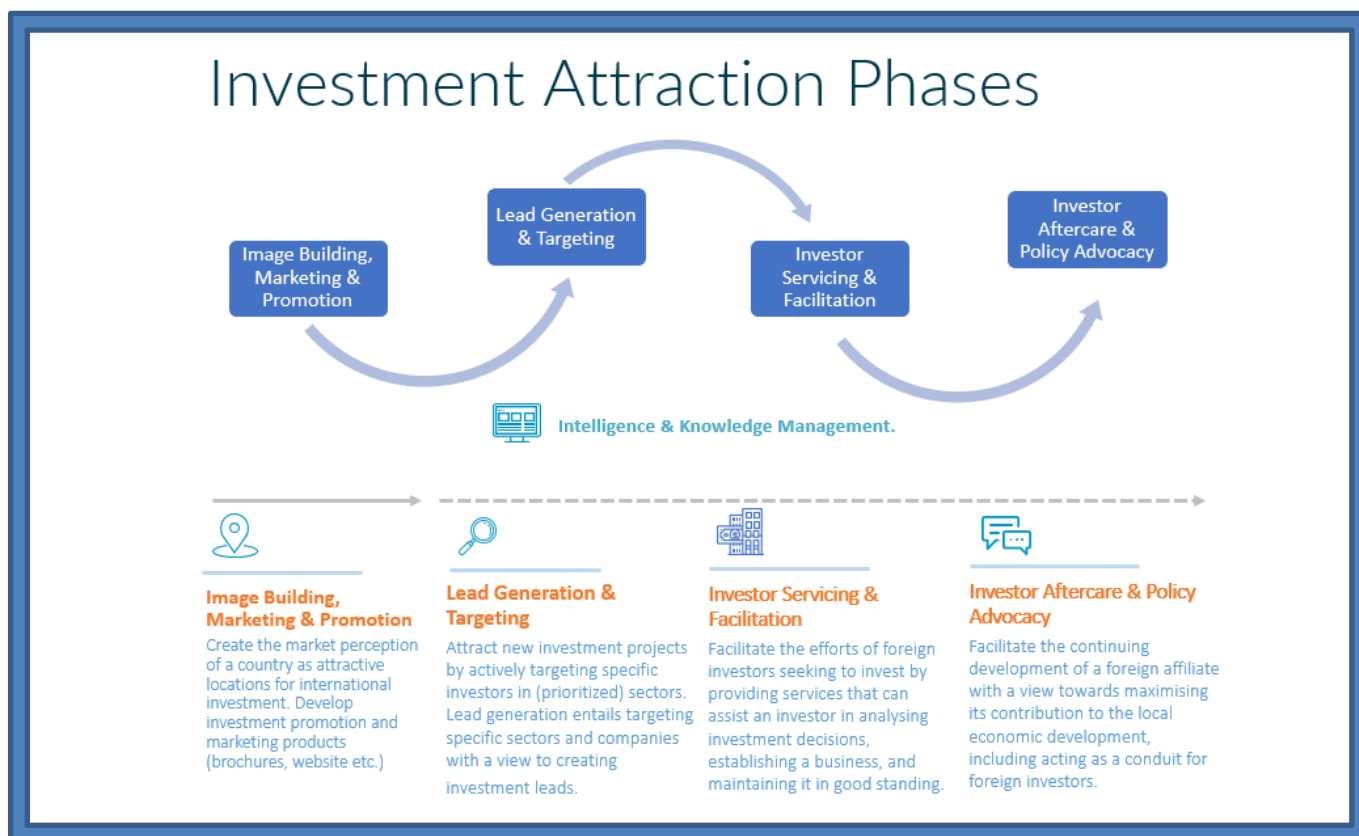
Event	Description	Date / Location
BLOCKCHAIN EXPO GLOBAL 2021 https://blockchain-expo.com/global/	The world-leading Blockchain Expo series returns to London at the prestigious Business Design Centre on 6-7th September 2021 and virtually on 13-15 September to host its fifth annual global event. It will bring together key industries from across the globe for two days of top-level content and discussion across 4 co-located events covering Blockchain, IoT, Cyber Security & Cloud, AI and Big data.	Sept. 5-7;13-15, 2021 London, UK
CoinAgenda Europe 2021 https://coinagenda.com/europe-2021/	The leading global blockchain investing conference series since 2014. CoinAgenda speakers include professional investors, traders, family offices, digital currency funds and top entrepreneurs in the blockchain and cryptocurrency sectors.	Sept. 27-29, 2021 Monaco
10th Blockchain & Bitcoin Conference Moscow 2021 https://btconf.ru/en/about-conf	Blockchain & Bitcoin Conference Moscow is an event about the current state of the cryptocurrency market and the possibilities of using blockchain technology in business. It will highlight the key aspects of regulating the circulation of digital assets. Specialized events	Sept. 29, 2021 Moscow, Russia

	under Blockchain & Bitcoin Conference Moscow brand have been organized since 2014. During this time, they have gathered thousands of visitors and united dozens of experienced experts.	
Blockchain Economy Expo 2020 Dubai https://blockchaineconomy.global/	The Blockchain Economy Expo 2020 Dubai will welcome more than 40,000 Visitors, 300 Exhibitors, 4,000 companies from 150 countries – it will be the first time that crypto community from so many nations and people will congregate under one roof. It's a once-in-a-lifetime opportunity for all of us to come together and redefine the financial and technological world of the future.	Dubai, UAE
Bitcoin 2022 https://b.tc/conference//	We're bringing together over 35,000 bitcoiners from across the globe as we point the world's attention on Bitcoin. Bitcoin 2022 is a meeting of the minds, a celebration of freedom, an enlightening, an educational experience, a moment to connect, a chance to inspire awe, a glimpse into a brighter future, a peaceful revolution, a modern-day constitutional convention, a woodstock for 2022...	Apr. 6-9, 2021 Miami, USA
Convergence India https://www.convergenceindia.org/	Convergence India has been at the forefront of India's digital revolution, bringing together under one roof the latest technology innovations and trends from the Telecom & Mobile industry, IT & Security, IoT, Broadcast & Digital Media, Embedded Technologies, as well as emerging technologies & enterprise solutions. Launched in 1992, the Convergence India series of expos is widely credited as India's leading Technology Show. The 3-day international trade Exhibition & Conference provides a valuable opportunity for industry leaders and influencers to discuss the latest trends and disruptions impacting various industry verticals.	Mar.22 -25, 2022 New Delhi

3.9 Recommendations

This section provides insights and recommendations for building investment attraction platforms for the Remote Business Services and Software/IT Development sectors in El Salvador. This information can be used by PROESA to supplement strategic and marketing plans, build consensus with stakeholders, and advocate with the government for improved foreign direct investment conditions. The graphic below shows the phases of investment attraction, and many of the elements of this section address each of the key phases.

Figure 22: Investment Attraction Phases



3.9.1 Sector Value Propositions

Below are the two value propositions for Remote Business Services and Software/IT Development sectors in El Salvador. Please note that while both sectors are high growth areas for business expansion, Remote Business Services is a more compelling proposition due to its track record and reference investors. Software/IT Development is very much work in progress.

3.9.2 Business Process Outsourcing Proposition

EL SALVADOR DRIVES GLOBAL BUSINESS PROCESS OUTSOURCING IN THE HEART OF THE AMERICAS
Global BPO companies like Teleperformance, Telus International, Sykes, Concentrix and 70 others have located and operated in El Salvador for many years
El Salvador serves a range of BPO activities
Contact centers
Knowledge processing outsourcing
IT outsourcing
Shared services
Benefits of locating in El Salvador
Competitive operating costs
Located in the Americas time zones
Proximity to North America
Service/solutions-oriented workforce
English with a neutral accent and strong affinity with the US
Existing BPOs in El Salvador achieve the highest ratings
BPOs in El Salvador are adding more value-added services such as KPO and ITO

SOFTWARE/IT DEVELOPMENT PROPOSITION

EL SALVADOR, AN EMERGING FORCE IN OUTSOURCED SOFTWARE DEVELOPMENT
Software development companies like Applaudo Studios, Elaniin, Rulesware, Proximity Software, Tecnoin, BITWorks have selected El Salvador for their development. International BPOs are also setting up IT outsourcing operations in El Salvador such as Uassist.me/Helpdesk and Telus International.
El Salvador serves a range of technology platforms SaaS CRM Web Mobile apps – IOS, Android Java PHP Python .Net
Benefits of locating in El Salvador Competitive operating costs Located in the Americas time zones Proximity to North America Service/solutions-oriented workforce English with a neutral accent and strong affinity with the US Existing BPOs in El Salvador achieve the highest ratings BPOs in El Salvador are adding more value-added services such as KPO and ITO

3.9.3 Suggested Marketing Initiatives

Below is a table of marketing suggestions to be implemented in the short, medium and longer term. We acknowledge that the current marketing budgets for PROESA are very small and limit the activities of the organization, but stress that this must be addressed expeditiously in order for El Salvador to compete for investment attraction on a global basis.

MARKETING COMPONENT	ACTIVITY	COMMENT
Marketing	Promotional Materials	Update and improve Remoted Services presentation Create Software Development presentation Create one-sheets for Remote Services and Software development Prepare investment business cases for both sectors for customization based on target client requirements Develop quarterly or semi-annual newsletter
	Digital Marketing	Web Site Load more detailed sector profiles for both sectors Create link to LinkedIn account Create sign-up for additional information and newsletter – to be developed Social Media LinkedIn page has been established, but there are no postings Create monthly postings by sector in English Share relevant sector information from stakeholders in English or Spanish – English intro Promote PROESA and other sector events Target prospects – see Targeting & Lead Generation
	Media Relations	Develop target media list and contacts Sector publications General business publications

		<p>Site selection publications</p> <p>Create targeted media pitches on a quarterly basis</p> <p>Develop a series (1-2 per year) of media fam trips to El Salvador to see the sector assets</p> <p>Create media interviews on any international trips for PROESA or any other stakeholder</p> <p>Use media postings on website and social media, and to influence other media contacts and local stakeholders</p>
	Events	<p>Target sector events has been provided in the target market analysis – we are available to help you narrow this list</p> <p>Select a set of events and begin to identify how you will participate PROESA, company, diplomatic office or diaspora</p> <p>Participation can be broken down into</p> <p>Attendance</p> <p>Exhibitor</p> <p>Sponsor</p> <p>Speaker</p> <p>Develop plan for each event</p> <p>Target companies for meetings</p> <p>Promote El Salvador via exhibition, sponsorship and speaking</p> <p>Create materials specific to the event</p> <p>Develop follow-up and evaluation plan</p>
Targeting & Lead Generation		
	Sector intelligence	<p>Build global target list of companies</p> <p>Track companies, qualify, and note expansion activities</p> <p>Track sector and subsector expansion trends</p> <p>Identify links with the El Salvador offering</p> <p>Log all information into a CRM</p> <p>Create alerts for identified prospects for El Salvador</p> <p>Use intelligence to reach out to companies based on relevant expansion activities</p>
	Investment outreach	<p>Leverage qualified target lists created in the sector intelligence segment</p> <p>Identify the right decision makers for Latam expansion</p> <p>Build outreach communications via email, LinkedIn, and telephone</p> <p>Allocate outreach responsibility: PROESA, consultants, diplomatic offices, stakeholders or diaspora</p> <p>Aim to move targets to prospects (companies with interest in learning more about El Salvador to Leads (companies with a project and detailed requirements)</p> <p>Secure virtual meetings</p> <p>Leverage events and missions for in-person meetings</p> <p>Log all outreach into CRM</p>
	Facilitator outreach	<p>Build target list of international facilitators</p> <p>Site selectors</p> <p>Other consultants, legal & accounting</p> <p>Sector associations</p> <p>International trade organizations</p> <p>Ambassadors</p> <p>Diaspora</p> <p>Others</p> <p>Add to periodic marketing list</p> <p>Conduct outreach to identify prospects</p> <p>Meet in person during outbound missions or engage diplomatic offices or diaspora</p> <p>Organize Fam trips for site selectors and other key influencers</p>

Facilitation		
	Investor engagement	<p>Once a company is qualified and has a project where El Salvador is being considered, investor engagement becomes critical</p> <p>PROESA becomes the coordinator for collecting requirements and assigning resources (internal or external) to respond in an efficient and relevant manner</p> <p>PROESA needs to map the scenarios prior to investor engagement and identify the stakeholders required for each scenario – having service level agreements (SLAs) in place is advised in order to ensure a prompt response</p> <p>PROESA then becomes the primary point of contact and coordinates all information exchanges and visits</p> <p>PROESA manages the project from start to finish</p> <p>An SLA is an agreement between PROESA and an investment facilitation partner defining critical deliverables and timeframes for servicing foreign direct investors</p>
Aftercare		
		<p>60% of foreign direct investment comes from existing investors (expansion of existing operations)</p> <p>PROESA is in contact with existing investors – below are some topics for discussion</p> <p>Challenges and looking for solutions</p> <p>Expansion opportunities</p> <p>Identifying strategic partners that may need to establish operations in Latam</p> <p>Introductions to key executives with other companies in the sector</p> <p>Recruiting key executives to act as Ambassadors for client visits, testimonials, speaking engagements at industry conferences etc</p>
Advocacy		
		<p>PROESA is a window into the challenges that existing investors face in El Salvador as well as the demands of prospect investors</p> <p>PROESA is a key advocate to the government on the needs of foreign direct investors and prospects</p> <p>These requirements need to be analyzed and proposed solutions presented to key government officials on a periodic basis</p> <p>PROESA can also act as a stakeholder coordinator to address and resolve open issues in a timely manner – this requires coordination and management of a formal stakeholder program that is established based on a memorandum of understanding</p>

Improvement of Investment/Business Climate/Ecosystem

Every country in the world has factors that they can be working on to improve and make more competitive their investment environment for the attraction of foreign direct investment. This is an effort that addresses legal, regulatory, administrative and institutional barriers to drive reforms or improvements that create an environment more attractive to foreign direct investors. Below is a summary of key issues identified and suggested solutions for El Salvador.

INSTITUTION	ISSUE	RECOMMENDATIONS
Government	Many government entities are involved in FDI attraction which creates challenges with roles, responsibilities and execution	<p>Create a clear map of the organizations and their roles/responsibilities</p> <p>Establish an operational framework between the organizations and sign a memorandum of understanding</p> <p>Establish clear goals and KPIs to track, review and report</p>

		<p>Issue a periodic strategic plan that is the property of the key organizations</p> <p>Communicate to the private sector the objectives and results</p> <p>Create Team SV as a marketing tool for both external and internal markets. The make up of the Team SV would include PROESA and as many stakeholders as possible that elect to proactively support the investment facilitation process</p>
Government	Regulatory/legal environment is viewed as unstable	<p>Government should seek to directly engage with business community to understand their needs/concerns</p> <p>Government narrative should be pro-business and supportive of existing FDI legislation – companies want stability to support their investment</p> <p>New decrees or laws that directly impact employers should be developed in consultation with business</p>
Government	The security situation in the country is challenging for business	<p>Government needs to address security concerns</p> <p>Government should work directly with companies that transport their employees to ensure that the transit from work to home is secure</p>
Government/Education System	Educational system does not address the immediate needs of business	<p>Educational authorities need to work directly with the companies to create annual training programs that address their needs</p> <p>Universities should be encouraged to create business focused courses and COOP programs that place students in industry for 50% of their studies</p> <p>INSAFORP needs to work more closely with the businesses</p> <p>Particular focus needs to be placed on English and technology platforms and programming languages</p>
Ecosystem	Sector ecosystems need to be better organized to create stronger, more competitive clusters	<p>RBS has support organizations like AmCham. The sector could benefit from a sector focused cluster organization coordinated by PROESA</p> <p>Software/IT Development also requires a sector focused cluster organization coordinated by PROESA</p> <p>Build clusters - dedicated work groups in the cluster organizations can work on key issues from security to legislation to skills and drive reform forward</p> <p>PROESA can then share the sector initiatives with the government framework to drive policy change</p> <p>Focus on regulatory environment and skills development</p>
PROESA	<p>PROESA does not have a budget large enough to sustain investment attraction at the level of a national investment promotion agency.</p> <p>Investment promotion budgets for promotion only for a similar size location range between \$500,000 to \$5,000,000.</p>	<p>Benchmark regional investment promotion agencies for insight into comparative budgets by activity</p> <p>Alternative recommendations include:</p> <p>Source promotional budget from other government entities</p> <p>Build PPP in each sector to fund investment promotion</p> <p>Further leverage NGO donors to fund specific activities such as a series of site selector fam tour visits or company investment tours</p> <p>Build competitive program to attract international investment, provide aftercare services and support sector development</p>

3.10 Annex II - Remote Services & IT Meeting Notes

This section provides meeting notes from the relevant meetings held in El Salvador and virtually that are directly related to the remote services and Software/IT Development.

Meetings

In Person

1. SIGET
2. MINEC
3. AmCham
4. PROESA Services

Virtual

1. CasaTIC
2. Sykes
3. INSAFORP
4. Concentrix
5. Applaudo Studios
6. Telus International
7. OneLink
8. Uassist.Me
9. Elaniin

SIGET

1. **DATE:** Thursday, August 26, 2021
2. **PARTICIPANTS:**
 - a. PROESA:
 - i. Jessica Bukele.
 - b. IOS Partners:
 - i. Andrew Clutz
 - ii. Lucía Gross
 - iii. Rodrigo Zapata.
 - c. SIGET:
 - i. Juan Carlos Hernández – Head of Power Monitoring and Control.
 - ii. Francisco Quintana.
 - iii. Rigoberto Salazar.
3. **BACKGROUND:**
 - a. SIGET is the Superintendence of Electricity and Telecommunications of El Salvador.
 - b. It is in charge of regulating the generation, distribution and control of electric energy in the country.
 - c. They concern themselves with Cost, Quality and Redundancy of energy.
 - d. Their main “pillars” are 4:
 - i. Application of laws and treaties in both power and telecom.
 - ii. Approve tariffs and rules of the game.
 - iii. Dictate norms and standards.
 - iv. Dispense justice in conflicts and controversies.
 - e. The CNE is the National Electricity Council reports to the Ministry of Economy and is in charge of dictating the public policies of the sector.

- f. Subsidies in the electric market in El Salvador are not many, the main ones are for residential use and for pumping drinking water.

4. POWER:

- a. GENERATION:
 - i. It can be public or private.
 - ii. Main sources are: hydro, geothermal, photovoltaic and thermal.
 - iii. Private plants are mostly photovoltaic.
- b. DISTRIBUTION:
 - i. All private, there are 8 distributing companies, 5 large and 3 small.
 - ii. The largest is AES, which operates 4 distribution companies.
 - iii. Total number of users: 1.9 million.
 - iv. Lines are mixed, non-exclusive.
 - v. Many free zones have their own private substation within their premises.
- c. COMMERCIALIZATION:
 - i. Private companies can purchase or import large lots of power and then act as retailers to sell it to final users.
 - ii. Any person or company can generate power according to the Incentive Law for Renewable Energy.
- d. REDUNDANCY:
 - i. Available in some areas.
 - ii. Urban areas are more likely to have redundancy.
 - iii. Urban areas are more concentrated and rural more disperse and quality is better in the first ones.
- e. COST:
 - i. SIGET claims El Salvador has the second lowest energy cost in the region, Guatemala being the best.
 - ii. And still people ungratefully complain.
- f. POWER MATRIX:
 - i. Installed capacity is about 3,500 MW and only about 1 MW is used.
 - ii. Installed capacity Matrix:
 - 1. Thermal: 32%
 - 2. Geothermal: 8.6%
 - 3. Hydro: 24%
 - 4. Solar: 21%
 - 5. Biomass: 11.7%
 - iii. Changes being introduced:
 - 1. New Natural Gas plant 355 MW (floating barge) will capture over 10 % of the installed capacity.
 - 2. Wind in smaller amounts.
 - 3. Bio-gas small amounts also.
- g. DISPATCH PRIORITY: lower cost goes first.
- h. TARIFS AND INCENTIVES:
 - i. Prices are cheaper for the 900,000 homes that consume less than 100 MW per month (residential).
 - ii. Next come commercial companies and SMEs.
 - iii. The cheaper prices are given to large industrial concerns which consume larger amounts of power.
 - iv. Private companies can negotiate tariffs with generating, distribution and commercialization companies.
 - v. Prices will be better for larger quantity and voltage levels.

5. TELECOM:

- a. They recommend we talk to Rafael Arbizú, to have a meeting similar to this one.

CasaTIC

1. **DATE:** Tuesday, September 7, 2021
2. **PARTICIPANTS:**
 - a. IOS Partners:
 - i. Andrew Clutz.
 - ii. Rodrigo Zapata (I only participated ½ hour because I had another meeting).
 - b. PROESA:
 - i. Jessica Bukele.
 - ii. Michelle Medrano
 - c. CASATIC:
 - i. Rafael Pérez – Executive Director.
 - ii. Ana Amaya.
3. **BACKGROUND:**
 - a. CASATIC is the Chamber of Information Technology of El Salvador.
 - b. Its objective is to promote Information Technology as a development factor.
 - c. Founded in 2010 it has 20 members.
 - d. Board includes companies like Microsoft, PBS Xerox, Dataguard, SVNET, El Monstruo Innovation, Grupo GD, and Bird Consultadores,
 - e. Focus areas: Policy, exportation and business, Human, Talent, Innovation
4. **SPONSORSHIPS/Alliances**
 - a. USAID.
 - b. GIZ.
 - c. WITSA (World Information Technology Services Alliance).
 - d. ALES (Latin-American Association of Service Exporters).
5. **AREAS OF WORK:**
 - a. Public Policy advocacy, promoting the Digital Agenda law initiative.
 - b. Policy - working on the laws and the environment- cyber security, personal data protection, electronic signature
 - c. Exports and Business, seeking commercial opportunities, promotion events, market studies and strategic alliances.
 - d. Human Talent, training programs in IT.
 - i. Center for High Technology in association with the Francisco Gavidia University.
 - ii. Training in software development.
6. **Other**
 - a. Fomilenio II focus/priority on Python, Project Administration, UX/UI, Security
 - b. Help of INSAFORP - the training group funded by companies that pay a monthly fee similar to DR - Accreditation
 - c. Centros de Desarrollo de Software (CDC)
 - d. Centro de Formacion Digital
 - e. Center for High Technology - opening delayed until the Pandemic clears
 - f. Training software developers, project manager, and cyber security
 - g. Universidad Francisco Gavidia
 - h. Open to inputs from CasaTIC members
 - i. Platform for digital transformation - companies are part of the app and they exchange support and ideas
 - j. List of service providers - will provide
 - k. Innovation Committee
 - l. Strategic plans

- m. Tech and social - fair programming
- n. Innovation and competitiveness
- o. Works with the Ministry

Sykes

1. **DATE:** Thursday, August 26, 2021
2. **PARTICIPANTS:**
 - a. IOS Partners:
 - i. Rodrigo Zapata.
 - ii. Andrew Clutz.
 - b. SYKES:
 - i. Beatriz Peralta – Gerente General.
3. **BACKGROUND:**
 - a. SYKES Enterprises is a US company from Tampa Florida, specialized in digital marketing, sales expertise, customer service and technical support.
 - b. Acquired by Sitel
 - c. 2006 start 1 client 175 people
 - d. 2 operations in El Salvador
 - e. 75% working from home
 - f. Languages English and Spanish some French and Portuguese
 - g. Currently, they employ 4,000 people in El Salvador and plan to grow to 5,000 by 2024.
 - h. Their investment is only about \$ 4000 per workstation, their real contribution is the creation and maintenance of high value-added jobs.
 - i. Their clients come from a variety of sectors:
 - i. Tourism and Travel: about 36% and growing.
 - ii. Financial Services.
 - iii. Retail.
 - iv. Healthcare.
 - j. They have a presence in Mexico, El Salvador 4000, Nicaragua 2000, Costa Rica 5000, Panama 2000, Colombia 10000 and Brasil.
 - k. They are members of AmCham and meet regularly there and collaborate as much as possible.
4. **OBSTACLES/CHALLENGES:**
 - a. Legal uncertainty, new legislation affecting business negatively.
 - b. Availability of labor with the right language skills.
 - c. Needed alteration to law to allow work from home - worried about amendment to the law
 - d. New day care center law
 - e. New disability law in 2020
 - f. Concern about violence and gangs
 - g. Available of bilingual labor is limited
 - h. Costs are rising - doubled in 5 years
5. **INCENTIVES:**
 - a. Remove constraints that hinder their growth potential.
 - b. Allow remote working as a normal way of doing business.
6. **Other**
 - a. People work ethic
 - b. Access to the 2.5 MILLION people from ES in the US
 - c. Sitel is bullish about Latam
 - d. Trend in moving business from offshore to nearshore
7. Despite all the challenges, landed 6 clients in the last 12 months
8. Soft programs comp plus incentives rewards, communication

9. Had stop new business growth in 21
10. Looking at new plan to work in 22
11. Incentives should be focused on labor and legal uncertainty
12. 5 yr plan is 5,000 staff in 2024 will hit this sooner

AMCHAM

1. **DATE:** Wednesday, August 25, 2021
2. **PARTICIPANTS:**
 - a. PROESA:
 - i. Javier Galdámez – Investment Promotion Director.
 - b. IOS Partners:
 - i. Rodrigo Zapata.
 - ii. Lucía Gross.
 - c. AMCHAM:
 - i. Carmen Aída Muñoz – Executive Director, previously worked at PROESA from 2001 to 2005.
 - ii. Carlos Artiga – Deputy Director, 7 years with AMCHAM, in charge of Security.
3. **Membership:**
 - a. Before Covid: 350 members.
 - b. Currently 325 as some closed operations.
 - c. 80% of US companies are members.
4. **Sectors of Opportunity:**
 - a. Logistics.
 - b. Auto Parts.
 - c. Medical devices.
 - d. Airport PPP.
5. **Call For Action: VP Kamala Harris.**
 - a. Companies that have shown interest: Master Card; Banco Davivienda (Col); Banco Agricola (Col); Duo Lingo; Nespresso; Chobani Yogurt; Microsoft.
 - b. Still unclear what specific projects these companies would be looking at.
 - c. Site visit being arranged by US Chamber of Commerce (Isabel Quirós) and State Dept (Ricardo Zúñiga), on hold awaiting outcome of September events (Bitcoin Law, Constitutional Reforms, etc).
6. **Obstacles:**
 - a. Rule of Law, uncertainty, volatility, lack of trust, examples
 - i. Law to regulate Call Centers.
 - ii. Another example: Bitcoin law.
 - iii. Still another: Constitutional reform.
 - iv. Another: no respect for intellectual property.
 1. Meds law passed in 2012/2013, was the cause for Pfizer and MSD to leave for Guatemala.
 2. Allows generic manufacturers to produce before existing patents expire.
 - b. Labor flexibility, or lack thereof.
 - c. Customs, time and cost.
 - d. Not enough labor with adequate English language skills.
 - e. Security concerns regarding labor.
 - i. Extortion by organized crime gangs in barrios.
 - ii. Especially during night shift.
 - iii. Private transportation costly.
7. **Investors to look at:**
 - a. ARNECON.

- b. AVX.
- c. Textile companies.
- d. Call Centers:
 - i. Teleperformance.
 - ii. Atento.
 - iii. Telus.
 - iv. Sykes.
 - v. Cognizant (not member of Amcham).
 - vi. Ubiquity.
 - vii. The Office Gurus.
 - viii. One Link.
 - ix. Focus.
 - x. Black Hawk.
 - xi. Applaudo (software).

MINECO

1. **DATE:** Monday, August 23, 2021
2. **PARTICIPANTS:**
 - a. PROESA:
 - i. Javier Galdámez – Investment Promotion Director.
 - ii. Jessica Bukele – Services.
 - b. IOS Partners:
 - i. Robert Hans.
 - ii. Rodrigo Zapata.
 - iii. Andrew Clutz.
 - c. MINECO:
 - i. Laura de Valiente – Investment Facilitation Deputy Director.
 - ii. Ivette Quintero – Intelligence and Economic Policy.
 - iii. Alejandro Panameño – Digital Innovation.
3. **Investment Facilitation:**
 - a. Take advantage of the Synergies between PROESA, MINECO, Investment Secretary and Ministry of Foreign Affairs.
 - b. Revise incentive policy and recommend adjustments to improve.
 - c. They have in-house studies on incentives benchmarking which they could share with us, Stephanie Argueta.
 - i. They made a study comparing with Bangladesh.
 - ii. Interested in Colombia, Uruguay and Argentina.
 - iii. They also have “White Papers” which might be of interest and he could share.
 - iv. Digital Nation: study they can also share.
4. **Digital Innovation:**
 - a. Promotion of talent and connection with labor market.
 - b. In association with Amazon, Microsoft and Universities.
 - i. Companies pay for certifications.
 - ii. Cloud skills Data Programming and English language are the main subjects.
 - iii. Employability is high.
 - c. Legislation to promote the sector: there are laws that provide good incentives, but companies don’t know them, IADB is creating a platform to divulge them.
 - i. Digital Transformation: due for launch in October.

PROESA Services Discussion

Attendees

Jessica Bukele
Andrew Clutz

1. SERVICES:

- a. 80 companies, 30,000 employees. 5 of them quite large (3,000 to 7,000 employees), SYKES, TELEPERFORMANCE, CONVERGIS among them.
- b. 75 medium companies, both local and foreign owned.
- c. Mainly Information Technology outsourcing; BPO; Contact Centers.
- d. There is a unique opportunity in Software development as there is a worldwide shortage of people in this segment.
- e. Why El Salvador?
 - i. Quality of Labor Force.
 - ii. Work ethics.
 - iii. Customer service skills.
 - iv. English language.
 - v. Competitive cost.
- f. Labor Force:
 - i. Limitation, not enough English-speaking people available.
 - ii. Companies do their own training.
 - iii. Outreach to students to convince them to study English and IT.
- g. Other
 - i. Key docs - see huge file and pull-out docs
 - ii. Investors Guide
 - iii. Services Sector Guide
 - iv. Digital services
 - v. Salaries doc - sent
 - vi. What % of the population speaks English
 - vii. She views Phillipines and India as competition
 - viii. Do not have ESL ratings - too expensive
 - ix. No services park - but America is building one
 - x. 35 direct flights to the US
 - xi. Many English schools
 - xii. Strong affiliation with the US – useful for contact centers
 - xiii. Services have no time limits - Govt may remove in October – Big risk
 - xiv. Normal tax is about 30%
 - xv. See table for incentives eligibility
 - xvi. ITOs not the same as BPOs
 - xvii. See Miempresa.com for company registration details
 - xviii. Services are for export only - max 30% local

INSAFORP

September 10, 2021

Ana Elsy Ocampo Herrera

- Focus on Technical skills development
 - Apparel
 - Mechanical
 - Electrical
 - Informatics
- English training
 - English - different levels focused on company needs
 - English program for work program that was designed with USAID in 2015, in 18 modules

- 6 basic modules
- 6 intermediate modules
- 6 advanced modules
- In 2020 they had 20,000 entries for a semester in English, if in that semester the trainings are finished, they can go out to buy so that students can continue with the training
- Basic level of 40 hours
- Intermediate and advanced level are 50 hours
- 2 hours of English were given daily
- After a certain number of hours, they go to the lab to do practices
- The English teacher is also accredited, and they ask for an advanced level
- They have didactic material for the facilitator and for the person to be trained
- Every 10 hours they go to do the practice
- Training to meet the needs of the different companies including call centers
- Each of the companies determine the level of training they need and Insaforp helps module by module

Program outline

- Administración y desarrollo gerencial
- Calidad, procesos y producción
- Mercadeo y ventas
- Finanzas, contabilidad y auditoria
- Desarrollo humano
- Recursos humanos
- Exportaciones e importaciones
- Desarrollo de instructores y supervisores
- Idiomas
- Informática
- Tecnologías, técnicas y sus aplicaciones

Concentrix

September 10, 2021

Andrea Munoz

- Started as Dell and then became Stream in 2012, 2014 Acquired by Convergys then acquired by Concentrix
- 500 staff to 2014 2500 - added 1000 employees in the last year
- Focus on Telcom, retail, satellite/mobile clients
- Services: CS, sales tech support and collections
- Work at home environment
- Client movements from Phillipines and India - attractive to move to Latam
- Business continuity - distributed from too much activity in Phillipines and India

- 50% - 50% home and office
- Concern in finding enough English speakers
- Hiring need of 300 monthly - fill rate is 60% (175)
- 50% is attrition and 50% growth
- Q4 is always a huge growth period
- Want to push people into careers - 90% of management is from within
- Internal academies - for English and sales skills
- Currently in every Latam country except Guatemala - largest Colombia, Brazil, Costa Rica
- ES is strong on sales skills
- ES has lower attrition than the region
- Most clients set up operations in at least two countries
- 25% growth this year
- \$6 million in capex
- One site in San Salvador
- Long term plan to have 25% of the staff work from home
- Tier 2 and Tier 3 service
- INSAFORP - developmental training, but English is not successful - Not aligned on standards
- Midterm - Upskill in English
- Long-term - schools need to start from the beginning
- Honduras has a dedicated program from start and tailored to business - higher level
- Colombia is a less expensive - and has scale in terms of employment pool
- Performance

Applaudo Studios

September 13, 2021

Darwin Romero

- 8 years old
- 1st customers NBC, Fox, Mayo Clinic, Simon Malls, Walmart, Bain, Miami Heat, Golden State Warriors - 60 clients in the US
- 70% in ES and 30% in Latam
- Latam software development
- 2020 - it all started - in Latam
- Barriers to starting a software firm in ES - complexity of working with US customer - why would they hand over the keys - need credentials - Can they execute?
- Number of software development firms in El Salvador - 12-20
- US companies are trying to find the right partners in Latam from Phillipines, India etc in
- Several companies that have potential
- 1,000 people that apply for jobs and many do not qualify in terms of skills
- Created an office in Chile for non - English speaking projects - Citi Group and 2 other banks in Chile
- Dell - Panama, and Porto Alegre Brazil
- DR, Ecuador, etc

Operations

- Employees: 610
- 14 countries
- Facility - Old Walmart
- New office 1200 sqm Estacion de Casco in San Salvador

- 50 people at the office and most are at home

Focus technology solutions

- Web
- Mobile
- IOS/Android
- See LinkedIn Skills requirement

Challenges

- Need to build the capabilities - see slides
- Outside in approach and understand the market requirements - top 20 software development skills
- English is key
- Opened coding school- matching grant of 1 million to training - IDB - Beat Lab - Washington DC
- Relationships with the universities and telling them that they need to change the way - not very reactive
- Disruption and certifying tech skills quickly - straight
- Opening a development center in DR 50 people in SDQ
- Another in Nicaragua
- New minister of Education - trying to change the law to make it easier to change programs to update education
- Working with Microsoft and AWS on this
- Govt subsidizing train
- Platzy (sp) - training platform

Opportunities

- A lot of work to be done in terms of skills
- Need to have the hard product
- Start at the high school level

Crypto

- Ramping up a team for Crypto for export only
- Too early to determine what will happen

Telus International

August 26, 2021

Colette Viaud, Deborah Rosales, Jose Calderon

- Canadian Telcom
- 50 years in the region
- Started call centers in the Phillipines
- 2008 bought local company
- 3 buildings
- 4500 people
- 80% English
- 400 people on French projects
- 1-2% Spanish
- Others - German, Portuguese, Italian
- Ops in Guatemala and ES

Activities

- Tier 1 support

- Technical support
- Shared services
- Talent outsourcing
- Coding

Client Sets

- Tech
- Financial services
- Gaming

40 programs

- 100-150 seats avg
- Some 500+
- Some small pilots
- 2020 Rapid growth
- 80% of workers from home
- Will likely move back to 20% from home and 80% at office
- 3 new programs coming on board now
- Application to the Board for a new building - 15,000 sqm
- Coming is working to move up the skill line
- More technology focused projects
- Bots/other tech
- Working with universities like Bosco - agreement for customized training and ESI
- Focus on data notation

Huge Retention Program

- Culture
- McDonalds
- Soccer field
- Gaming room
- Gym
- Day Care
- Clinic - dental everything
- Private insurance for extended family

CSR

- Annual volunteer days
- Children's Hospitals
- Training kids
- Community Board with \$100K per year

OneLink

September 8, 2021

Santiago Rossi

- 8-10 years in operation
- Just acquired by WebHelp - Europe, Africa and Asia - new step into Latam
- 3,000 people in San S and Santa Ana (500) - want to grow this site adding 200 seats
- Nearshore market - US
- Latam Accts - 14,000 Col, Nic, Brazil, Guatemala, Mexico etc

- 70% rev from nearshore - bilingual
- Challenge - language and their growth
- Nearshore opportunity - pricing, close to the US
- 20-35k bilingual employees in ES
- Job hopping is driving up costs due to limited pool
- Need to ID more qualified works
- Laws - clear now - does not foresee major changes
- 36 hours a week for night work
- Working with Ministry of Labor to get contract to meet the needs of the client agreements
- Premium markets - US & Canada
- 60% are working from home
- Trying to have 30% of the people on site
- Garage contact centers - 12 people
- Clients: Airlines, Fintech, Telcos, Healthcare, some retails, travel
- Sales, customer support, tech support
- Voice, chat, email, chat bots - priced per transaction - build themselves 200 people -
- 58 clients (14 in ES)
- Client costs \$15 per hour compared to \$30-35
- Plenty of people with technical skills - 500 cvs for 20 positions in Spanish
- Struggling to get 300 with English skills
- B2 level - train them to a level of 6.5 - 8 - pay to train them
- Invest in training before they stater work - several months - need govt commitments and investment
- Incentives for English speakers - double salary
- Language studio unit in the company - classes, videos,
- People working from home are very productive
- Awaiting the new permanent law on a work from home scenario
- 25% growth in 6 months 60 net jobs
- Workstation - \$2,500 - 4,000 per seat
- BPO performance -all Latam ops are roughly equal
- Col and Nic - 48 hours
- ES 44 hours per week
- Fringes in ES 32%
- Guatemala 50%
- Colombia 42%
- RE cheaper in Col, and Nic than ES
- Price sensitive customers cannot go to Nic and Guatemala
- Colombia has an English problems
- Amount of business could grow 2x 3 x

Ussist.Me

September 8, 2021

Alfredo Atanacio

- Operating for 12 years
- ES formed with 3-4 people - local
- Now 350 people
- Based in San Salvador - mostly remote
- New HQ which is a co-working space

- 1 year to get the permits
- 6 mos. delay during the shutdown
- \$6.5 million
- 30% will work at the office
- 90% of clients in the US
- Small businesses - high growth - looking for extension of the team
- Customer services
- Executive assistance
- Law support
- Creative services - content creators - web design, managing apps - growing 40 are in this unit
- Real estate - transaction coordination
- A lot more unscripted
- 200 customers
- \$60K per month and smallest is \$300 per month moving to 1700 per month - selling a solution
- 900 per month for 2-3 hours and full-time availability
- Virtual assistant
- Growth 35-40% this year 0 added 100 people since Jan 21
- \$3 million in salaries - Jan - Sept
- Will be at 800 in the next 2-3 years
- Must speak English - perfect English
- Internet savviness
- Experience
- Beginning to hire outside of ES - Venezuela and Honduras
- UAM academy
- Needs - talent
- AI that changes the accent
- Institutions and rule of law - need a clear path forward and respect for the laws going forward
- Assembly keeps approving new paid holidays - 2x on the wage
- New Constitution - Xmas bonus exists - adding a mid-year bonus
- Allowance for 2 hours a day paid to study
- Changing rules
- Remote work law
- Academia - align what the universities are teaching with business skill needs
- Shorter programs than bachelors 12-24 months
- 800 per month
- Quality of work from the people in ES - location, US relationship, focus on solutions
- Reliable electricity
- INSAFORP - potential, but not great - need to have more alignment
- Look at the job openings uassistme.co

ELANIIN

September 8, 2021

Adrian Gomez CEO, Efrain Ortiz – HR, Alessandra - BD

- 7 years old
- 200 employees
- 95% is remote
- Office in San Salvador

- DR, Colombia, Mexico
- Partners in SLC + doing project sales, Canada
- Investors from outside + US ES
- Back end UX/UI project managers
- Documentation services - outsource developers
- Fixed price outsource project
- Programming Fixes
- 100% focus is the US
- Europe, Canada, US
- Same time zone
- Easy access to US and vice versa
- More expensive than India
- Higher quality
- India \$15-20 hr.
- \$35-40 per Hour in ES
- Lack of developers
- Proactive, communicate well, soft skills
- Dedicated department for training language and technical
- Growth opportunities
- Looking at Guatemala, Honduras, Mexico for talent
- Customer types: Software development companies-staff augmentation, SAAS, CRM platforms that need improvements-debugging, and banks-Fintech
- Programming languages: Java scripting front end, back-end PHP, Python, .Net, Mobile applications: IOS, Android
- Lack of technical skills: 3+5 years in experience
- English
- Schools don't prepare for the real-world requirements
- Other skills
- Need to build perception of ES as a tech country
- Not enough communication across companies due to the competition for the talent
- Job jumping – cannibalism - competing for talent
- Salaries are growing fast
- Costs are the same as Colombia – but they have scale
- Talent is the key issue - can't hire fast enough
- Companies want to partner
- Aim - big projects \$500k -\$1million - min of 8-10 projects
- Scrum master, web ops, UXUI, QA
- 90 people in ES
- Other company operations:
- Mercandoo + Amazon for CA + 1.5 m 2nd
- Dimo + micro loans



Pharmaceutical Chemistry Sector

4 SECTORAL STUDY: PHARMACEUTICAL CHEMISTRY

4.1 Introduction

The purpose of this document is to provide a comprehensive review and analysis of the Pharmaceutical Chemistry industry as a priority sector, focusing on the identification of the main trends of the industry and the key factors to be considered by investors when evaluating where to invest.

In line with the Terms of Reference (TOR), this study will inform the ongoing efforts to promote and attract FDI into El Salvador, outlining the readiness in the sector and identifying the specific messages to the target FDI audience.

The Pharmaceutical Chemistry sector is one of the strongest and fastest growing sectors in the country. PROESA already has a study of the chemical-pharmaceutical and cosmetics sector, which offers a starting point for investment attraction, however, it is necessary to review and update the study to identify the type of foreign companies with the potential to develop and/or expand their operations in El Salvador.

It is also necessary to create a value proposition based on the investment factors that companies are taking into consideration in the new global context and, to identify improvements in the local investment climate to make the country more attractive.

As part of the investment factors, the supply chain should also be taken into consideration to analyze the opportunities that can be found in the country and to strengthen the reverse supply chain.

4.2 General Overview and Global Trends

4.2.1 Pharma Global Market Size and Forecast

The Covid-19 pandemic had an unprecedented impact on the world in 2020 and the global economy is still suffering as we enter the final quarter of 2021. Communities across the globe came together and looked to the pharmaceutical industry to create solutions.

Even with significant disruption and reprioritization of clinical trial activity, R&D activity levels remained at historically high levels for the pharma industry in 2020, driven by new funding and strategic business transactions. This led to many pharma companies successfully developing drugs and vaccines against Covid-19 and these have been successfully rolled out across the world. Many companies were able to meet their financial expectations as medicines kept reaching patients, despite lockdowns and social distancing. *Annex 7 Bibliography (1)*.

Fueled by new product launches and an aging population, the global pharmaceutical industry has continued to exhibit strong growth. Despite disruptions caused by the pandemic, the US FDA approved an impressive 53 new drugs and biologics in 2020, which surpassed the 48 new drugs that were approved in 2019 and was the second-highest level of approvals in the last decade. (1).

The global pharmaceutical market has experienced significant growth in recent years. In 2020, the total global pharmaceutical industry's revenues reached 1.27 trillion U.S. dollars. This is a significant increase from 2001 when the industry's revenues were at just 390 billion U.S. dollars. The pharmaceutical market plays a key role in how people get medications and what people pay for medication. However, some markets are performing better for pharmaceutical companies than others. (2, 3).

The global market is expected to grow at a compound annual growth rate (CAGR) of 11.34% from 2021 to 2028. The pharmaceutical landscape has undergone a massive transformation with the emergence of new technologies, as well as cost-effective and more efficient manufacturing approaches.

In addition, increasing investment flow in this space has positively impacted market growth. Manufacturing floor downtime and the production of product waste are reduced by the implementation of robotic technology and Artificial Intelligence (AI). Additionally, single-use disposable solutions have gained momentum in this industry and have replaced conventional open transfer manufacturing techniques. Furthermore, the paradigm shift towards integrated, smart, and data-rich paperless operations has resulted in more error-free and precise production. Such ongoing developments have propelled drug manufacturing. (4)

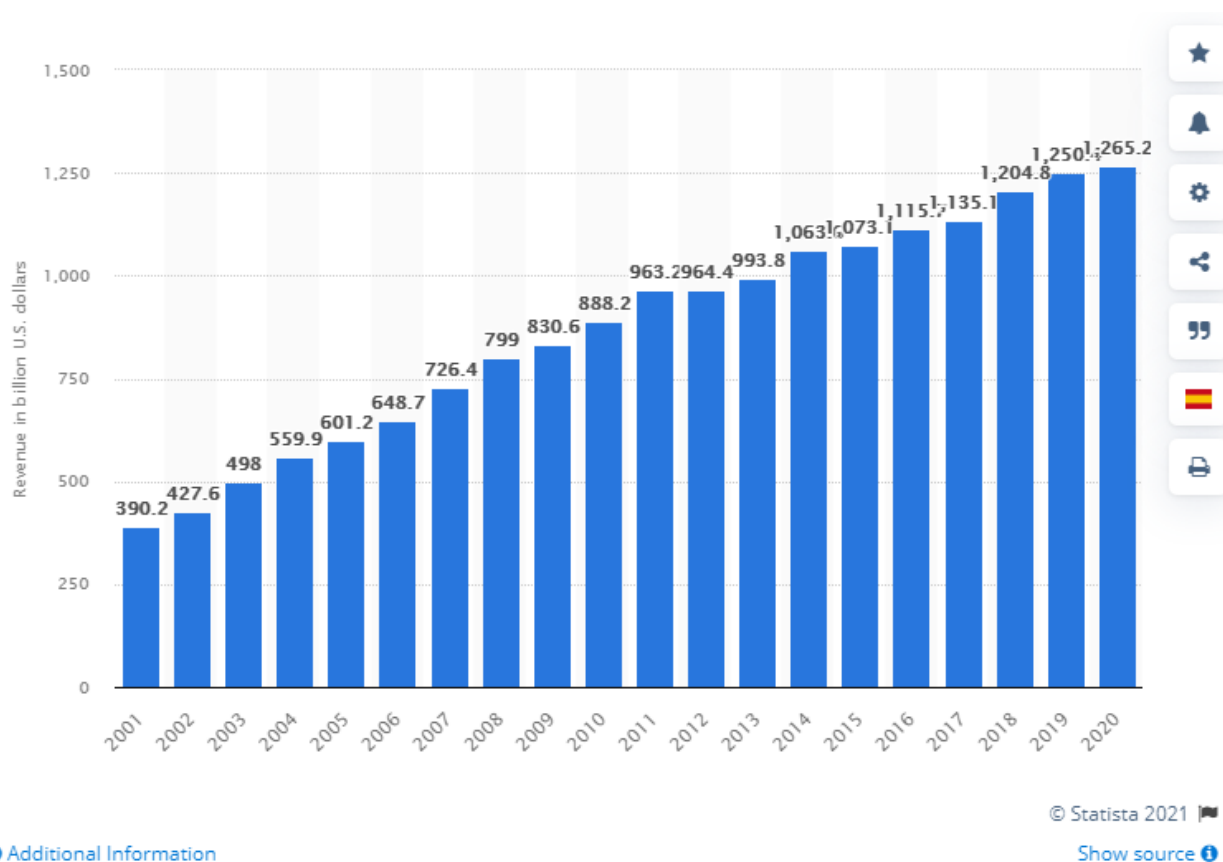
The North American market (USA & Canada) remained the world's largest market with a 49% share, well ahead of Europe, China, and Japan. Important emerging markets include middle and low-income countries such as Brazil, India, Russia, Colombia, and Egypt, to name a few. Despite increasing revenues globally, the Latin American region accounts for the lowest share of the global pharmaceutical market's revenues. (2, 5, 6)

The U.S. alone accounts for 40% of the world's pharmaceutical sales and this is attributed to many strategic pharma partnerships, especially among the well-established and early-stage companies, in this region. In addition, the U.S. held the dominant position in per capita prescription drug spending globally. Furthermore, the U.S. accounted for the largest number of drug efficacy studies and clinical trials in the global market. (2)

Notwithstanding the above, Asia Pacific is expected to be the fastest-growing regional market due to a huge customer base, increases in healthcare expenditures, rising disease incidence, and the presence of supportive regulatory systems.

In addition, the region has recently started to adopt new technologies and has undergone a digital transformation to achieve sustainable patient care. Various national-level policies have promoted the application of big data and Artificial Intelligence (AI) in Asian countries. The State Council of China issued guidelines to promote the development of healthcare big data and AI with specific emphasis on its application in healthcare. Moreover, several western companies are setting up new facilities in this region due to lower cost as well as growing markets in the region. (5)

Figure 23. Revenue of the worldwide pharmaceutical market from 2001 to 2020
(In billion U.S. dollars)



Source: <https://www.statista.com/statistics/263102/pharmaceutical-market-worldwide-revenue-since-2001/>

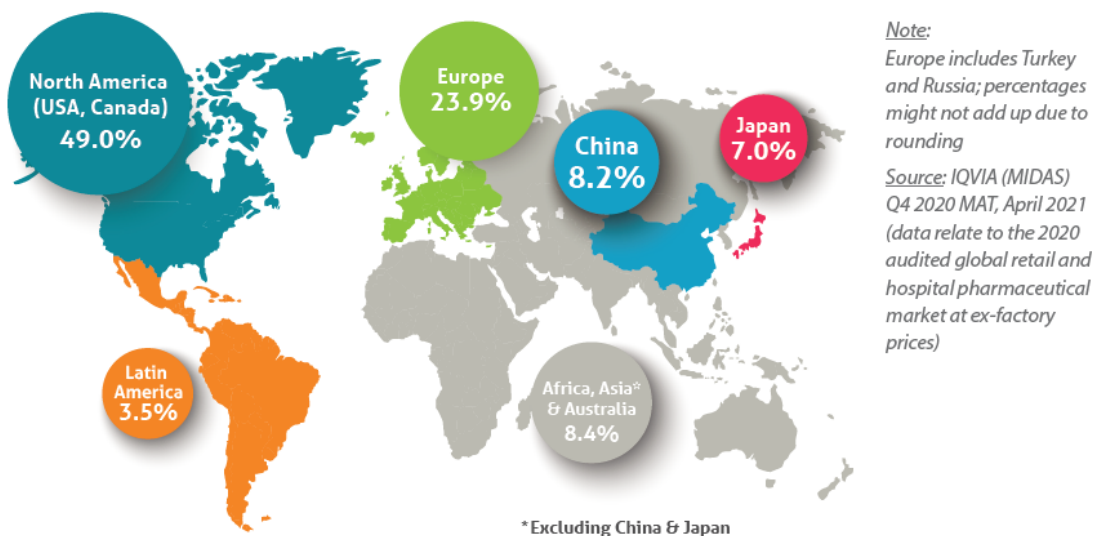
Constant progress in the field of personalized medicines has opened numerous possibilities to target different health diseases and has allowed for the development of patient-centric models. This progress results in a shift from large batches to smaller batches for the development of complex medicines and autologous patient-centric treatments. This has also encouraged manufacturers to redesign their supply chain to better align with the patient-centric health care system. (1)

Pharmaceutical companies are offering drugs for customized individual treatment for various diseases. Personalized medicine, also referred to as precision medicine, aims to provide medical care according to the patient's individual characteristics and genetic makeup. Precision therapies are increasingly being adopted as firms increasingly let go of the one-size-fits-all model for common medical conditions. Major companies such as GSK, Teva Pharmaceuticals and AstraZeneca are investing in development of personalized medicines. (6)

The top pharmaceutical products sold globally include Humira, Eliquis and Revlimid. Many of these pharmaceuticals are approved to treat multiple chronic conditions or cancers. Oncologic is the top therapeutic class for drug sales globally, followed by antidiabetics. However, the sales of drugs for autoimmune diseases and diabetes have experienced some of the largest growth in spending in recent years. (2)

Figure 24. World Pharmaceutical Market Sales by Region (2020)

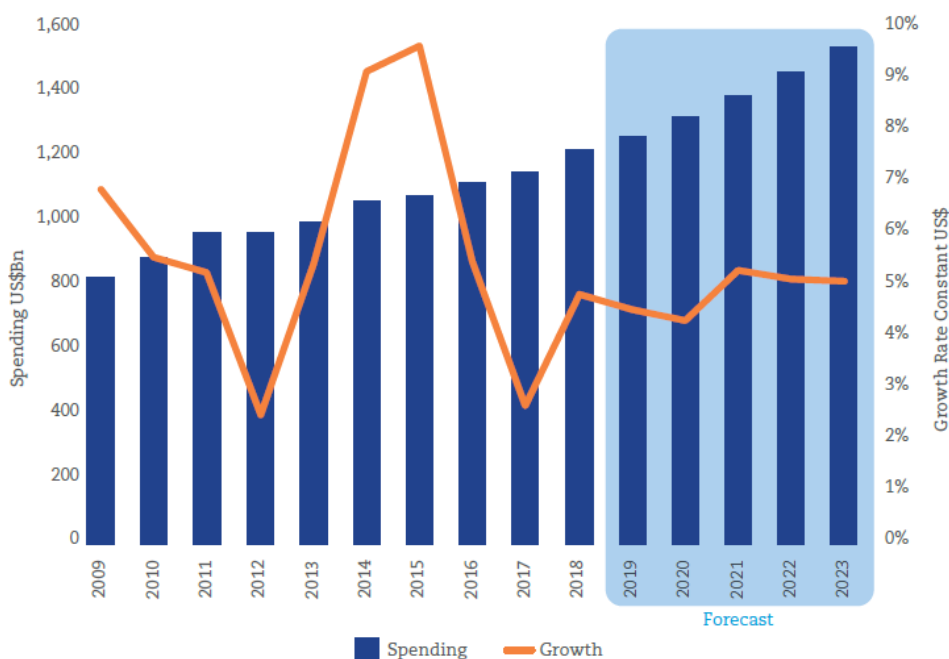
BREAKDOWN OF THE WORLD PHARMACEUTICAL MARKET – 2020 SALES



Source: <https://www.efpia.eu/media/602709/the-pharmaceutical-industry-in-figures-2021.pdf>

The United States share of global spending will increase from USD 485 billion in 2018 to around USD 625-655 billion in 2021, while the top 5 European countries’ share of spending will grow from USD 178 billion to USD 195-225 billion. Meanwhile, “pharmerging” countries will spend USD 355-385 billion in 2021 from 286 in 2018. By 2022, the African continent is set to reach a total of over USD 25 billion. (2,3 various). (5)

Figure 25. Global Spending on Medicines



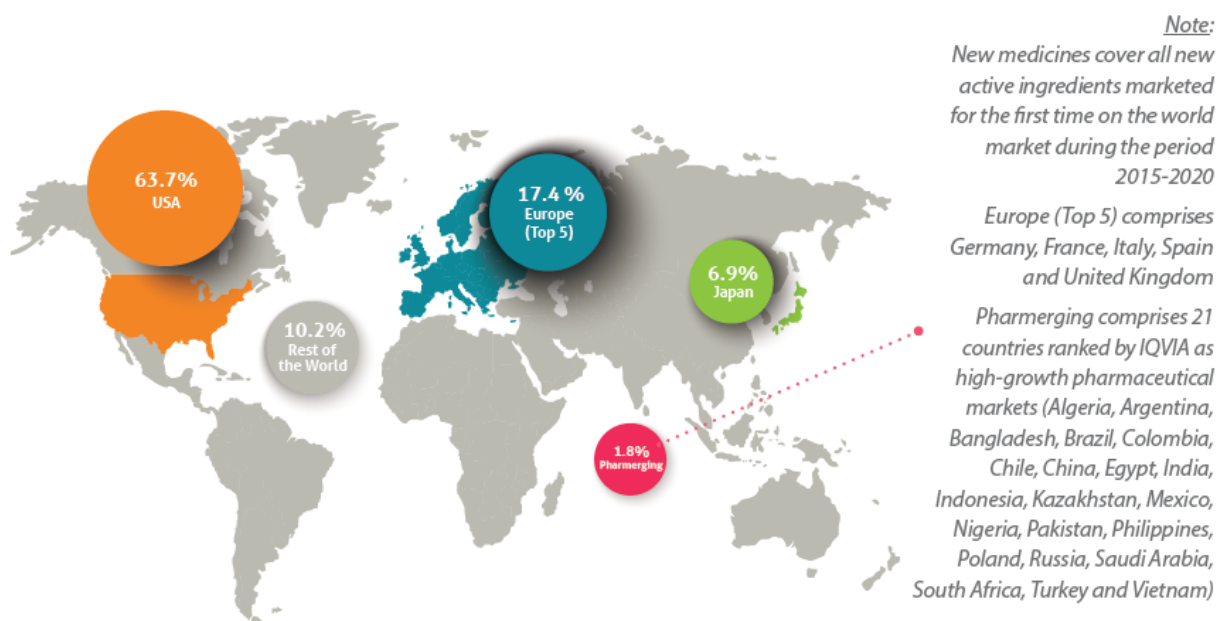
Source: <https://www.ifpma.org/wp-content/uploads/2021/04/IFPMA-Facts-And-Figures-2021.pdf>

All new medicines introduced into the market are the result of lengthy, costly, and risky research and development (R&D) conducted by pharmaceutical companies. By the time a medicinal product reaches the market, an average of 12-13 years will have elapsed since the first synthesis of the new active substance.

The cost of researching and developing a new chemical or biological entity was estimated at € 1,926 million (\$ 2,558 million in year 2013 dollars) in 2014 (DiMasi et al, Journal of Health Economics, January 2016). On average, only one to two of every 10,000 substances synthesized in laboratories will successfully pass all stages of development required to become a marketable medicine.

Figure 26. Sales of New Medicines by Region (2015 -2020)

GEOGRAPHICAL BREAKDOWN (BY MAIN MARKETS) OF SALES OF NEW MEDICINES LAUNCHED DURING THE PERIOD 2015-2020



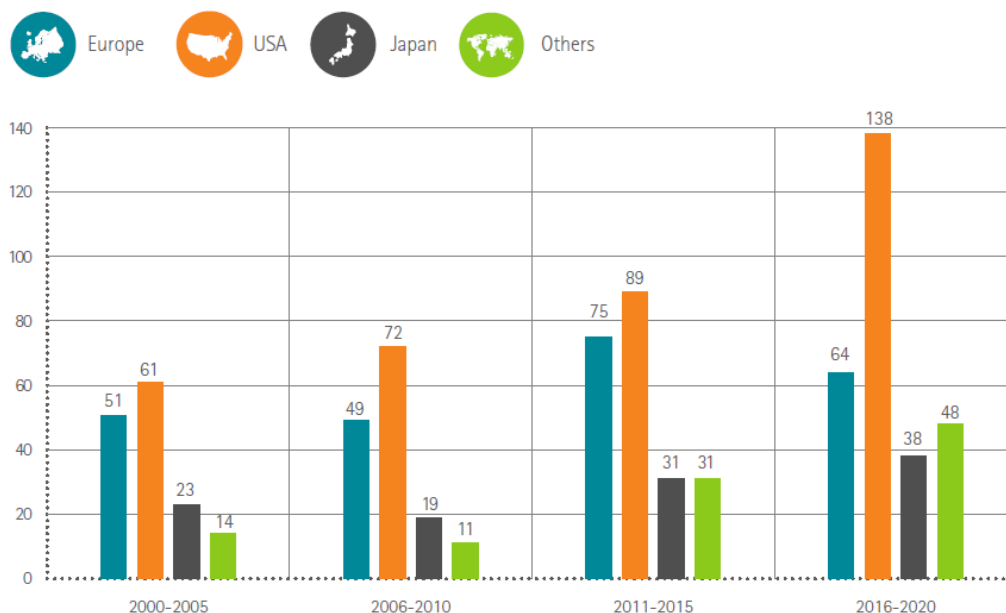
Source: IQVIA (MIDAS April 2021)

Source: ifpma.org / IQVIA, 2021

According to EUROSTAT data, the pharmaceutical industry is the high technology sector with the highest added value per person employed, significantly higher than the average value for high-tech and manufacturing industries. The pharmaceutical industry is also the sector with the highest ratio of R&D investment to net sales. According to the 2020 EU Industrial R&D Investment Scoreboard the pharmaceutical and biotechnology sector amounts to 18.4% of total business R&D expenditure worldwide.

Figure 27. Number of New Chemical and Biological Entities (2001 – 2020)

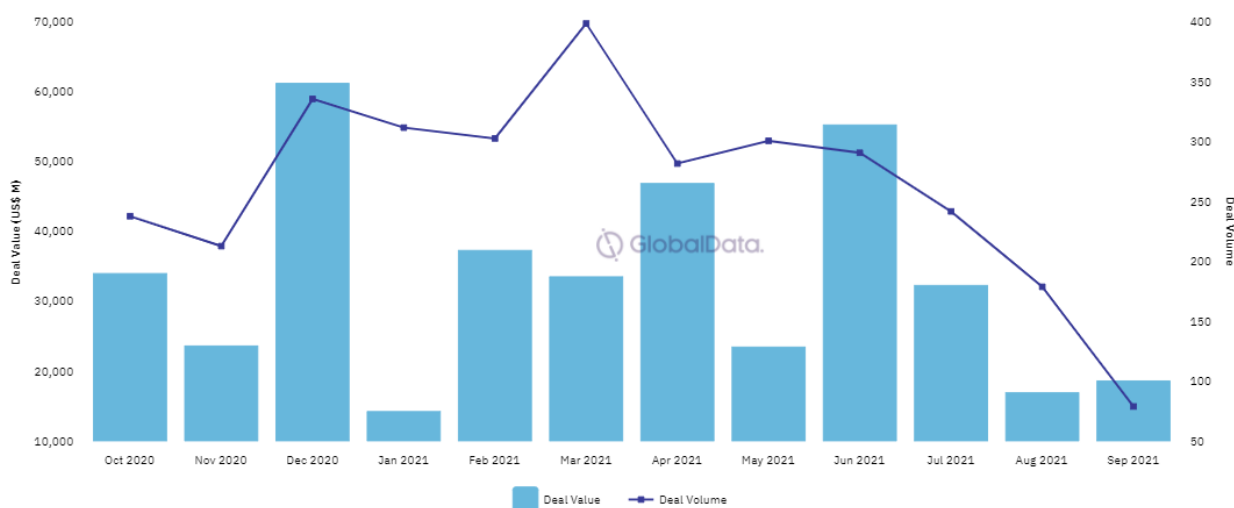
NUMBER OF NEW CHEMICAL AND BIOLOGICAL ENTITIES (2001-2020)



Source: SCRIIP – EFPIA calculations (according to nationality of mother company)

Key players have adopted strategic initiatives to expand their presence and maintain a competitive edge in the market space. Moreover, market participants are involved in product development, collaboration and partnership models, agreements, business expansion, and merger & acquisition strategies to reinforce their product portfolio and fulfill the demand for pharmaceutical products.

Figure 28. Pharma Sector All Deal Activity by Value and Volume (2020 -2021)



Source: GlobalData Deals Database

Source: <https://www.pharmaceutical-technology.com/deals-insights/>

Figure 29. Pharma Sector Overall Deal Activity by Region (2020 -2021)



Source: GlobalData Deals Database

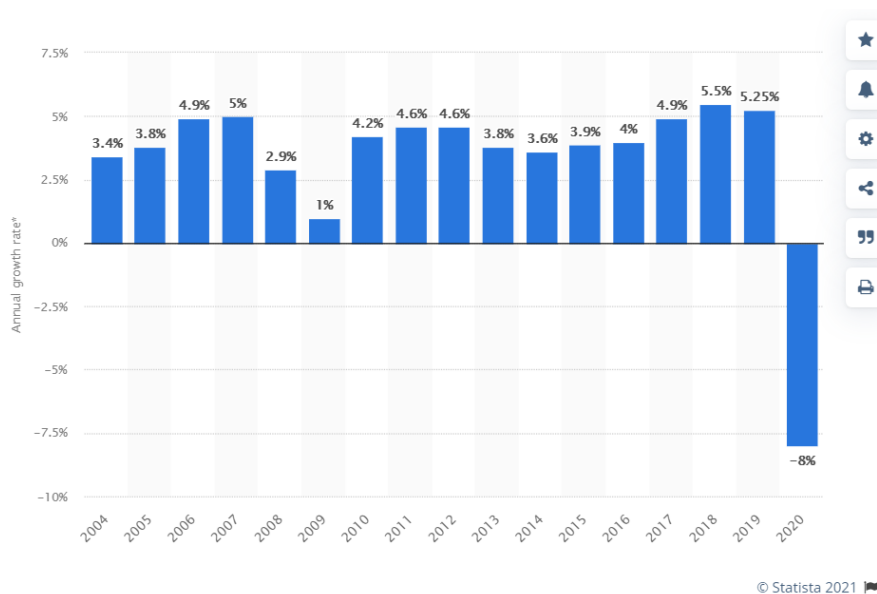
Source: <https://www.pharmaceutical-technology.com/deals-insights/>

The United State reported most deals during the last 12 months, followed by China and some European countries. Nevertheless, deals took place all over the world, as shown in the above figure 7.

4.2.2 Cosmetics and Personal Care global market size and forecast

Skincare, hair care, make-up, perfumes, toiletries and deodorants, and oral cosmetics are the main product categories of the cosmetic market. Since the early twentieth century, the production of cosmetics and beauty products has been controlled by a handful of multi-national corporations— L’Oréal, Unilever, Procter & Gamble Co., The Estee Lauder Companies, Shiseido Company, to name a few. In 2018, the U.S. was considered the most valuable beauty and personal care market in the world, generating approximately 89.5 billion U.S. dollars in revenue that year. (8)

Figure 30. Annual growth of the global cosmetics market from 2004 to 2020

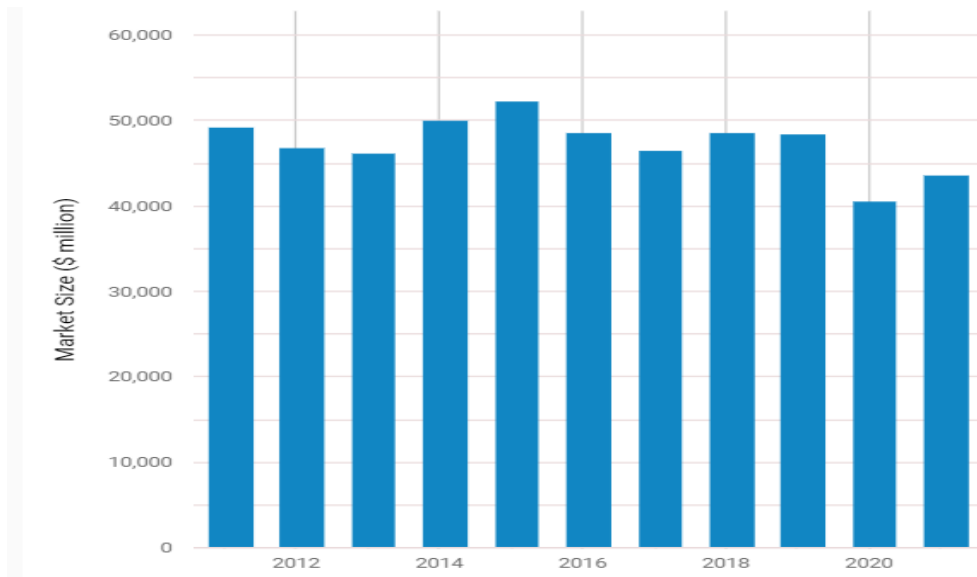


© Statista 2021

This statistic shows the annual growth rate of the global cosmetics market from 2004 to 2020. In 2020, the global cosmetics market shrank by an estimated 8 percent compared to the previous sales year.

Given the size of the cosmetics market in the United States, consumers are faced with nearly unlimited options in terms of which brands to purchase, with several brands standing out as among the most popular. (8)

Figure 31. Cosmetic and Beauty Products Manufacturing in the US – Market Size

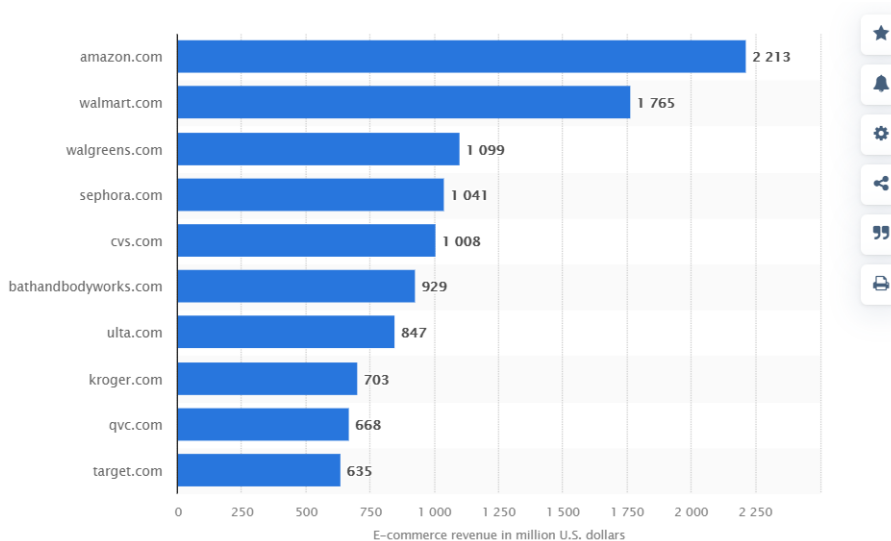


Source: <https://www.ibisworld.com/industry-statistics/market-size/cosmetic-beauty-products-manufacturing-united-states/> updated May 27, 2021

Within the cosmetics category in the U.S., eye cosmetics was the most profitable segment. In 2020, about 1.96 billion U.S. dollars were generated from sales of eye cosmetics in the U.S. Facial cosmetics was the second most profitable segment, with sales revenue of 1.9 billion U.S. dollars. Of the eye cosmetic industry, mascara was the leading product in the U.S. The segment also included eye liners, eye shadows, eyebrow makeup and eye combos. (8)

Besides the eye cosmetic segment, lipstick was also a profitable segment within the cosmetic industry in the U.S., generating 647.31 million U.S. dollars in revenue for the lip cosmetics category. (8)

Figure 32. Top online stores in the Personal Care segments in the U.S. in 2019, bye-commerce net sales (in million U.S. dollars)



© Statista 2021

Source: Statista, 2021

Amazon.com is leading the *Personal Care* e-commerce market in the U.S., with e-commerce net sales of 2.2 billion U.S. dollars in 2019 generated in the U.S., followed by Walmart.com with 1.8 billion U.S. dollars. Third place is taken by Walgreens.com with a revenue of 1.1 billion U.S. dollars. Sephora.com is the fourth biggest Personal Care online store in the U.S. with net sales of 1 billion U.S. dollars in 2019.

According to the Cosmetics European report (9) the European cosmetic market had revenues of €76.7 billion rivaling the US market for the largest in the world.

The largest national markets for cosmetics and personal care products within Europe are Germany (€14 billion), France (€11.5 billion), the UK (€9.8 billion), Italy (€9.7 billion), Spain (€6.4 billion) and Poland (€3.8 billion).

Figure 33. European Market for Cosmetic Products (€ Billion) in 2019



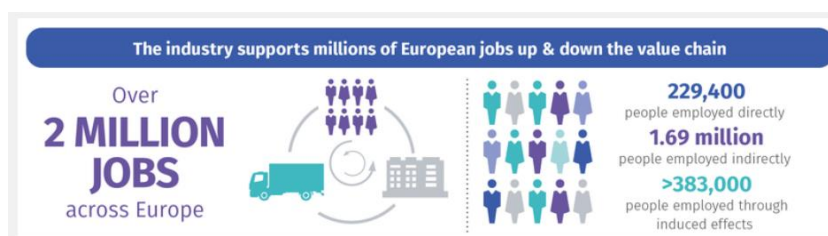
Source: <https://cosmeticseurope.eu/cosmetics-industry/>

Including direct, indirect, and induced economic activity, the industry supports over 2 million jobs. In 2020, over 229,400 people were employed directly, and a further 1.69 million indirectly in the cosmetics value chain. For every 10 workers employed in the European cosmetics and personal care industry, at least two further jobs are generated in the wider economy because of employees spending their wages on goods and services.

Moreover, by attracting investment from outside of the EU, developing intangible assets like brands, and investing in R&D, the cosmetics and personal care industry is helping to enhance the competitiveness of the European economy and contributing to future prosperity.

The vast majority of Europe's 500 million consumers use cosmetic and personal care products every day to protect their health, enhance their well-being and boost their self-esteem. Ranging from antiperspirants, fragrances, make-up, and shampoos, to soaps, sunscreens and toothpastes, cosmetics play an essential role in all stages of our life and have important functional and emotional benefits.

Figure 34. Impact of the Cosmetics and Personal Care Industry in jobs creation in Europe (2019)



Source: <https://cosmeticseurope.eu/cosmetics-industry/>

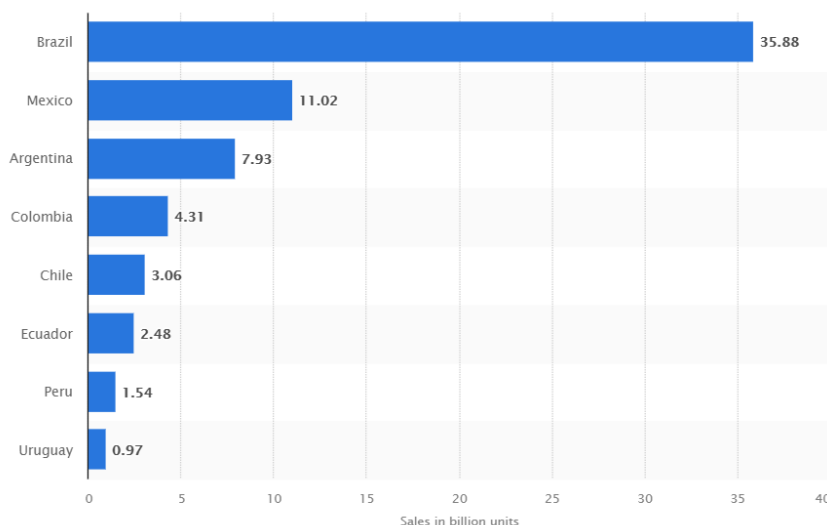
4.2.3 Latin American Market

The 15 largest pharmaceutical industries operating in Latin America control only 37% of dollar sales in the region. Among Brazilian companies, four companies occupy this select list, and three of them register double-digit growth. In addition to multinationals -10 in total- and Brazilians, the Latin American ranking includes another regional pharmaceutical company, Argentina's Roemmers. Consultancy Close-Up International.

Sanofi ranks first, with \$ 2.1 billion in sales and 9.8% growth over the same period last year. Abbott is second, with \$ 1.4 billion (3.4% growth), followed by Pfizer, with \$ 1.3 billion and 1.1% growth.

The first Brazilian to appear on the list is in fifth place. This is NC Farma, of which EMS is a part, with 1.100 billion USD in sales and a year-on-year increase of 10.6%. In seventh place is Eurofarma, in tenth place Aché, and in 12th Hypera Pharma, the latter is the one with the largest portfolio of products in the market among all the corporations.

Figure 35. Sales volume of the pharmaceutical industry in selected countries in Latin America as of 2019 (in billion units)



Source: Statista, 2021

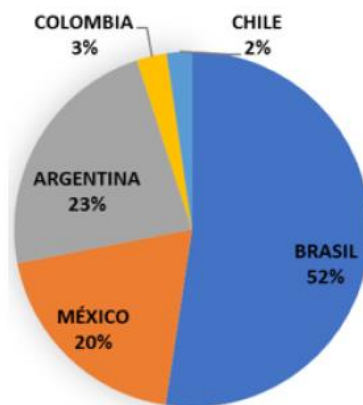
As of 2019, Brazil was the country with the highest volume of pharmaceutical sales in Latin America, with nearly 36 billion units sold since 2008. Mexico ranked second, with 11 billion units of pharmaceutical products sold in the period.

A study from Breakthrough IPIntelligence (Muñoz, Silva, Fuentes, 2020) indicate that Latin America as a region, has maintained a constant growth during the last 5 years; and will represent 7% of the global pharmaceutical market by 2023. (12)

Amongst the key factors that contribute to the growth of the pharmaceutical market, in Latin America are high foreign investments, the expansion of geriatric population, the reform of the regulatory framework and the increase in trade agreements with other countries such as the United States, Canada, and various European countries; and of course, the global SARS-CoV-2 pandemic, which resulted, for the first time in history with the launch of an open-source drug/vaccine. (12)

In a regional market context, Brazil is and will be the most attractive market of the region in the next few years. Moreover, accumulated sales from the main pharmaceutical companies regarding the most important segment in the Latin American market (respiratory) will exceed the second-place country (Mexico) by almost three times over the next 5 years. (12)

Figure 36. Estimated market share of generic drugs for 2029 in Latin America.

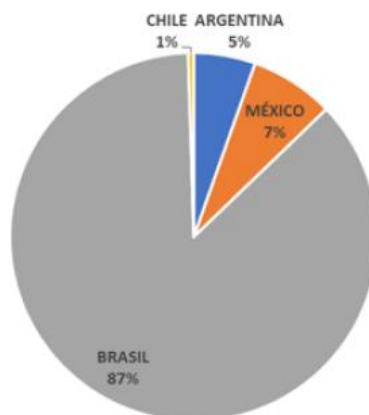


Source: Trends-and-Forecast-for-the-Pharmaceutical-Markets-of-Mexico-and-Latam. Own elaboration with IQVIA data. (12)

On the other hand, the generic market analysis of the region reveals that for 2028, Brazil will have the highest number of sales of generic products.

In the biosimilar market, higher general sales volumes are also expected in the region in 2021. Similarly, by 2028 it is estimated that Brazil will be the leading market in Latin America for these products.

Figure 37. Percentage of sales (2019) in pharmaceutical market of Latin America

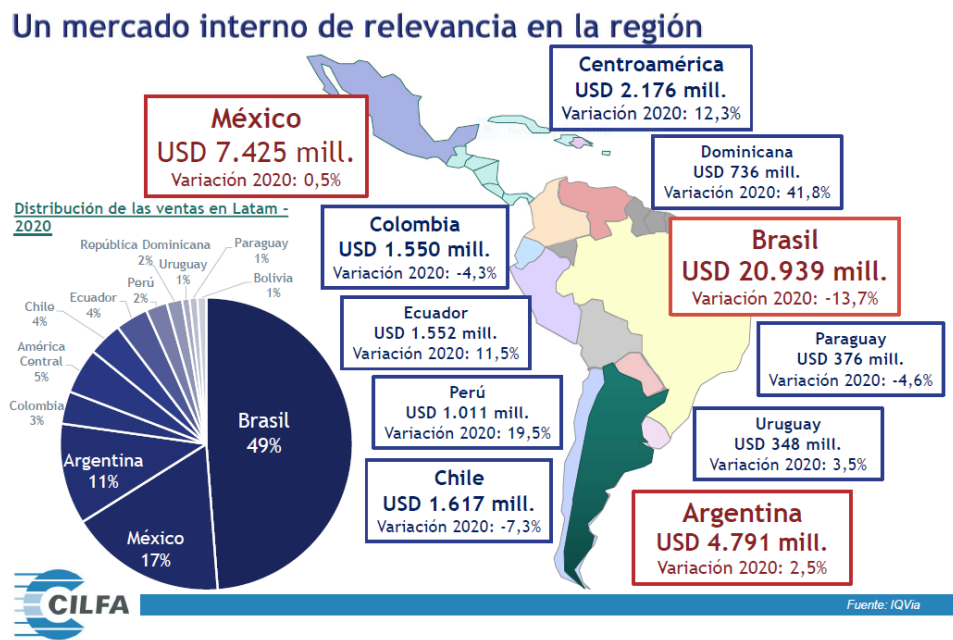


Source: Trends-and-Forecast-for-the-Pharmaceutical-Markets-of-Mexico-and-Latam. Own elaboration with IQVIA data. (12)

Another report conducted by Market Data Forecast, mention that the size of the Latin America Generic drugs market has been calculated at USD 37.14 billion in 2021. It is expected to reach USD 50.67 billion by 2026, growing at a CAGR of 6.41% from 2021 to 2026. The primary drivers of the Latin American generic drugs market are related to patent expiration, which helps initial developers produce lower-cost generic variants and introduce into the market. People prefer most generic drugs as they are cost-efficient and affordable. In addition, an increase in the rates of rising chronic illness is boosting the sales of generic, advances in the formulation of the drugs, and market players are also driving the market growth. <https://www.marketdataforecast.com/market-reports/latin-america-generic-drugs-market> (13)

In the following figure, information on the distribution of sale of pharmaceutical products in Latin America during 2020 is detailed.

Figure 38. Pharmaceutical Sales Distribution in Latin America (2020)



4.2.4 Trends/Insights

The following trend/insights are provided by Grandview research (3).

4.2.5 Outsourcing

The outsourcing segment dominated the market in 2020 with a revenue share of over 54%. Several benefits associated with outsourcing operations are expected to drive the segment growth at a lucrative pace over the coming years. Outsourced services minimize the investments, reduce drug development & overall costs, increase the efficiency of manufacturing procedures, and easily comply with different regulatory norms. Moreover, the integration of Robotic Process Automation (RPA) by contract manufacturers efficiently accelerates the drug development processes.

In recent years, key drug manufacturers have shifted their focus towards external service providers for R&D and manufacturing services. The growth in the demand for customized products, the need for enhanced productivity & efficiency across the value chain, and continuous pressure from regulatory bodies on drug pricing have compelled the pharmaceutical companies to rely more on outsourcing mode of drug development.

Most of the large-scale drug manufacturers opt for in-house production because it allows the companies to have control over the private information associated with novel molecules. Expansion of in-house manufacturing facilities by key firms also drives the segment growth. For instance, in February 2021, WuXi STA; a subsidiary of WuXiAppTec; announced to purchase a Switzerland-based manufacturing facility from Bristol Myers Squibb. Thus, in-house manufacturing is expected to witness significant growth in the coming years.

4.2.6 Formulation

- In terms of revenue, **tablets** dominated the market with a share of over 26 % in 2020. This is due to the wide availability of tablets in different colors, shapes, and sizes as well as types, such as film and enteric-coated, effervescent, and orally disintegrating tablets. The advent of 3D-printed tablets designed for personalized needs also boosts segment growth. For instance, in February 2020, Merck partnered with a German firm, AMCM, to conduct clinical testing on 3D-printed tablets.
- The **injectable** segment is anticipated to grow at the second fastest CAGR during the forecast period. A rise in the number of approvals for prefilled syringes and auto-injectors is attributed to the segment growth. Moreover, a shift in preferences towards larger dosage volumes has resulted in an increased demand for 2.25-mL needle syringes, which significantly contributes to the revenue generation in this segment.
- **Subcutaneous injections** have gained immense popularity in recent years among drug developers, device manufactures, and patients. Benefits associated with these injections are self-administration, ease of use, reliability, precision, use of fixed doses in prefilled syringes, compact design, compliance, and high patient comfort. The advent of subcutaneous injections is expected to further propel the growth of the injectable segment.

4.2.7 Routes of Administration

- The **oral segment** led the global market and was valued at 236.91 USD billion in 2020. Oral dosage forms are affordable, easy to manufacture, and patient friendly. In addition, the advancements in drug delivery technologies, such as sustained release dosage formulations and targeted drug delivery, have allowed orally administered drugs to achieve greater levels of availability in the marketplace.
- A significant rise in the implementation of automated systems and barrier systems, including restricted access barrier systems, and isolators, in parenteral manufacturing, is expected to boost the **parenteral segment** at the fastest CAGR over the forecast period. In addition, an introduction of a broad range of packaging styles, such as ready-to-fill syringes, cartridges, and vials, has hugely transformed the parenteral manufacturing sector.
- The rise in demand for innovative **drug-delivery systems** that better fit with the ‘mobile lifestyle’ of patients paves a path for the high adoption of pens and autoinjectors, which further surges the segment growth. In addition, an increase in the outsourcing of fill-finish manufacturing services by the drug developers boosts the revenue generation in the parenteral segment.

4.2.8 Therapy Area

- The **other diseases segment** dominated the market with a revenue share of more than 64% in 2020 and will retain the leading position throughout the forecast years. The COVID-19 pandemic is anticipated to serve as the key driving force for R&D expenditure in this segment. Moreover, growing awareness about women’s health has driven significant attention of operating players towards the development of therapies to address key conditions in women, such as menstrual irregularities.
- On the other hand, **cancer therapies** are anticipated to register the fastest CAGR from 2021 to 2028. This is owing to the high sales of oncology drugs, especially KEYTRUDA of Merck and HUMIRA of AbbVie, Inc. Several studies have reported that healthcare spending on cancer treatments has doubled in the last few years. Moreover, a huge number of clinical tests in immuno-oncology globally are driving the segment growth.

- An increase in the incidence rate of **diabetes** globally and a rise in the number of marketed branded anti-diabetic therapies create numerous growth opportunities for the diabetes segment. According to the estimates of the International Diabetes Federation, there were around 463 million adults with diabetes in 2019 and it is expected to rise to 700 million cases by 2045. Thus, the high incidence rate of the disease drives the segment growth.

4.2.9 Prescription

- The **prescription medicines segment** accounted for the maximum revenue share of 84.73% in 2020 and will expand further at a steady CAGR from 2021 to 2028 due to the growing prescription drug expenditures across the globe. According to the American Journal of Health-System Pharmacy, the overall prescription drug spending rose by 4-6% in 2019 in the U.S. Similarly, data from Vizient's Pharmacy Program stated that the hospital prescription drug spending rose by nearly 4.57% in 2020.
- Factors, such as the high demand for cost-effective treatment options and self-medication, have hugely transformed the **Over-the-Counter (OTC)** medicines segment. OTC medicines are comparatively cost and time effective as compared to prescription medicines. Recently, several regulatory bodies have shifted many medicines from the prescription to the OTC segment.

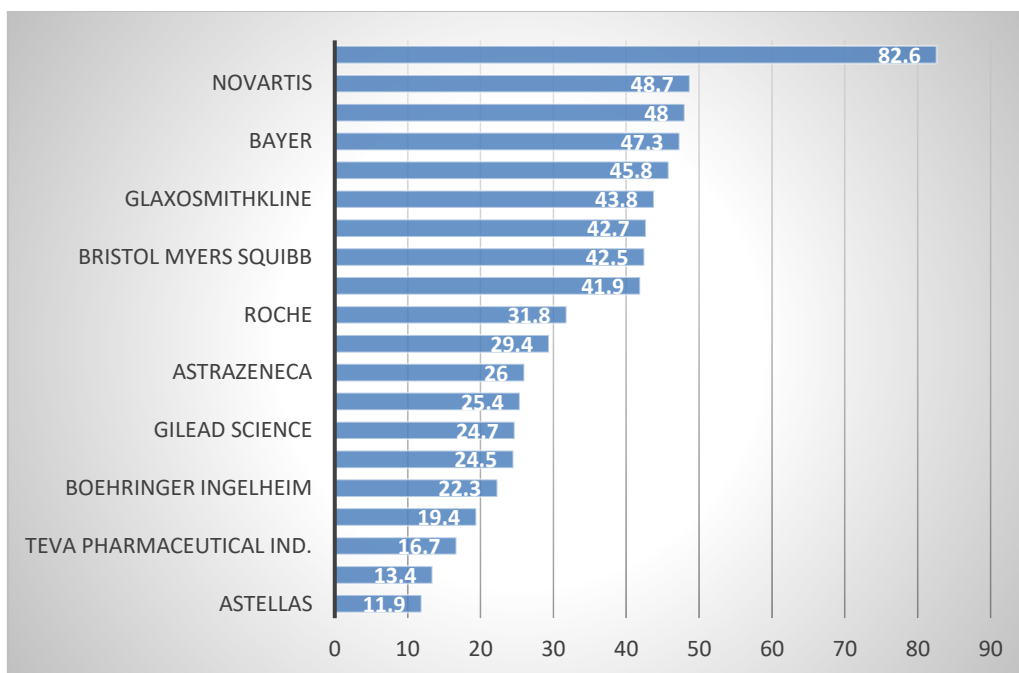
As per the estimates of the Consumer Healthcare Products Association study, this paradigm shift is expected to save around USD 20.0 billion healthcare spending every year. This Rx-to-OTC switch is a scientifically rigorous, data-driven, and highly regulated procedure that enables consumers to have access to a wide range of medicines. Thus, the cost-saving benefits coupled with high public demand for OTC medicines will propel the segment growth at the fastest growth rate from 2021 to 2028.

4.2.10 Age Group

- The **geriatric segment** led the global market and was valued at 203.16 USD billion in 2020. According to the publications of World Population Prospects: the 2019 Revision, one in 11 individuals were over age 65 years in 2019. This is expected to reach to one in six individuals by 2050.
- The growth of specialty drugs under the Orphan Drug Act has been a boon in pediatric medicine. The introduction of the Pediatric Research Equity Act (PREA) and Best Practices for Children Act (BPCA) provides a carrot-and-stick technique that focuses on the development of pediatric medicines. PREA operates as a checkpoint during the FDA drug approval. Thus, due to such supportive initiatives, the **children & adolescents' segment** is estimated to grow at the fastest CAGR from 2021 to 2028. Moreover, the growth in the approvals of pediatric medicine boosts the segment growth. For instance, in March 2020, Eli Lilly and Company received the FDA approval for the supplemental Biologics License Application for its Taltz injection that is designed for the treatment of plaque psoriasis in children. In January 2020, Neurelis, Inc. received the FDA approval for its VALTOCO nasal spray that is designed for epilepsy treatment in children aged 6 years and above.

4.2.11 Global Top Companies

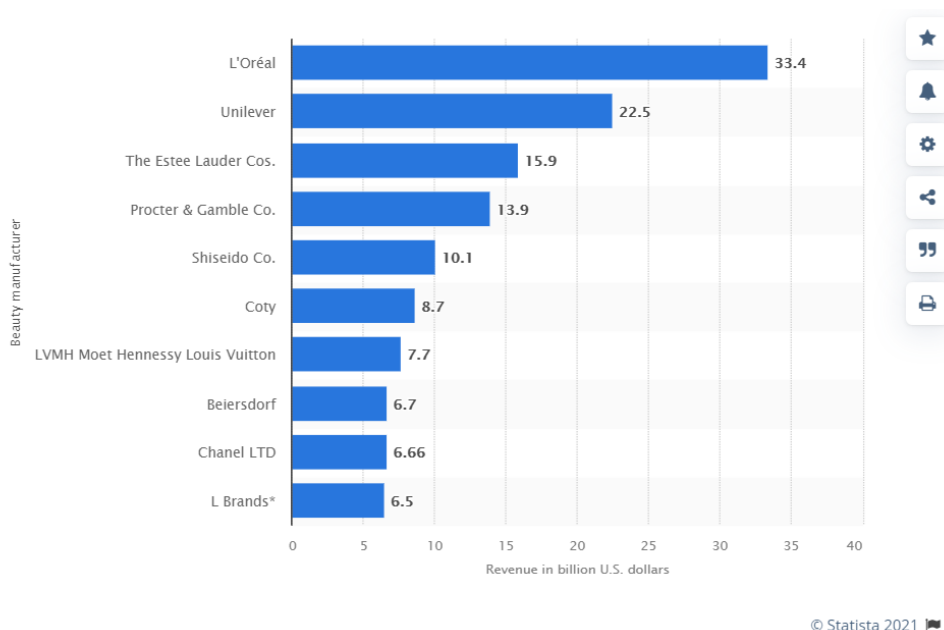
Figure 39. The top 20 pharma companies' comparison by revenue (US\$ Bn, 2020)



Source: Authors. Companies' website, annual report

The above figure is a representation of the top 20 companies manufacturing pharma and biopharma products. Number one is Johnson & Johnson based in NJ, USA, other top companies are from Europe and Japan.

Figure 40. Revenue of the leading 10 beauty manufacturers worldwide in 2020(in billion U.S. dollars)



© Statista 2021

Source: Statista, 2021

This statistic shows the revenue of the leading 10 beauty manufacturers worldwide in 2020, ranked based on beauty sales of 2019. In that year, L'Oréal was the top ranked global beauty manufacturer with a revenue that amounted to about 33.4 billion U.S. dollars.

4.2.12 Pharma driving and restraining factors

Table 4-1. Pharmaceutical and Cosmetics sector: Driving and Restraining factors

Driving Factors	Restraining Factors
This rise in the aging population increased the patient pool of many chronic diseases such as rheumatoid arthritis, hypertension, diabetes, and cancer. The increase in the patient pool drove the demand for pharmaceuticals used in the treatment of these diseases, significantly impacting market growth during this period.	Access to highly skilled and educated workforce from the administrative level up to and including Ph.D. scientists. A third of the jobs in the sector are in key STEM occupations.
Many drugs are becoming re-classified, shifting from a prescription-only medication to an over-the-counter medication.	R&D high costs and long-term cycles to generate new medications. Small molecule drug R&D productivity is declining.
Innovations in oncology, autoimmune, diabetes, and rare diseases.	Higher drug prices
The online factor, wellness & self-care attracting more consumers	Environmental impact and ethical component (tested on animals) in cosmetics

Source: Authors

4.2.13 Financial Activity Trends for OEM's: FDI, Mergers & Acquisitions and Expansions

Despite the continuation of the pandemic, 68 per cent of investment promotion agencies (IPAs) expect investment to rise in their countries in 2021, according to UNCTAD's recently conducted IPA Survey. Close to half of the respondents expects a significant rise in global FDI in 2021.

However, IPAs acknowledge the continued difficult global environment for investment promotion. IPAs rank food and agriculture, information, and communication technologies (ICT) and pharmaceuticals as the three most important industries for attracting foreign investment in 2021. While food and agriculture has always been considered important for attracting FDI, especially by developing and transition economies, ICT and pharmaceuticals are seeing an increase in interest because of the pandemic.

Biopharma M&A activities suffered a slowdown in 2020. One could argue that 2019's megadeals consumed some of last year's quota, and COVID-19 definitely didn't help. But AstraZeneca's \$39 billion deal for Alexion Pharmaceutical and Gilead's \$21 billion acquisition of Immunomedics showed the appetite for dealmaking is still there. (10)

According to PwC's count, total life science deals—including those in medtech and contract services—dropped nearly 50% in value in 2020 versus 2019. But industry watchers are optimistic that 2021 will see a rebound in

biopharma deals, and it's not just because companies have largely straightened out their internal operations during the pandemic to be able to look outside again.

"What's important are the fundamentals. Big Pharma companies have the balance sheets to deploy against M&A, and the need to go into therapeutic areas where they can create eminence," Arda Ural, Ernst & Young's Americas industry markets leader for health sciences and wellness, said in a recent interview.

The rebound in cross-border M&A activity, which started in the second half of 2020 and continued in the first quarter of 2021 in advanced economies, with many deals in the healthcare and technology sectors, could boost FDI equity flows in 2021, unless further major divestments take place in 2021. (FDI in figures – April 2021).

FDI equity outflows from OECD countries declined by 65% and represented 0.4% of OECD GDP, the lowest level since 2005 (Figure 6). The drop was mostly driven by major divestments from the Netherlands, as Dutch companies sold their stakes in foreign companies, and by decreases from Japan, down from very high levels recorded in 2019 because of Takeda Pharmaceutical acquiring the entire share capital of Shire PLC, a Dublin-based manufacturer and wholesaler of pharmaceutical products (see FDI in Figures – April 2020). There were also declines in FDI equity outflows since 2019 surpassing USD 10 billion in Canada, Germany and Italy, and divestments from investors in Ireland. (FDI in figures – April 2021.)

Vaccine development most notably dominated the headlines in 2020 and it was the large pharmaceutical and biotechnology companies, with STEM workers at their core, that produced viable vaccine candidates. One such company is US-based Moderna which opened a new facility to produce coronavirus vaccines in Basel, Switzerland in August 2020. The company's chief executive officer, Stéphane Bancel, explained that the company was motivated by the country's "dynamic pool of industry talent, scientists, research organizations, investors, and global health policymakers". The fDi report 2021.

The following report is an abstract of PwC Global M&A Trends in Health Industries: 2021 Mid-year Update (<https://www.pwc.com/gx/en/services/deals/trends/health-industries.html>)

M&A activity in the pharmaceuticals and life sciences (PLS) and healthcare services (HCS) continued to attract high levels of investor interest in the first half of 2021, even as the COVID-19 pandemic has begun to ease in some regions. M&A deal activity and valuations are running high, and we expect this trend to continue for the next 12 to 18 months.

Along with high valuations, the sector has seen a multitude of deals involving complex deal structures, from special purpose acquisition companies (SPACs) in the US to public-to-private transactions.

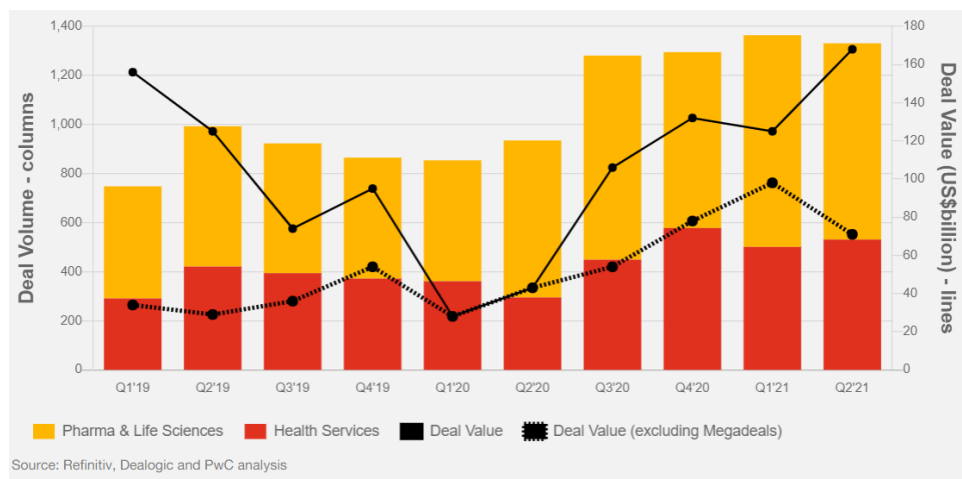
We expect the following areas in the pharmaceuticals and life sciences to be M&A activity hotspots during the next six to 12 months:

- Traditional big pharma players have ample dry powder for M&A—and they're likely to continue to be interested in acquiring biotech companies at the frontier of science, such as **cell and gene therapy or next generation therapeutics**. Due to a surge in valuations for some biotech companies, big pharma is increasingly looking at more creative approaches to deal-structuring and partnerships.
- **Contract development and manufacturing organizations (CDMOs)** can command higher valuations with a differentiated offering or specialized capability such as in mRNA technology or cell and gene therapy.
- Apart from vaccinations, rapid and increasingly sophisticated **point-of-care diagnostics** will play a central role in managing the pandemic. This is likely to attract further investment and M&A as

innovative technologies emerge from disruptors.

- As the pandemic is likely to remain front of mind in many countries, the market for **consumer health products** that can improve overall health and well-being (e.g., vitamins, minerals, and supplements) should continue to grow and is likely to make this sector increasingly attractive for investors.

Figure 41. M&A trends in the first half of 2021. Global Health Industries Deal Volumes and Values



Source: <https://www.pwc.com/gx/en/services/deals/trends/health-industries.html>

The significant uptick in M&A deal flow in the sector that began in the third quarter of 2020 continued into the first half of 2021, with deal activity remaining at elevated levels across all regions both in terms of deal volume and deal value. This is driven by particularly strong interest from PE funds in the health industries sector, which collectively accounted for approximately 47% of deal volume, a marked increase compared with a long-term average of around 35%. Eleven megadeals were announced in the first half of 2021 with a total deal value of approximately US\$128bn.

The global pharmaceutical industry is expected to witness growth as the top pharma companies are at forefront of the fight against COVID-19. From Johnson & Johnson to Shanghai Pharmaceuticals, Pharmaceutical Technology lists the top ten pharmaceutical companies in 2020, based on revenues. (<https://www.pharmaceutical-technology.com/features/top-ten-pharma-companies-in-2020/>)

Table 4-2. The top 10 largest biopharma M&A deals in 2020

Buyer/Seller	Deal Value	Date announced
AstraZeneca/Alexion Pharmaceuticals	\$39 billion	Dec. 12, 2020
Gilead Sciences/ Immunomedics	\$21 billion	Sept. 13, 2020
Johnson & Johnson/Momenta Pharmaceuticals	\$6.5 billion	Aug. 19, 2020
Gilead Sciences/Forty-Seven	\$4.9 billion	March 2, 2020
Sanofi/Principia Biopharma	\$3.68 billion	Aug. 17, 2020

Bristol Myers Squibb/ MyoKardia	\$13.1 billion	Oct. 5, 2020
Merck & Co./VelosBio	\$2.75 billion	Nov. 5, 2020
Bayer/Asklepios BioPharmaceutical	\$2 billion (upfront)	Oct. 26, 2020
Nestlé/Aimmune Therapeutics	\$2 billion	Aug. 31, 2020
Servier/Agios Pharmaceuticals' oncology portfolio	\$1.8 billion (upfront)	Dec. 21, 2020

Source: <https://www.fiercepharma.com/special-report/servier-agios-pharmaceuticals-oncology-portfolio-top-10-largest-biopharma-m-a-deals>

Other deals reported by Health Evolution are the following

- Walgreens sold its Alliance Healthcare business to AmerisourceBergen, the pharmaceutical wholesale company based in Pennsylvania, for \$6.5 billion
- French-based pharmaceutical company Sanofi acquired U.K.-based Kymab for \$1.4 billion to increase its presence in immunology
- Merck announced it was acquiring Pandion Therapeutics for \$1.9 billion in February
- Horizon Therapeutics struck a deal to buy AstraZeneca's spinout Viela Bio for \$3 billion
- Amgen bought Five Prime Therapeutics for \$1.9 billion
- Roche acquired GenMark Diagnostics for \$1.8 billion

Source: <https://www.healthevolution.com/insider/deals-report-early-pharma-ma-activity-points-to-a-busy-2021/>

4.3 Characterization of the Pharmaceutical and Cosmetics Sectors

4.3.1 Definition

Pharmaceuticals can be any type of drugs that are used for medicinal purposes, in the treatment of diseases. This industry includes establishments that produce biologics and pharmaceutical drugs.

The FD&C Act defines **drugs** as "articles intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease ... and articles (other than food) intended to affect the structure or any function of the body of man or other animals."

The Federal Food, Drug & Cosmetic Act (FD&C Act) defines **cosmetics** as "articles intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body...for cleansing, beautifying, promoting attractiveness, or altering the appearance." Included in this definition are products such as skin moisturizers, perfumes, lipsticks, fingernail polishes, eye and facial makeup preparations, shampoos, permanent waves, hair colors, toothpastes, and deodorants, as well as any material intended for use as a component of a cosmetic product.

Certain claims may cause a product to qualify as a drug, even if the product is marketed as if it were a cosmetic. Such claims establish the product as a drug because the intended use is to treat or prevent disease or otherwise affect the structure or functions of the human body. Some examples are claims that products will restore hair growth, reduce cellulite, treat varicose veins, or revitalize cells.

OTC drugs are often marketed side by side with cosmetics, and **some products qualify both as cosmetics and as OTC drugs**. This may happen when a product has two intended uses, with ingredients intended to do two

different things. For instance, a shampoo is a cosmetic, since its intended use is to cleanse the hair. An anti-dandruff treatment is a drug because its intended use is to treat dandruff. Consequently, an antidandruff shampoo is both a cosmetic and a drug. Among other cosmetic/drug combinations are toothpastes that contain fluoride, deodorants that are also antiperspirants, and moisturizers and makeup marketed with sun-protection claims.

4.3.2 Classification

According to the chemical composition of the drugs, these can be divided into two categories of chemical synthesis and biological / biotechnological (cancer treatment, autoimmune diseases, hemodynamic disorders, and autoimmunization, among others).

4.3.3 Drugs

In 2020, the conventional drugs (small molecules) segment accounted for the highest revenue share of over 65%. According to an article published in August 2019 (<https://www.grandviewresearch.com/industry-analysis/biologics-market>) in the pharmaceutical market, small molecule drugs account for up to 90% of the total global drug sales. This is representative of the dominance of small molecules in the global pharmaceutical market.

Over the past few years, biologics are increasingly gaining traction with promising efficacy for the treatment of autoimmune diseases and cancer. Owing to the substantial investments and innovative approaches, biologics are gaining significant attention. In early 2020, seven of the top 10 best-selling drugs were biologics. This shows the emergence of biologics in the global market.

Pharmaceuticals are classified into two categories: ethical and popular mass distribution (over the counter).

Table 4-3. Pharma and Biopharma Drugs Classification

Drug category	Description
Prescription Drug	A drug available to the public only upon prescription written by a physician, dentist, or other practitioner licensed to do so. Ethical drugs.
Patented Drug	When a pharmaceutical company first develops a new drug to be used for a disease condition, it is initially sold under a brand name by which the clinicians can prescribe the drug for use by patients. The drug is covered under patent protection, which means that only the pharmaceutical company that holds the patent is allowed to manufacture, market the drug, and eventually make profit from it.
Generic Drug	The term 'generic' is widely used but its definition is not always consistent between countries. Generics are usually produced by a manufacturer who is not the inventor of the original product and are marketed when intellectual property protection rights are exhausted. These in general terms are classified for human, pediatric, ophthalmic, dermatological, gynecological, and veterinary use. There is a segmentation according to the therapeutic class to which each drug belongs.
OTC Drug: Over the Counter	OTC are drugs that can be purchased without a doctor's prescription. FDA is conducting a review of all OTC drugs to establish monographs (rules) under which the drugs are generally recognized as safe and effective, and not misbranded. They are intended to cure or prevent less specific diseases, they have a registered trademark, the consumer is the one who decides the purchase, they are manufactured to meet the demand of mass markets

Biopharmaceutical Biologics	A pharmaceutical product that is manufactured using live organisms and has an active ingredient that is biological in nature. A substance derived from animal products or other biological sources that is used to treat or prevent disease. A regulatory term related to FDA approval for biopharmaceuticals and associated products.
Biogeneric	A biopharmaceutical considered to be generic, e.g, not the innovator biopharmaceutical product.

Source: https://www.who.int/medicines/areas/access/NPrices_Glossary.pdf
https://www.pharmacytimes.com/view/supp_2008-08_003

Biopharmaceutical Innovation and Global Public Health

The research-based biopharmaceutical industry plays a vital role in developing new medicines and vaccines to prevent and treat diseases, improving the lives of patients worldwide. By investing billions of dollars and thousands of scientist-hours, it pushes the limits of science, fosters medical progress, and contributes to the prosperity of society.

On average, researchers identify one promising compound among 5,000–10,000 screened. Researchers then extensively test the compound to ensure its efficacy and safety, a process that can take 10 to 15 years for both a medicine and a vaccine. In 2018, 62 new medicines were launched, while currently more than 8,000 compounds are at different stages of development globally.

Some areas of development in the biopharmaceutical field include the following:

- Infectious diseases
- Cancer
- Respiratory tract
- Musculoskeletal
- Neurology
- Immunology
- Diabetes
- Digestive
- Vaccines

Figure 42. Generics Pharmaceutical Market Sales by European Country (Percentage %)



Source: EFPIA member associations (official figures) - (e): EFPIA estimate; Eurostat (EU-28 trade data 2000-2020)

4.3.4 Cosmetics Personal Care Products

Over recent years, the idea of ‘self-care’ has become an important concept in the lives of consumers, particularly among younger generations. ‘Self-care’ describes the act of prioritising physical and mental wellbeing over the stresses and strains of daily life, and encompasses acts such as sustaining positive sleep patterns, getting enough fresh air, and eating five portions of fruits and vegetables a day. Unsurprisingly, the phrase was used frequently during the global pandemic.

The rise in self-care, along with movements such as Body Positivity which defy conventional beauty standards, mean that it has been a time of significant change for the beauty and cosmetics industry. The emphasis on inner well-being means consumers now expect cosmetic products that help them feel their best as well as look their best. With these changing demands, there are now new, exciting ways for brands to appeal to consumers.

Buzzback spoke to over 2,000 consumers in the UK and US to find out how consumers are responding to new trends and ingredients in healthcare, wellness, and skincare. We wanted to understand which ingredients offer the biggest opportunities for brands and found that over half of consumers have heard of or are open to experimenting with ingredients they have never tried before. With benefits such as lowering blood pressure,

consumers are most open to trying products that contain Omega-3 (77%), followed by Turmeric (66%), Probiotics (64%), Rhodiola (64%) and Prebiotics (61%).

We found that 65% are looking for stress relief remedies, while pain, anxiety and depression management are other major concerns. Around half of consumers would like to see some personal care benefits from the use of a new product, for example skin improvement and whiter teeth from activated charcoal, immune support from probiotics, trying plant-based ingredients, or increased hair growth from collagen. Because consumers aren't fully aware of the benefits that ingredients present, there's a key opportunity for brands to provide education of these benefits to encourage uptake.

In turbulent times, it's easy for brands to leap into new product innovations to try and stay ahead of the game. But, when it comes to creating successful beauty and cosmetics products, even when you're on a tight deadline, consumer centricity is key. Opportunities for plant-based personal care products and beauty products containing activated charcoal or essential oils may be booming, but in a competitive market, cosmetics brands need to do their homework to make sure they get product launches right. By identifying what consumers are really looking for from their moisturiser, make up or shampoo, companies can truly innovate in the right direction, develop new, successful products, and deliver value to their customers.

Source: <https://www.cphi-online.com/the-latest-trends-for-cosmeceuticals-what-is-news113403.html>

Cosmetics and personal care products are applied to the human body for the purposes of cleaning, beautifying, promoting attractiveness or changing its appearance.

Ranging from antiperspirants, fragrances, make-up, and shampoos, to soaps, sunscreens and toothpastes, cosmetics and personal care products play an essential role in in all stages of our life.

Table 4-4. Main Categories of products in the Cosmetics Personal Care Industry

Categories	Description
Oral care	Products intended to cleanse the oral cavity, freshen the breath, and maintain good oral hygiene. Some products also include ingredients to protect against the formation of cavities.
Skin care	Cleansers are <i>products</i> that are intended to clean the <i>skin</i> by removing dirt, oil, <i>makeup</i> , and dead <i>skin</i> cells. Moisturizers. Foot Powders and Spray. Face and Neck Creams/Lotions.
Sun care	Sunscreens are products applied to the skin to protect against the harmful effects of the sun's ultraviolet rays. Sun screening products come in many forms, as creams, lotions, lip balms, hair tonics, and gels.
Hair care	Hair Care products are those that help to control the properties and behavior of the hair so that it can be maintained in a controlled and desirable manner. This can include hair conditioners, hair sprays, hair straighteners and relaxers, permanent waves, shampoos, rinses, tonics, and dressings.
Decorative cosmetics	Decorative cosmetics are cosmetic products such as make-up used to decorate and change the appearance, are used for enhancing the appearance.
Body care and perfumes	Fragrance products enhance the body's scent.

Source: <https://cosmeticseurope.eu/cosmetic-products/>

The market penetration of some cosmetic and personal care products in the EU is likely to be near 100%. For instance, deodorant usage is close to total in the UK, with 94% of women and 87% of men using deodorants, while in France, 98% of adult women and 94% of adult men use liquid shampoo.

In terms of the frequency with which cosmetic products are used, differences can be observed across countries, between people of different genders and ages and for different cosmetic products. A sample of data for some of the most widely used cosmetic products is given in the diagram below.

Figure 43. Cosmetics Products most widely used



Source : <https://cosmeticseurope.eu/cosmetic-products/>

4.3.5 Cosmeceuticals

Cosmeceuticals are typically applied, combination products that bring together cosmetics and "biologically active ingredients". Products which are similar in perceived benefits but ingested orally are known as nutraceuticals. According to the United States Food and Drug Administration (FDA), the Food, Drug, and Cosmetic Act "does not recognize any such category as "cosmeceuticals."

A product can be a drug, a cosmetic, or a combination of both, but the term "cosmeceutical" has no meaning under the law". Drugs are subject to an intensive review and approval process by FDA. Cosmetics, and these related products, although regulated, are not approved by FDA prior to sale.

4.3.6 Dietary Supplement

FDA regulates both finished dietary supplement products and dietary ingredients. FDA regulates dietary supplements under a different set of regulations than those covering "conventional" foods and drug products. Under the Dietary Supplement Health and Education Act of 1994 (DSHEA):

Manufacturers and distributors of dietary supplements and dietary ingredients are prohibited from marketing products that are adulterated or misbranded. That means that these firms are responsible for evaluating the safety and labeling of their products before marketing to ensure that they meet all the requirements of DSHEA and FDA regulations.

FDA is responsible for acting against any adulterated or misbranded dietary supplement product after it reaches the market.

Source: <https://www.fda.gov/food/dietary-supplements>

The Regulatory System

4.3.7 The European regulatory systems for medicines

The European medicines regulatory system is based on a network of around 50 regulatory authorities from the 31 EEA countries (28 EU Member States plus Iceland, Liechtenstein, and Norway), the European Commission and EMA.

EMA and the Member States cooperate and share expertise in the assessment of new medicines and of new safety information. They also rely on each other for exchange of information in the regulation of medicine, for example regarding the reporting of side effects of medicines, the oversight of clinical trials and the conduct of inspections of medicines' manufacturers and compliance with good clinical practice (GCP), good manufacturing practice (GMP), good distribution practice (GDP), and good pharmacovigilance practice (GVP). This works because EU legislation requires that each Member State operates to the same rules and requirements regarding the authorisation and monitoring of medicines.

IT systems which connect all parties in the network facilitate the exchange of information on aspects such as safety monitoring of medicines, authorisation and supervision of clinical trials or compliance with good manufacturing and distribution practices.

To protect public health and ensure the availability of high quality, safe and effective medicines for European citizens, all medicines must be authorised before they can be placed on the market in the EU. The European system offers different routes for such an authorisation.

The decentralised procedure. where companies can apply for the simultaneous authorisation of a medicine in more than one EU Member State if it has not yet been authorised in any EU country and does not fall within the scope of the centralised procedure.

The mutual-recognition procedure where companies that have a medicine authorised in one EU Member States can apply for this authorisation to be recognised in other EU countries. This process allows Member States to rely on each other's scientific assessments.

Manufacturers, importers, and distributors of medicines in the EU must be licensed before they can carry out those activities. The regulatory authorities of each Member State are responsible for granting licences for such activities taking place within their respective territories. All manufacturing and importing licenses are entered into EudraGMDP, the publicly available European database operated by EMA.

Manufacturers listed in the application of a medicine to be marketed in the EU are inspected by an EU competent authority. This includes manufacturers located outside the EU unless a mutual recognition agreement (MRA) is in place between the European Union and the country of manufacture. Inspection outcomes can be accessed by all Member States and are made publicly available across the EU through EudraGMDP.

Source: https://www.ema.europa.eu/en/documents/leaflet/european-regulatory-system-medicines-european-medicines-agency-consistent-approach-medicines_en.pdf

4.3.8 U.S. Pharmaceutical regulatory standard

The main regulatory standard for ensuring pharmaceutical quality is the Current Good Manufacturing Practice (CGMPs) regulation for human pharmaceuticals. Consumers expect that each batch of medicines they take will meet quality standards so that they will be safe and effective. CGMP refers to the Current Good Manufacturing Practice regulations enforced by the FDA. CGMPs provide for systems that assure proper design, monitoring, and control of manufacturing processes and facilities. Adherence to the CGMP regulations assures the identity, strength, quality, and purity of drug products by requiring that manufacturers of medications adequately control manufacturing operations. This includes establishing strong quality management systems, obtaining appropriate quality raw materials, establishing robust operating procedures, detecting and investigating product quality deviations, and maintaining reliable testing laboratories. This formal system of controls at a pharmaceutical company, if adequately put into practice, helps to prevent instances of contamination, mix-ups, deviations, failures, and errors. This assures that drug products meet their quality standards.

Drugs, however, must generally either receive premarket approval by FDA through the New Drug Application (NDA) process or conform to a "monograph" for a particular drug category, as established by FDA's Over the Counter (OTC) Drug Review. These monographs specify conditions whereby OTC drug ingredients are generally recognized as safe and effective, and not misbranded. Certain OTC drugs may remain on the market without an NDA approval until a monograph for its class of drugs is finalized as a regulation. However, once FDA has made a final determination on the status of an OTC drug category, such products must either be the subject of an approved *NDA* [FD&C Act, sec. 505(a) and (b)], or comply with the appropriate *monograph* for an OTC drug. (A note on the term "new drug": Despite the word "new," a "new drug" may have been in use for many years. If a product is intended for use as a drug, it must comply with the requirements outlined above.) You can find information on FDA's website, under "[Development and Approval Process \(Drugs\)](#)," especially "[How Drugs Are Developed and Approved](#)." If you still have questions about NDAs and OTC monographs, or any other aspect of drug regulation, please contact [CDER](#). You can contact CDER's Division of Drug Information, Small Business Assistance at CDERSmallBusiness@fda.hhs.gov or, for general drug-related inquiries, CDER's Division of Drug Information at druginfo@fda.hhs.gov.

Source: <https://www.fda.gov/drugs/pharmaceutical-quality-resources/facts-about-current-good-manufacturing-practices-cgmps>

4.3.9 El Salvador Pharmaceutical Manufacturing Regulation

DNM (Dirección Nacional de Medicamentos / National Medicine Authority) oversees the administration of the regulatory system and control, including audits, to the pharmaceutical manufacturers.

They are mainly two Quality regulations in place, the Good Manufacturing Practices (GMP) Guidelines and the WHO Norm 32 (Informe 32 de la Organización Mundial de Salud).

<https://www.medicamentos.gob.sv/tmp/Archivos/normativa-dnm/UIF/Normativas/16%20Informe%2032%20OMS.pdf>

<https://www.medicamentos.gob.sv/index.php/es/normativa-m/normativa-por-unidad/unidad-de-inspeccion-y-fiscalizacion>

4.3.10 U.S. Cosmetics Personal Care regulatory system

Among the important differences between requirements for cosmetics in the United States and various other countries are the legal definitions of drugs and cosmetics, restrictions on the use of color additives and other ingredients, and registration requirements. Some products regulated as cosmetics in Europe, for instance, are regulated as drugs in the United States. Sunscreens are a case in point. There also are differences regarding prohibited and restricted ingredients, particularly color additives. Some countries may require cosmetic companies to register their establishments and list products and ingredients with the government; in the United States, cosmetic registration is voluntary but highly recommended. <https://www.fda.gov/cosmetics/cosmetics-laws-regulations/cosmetics-us-law>

Cosmetic companies may register in the United States through FDA's *Voluntary Cosmetic Registration Program* (VCRP). The VCRP assists FDA in carrying out its responsibility to regulate cosmetics. FDA uses the information to evaluate cosmetic products on the market. Because product filings and establishment registrations are not mandatory, voluntary submissions provide FDA with the best information available about cosmetic products and ingredients, their frequency of use, and businesses engaged in their manufacture and distribution (Federal Register, vol. 73, p. 76360, and vol. 69, p. 9339).

The FD&C Act does not require cosmetic firms to register their establishments or list their product formulations with FDA. In contrast, it is mandatory for drug firms to register their establishments and list their drug products with FDA [FD&C Act, sec. 510; 21 CFR 207]. See Drug Registration and Listing System (DRLS and eDRLS).

With the exception of color additives and a few prohibited ingredients, a cosmetic manufacturer may use almost any raw material as a cosmetic ingredient and market the product without an approval from FDA. The Federal Food, Drug, and Cosmetic Act requires that color additives used in cosmetics must be tested for safety and be listed by FDA for their intended uses.

Regulations restrict or prohibit the use of the following ingredients in cosmetics: bithionol, mercury compounds, vinyl chloride, halogenated salicylanilides, zirconium complexes in aerosol cosmetics, chloroform, methylene chloride, chlorofluorocarbon propellants and hexachlorophene. To learn more, see [Ingredients Prohibited and Restricted by FDA Regulations](#).

FDA-regulated does not mean FDA-approved. FDA does not have the legal authority to approve cosmetics before they go on the market, although we do approve color additives used in them (except coal tar hair dyes).

However, under the law, cosmetics must not be "adulterated" or "misbranded." For example, they must be safe for consumers when used according to directions on the label, or in the customary or expected way, and they must be properly labeled. Companies and individuals who market cosmetics have a legal responsibility for the safety and labeling of their products.

FDA can act against a cosmetic on the market if we have reliable information showing that it is adulterated or misbranded. FDA acts within our legal authority, based on public health priorities and available resources.

The law does not require cosmetic products and ingredients, other than color additives, to have FDA approval before they go on the market, but there are laws and regulations that apply to cosmetics on the market in interstate commerce.

The two most important laws pertaining to cosmetics marketed in the United States are the [Federal Food, Drug, and Cosmetic Act](#) (FD&C Act) and the [Fair Packaging and Labeling Act \(FPLA\)](#)[External Link Disclaimer](#). FDA regulates cosmetics under the authority of these laws.

FDA can and does [inspect cosmetic manufacturing facilities](#) to assure cosmetic product safety and determine whether cosmetics are adulterated or misbranded under the FD&C Act or FPLA.

Under the law, manufacturers are not required to register their cosmetic establishments or file their product formulations with FDA, and no registration number is required to [import cosmetics](#) into the United States.

Source: <https://www.fda.gov/cosmetics/resources-consumers-cosmetics/cosmetics-qa-why-are-cosmetics-not-fda-approved>

<https://www.fda.gov/cosmetics/cosmetics-guidance-regulation>

4.3.11 EU Cosmetics Personal Care Regulatory System

In the early 1970's the Member States of the European Economic Community (now called the European Union - EU) decided to harmonize their national cosmetic legislations in order to enable the free circulation of cosmetic products within the Community, on the basis of commonly agreed safety standards. The Cosmetics Directive was adopted in 1976. This Directive was reevaluated in 2009 to enable further harmonization and an EU-wide Cosmetics Products Regulation entered into force in July 2013.

The philosophy of the Cosmetics Regulation is that all products meeting the requirements of the Regulation should have equal and immediate access to the market and should be able to circulate freely throughout the European Union. In the EU, it is strongly believed that for fast moving consumer products, such as cosmetics, an in-market control system (also known as post-market control) is more effective than pre-market approval procedures.

The key principle of the Cosmetics Regulation is that the person or company who places the cosmetic product on the market is responsible for that product (so called 'Responsible Person'). It is the responsibility of that person or company (usually the manufacturer or the importer) to ensure that the product is safe and meets all the requirements of the Cosmetics Regulation. All stages of the development of the cosmetics product are regulated by the Cosmetics Regulation, from the choice of ingredients to the placing on the market of the product

4.3.12 Central America

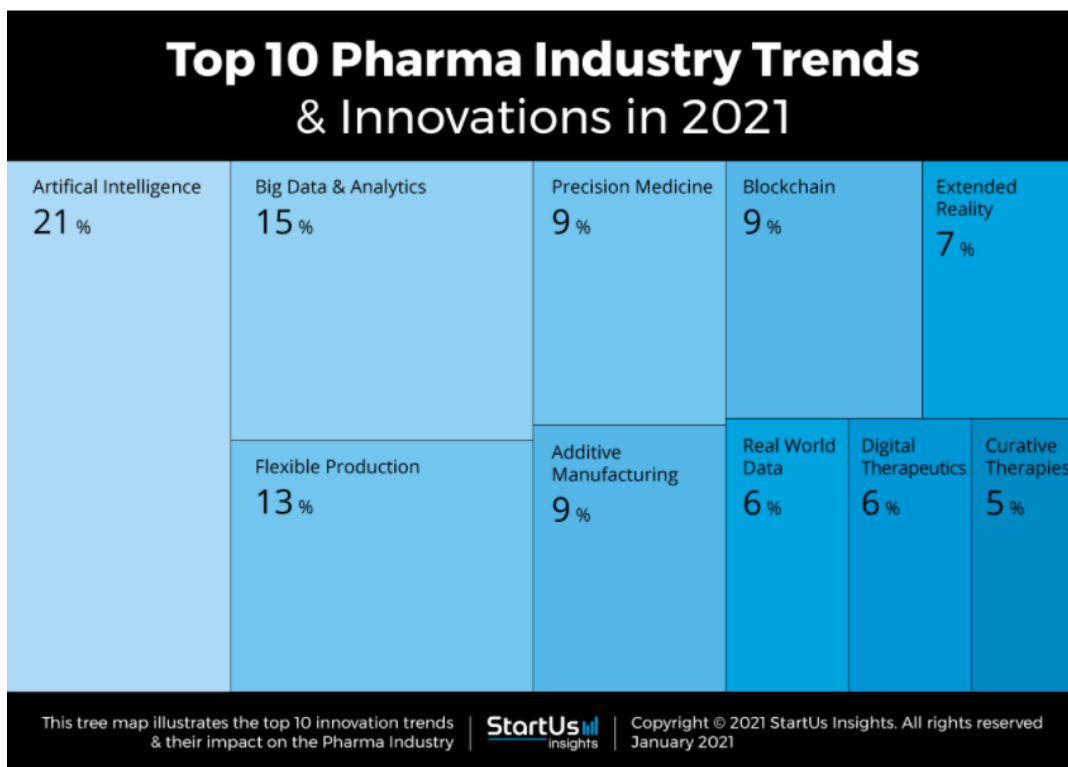
COMISCA (Consejo de Ministros de Salud de Centroamérica / Council of Ministers of Health of Central America) constitutes the political body of SICA (Sistema de Integración Centroamericana/ Central America Integration System) whose purpose is the identification and prioritization of regional health problems. COMISCA is made up by Belize, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panamá, and Dominican Republic.

Representatives from Central American National Regulatory Authorities for Medicines (NRAs) are working to advance in the development of a joint review mechanism for pharmaceutical products for the countries of the Region. The objective with such initiative is to support the development of a regional approach for the technical evaluation of pharmaceutical products, among others.

There is also a “Joint Review of Dossiers”, to develop a mechanism to improve the process of review of files that are submitted to new registration in the participant countries. User’s Guide for the joint review mechanism, and a Review procedure for the technical evaluation of pharmaceutical products.

4.3.13 Future Trends in the Pharmaceutical Industry

Figure 44. Top 10 Pharma Industry Trends & Innovations (2021)



Source: <https://www.startus-insights.com/innovators-guide/top-10-pharma-industry-trends-innovations-in-2021/>

The use of **artificial intelligence (AI)** and machine learning is accelerating the drug discovery and development processes. Startups are exploring the use of these technologies to address the various challenges in the pharma industry, such as automation and optimization of the manufacturing processes, as well as designing effective marketing and post-launch strategies. Patient identification is a crucial step in the drug discovery and development process, especially for conducting clinical trials. AI simplifies the identification of eligibility criteria and the inclusion of patients and makes the cohort identification process faster and cheaper.

Big Data & Analytics. The large volumes of data available throughout the drug discovery and development process require high-performance systems to properly analyze data and derive value from it. Pharmaceutical companies are looking to open their critical data to third parties, thus making data management a crucial area of focus. The advancement in analytical techniques is also turning historical and real-time data available with pharmaceutical companies into valuable assets for predictive, diagnostic, prescriptive, and descriptive analytics. Moreover, these analytics techniques are used on almost all types of medical data from patient records, medical imaging, and hospital data, to name a few.

Flexible Production. The pharma industry is exploring new ways of manufacturing due to the changing market dynamics, such as small batches for precision medicine. Single-use technology is gaining popularity as it reduces downtime and increases productivity by eliminating complex steps like cleaning and validation between separate production stages.

Precision Medicine. Precision medicine comes from the idea of treating each patient as a unique individual. Advancements in omic and data analysis are providing new insights into how the human body responds to drugs. This knowledge, along with advanced manufacturing methods such as additive manufacturing, is making personalized medicine a reality.

Additive Manufacturing. The need for precision medicine is also making pharmaceutical companies rethink the manufacturing process. A lot of research is underway for making advanced **3D printers that print tissues or cells**. 3D printing of human tissues has great applications in drug development, **organ engineering**, and regenerative medicine. This allows the development of age or physiology-dependent medical formulations, as well as precision pills. Bioprinters also help in pushing innovation in bioinks, **tissue engineering**, and **microfluidics**.

Blockchain technology is very significant for the pharmaceutical industry in every stage of the production and distribution of drugs. The stakeholders in the pharma industry are, in general, extremely secretive about their data due to the sensitive nature of the data. Blockchain technology is also being explored to tackle the use of counterfeit medicines and substandard drugs that enter the pharmaceutical supply chain and kill thousands of patients every year. The digitalization of transactions makes blockchain a promising solution for tracking and securing the pharma transaction ecosystem.

Extended Reality (XR). Mixed reality (MR), virtual reality (VR), and augmented reality (AR) is enabling visualizations like never before. Pharma startups are exploring the possibilities of these technologies in pharmaceutical research and manufacturing spheres. Extended reality tools enable data-rich and meaningful real-time location-agonistic interaction among research teams. Startups are making human augmentation in pharma a reality through extended reality **wearables** and tools.

Real-world data (RWD) and **real-world evidence (RWE)** are transforming innovations in the pharmaceutical industry. RWD includes patient health status, treatment data, and health reports collected routinely. The pharmaceutical industry, owing to its research-intensive nature, has to make sure that the data they use is reliable and of real value. The availability of real-world data enabled by the Internet of Things (IoT), sensors, and wearables is restructuring the way the pharma industry is functioning.

Digital therapeutics deliver evidence-based therapeutic interventions using software to prevent, manage, or treat physical, mental, and behavioral conditions. These non-pharmacological, tech-driven solutions are either stand-alone or used along with medications, devices, or therapies. Digital therapeutics let each individual have greater control over their health and outcomes.

Curative Therapies. There is a paradigm shift happening in the area of treating illnesses from managing diseases to curing diseases altogether. Curative therapies such as cell and gene therapies are changing the way we deal with chronic diseases or difficult to treat conditions by eliminating the need for long-term treatments. In gene therapy, genetic material is introduced into the cells to compensate for abnormal genes or to make a beneficial protein. Genetically engineered viruses are the most common vectors used for gene therapy.

Discover all Pharma Technologies & Startups. The COVID-19 pandemic has forced all companies to rethink many aspects of their business, including manufacturing and supply chains and the same holds true for pharma companies. The pandemic also highlights the need for improving the speed and accuracy of finding and mass-producing novel drugs, treatment methods, and vaccines to respond to such large-scale and high-pressure demands. Further, startups and scaleups working in the intersection of life sciences research, biotech, and pharma are discovering new properties of cells and molecules to deliver potentially game-changing solutions for the industry, as well as for the larger public.

The Pharma Industry Trends & Startups outlined in this report only scratch the surface of trends that we identified during our in-depth research. Among others, low-volume production, nanotechnology, and mRNA vaccine technologies will transform the sector as we know it today. Identifying new opportunities and emerging technologies to implement into your business early on goes a long way in gaining a competitive advantage.

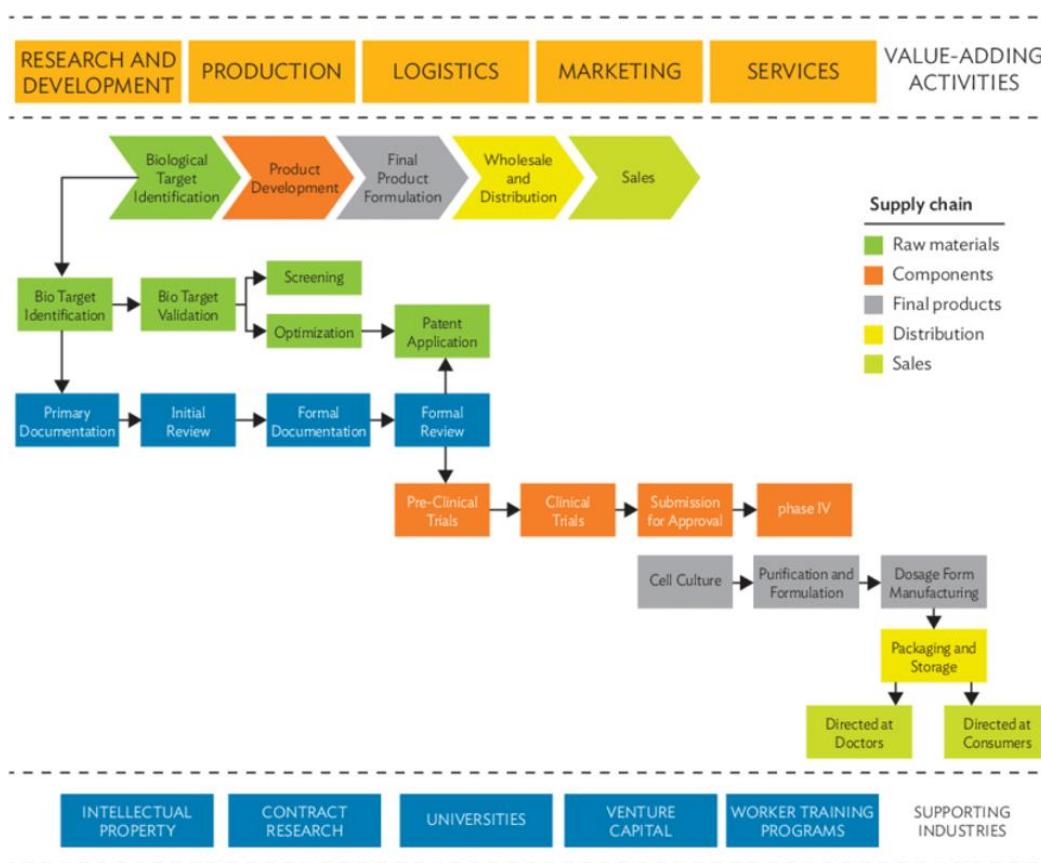
Source: <https://www.startus-insights.com/innovators-guide/top-10-pharma-industry-trends-innovations-in-2021/>

4.3.14 Global Value Chain (GVC) Pharmaceutical and Cosmetics

4.3.15 Chemical-Pharmaceutical Value Chain

The following diagram is an example of the Value Chain of the chemical-pharmaceutical sector globally

Figure 45. The Chemical-Pharmaceutical Global Value Chain



Source: North Carolina in the Global Economy Value Chain. Drugs & Pharmaceutical Value Chain 2012. https://www.researchgate.net/figure/The-Pharmaceuticals-Global-Value-Chain_fig2_323983870

While laboratories in El Salvador are mainly producing generic and OTC products, they have innovation facilities to create their own formula for these products. Therefore, using this diagram flow example, they engaged in Production, Logistics, Marketing and Services.

In El Salvador, research activities are not very well developed for the development of value added and innovative drugs. However, they have support from the Universities and the level of knowledge is being developed to enhance the current manufacturing process.

This is an area of major opportunity for El Salvador to build innovation and create a niche area to make a difference in the industry, as such, this is a long-term opportunity for the country. Clinical Research is another area of opportunity, in the CA region Guatemala, Costa Rica, Panama, and the Dominican Republic are conducting this type of activities.

At the production level, there are many pharmaceutical laboratories, and it is a growing industry in the country. The list of such labs is included in Section 5.2 of this study. Most of them are national companies with a long history pioneering the local industry. Recently, foreign companies have acquired some well-established local labs; for example, Tecnoquímicas which acquired Laboratorios Lopez, bringing new technology into the sector. Contract manufacturing is another opportunity for El Salvador to expand its sector.

From the Production side, El Salvador has DSM as the National Medicine Agency regulation the sector. Some 33 laboratories are GMP certified and fulfil report 32 (WHO Norm) requirements to ensure the quality of the products through all the supply chain.

Market surveillance, pharmacovigilance, consumers information, are some of the activities of supervision by DSM and also the responsibility of each manufacturer. These areas could be potential opportunities for FDI (pharmacovigilance services, reviewing protocols, registry process, label modifications, advertising, web services) given to the experience already in place, however, it will require a good level of English and an understanding of the global regulatory environment.

El Salvador has specific associations providing specialized support to the sector and all its stakeholders. These include ALFA (Asociación de Laboratorios Farmacéuticos de El Salvador) and INQUIFAR (Asociación de Químicos Farmacéuticos).

Other support agents are ASI (Asociación Salvadoreña de la Industria Privada), COEXPORT, and AMCHAM (American Chamber of Commerce in El Salvador).

Governmental institutions such as PROESA, and various Ministries with specific roles within the confines of the sector are also key stakeholders. Additional support from these entities will be necessary to expand the industry and access new markets such as the U.S.

Regarding logistics, there are many providers of land transportation internally throughout the country who also export to the Central American markets. Most of this transport is outsourced to third parties, the majority of them are small to medium size companies.

Logistics operators such as Blue Logistics, American Logistics Group, who were interviewed during the inception mission to this study, handle some of this cargo. Difficulties appear to be related to air freight, due to the small volume of export by this mode of transportation, and as there are only 3 carriers (Amerijet, UPS, DHL). Ocean freight is also available by the internal Pacific port of El Salvador, or by means of other countries with Port facilities in the Atlantic (Guatemala and Honduras).

The products are marketed and distributed by the manufacturers, and the main markets in the country include drugstores, hospitals, clinics, pharmacies. There are distributors and importers as well, who handle both domestic and foreign suppliers including products coming from China and India.

Production inputs (raw materials) are purchased individually by each laboratory, and it is the weakest element in the supply chain. Almost all labs buy materials outside the country, and during the past year access has been difficult due to the pandemic. Both the delivery times and prices have gone up dramatically (e.g., Hydroxychloroquine went from costing \$ 80 per kilo to \$ 1,600 per kilo) and the sector has very limited purchasing power.

While glass containers are not available in country, other type of packaging (plastics, cardboard boxes, labels, etc.) are provided by local suppliers and this could be an opportunity to get into other markets such as the Dominican Republic. There is no manufacturing capability of gel caps in El Salvador, and this could be an area of new opportunity for manufacturing.

4.3.16 Cosmetics and personal care industry value chain

The cosmetics and personal care industry value chain comprises five levels, according to the European Cosmetics Association.

Figure 46. Cosmetics and Personal Care Value Chain



Source: <https://cosmeticseurope.eu/cosmetics-industry/>

Inputs to production. Companies that provide the raw materials required to manufacture cosmetic and personal care products. Ingredient selection is dictated in Europe by the EU Cosmetics Regulation, which lays down all rules for product and ingredient safety assessments. It lists all substances that must not be used owing to their toxicity, substances that can only be used in specified circumstances, and the substances approved for use in cosmetics like coloring agents, preservatives, and UV filters. In the U.S the FDA is the regulatory agency for certain inputs such as coloring agents.

Manufacturing. Product manufacturers and suppliers of supporting activities e.g., marketing and IT. The EU Cosmetics Regulation stipulates that all cosmetics products must be manufactured in accordance with the harmonized standards laid out in GMP, in turn described in the Official Journal of the European Union. GMP ensures that products are prepared in a clean environment and that the products are not contaminated in production. Microbial contamination can be quite common as many microorganisms live freely in the

atmosphere around us, and could lead to degradation and, in severe cases, could cause harm to the consumer. There is some 20+ certified laboratories in El Salvador, most of them export to Central America. This is an area of opportunity to make use of the local biodiversity, improve the research and innovation to manufacture natural additive products into a demanding market.

Distribution and wholesale. Before being placed on the European market, all cosmetics products must be listed on a centralized database, the Cosmetic Products Notification Portal (CPNP), managed by the European Commission. When a product has been notified in the CPNP, there is no need for any further notification at national level. In El Salvador this activity is conducted by several manufacturers, importers, and distributors, similar to the pharmaceutical sector described in Section 3.5.1.

Retail and beauty services. Product vendors like salons, department stores, online stores, and pharmacies. Also, an area of opportunity to outreach companies providing online sales, as a service operation center.

Consumers. Individuals who purchase cosmetics and personal care products represent the final link in the value chain. Advertising is an important part of the interaction cosmetics brands have with consumers. It conveys how the products work, whom they are for and how best to use them, ultimately providing the information that helps them make informed choices.

4.3.17 The Ecosystem

The pharmaceutical chemistry sector including cosmetics, hygiene and personal care products is formed by the Original Manufacturers, which carry out processes such as innovation, research and development to create new products and services; they can also be manufacturers of non-original products, in this case the entity develops a formula to manufacture similar products to the original, maintaining the same principles for quality, effectiveness, safety, compliant with the regulatory standards in all cases; a second type of entities are the Contract Manufacturer, which provide third party manufacturing and/or services to the industry, by means of contracts, they are not the owners of the products, some include packaging, clinical research by contract, logistics, distribution services among other; and the suppliers, they are the backbone of the industry, they provide a wide arrange of inputs and services.

The following table illustrate some of the participants of the ecosystem, it is not intended to be and comprehensive listing.

Table 4-5. Pharmaceutical and Cosmetics Ecosystems Participants

Original Manufacturers	Contract Manufacturers	Suppliers
Biopharmaceuticals	Contract Services – Bio Services (outsourcing)	APIs Active Pharmaceutical Ingredients; Generics
Custom Manufacturing	Contract Services – Contract Services (outsourcing)	Analytical & Laboratory Services, Equipment
Finished Dose Forms	Contract Services – Clinical Trials Stages 1-4, CRO, Clinical Data	Excipients, specialty chemicals, fine, intermediates
Natural Extracts	Pharmaceutical Packaging	Pharmaceutical Machinery & Technology
Pharmaceutical Products	Logistics, Distribution services	Packaging materials

Source: Authors

4.4 El Salvador Profile

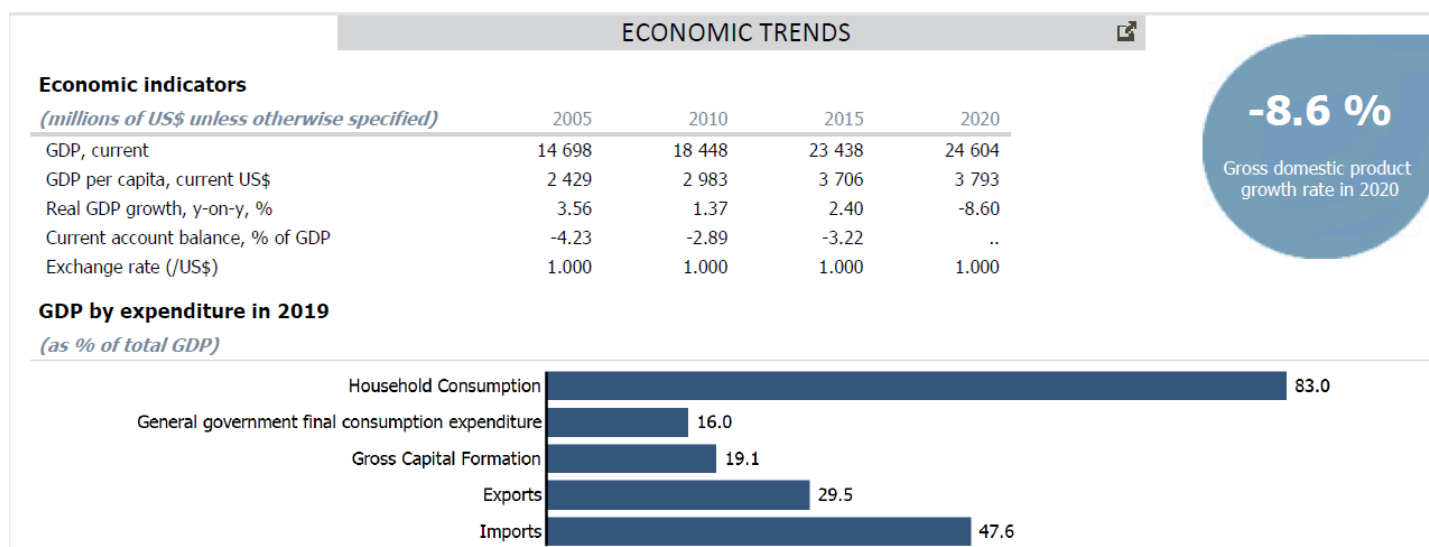
4.4.1 General Profile

Official Name:	República de El Salvador
ISO Country Code:	sv, slv
Time Zone:	Local Time = UTC -6h
Population:	6.4 million people
Official language:	Spanish
Capital City:	San Salvador (pop. 1,107,305).
Other Cities:	Santa Ana (pop. 237 000), San Miguel (pop. 222,000), Ahuachapán (pop. 100 000), Soyapango (pop. 222,096).
Territorial Organization:	The country is divided into 14 departments with the administrative, subdivided into 262 municipalities. San Salvador is surrounded by several municipalities, and this is called the Greater San Salvador Metropolitan Area (AMSS), with 2,177,432 inhabitants (2020)
Government:	Type: Republic. Independence: on 15 September 1821 (from Spain).
Currency:	US Dollar (USD), and Bitcoin
Industries:	Food and beverage processing, textiles, footwear and clothing, chemical products, petroleum products, electronics.

Exports-commodities: offshore assembly exports, coffee, sugar, textiles and apparel, gold, ethanol, chemicals, electricity, iron, and steel manufactures.

Imports-commodities: raw materials, consumer goods, capital goods, fuels, foodstuffs, petroleum, electricity.

Figure 47. El Salvador Country Profile



Source: UNCTADSTAT, 2020. Generation date: 22 July 2021

INTERNATIONAL MERCHANDISE TRADE

Total merchandise trade

(millions of US\$)

	2005	2010	2015	2020
Merchandise exports	3 418	4 499	5 509	5 030
Merchandise imports	6 690	8 416	10 293	10 594
Merchandise trade balance	-3 272	-3 917	-4 784	-5 564

-15.4 %

Merchandise exports growth rate in 2020

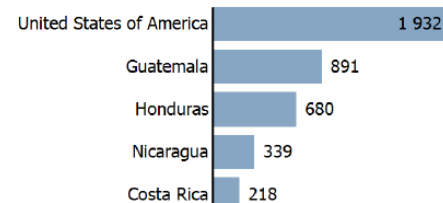
Export structure by product group in 2020

(as % of total exports)



Top 5 partners in 2020

(exports, millions of US\$)



Source: UNCTADSTAT, 2020. Generation date: 22 July 2021

FDI AND EXTERNAL FINANCIAL RESOURCES

Financial flows

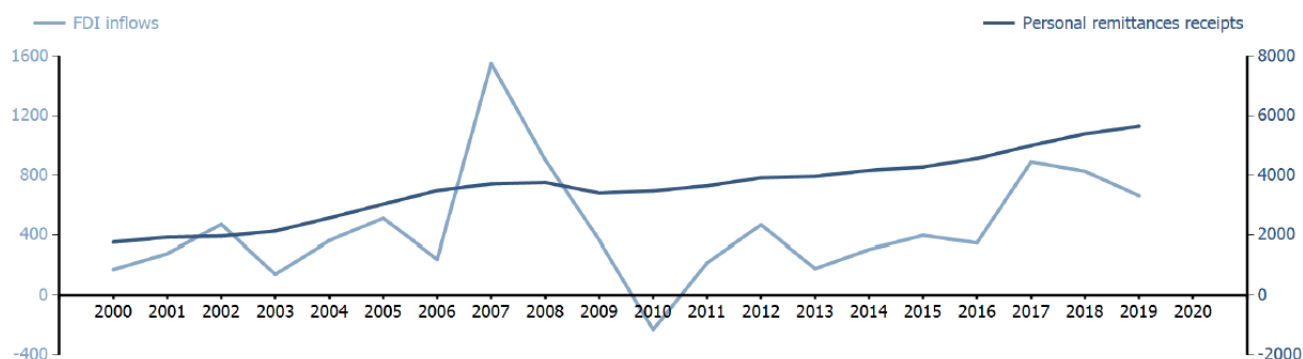
(millions of US\$ unless otherwise specified)

	2005	2010	2015	2020
FDI inflows	511.10	-230.30	396.62	..
FDI outflows	-112.90	-4.70	0.27	..
Personal remittances, % of GDP	20.61	18.82	18.24	..

FDI outflows as % of GDP in 2020

Financial flows trends

(millions of US\$)



Source: UNCTADSTAT, 2020. Generation date: 22 July 2021

El Salvador is the smallest and the most densely populated country in Central America. With an area of 21,000 km², it's about the size of Slovenia or slightly smaller than the U.S. state of Massachusetts. El Salvador's landscape offers three general regions, a narrow Pacific coastal belt, a central plateau, and the northern lowlands, formed by the wide Lempa River Valley. Its highest point is Cerro El Pital with 2,730 m.

Main export sectors are textile and apparel, agroindustry, food and beverages, chemical industry, plastics and rubber, paper and cardboard, metalwork, machinery and apparatus, mineral products, other sectors.

Figure 48. El Salvador Map



4.4.2 El Salvador Pharmaceutical chemical industry overview

In this context of crisis, El Salvador's pharmaceutical industry is one of the few sectors that in the first half of 2020 managed to increase its exports, and in some cases the production plants have had to work double shifts to satisfy demand. The manufacture of pharmaceutical products, medicinal chemical substances and botanical products for pharmaceutical use was one of the few sectors that, from January to June 2020, registered a positive variation in the amount of their sales abroad, according to official data from the Central Bank. The COVID-19 pandemic multiplied the demand for medicines and hygiene supplies.

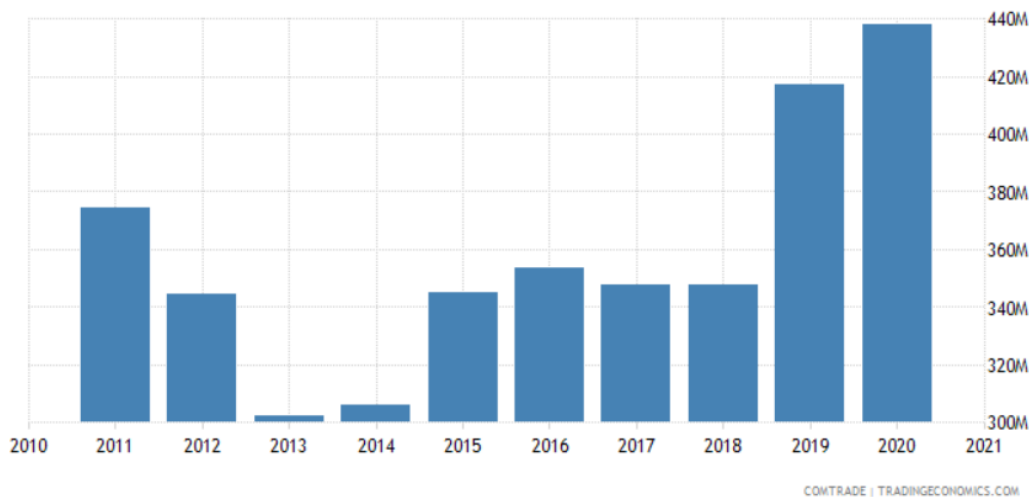
https://www.centralamericadata.com/es/search?q1=content_es_le:%22Asociaci%C3%B3n+de+Industriales+Qu%C3%ADmicos+Farmac%C3%A9uticos+%28El+Salvador%29%22

The Salvadoran pharmaceutical Industry is made up of 56 drug-producing companies nationwide (numbers vary according to the source). This sector is one of the most important categories of non-traditional exports, registering sales of almost 170 million US dollars by 2020, the main export markets being Central America, Panama, Belize, Mexico, the United States, and the Dominican Republic.

Main export products include both chemical and pharmaceutical: Medicine for human and veterinary use, detergents, fertilizers, antibiotic drugs, parenteral solutions, paint, hair products. <http://www.elsalvadortrade.com.sv/Directorio/Exportadores>

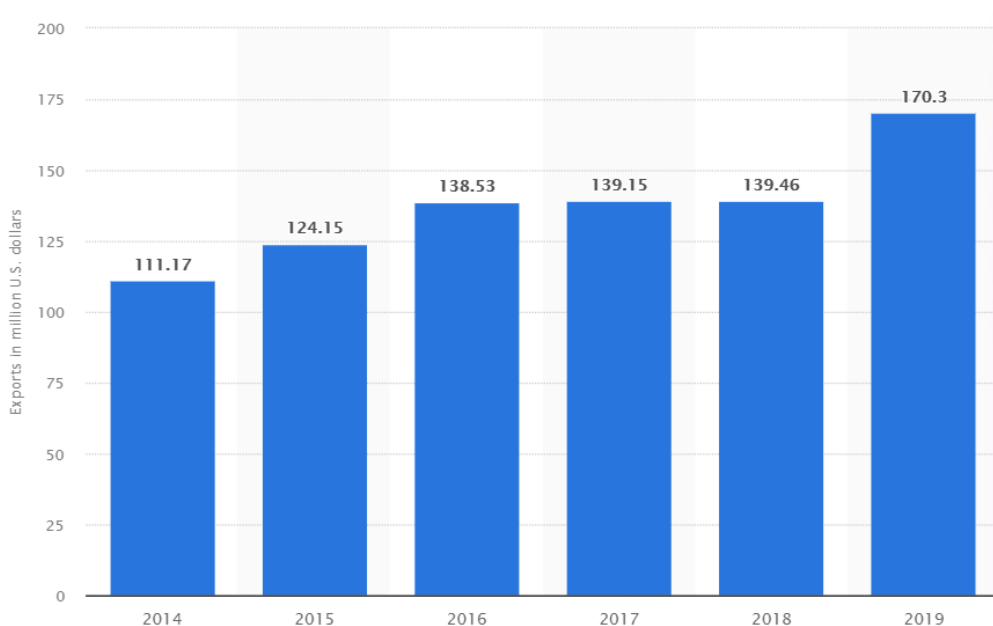
El Salvador's imports of pharmaceutical products reached US\$437.82 Million during 2020, according to the United Nations COMTRADE database on international trade. El Salvador's Imports of Pharmaceutical products - data, historical chart, and statistics - was last updated in September of 2021.

Figure 49. El Salvador Pharmaceutical Imports (2011 – 2020)



Source : <https://tradingeconomics.com/el-salvador/imports/pharmaceutical-products>

Figure 50. El Salvador Pharmaceutical Exports (2014 – 2019)



Source : <https://www.statista.com/statistics/1070073/el-salvador-pharmaceuticals-export-value/>

In 2019, El Salvador exported over 170 million U.S. dollars’ worth of pharmaceutical products, up from the 139.46 million dollars exported the year before. Pharmaceutical exports from the country increased by over 53 percent between 2014 and 2019.

El Salvador’s exports of pharmaceutical products to Mexico were US\$1.37 Million during 2020, according to the United Nations COMTRADE database on international trade. El Salvador Exports of pharmaceutical products to Mexico - data, historical chart and statistics - was last updated in September of 2021.

El Salvador is the third largest economy of the Central American region:

- 56 local pharmaceutical companies / 30+ GMP Certified (numbers or not accurate, depend on the source)
- Branded drugs and branded generic products driven market more than more than 90%
- True generics - less than 8%
- The market is growing on average of 4% to 5% annually
- This industry employs more than 6,800 direct people
- Highly qualified workforce, wages over the minimum (\$630+)
- 70% of the manufacturing was for export markets (2019)
- Products: antibiotics, injectables, solids, semi-solid, gel, syrup, parenteral solutions, supplements, vitamins, powders, generics, OTC

The regulatory agency is the National Medicine Directorate (DNM – Dirección Nacional de Medicamentos) provides Good Manufacturing Practices Certificates to local laboratories. The validity of the registration is of 5 years. Local importers need to pay an importer license fees and an annual sales license.

Special Regulation for Foreign Sanitary Registration. This mutual recognition only applies to the registrations which are from the US-FDA, the Pan American Health Organization (PAHO), the Medicine European Agency (EMA), Canada, Japan, Australia, and Switzerland.

The largest single buyer of pharmaceutical products in El Salvador is the public sector, including the Ministry of Health and the Salvadorean Social Security Institute. Products coming from China and India are increasing their presence in the market.

4.4.3 Cosmetic Personal Care

There are 23 certified laboratories in the Cosmetics and Hygiene industry, less than 15 are working in cosmetics products. Some pharmaceutical laboratories are also in the cosmetics manufacturing and distribution. There is unfortunately no information regarding the employment generation for this item nor detailed information regarding trade balance for this sub-sector. Exports go mainly to the Central American region (CA4); similar to pharmaceuticals.

4.4.4 Benchmark

The chemical-pharmaceutical and cosmetics-personal care sectors are market driven with operational efficiencies resulting in apparent profitability. These are strong drivers for the development of additional investment as well as eventual medical devices manufacturers.

The transfer of advanced technology is essential for economic development. It is one means by which low – and middle-income countries can accelerate the acquisition of knowledge, experience, and equipment related to advanced, innovative industrial products and processes.

Technology transfer has the potential to help improve health faster and reach across many geographies. It also benefits the overall economy by increasing the reliability of supply, decreasing reliance on imports, and raising the competencies of the local workforce. (IFPMA, 2011).

El Salvador has invested in this sector for decades, and this experience in basic and to some degree more advanced technologies is there, as well as the education system that offer specialized programs at the College/University level. Operators are trained at different technical institutions, while knowledge is present in a basic format that will require additional “upskilling” to attract more value-added manufacturing and services, including biosimilars, which we see as a potential niche opportunity for El Salvador.

According to an OECD study, some key factors to be considered are the following:

Figure 51. Critical Factors for Creating Favorable Conditions for Biopharmaceutical Technological Transfers



Source: Kiriya, N. (2011), "Trade and Innovation: Pharmaceuticals", OECD Trade Policy Papers, No. 113, OECD Publishing, Paris, Available at: <https://doi.org/10.1787/5kgdscrcv7jg-en>.

4.4.5 Human Capital

As of 2018, 40% of the biopharma industry was facing difficulties in hiring for process development staff due to shortage of talent. This shortage led to a rise in competition and salaries for the limited talent pool available for biologics manufacturing, thereby limiting growth of the market during the historic period.

During this study, interviews with major stakeholders were conducted and the general feedback was that Salvadorans have a great work ethic, low turnover, low absenteeism, high productivity, fast learning curve, among other great attributes.

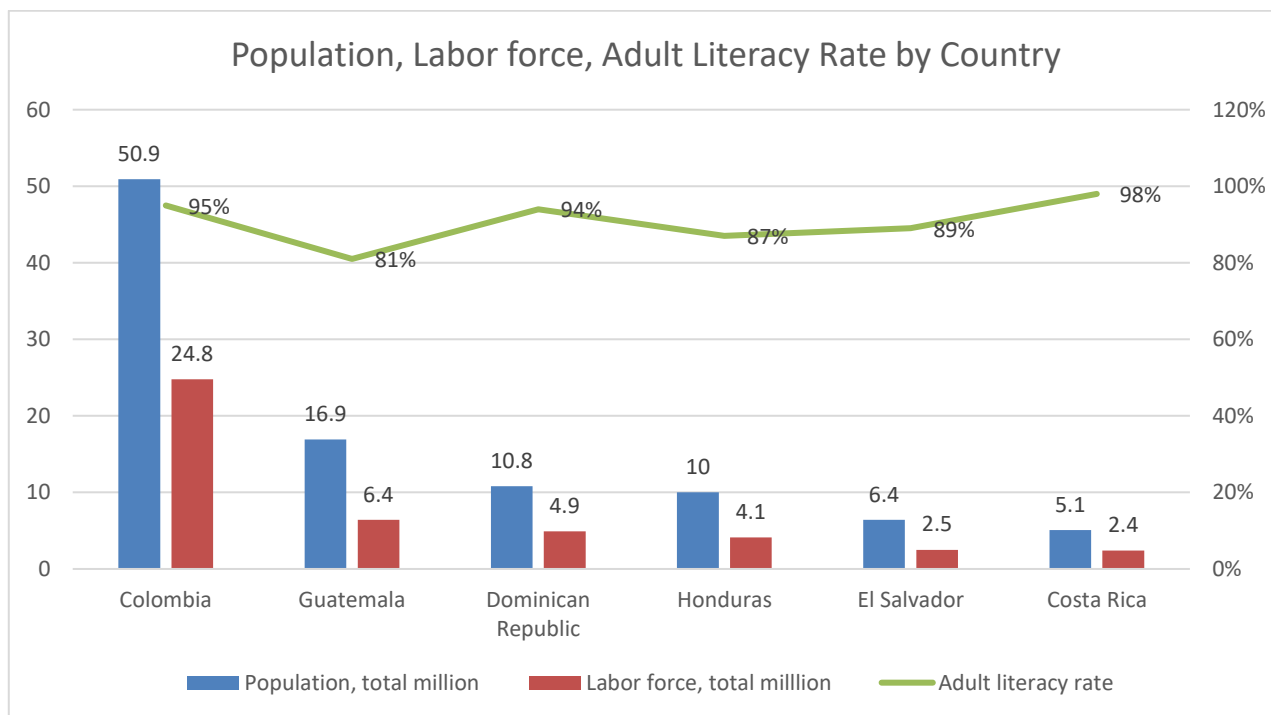
El Salvador provides access to specialized professionals in the chemical and pharmaceutical sector, at competitive costs. Wages in El Salvador are competitive, however the recent 20% increase in the minimum wage has created a climate of unpredictability. Nevertheless, the workforce in the chemical and pharmaceutical sector are well paid since it is more about capital investment rather than huge amount of labor, but this workforce must be very specialized.

Quality training programs provide a trained workforce that matches specific job skill requirements so that workers are ready to work as soon as the business opens its doors. specific job training for a new or existing workforce is crucial to the success of a company's relocation or expansion. Specific, quality job training that meets industry standards reduces the need for additional training once new employees are on the job, which saves the company time and money. When selecting a site, firms should look for specific assistance in training new or current workers in long-term, permanent technical jobs, or that provide short-term, job-specific training designed to fit the company's needs.

This is an area of improvement in ES and should be included in national programs as part of the benefits provided to FDI in the medical sector, with a long-term vision and strategy.

Some of its competitors, such as Costa Rica and Dominican Republic are working on specific programs to bring more qualified labor. Some other countries such as Ireland, offer special grants and payroll payment during the initial stages of establishment and/or expansions to FDI firms.

Figure 52. Comparison of total population and labor force (In millions), and literacy rate (%) by Country

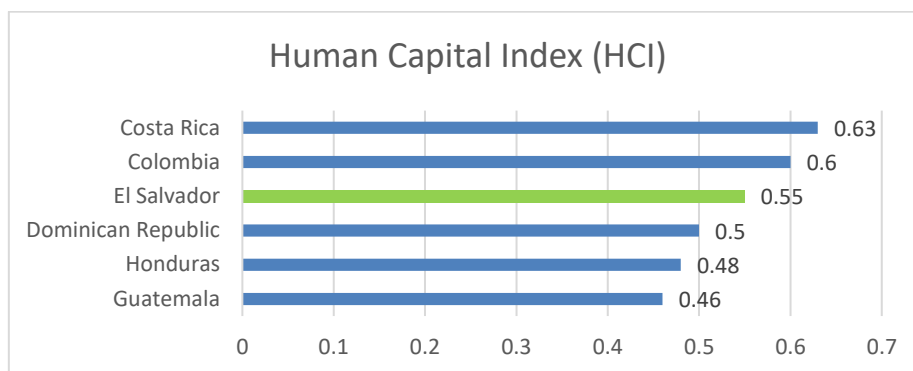


Source: World Bank, 2020. Data World Bank indicators.

Colombia and Guatemala have by far the largest population and labor force, but Guatemala has the lowest adult literacy rate. El Salvador has similar size labor force than Costa Rica, the perception from the interviewed firms in ES is that labor is abundant and easy to recruit for the current type operations in the country. Costa Rica has a shortage of labor pool for the specialized industries with production facilities and/or services operations. In terms of size, Dominican Republic is a top competitor by number of people, and they also have a high adult literacy rate, but the report from investors is the urgent need for more qualification to fulfill the increasing demand.

A highly skilled, well-educated, and growing workforce is an essential consideration for a new business location, and finding the right talent represents one of the most pressing challenges. Therefore, choosing a problematic labor market constitutes one of the biggest risks for successful site selection in the medical devices industry.

Figure 53. The Human Capital Index (HCI), 2020



Source: World Bank calculations based on the 2020 update of the Human Capital Index (HCI). World Bank. 2021. The Human Capital Index 2020 Update: Human Capital in the Time of COVID-19. Washington, DC: World Bank. doi:10.1596/978-1-4648-1552-2. License: Creative Commons Attribution CC BY 3.0 IGO.

Note: The Human Capital Index (HCI) ranges between 0 and 1. The index is measured in terms of the productivity of the next generation of workers relative to the benchmark of complete education and full health.

For this indicator El Salvador rank #3 above Dominican Republic, Honduras, and Guatemala. Such indicator should be included in the value proposition strategy for the favorable score received.

Human capital consists of the knowledge, skills, and health that people accumulate over their lives. People’s health and education have undeniable intrinsic value, and human capital also enables people to realize their potential as productive members of society. More human capital is associated with higher earnings for people, higher income for countries, and stronger cohesion in societies. It is a central driver of sustainable growth and poverty reduction.

Globally, the HCI 2020 shows that, before the pandemic struck, a child could expect to attain an average of 56 percent of her potential productivity as a future worker. This global average masks considerable variation across regions and economies. For instance, a child born in a low-income economy could expect to be 37 percent as productive as if she had full education and full health. For a child born in a high-income economy, this figure is 70 percent. Globally, the average HCI is slightly higher for girls (0.59) than for boys (0.56).

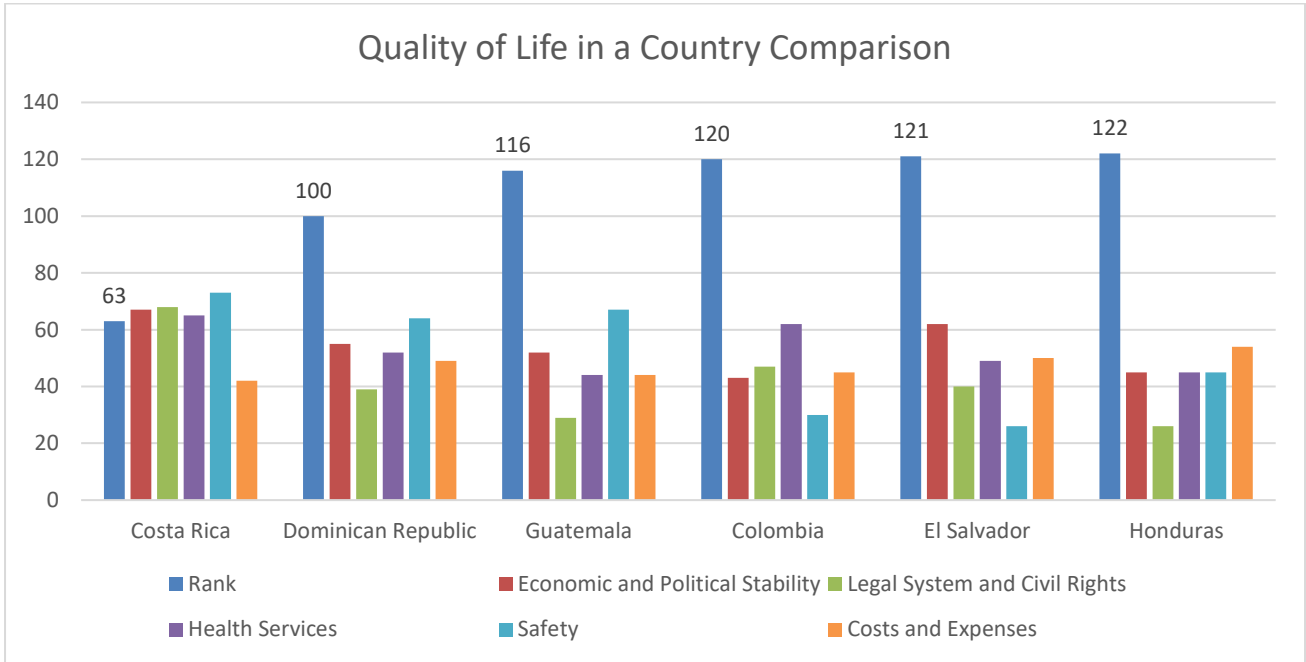
Figure 54. Quality of Life in a Country Comparison

Rank	Country	Economic and Political Stability	Legal System and Civil Rights	Health Services	Safety	Costs and Expenses	Total
121	El Salvador	62	40	49	26	50	45
116	Guatemala	52	29	44	67	44	46
120	Colombia	43	47	62	30	45	45
63	Costa Rica	67	68	65	73	42	56
100	Dominican Republic	55	39	52	64	49	50
122	Honduras	45	26	45	45	54	45

Source : <https://www.worlddata.info/quality-of-life.php>

Notes: Quality of life in a country comparison. A total of 37 factors were included in the calculation of the overall index, which were divided into 7 subject areas here (for the purpose of this analysis climate and popularity were not included). This table applies primarily to residents who also receive their income and pay taxes in the respective country

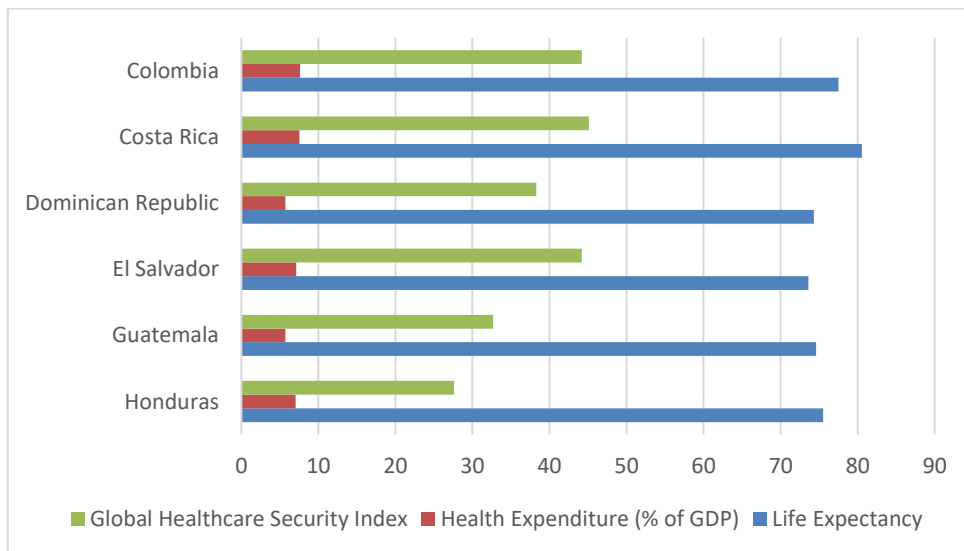
Figure 55. Quality of Life Comparison in five subject areas



Source : <https://www.worlddata.info/quality-of-life.php>

Costa Rica rank the best in quality of life within the competitors in this benchmark, followed by Dominican Republic, and Honduras rank the lowest. One of the lowest scores for ES is safety. ES, Colombia, and Honduras have the same total score of 45, but the difference lies in specific areas of analysis.

Figure 56. Health Indicators Comparison by Countries



Source: Dat.worldbank.org/indicator (Health Expenditure as % of GDP, 2018: Life Expectancy, 2019); www.ghsindex.org (2019)

El Salvador has good numbers on these indicators above of Guatemala and Honduras, and better position in the GHS Index and Health Expenditure over the Dominican Republic.

4.4.6 Stability and ease of doing business

When looking overseas for new sites, the geography of markets to be served will delimit the initial search territory. Among key factors will be trading blocks, tariffs/barriers to entry talent pool, labor costs, other operating costs, infrastructure, labor legislation, potential/social risk, available sites/buildings, economic zones, and accessibility.

Table 4-6. Competitiveness, Ease of Doing Business, and Governance Indicators by Country, 2019

Indicator	El Salvador	Guatemala	Colombia	Costa Rica	Dominican Republic	Honduras
Global Competitiveness rank /141 countries	103	98	57	62	58	101
Ease of Doing Business Rank	91	96	67	74	115	133
Short term political risk	3	2	2	2	2	2
Control of Corruption	32.69	18.75	48.08	75.96	25.00	23.08
Rule of Law	23.56	13.94	38.46	70.19	41.83	15.38
Regulatory Quality	56.25	44.23	66.35	68.95	52.40	34.13
Government Effectiveness	35.58	26.44	55.77	67.79	38.94	30.29
Political Stability and Absence of Violence/Terrorism	42.86	25.24	15.71	60.48	48.57	27.14
Voice and Accountability	51.72	35.47	55.17	85.71	53.69	31.03
Country Risk Classification *	5	4	4	4	4	5
Inflation % (2020)	1	4	1.61	2	3	4

Source: Doing Business database.

https://www.theglobaleconomy.com/rankings/political_risk_short_term/#

<https://info.worldbank.org/governance/wgi/Home/Reports>

*<http://www.oecd.org/trade/topics/export-credits/arrangement-and-sector-understandings/financing-terms-and-conditions/country-risk-classification/>

Country Risk Classifications of the Participants to the Arrangement on Officially Supported Export Credits, June 2021

Notes. The six aggregate indicators (governance) are reported in percentile rank terms from 0 to 100, with higher values corresponding to better outcomes. The Global Competitiveness Index 4.0 assesses the microeconomic and macroeconomic foundations of national competitiveness, which is defined as the set of institutions, policies, and factors that determine the level of productivity of a country.

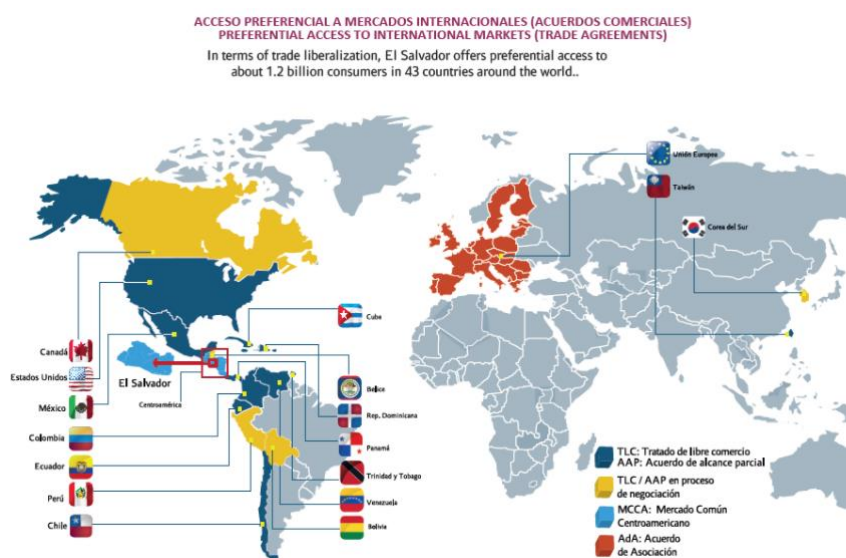
El Salvador has a weak position in some of the above indicators, but it has some advantages over Guatemala and Honduras. It is important to highlight that these data are from 2019, and El Salvador has undergone significant changes that may vary its position when the most updated report comes public by the end of September 2021. The inflation rate in ES is the lowest.

To attract new FDI, El Salvador must improve the process of doing business, to make it more friendly and predictable to investors. Specially in the Medical Devices sector, decisions are made on a long-term planning due to the nature of the regulatory environment over products and markets, for these investors, a stable and rule of law is a must to be considered.

4.4.7 Investment Incentives, Market Access, and Regulatory Environment

Market access. El Salvador has an ample range of Free Trade Agreements and a strategic location in the Americas.

Figure 57. Preferential Market Access from El Salvador to the World



When selecting a site, pharmaceutical companies seek those areas that have tax structures designed to reward investment and innovation. Corporate income tax, workers' compensation, tax credit incentives, property taxes, investment grants, as well as sales tax exemptions are factors usually considered by medical device companies during their site selection process.

More creative incentives are given in various countries, e.g., infrastructure subsidies to increase the accessibility and attractiveness of a site. Training workforces, if a foreign investment brings a new type of operation to the host country and more critical if trying to attract pharmaceuticals, there could be potential issues around sourcing a qualified workforce, committing to educational training programs will be considered as a key strategic incentive. Initial wage subsidies, for a limited time to help the initial ramp up process.

For device companies that clean parts and assemblies, or use chemicals or gases in quantity, it is necessary to be aware of local environmental regulations. A coordinated permitting process can help new companies address environmental laws. A streamlined line process in place and providing accurate and timely information regarding permitting and regulatory requirements is critical during the initial country evaluation. The presence of a green energy matrix is a positive factor in a site evaluation.

Environmental protection and stewardship are rapidly rising to the top of the corporate agenda and pharmaceutical businesses are no exception. The healthcare sectors of the United States, Australia, Canada, and England combined emit an estimated 748 million metric tons of greenhouse gases each year, an output

greater than the carbon emissions of all but six nations worldwide. In order to curb this situation various European standards have been introduced.

Sterilization, however, falls short on the environmental front, and may consume more energy and produce more emissions than incineration itself. Gamma radiation is one of the preferred sterilization technologies for pharmaceuticals.

Reducing the impact of packaging can also significantly reduce the materials that need to be dealt with through either waste or recycling. In addition to this, for recycling plans to be successful it important to have a full understanding of the practices surrounding device use and to establish, where possible, closed loop recycling systems that recover the waste materials from hospitals or patients and bring them back into the recycling process.

Table 4-7. Foreign Trade and Investment Incentives comparison by Country

Country	Number of Industrial Parks /Free Zone	Investment Freedom Ranking 2021	Free Trade Agreement	Double Tax Treaties	Availability of Investment Incentives
El Salvador	17 (9 suitable for manufacturing)	70	6	1	Free Zone Law: 100% income tax exemption, municipal taxes for 15 years in SS Metro area; 20 years Outside SS Metro area. DPA. International Services Law
Guatemala	12	70	12	1	Free Zone Law: 100 % income tax exemption for 10 years
Colombia	41	80	17	14	Single income tax rate of 20% (the current rate in the National Customs Territory is 32% for 2020, 31% for 2021)
Honduras	39	65	10	0	Free Zone Law: 100% income tax exemption for 20 years
Dominican Republic	68	70	5	2	Free Zone Law: 100% income tax exemption, no time limit
Costa Rica	39 (12 for MD manufacturing)	70	14	3	Free Zone Law: 100% income tax exemption for 8 years in Metro area; 12 years Outside Metro area

Source: Authors. Interviews carried out by IOS Partners expert consultants.

https://www.theglobaleconomy.com/rankings/herit_investment_freedom/

<https://investincolombia.com.co/en/how-to-invest/investment-incentives/free-trade-zone-regime-colombia>

<https://cni.hn/honduras-beneficios-fiscales/>

<https://www.cnzfe.gob.do/index.php/es/preguntas-frecuentes>

El Salvador has an important restriction in its incentive laws – Free Zone and DPA – that require an improvement to attract FDI in the chemical-pharmaceutical-cosmetics-personal care sector

Art. 6. The natural and legal persons who have the following lines of business will not be able to rely on this Law:

g) Production, assembling or maquila, manufacturing, processing, transformation, or commercialization of sugar, its substitutes, derivatives and by-products; as well as any good that directly or indirectly incorporates sugar, its substitutes, derivatives or by-products.

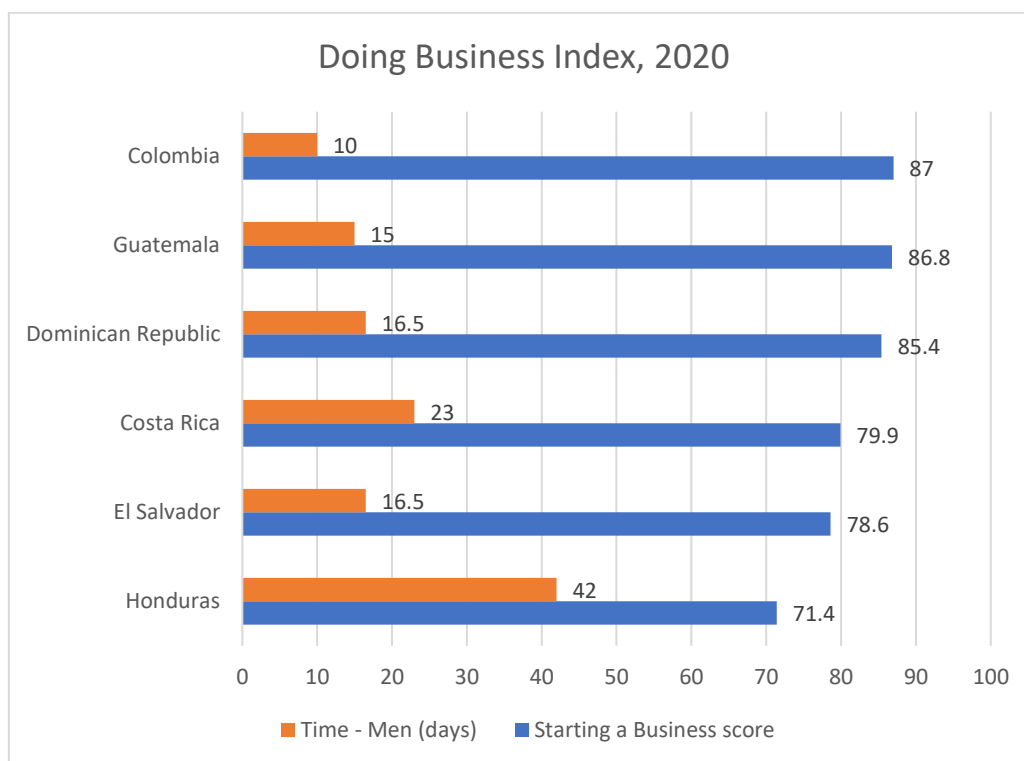
h) Production, assembling or maquila, manufacturing, processing, transformation, or commercialization of alcohol of any origin, as well as any good that incorporate directly or indirectly alcohol from any origin, except as provided in Roman V of article 3 of this Law

Almost every manufacturing process in this sector will require inputs such as sugar, alcohol in its production process, and cleaning, as an essential part of the required materials.

4.4.8 Infrastructure costs and quality and logistics

Each medical device company must assess how much it will cost to operate its business daily. An important area to research is utility costs, especially electricity. Such issues usually focus on the following: availability of electricity to the site, availability of temporary power during construction, regional generating sources, hookup fees, and cost per kilowatt hour. Cost of land and rental fees are also very important in the total equation.

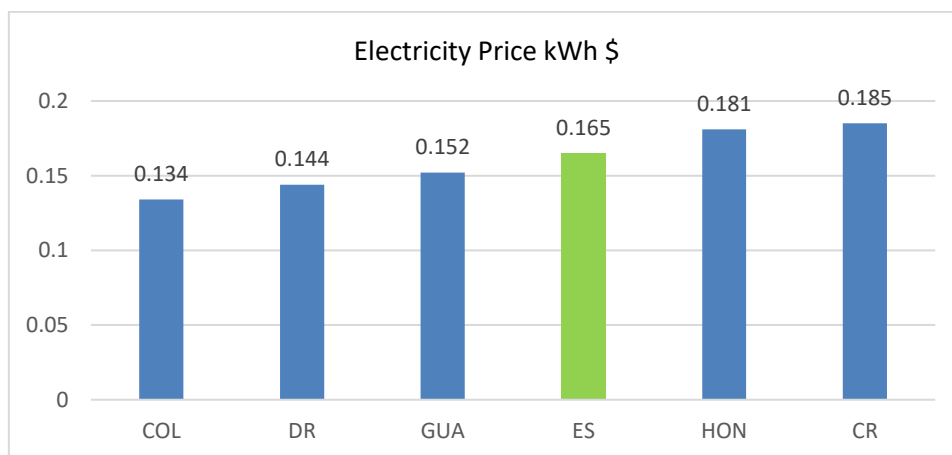
Figure 58. Starting a Business score and Time -Men (days) Doing Business Index, 2020



Source: World Bank, Doing Business project (doingbusiness.org).
<https://www.doingbusiness.org/en/data/exploretopics/starting-a-business>. May 2020

According to this report, Colombia is the country with the best time and cost to start a business and Honduras received the lowest score. El Salvador shows the second lowest time to start a business, this information should be included in the messages to the potential investors, plus the support that we will be receiving from PROESA’s Investment Executives as key contacts during the evaluation of the site selection and facilitating the establishment process and aftercare services.

Figure 59. Electricity prices comparison by Country



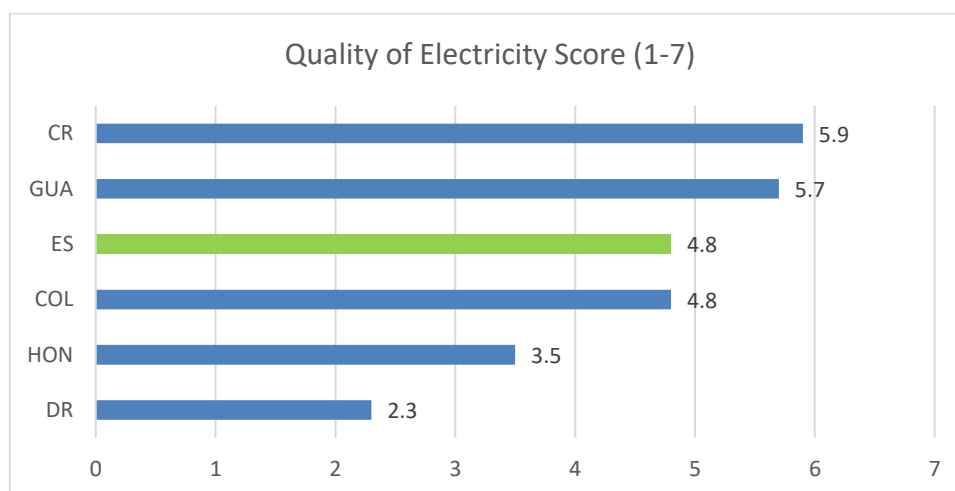
Source: <https://www.globalpetrolprices.com/countries/>

Notes. For **businesses**, the displayed data point uses 1,000,000 kWh annual consumption. Dec 2020.

Energy is expensive in the area and it must improve in costs, manufacturing facilities are air-conditioned run 24 x 7 all year round, thus competitive prices are a must.

Finding ways to reduce the price of electricity could be another competitive factor in El Salvador, to take in consideration above all if the manufacturing processes involved plastic transformation.

Figure 60. Quality of electricity comparison by Country

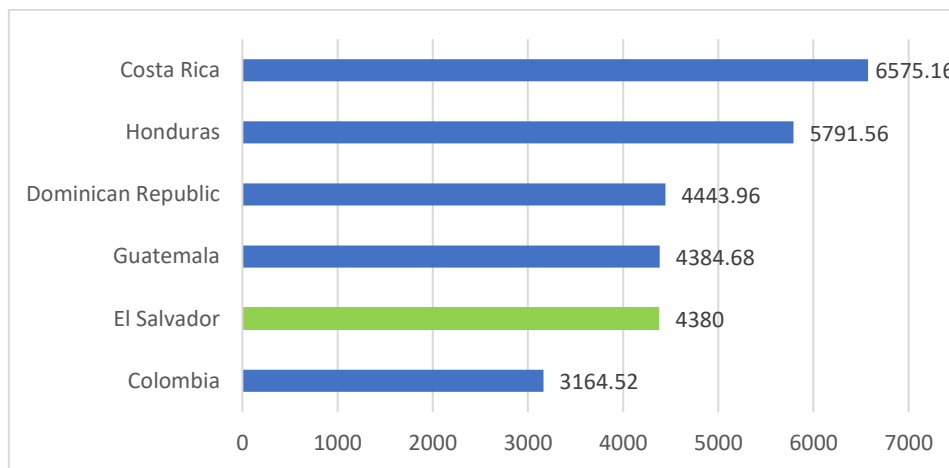


Source: 2.07 Quality of electricity supply - World Economic Forum 2018

Note. In your country, how reliable is the electricity supply (lack of interruptions and lack of voltage fluctuations)? [1 = extremely unreliable; 7 = extremely reliable]

Pharmaceuticals are capital intensive and those equipment’s require a good and stable source of energy to be efficiently running. A poor quality can affect not only the direct process, but it will disrupt the clean room conditions and validation.

Figure 61. Minimum wage comparison by Country (US\$ annual)

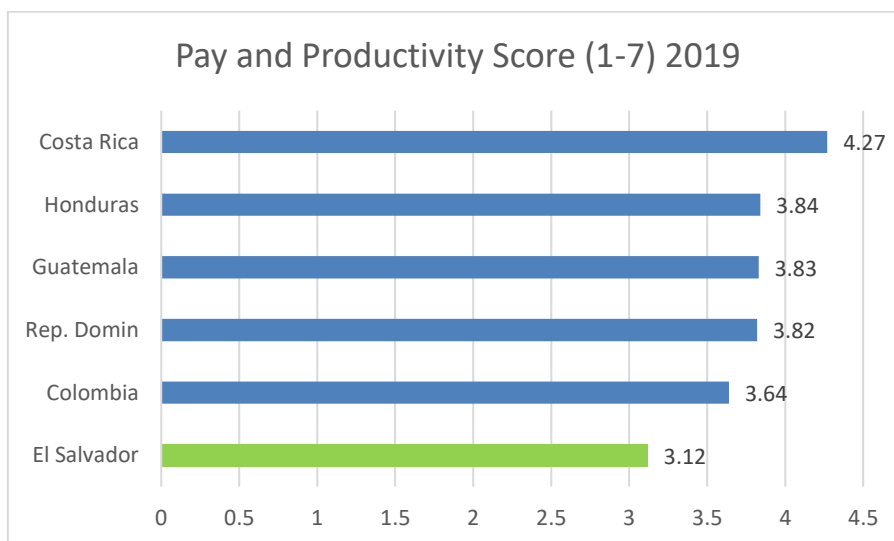


Source: <https://wageindicator.org/salary/minimum-wage>; Consejo Nacional de Salario Mínimo El Salvador; <https://www.salariominimocolombia.net/>; <https://tusalario.org/honduras/salario/salario-minimo>; <https://presidencia.gob.do/sites/default/files/content/documentos/Resolucion-1-2021-Salario-Minino.pdf>; <https://www.mtss.go.cr/temas-laborales/salarios/lista-salarios.html>

Costa Rica report the highest minimum wage in US\$ annual for 2021 and Colombia the lowest from the list of competitors. Most countries in Latin America and the Caribbean have raised salaries during 2021, the most recent was El Salvador. Wages are listed in figure 26. Nevertheless, pharmaceutical jobs are well paid due to the nature of the qualified workforce, but must be competitive with other locations.

El Salvador, Honduras, and Dominican Republic work on a 44 hours per week, Costa Rica, and Guatemala work on a 48 hours per week, Colombia will be moving gradually from 48 hours to 42 hours per week. The industry pays above minimum wages.

Figure 62. Pay and Productivity comparison by Country



Source:

https://tcdata360.worldbank.org/indicators/hb01e7faa?country=BRA&indicator=661&viz=line_chart&years=2017,2019

El Salvador ranks lowest for this indicator, and this is an important consideration to be analyzed when comparisons are made in the region. This should be a call to action for PROESA and national policy makers to study this further as well as consider/implement corrective measures.

4.4.9 Transportation Network

As the pharmaceutical industry becomes more global, it is increasingly important for firms to be part of a transportation system that can move people and materials both locally and globally, throughout the world.

Companies will investigate the accessibility and costs of transporting their products through the region's interstate highway system, railroad networks, and airport. A convenient and continually developing transportation infrastructure in proximity to major trade corridors and offering access to major markets as well as to product suppliers, is critical to companies attempting to streamline their supply chain and be globally competitive in their sector/industry.

The kind of product a company manufactures is an important factor when evaluating the attractiveness and responsiveness of a region's transportation network. Pharmaceuticals are normally easy to transport by land and ocean, air freight is mostly used by biopharma products because of the nature of the product that require strict temperature control conditions, and the high prices of these product in the world market.

Table 4-8. Transportation network indicators comparison by Countries

Indicator	El Salvador	Guatemala	Colombia	Costa Rica	Dominican Republic	Honduras
Number of ports	2 in the Pacific	2 in the Atlantic and 1 in the Pacific	8 in the Caribbean and 2 in the Pacific	2 in the Caribbean and 1 in the Pacific	12	4 in the Atlantic and 1 in the Pacific
Maritime container traffic TEU'S (2019) *	249.500	1.529.000	4.254.900	1.530.000	1.338.403	790.800
Number of international airports	1	2	2	2	5	3
Air transport, freight (million ton-km)	13	0	1.548	11	0	0
Number of direct passenger flights	28 routes of origin and destination in 14 countries	11 country destination direct flights	15 country destination direct flights	32 routes per day to 13 countries	10 country destination direct flights	8 direct destinations in 4 countries

Source: Authors.

*<https://datos.bancomundial.org/indicador/IS.SHP.GOOD.TU>

Note: TEUS stands for twenty-foot equivalent unit.

**<https://datos.bancomundial.org/indicador/IS.AIR.GOOD.MT.K1>

El Salvador international airport is one of the largest and most modern in the region, which is an advantage for biopharmaceuticals air transportation, but they do not have a strong air cargo system, it is mainly passenger flow. Amerijet, UPS and DHL are the air freight cargo company, providing shipping 3 days per week to the USA, Miami. There is no redundancy which make the network vulnerable and weak. Direct air cargo shipments from El Salvador to Central American countries, Dominican Republic, Mexico, and others, are not available, they must go via Panama or Miami. Connection within cities in Central America is for passengers only, not cargo.

Not having a port in the Atlantic is a weak point for moving cargo to the east coast, thus, cargo goes out through Guatemala and Honduras, adding pressure on cost and time, especially due to the inefficiencies of customs at each border. This is very important for activities such as logistics, and frankly the reason why Panama is still a logistics paradise and a pharmaceutical hub - given their great maritime transportation network through the Canal Zone.

Of late, freight costs have gone up considerably as an impact of the pandemic. For example, a container from China to America nowadays cost some US\$20,000 while it used to be less than \$3,000 a year ago. **This situation is an advantage to promote “near-shoring” production** back to the Americas, and countries such as El Salvador could benefit with the proximity to the USA market and lower transportation costs.

4.5 Presence of Suppliers and Manufacturers

El Salvador is one of the leading producers of pharmaceuticals in Central America, with 55 companies.

Table 4-9. Companies in the supply chain of the pharmaceutical and cosmetics sector

Company	Description
AINSA	A company dedicated to the production of goods for the cleaning and beauty industry, veterinary and agricultural products, insecticides for home use and raw materials in general.
Activa	Distributor of perfumes and fragrances
BIOKEMICAL	Pharmaceutical company, specialized in the commercialization of OTC commercial medicine products ity
CENTRUM, S.A. DE C.V.	Distributor pharmaceutical, medical supplies
Corporacion Bonima	Acquired by Tecnoquimicas (Colombia) former Bayer laboratory
DISTRIBUIDORA UNIDA INDUSTRIAL S.A DE C.V. DIUSA	Producer and Marketer of Chemical products as Raw Materials for the different industrial sectors
Drogueria FALMAR Laboratorios	Manufacturer of pharmaceutical free sales, disinfectant, antiseptics, biosafety, others
DROGUERIA JOTAGE	Company dedicated to the formulation and production of medicines for human use, nutraceuticals and nutritional products.
DROGUERIA Y LABORATORIOS FALMAR	Industry that produces Iodine Pac (polyvidone iodine soap solution), Glutaraldehyde solution, Lorhexidine gluconate (soap and solution), Clean alcohol gel.
DUISA S.A. DE C.V.	A company dedicated to the production of adhesives, disinfectants and cleaners, chemicals for hospital laundry, raw materials and solvents and mixtures.
Empresas Lopez-Davidson	empresa farmacéutica, dedicada a la fabricación, comercialización y distribución de productos para la salud, especialidades farmacéuticas y equipo médico

Establecimientos Ancalmo	La farmacéutica Ancalmo Internacional se inició con la apertura, en diciembre de 1938, de la Farmacia Alemana en la ciudad de San Salvador. Product ZORRITONE.
Farlab	
FUENTECLARA, S.A. DE C.V.	
GAMMA LABORATORIES, S.A. DE C.V	This laboratory is dedicated to the production of medicines for pediatric use, medicines for the respiratory tract, and veterinary medicine for larger species.
GRUPO PAILL, S.A. DE C.V.	This industrial group produces medicines for human use, chemicals and pharmaceuticals, manufacturing, services.
INDUSTRIAS MONERVA, S.A. DE C.V.	It is a company that is dedicated to the manufacture of bandages and compresses of gauze, absorbent cotton.
LABORATORIOS ARGÜELLO, S.A DE C.V.	Drugstore, pharmacy
Laboratorios Aarsal	Acquired by Grupo Vargas. GMP Lab Ethics, OTC, Vet products liquid, sterile parenteral liquids of small volume, sterile parenteral liquids of small volume hormonal, solid and semisolid
LABORATORIOS BIOGALENIC, S.A DE C.V.	GMP Lab, parenteral solutions
LABORATORIOS BIOLÓGICOS DE EL SALVADOR 'LABIS S.A. DE C.V.	This industry is dedicated to the production of vitamins, dewormers, antibiotics, minerals, for veterinary use in productive and companion species.
LABORATORIOS COMBISA, S.A. DE C.V.	Manufacture medicines and supplements
LABORATORIOS FARDEL	This company is dedicated to the manufacture and distribution of medicines for human use.
LABORATORIOS FERSON	This company is dedicated to the manufacture and distribution of medicines for human use.
LABORATORIOS GENERIX, S.A. DE C.V.	This company is dedicated to the manufacture of medicines for human use.
LABORATORIOS LOPEZ, S.A. DE C.V.	Acquired by PROCAPS (Colombia). Manufacture of tablets and powders for oral suspension; oral syrups and solutions.
LABORATORIOS MARCELI	This pharmaceutical industry specializes in the production of Methocarbamol + Paracetamol; multivitamins, calcium + b12 and appetite stimulants
LABORATORIOS MEDITECH	This company is dedicated to the manufacture of medicines for human use.
LABORATORIOS PHARMEDIC	is dedicated to the manufacture of cardiovascular, hypoglycemic, lipid-lowering, analgesic, anti-inflammatory, antibiotic, antibacterial drugs
LABORATORIOS SUIZOS	GMP Lab, pharmaceuticals and cosmetics
QUIMEX SA DE CV	Not Available
QUIMICAS NATURA VIGOR, S.A. DE C.V.	Cosmetic manufacturer and commercialization
SUMINISTROS FMQ, S.A. DE C.V.	Specializes in making absorbent cotton, absorbent gauze, bandages, swabs.
Teramed	Manufacture pharmaceuticals (generics) and commercialization
VIJOSA	One of the largest pharmaceutical companies in El Salvador

Source: Interviews carried out by IOS Partners consulting experts.

Note: It would be useful for PROESA to generate a comprehensive mapping of the local stakeholders that will participate in the development of the medical devices sector for the attraction of FDI. The information collected for this study is inconsistent as sources have contradictory and often non-updated information.

4.6 Stakeholders

El Salvador is well positioned to become a premiere location for manufacturing of chemical-pharmaceutical and cosmetics/personal care products. It has a wide range of support agencies and the sector has become an important economic growth pole, generating employment and exports. This must be further enhanced with technology transformation as well as development of niches for a more specialized industry, hopefully to include biopharmaceuticals/biologics in its country portfolio.

Table 4-10. Key stakeholders Pharmaceutical - Cosmetics Personal Care

PROESA	PROESA, the Export and Investment Promotion Agency of El Salvador, has created a directory of exporters to facilitate foreign investment.
Chambers, Associations	ASI, ALFA, INQUIFAR, AMCHAM, ASIPLASTIC
Ministerio de Economía	In charge of policies and economic strategies for incentives to develop a long-term vision for competitiveness
Ministerio de Educación /Academy	A major partner to develop medical devices industry, to facilitate policies towards training in specific areas of demand Universities and Technical Centers, Institutes FUNDEPLAST, ITCA/FEPADE
INSAFORP	Key partner for the development of skills and qualified operators and technicians
Ministerio de Salud / DNM Dirección Nacional de Medicamentos	In charge of policies, registry, permits and regulations for the medical devices
Customs	A partner that needs to understand the industry, there is a need to provide knowledge transfer to the customs authorities and personnel for them to promote best practices and to be facilitators of the law and regulations, but not to be stoppers in the inbound/outbound global logistics and value chain
Ministry of Labor	Policies and strategies for human resources development, wages, legal framework
Suppliers	Logistics companies, plastics, metalwork, packaging, service providers utilities, among others
CIEX	CIEX's main objective is to centralize, streamline and simplify export and import procedures in coordination with the institutions involved in export and import activities, through high-tech computer systems.
COEXPORT	Is a private non-profit institution, at the service of the export sector. Coexport seeks to promote and encourage the production and export of goods and services through the free enterprise system, as a means of economic and social development of the country, bringing together the productive sectors linked to exports.
Ministerio de Relaciones Exteriores	Seeks to formulate, direct and execute the foreign policy of El Salvador in an efficient and effective manner, which allows an active presence of the country in the international system. Projecting, promoting, managing and negotiating with excellence, actions in the political, economic, social, cultural and human fields for the benefit of the integral development of the Salvadoran Nation.

Source: Authors.

4.7 SWOT Analysis

As part of this study, a series of interviews were conducted with several stakeholders, many of them providing insightful information illustrating the need to facilitate and streamline procedures. Amongst other findings,

stakeholders concur that customs procedures and product registration (amongst other procedures) take time and resources, and that ideally, they could be handled more efficiently.

Another constraint identified is that need to facilitate availability/access to new or additional space at the industrial parks for temporary or permanent requirements. Currently, it can take a few months to do so, and customers prefer to go to other countries such as Honduras or Guatemala that will approve new facilities in days or weeks but not months.

Most stakeholder mentioned that the current incentive laws have improved, nevertheless, in the case of the pharmaceutical sector, they are not benefitting from most of these – due to restrictions on sugar and alcohol inputs, which are essential to the industry. A few of the investors did mention that they made the request to DPA to allow them to participate, but it was rejected.

Additional issues raised include the desirability of facilitating flexible working shifts. Some companies operate continuously and consider that at certain hours there is a risk for employees due to citizen insecurity, hence for these people it is preferable to have a little bit longer working hours, so as not to be expose their staff to potential risks during nighttime hours.

The need for greater knowledge of international markets, the registration and certification processes, as well as more support to promote the sector for exports was also mentioned.

Table 4-11. SWOT Analysis

STRENGTHS	WEAKNESSES
GMP Certified laboratories under Report 32 WHO Quality manufactured products and export experience Specialized trained labor force in chemistry-pharma-biology with college degrees and technical training skills Free Trade Agreements in place with important markets Geographical proximity of the United States and Mexico Infrastructure – energy providers and increasing number of projects (increasing energy offer and diversified sources) Competitive Labor cost Experienced pharmaceutical industry Low inflation rate Good network support from its stakeholders	Free Zone Law incentives (prohibition Art. 6) Poor energy quality and high price Lack of suppliers (raw materials, APICs) Safety issues Lack of port in the Atlantic Air freight is limited to only a few carriers Lack of predictability (currency, prices, regulations, legislation) Customs inefficiencies Slowness in the procedures for obtaining sanitary permits and technological deficiencies Very low R&D investments Basic innovation capabilities in the academic sector
OPPORTUNITIES	THREATS
The market for consumer health products that can improve overall health and well-being (e.g., vitamins, minerals, and supplements) should continue to grow and is likely to make this sector increasingly attractive for investors Production of generic drugs and biosimilar is increasing worldwide Top South American pharmaceuticals are looking at other locations to diversify operational risks and access market New services in demand internally and outsourced: data science, pharmacovigilance, marketing, online services support	Regional competitors' penetration in same markets Mexico and Colombia capturing reshoring (strategies in place) Products from China and India at lower prices into the region Thailand and other lower cost countries in Asia Educational programs and virtuality /Pandemic impact difficulty in training Preference of imported products with respect to the national production that currently exports Global Supply Chain increasing costs and difficult access

Source: Interviews carried out by IOS Partners expert consultants.

The main conclusion from the above SWOT review is that EL Salvador has a long history in the chemical/pharmaceutical sector, with in-house capabilities that can be developed into more value-added and specialized manufacture products (biosimilars, natural ingredients, raw materials).

Nonetheless, the country will need to enhance the security, transportation network, infrastructure (more stable energy and redundant service), streamlined process at customs and institutions like DNM (Dirección Nacional de Medicamentos) and the Ministry of Health.

There is some indication that the educational institutions in the country will do a competent job of generating qualified human resources that the sector will need to attract. In that regard, opportunities for the development of sector suppliers appear to be promising to facilitate an aspirational vision towards biotech and the future trends in the ITCs space. However, the appropriate amendments to the Free Zone and DPA laws (regarding alcohol and sugars) will need to be undertaken to improve the investment incentives for the sector.

4.8 Investment Readiness – The Opportunities

4.8.1 Competitors Landscape

Central America’s geographic location is very attractive for companies in the USA due to its proximity to the North American market, competitive production costs, investment incentives – as well as low or inexistent duties due to the FTA’s.

The Healthcare landscape in Central America is changing quickly. Demand is growing as populations age and chronic diseases become commonplace. Increasing wealth in some demographic segments drives a desire for higher quality services.

During 2020, Central American imports of pharmaceutical products totaled \$3.502 billion, and purchases from Mexican companies increased by 2% over the amount reported in 2019. (CentralAmericaData.com).

Below, please find a Comparative Analysis of Pharmaceutical and Cosmetics companies in some of the most competitive countries.

Table 4-12. Pharmaceutical and Cosmetics Comparative Analysis by Country

COUNTRY	# Of COMPANIES	IMPORTS	EXPORTS	EMPLOYMENT	Type of Operations & Products
Mexico	770 (Pharma)	US\$5.5 Billion (Pharma, 2020) US\$2.64 Billion (Cosmetic, 2020)	US\$1.46 Billion (Pharma, 2020) US\$2.56 Billion (Cosmetic, 2020)	74,000	Medicines, Vaccines, Skin care, Hair care, fragrances, color cosmetic and nails,
Costa Rica	40+ including local and MNC	US\$818.63 Million (Pharma, 2019) US\$232.59 Million (Essential oils, perfumes, cosmetics, toiletries, 2019)	US\$168 Million (Pharma, 2019) Guatemala, El Salvador, Honduras, Nicaragua, Panamá, República Dominicana, Trinidad y Tobago, Cuba and Jamaica US\$15.15 Million (Cosmetics, 2019)	3,500	Of the 6,300 pharmaceutical items that are registered in the country, 1,400 are produced locally. One percent of these products represent diagnostic reagents and vaccines, forty-three percent are made up of antiserums, and fifty-six percent of production of prescription drugs, Research clinical trials. Commercialization, distribution, shared services, finance, pharmacovigilance centers.

Dominican Republic	60 + (14 MNC) in Pharma 10+ in Beauty Cosmetics	US\$722.77 Million (Pharma, 2018) US\$722.77 Million (Cosmetics, 2018)	US\$508.29 Million (Pharma, 2018) US\$96.8 Million (Beauty Cosmetics, 2018)	n.a.	Medicine manufacturing, Commercialization, Distribution, Logistics, Clinical Research Cosmetics, personal care, and household products
Colombia	96 GMP domestic accredited; 161 GMP MNC (Include 26 companies in Research & Development)	US\$2.51 Billion (Pharma, 2020) US\$547.2 Million (Essential oils, perfumes, cosmetics, toiletries, 2020)	US\$361.51 Million (Pharma, 2020) Ecuador, Peru, Panama, Chile, USA, Central America, Argentina, Brasil, Uruguay, Paraguay US\$423.31 Million (Essential oils, perfumes, cosmetics, toiletries, 2020)	42,486	Producers of Prescription (RX), Over the Counter (OTC) and Dietary Supplements. Commercialization, Logistics and Distribution, Clinical Research, Development Essential oils, fragrances, cosmetics, hygiene, soaps, and detergents
Guatemala	70 domestic and 2 MNC authorized to manufacture medicines 17+ Cosmetic, Hygienic, Personal Care	US\$687.21 Million (Pharma, 2020) US\$364.58 Million (Essential oils, perfumes, cosmetics, toiletries, 2020)	US\$687.21 Million (Pharma, 2020) Central America, Panama, USA, Dominican Republic, Ecuador, Bolivia US\$365 Million (Cosmetics, H & PC, 2019) Central America, France, USA	8,000 in Pharma 7,000 in Cosmetic and Hygienic Products and Personal Care	Manufacturing, Commercialization, Logistics and Distribution, Clinical Trials, Financial Services Centers. Medications, dietary supplements, vitamins, and natural products. Essential oils, fragrances, cosmetics, hygiene, soaps, and detergents
Honduras	26 (Pharma, SMEs) 13 (Cosmetics)	US\$ 535 Million (Pharma, 2020) US\$18.53 Million (Cosmetic, 2019)	US\$16 Million (Pharma, 2020) Central America US\$4.07 Million (Cosmetic, 2019)	n.a.	Generics and cosmetics
El Salvador	56	US\$ 437.83 Million (Pharma, 2019) US\$ 179.45 Million (Cosmetics, 2019)	US\$ 170 Million (Pharma, 2019) Central America, Dominican Republic, USA, Mexico, Colombia Cosmetics n.a.	6,800	Medicine for human and veterinary use, detergents, fertilizers, antibiotic drugs, parenteral solutions, paint, hair products

Source: IOS Partners consulting experts. UN COMTRADE date base on international trade, 2020. AGEXPORT. ASINFAR. ANDI.

Competitors Initiatives

Competitor countries are implementing various initiatives to attract FDI. Below, please see some key examples:

Guatemala

EXPORT PHARMA TO USA: This is a program that prepares companies to enter the United States market, given the importance of the market with its high demand for pharmaceutical drugs, multivitamins, over-the-counter drugs, and natural products. Through this program, companies will be strengthened to comply with the regulations for entering the market, and receive help to develop relationships with international buyers.

Local Events thru AGEXPORT: Pharma Innovation & Trends (2020), in which the main international product trends for the development and innovation of pharmaceutical products were exhibited and within which medicinal hemp (CBD) is undoubtedly one of the up-and-coming products.

HEALTH & CARE SUPPLIERS (2021): A specialized business roundtable is organized, to develop linkages with international buyers from Central American countries, the United States, the Dominican Republic, among others.

Expo Belleza & Salud and Cosmetics Talks & Formulation Summit: This is a contest that promotes the development of professionals, women, youth, and formulators with Guatemalan scientists with innovative projects for cosmetics, cosmeceuticals, and hygienic products - so that entrepreneurs, SMEs as well as national and international companies can learn about the future of post-pandemic fragrances, strategies, and develop tools and strategies to face the new normal – including digital marketing, the development of new products as well as other topics that will boost the competitiveness of the sector.

Colombia

Colombia's **clinical research platform SISEC**; a system for total monitoring of clinical research in the country, where the data concerning all the studies and research carried out are recorded to detect in real time the challenges that can be improved in these practices.

A **thought center or think tank called INNOS**, whose purpose is to generate content and information that help nurture and complement public discussion on health issues.

Events such as the "**hackathon**" and the "**ideathon**" for the integration of new voices and ideas to promote innovation and sustainability of services in this sector.

4.8.2 Companies

This is not intended to be a comprehensive list but a guidance to promotional efforts.

Brazil (pharmaceuticals)

- Ache Laboratorios Farmaceuticos
- Hypera Pharma
- NEO Quimica
- EMS Pharma

Argentina (pharmaceuticals)

- Gador
- Elea
- Casasco
- Baliarda
- Investi
- Bernabo
- Savant

Costa Rica (cosmetics & hygiene, natural)

- BioLand
- Total Natural

Mexico

- Sol Natural (cosmetics & hygiene)
- Ahal Laboratorios (bio cosmetics)
- NE Natural Elements (cosmetics natural, organic)
- Vervan (skin care)

Colors, flavors, and other specialty ingredients

- Symrise
- Bell Flavors & Fragrances (USA)
- Givaudan
- Rudolf Wild GmbH
- Robertet
- IFF International Flavors & Fragrances

Europe

- BTSa (supplements, cosmetics) Spain
- Arkopharma Laboratorios (phyto-pharmaceuticals) Spain
- Zeller International (phyto-pharmaceuticals) Switzerland
- Laboratorios Valquer (cosmetics) Spain
- Amapola Bio-Cosmetics (sustaining cosmetics) Spain
- Ami Iyök ecosmetics (cosmeceuticals) Spain
- Pulpe de Vie (bio-cosmetics, higiene) France
- Martina Gebhardt (natural cosmetics) Denmark
- Natural Cosmetic Lab (organic cosmetics) Spain

USA

- Exel Aesthetic Biotechnology USA (cosmetics)
- Morphe Cosmetics (digital retail direct-to-consumer distribution beauty and personal care)
- Pharma Natural (vitamins, supplements, herbs, wellness, skin care)
- Tasyly Pharmaceuticals, Inc. (herbal medicines)

4.9 Recommendations

The proposed recommendations are provided based on the findings identified through our competitive country analysis and further to the SWOT and benchmark analysis. The interviews conducted during the country evaluation with the various local and international firms established in El Salvador have also provided important insights to identify the following areas of opportunities:

4.9.1 The Opportunities

Before considering any proactive activities towards FDI attraction in the pharmaceutical and cosmetic sectors, an improvement to the incentives laws must be taken seriously. This could be a “show-stopper” to companies looking to develop or expand operations in El Salvador – and result in their locating in other locations.

Improvements to the incentives scheme to allow chemical-pharmaceutical-cosmetics-personal care manufacturing companies to engage into the FZ/DPA ecosystem is of critical importance.

Table 4-13. Proposed Areas of Opportunities

The Opportunities	Value proposition - key message
<p>Short Term Opportunity</p> <p>PROESA to continue supporting companies already established in ES for market expansion (retention and expansion of current industries)</p>	<p>The number of companies already manufacturing in El Salvador is significant and the aftercare program should be very proactive to facilitate new initiatives to promote further opportunities (the USA market was mentioned in most of the interviews).</p> <p>There is an expressed need by the companies in the sector to receive more information about the market, entry regulations, buyers</p>
<p>Short to Mid-term Opportunity</p> <p>Services such as: Pharmacovigilance Patients support on-line services Marketing services (on-line sales) Logistics/ Distribution</p>	<ul style="list-style-type: none"> • An experienced workforce in the pharmaceutical regulatory environment • Time-Zone • Workforce services attitude is premium • Experienced and productive call centers • International Services Law is one of the best in the region • Logistics Operators Track Record Experience
<p>Short to Mid-term Opportunity</p> <p>New business model: Joint Venture with local companies; M&A</p> <p>Access to new technology/Transformation to higher value-added products</p>	<ul style="list-style-type: none"> • Existing well-structured pharmaceutical cluster with presence of local and international companies that have implemented new business models • Example of Procaps and Laboratorios Lopez; Tecnoquimica and Bayer • Market access in the region by means of FTAs • Strategic location • Specialized work force and training support thru INSAFORP
<p>Mid to Long-Term Opportunity</p> <p>Natural ingredients for cosmetics and personal care</p> <p>Natural ingredients for phytopharmaceuticals</p> <p>Flavors & Fragrances</p>	<ul style="list-style-type: none"> • El Salvador is rich in biodiversity • It has an excellent climate and conditions to grow medicinal herbs • Competitive wages • FTAs in place with important markets in Europe, Asia, USA • Presence of manufacturing laboratories • Support from the academia and government official to facilitate the exploitation of natural resources according to the National Regulations in place
<p>Mid to Long-Term Opportunity</p> <p>Biosimilars (bio generic) manufacturing</p>	<ul style="list-style-type: none"> • Track record in the pharmaceutical industry • Productive and fast learning workforce • Presence of DNM agency


<p>Regional Value Chain Opportunities</p> <p>Packaging supplies (plastic containers, boxes, bags, film) to the region</p> <p>Contract manufacturing/outsourcing services in products such as Generics, OTC, Vitamins, Dietary Supplements (this is more an export promotion activity rather than a FDI initiative)</p>	<ul style="list-style-type: none"> • Track record in the packaging supplies (e.g., Salvaplastic, Sigma) • Strong plastics industry and training program • DNM in place as a recognizes Regulatory Authority to perform audits, GMP certificate • Track record of Certified Manufacturing Laboratories, offering a wide range of quality products and with available production space and capabilities
<p>Long Term Opportunity</p> <p>Attraction of small/medium size companies in the chemical/pharmaceutical and cosmetics/ personal care sector</p>	<ul style="list-style-type: none"> • Track record from over 30 manufacturing laboratories GMP certified • Educated and specialized workforce in the pharmaceutical area • Competitive costs • Reliable infrastructure • Strategic location to main markets and FTAs in place • Investment incentives (if FZ and DPA laws improve)

4.9.2 Target Events

The following proactive actions should be considered when attending or considering attending trade show events:

- Go over the list of exhibitors and/or attendees and create an accurate list of potential target companies, follow these companies on LinkedIn, get in touch with decision makers contacts.
- Get in touch with International Associations that will be attending the shows, generate actions prior to the event, request an appointment to make a Country Presentation/Webinar to the members of the participant Association.
- Partner with the Embassy and/or Commercial Offices located in El Salvador of countries of main interest, make them part of your efforts to attract business opportunities.
- Partner with El Salvador offices abroad and make them part of your FDI attraction initiatives. Make sure you attend the various initiatives with the support of National Authorities to support your value proposition to potential investors.
- Include Diaspora contacts in your preferred list for news and FDI attraction initiatives
- Make sure to incorporate the local Chambers, Associations, Universities (pharma related schools, professors; and R&D students abroad) in your specific projects, initiatives to multiply the professional network and communication/image building opportunities.

Table 4-14. Target Events

Event Name	Date Location	Description (sub-sector focus, attendees)
CPhi Global Pharma and Beauty Events	25 Oct - 19 Nov 2021 Online Conference & Networking May 17-19, 2022 Pennsylvania Convention Center, Philadelphia, USA Nov 1-3, 2022 Messe Frankfurt, Germany	CPhi's 30-year tradition organizes the most important and widespread series of global pharmaceutical events. Each year CPhi unites more than 100,000 pharmaceutical professionals through exhibitions, conferences, and online communities to network, identify business opportunities and expand the global market. Hosting events in Europe, China, Korea, India, Japan, South East Asia, Middle East and North America, CPhi co-locates with ICSE for contract services, P-MEC for machinery, equipment and technology, InnoPack for pharmaceutical packaging, Bioproduction for biopharma and FDF for every aspect of the finished dosage supply chain. Newest vertical introduces opportunities around Pharma and Beauty. This is the space on CPhi Online that brings you news, insights, expert sessions and trends around cosmetic ingredients, nutraceuticals, cosmeceuticals, and dermatological finished products. CPhi North America was honoured by Tradeshow News Network, taking home the fastest growing award in the attendance category https://www.cphi-online.com/live/cphi/event46.jsp?eventid=192 Attendee – Online \$49. Includes access to: Online Content, Online Matchmaking & Meetings with Exhibitors, Online Networking. https://www.cphi.com/northamerica/en/attend/packages-pricing.html https://www.cphi.com/en/events/upcoming-events.html https://www.fair-point.com/event/2022/cphi-worldwide/request/ https://www.cphi.com/europe/en/home.html
INTERPHEX	October 19-21, 2021. 2022 dates TBD Javits Center, NYC, USA	For 41 years, INTERPHEX has proven to be the place to find all of the State-of-the-Art Solutions you need to Cost Effectively Develop and Manufacture Quality Product. INTERPHEX is the premier pharmaceutical, biotechnology, and device development and manufacturing event to “Experience Science through Commercialization”. Based in New York, INTERPHEX brings over 10,000 global industry professionals and 625+ leading suppliers together to “Learn It, Experience It, Procure It” through a combination of no cost technical conference, exhibits, demonstrations and networking events to leverage quality, efficiency, and cost effectiveness in today’s global market. https://www.interphex.com/en-us/show-info/exhibitor-list.html Organizers: RX UK (Reed Exhibitions)
 EXPOFARMA Asociación Farmacéutica Mexicana, A.C.	April 27 - 29 2022 World Trade Center Ciudad de México	The only business forum where exhibitors can be in direct contact with more than 8,000 professionals from the Pharmaceutical, Chemical, Cosmetic, Food, Medical Devices, Hospital Pharmacy, Pharmaceutical and Clinical Analysis industries. 184 stands. info@expofarma.net https://www.expofarma.net/Expositores.html Coordinador Ventas: Armando Palomo Solís armando.palomo@expofarma.net palomosolis.armando99@gmail.com
Pharma 2021 (formerly eyepharmaceutical Barcelona)	Oct 11-22, 2021 Virtual Event	A Reuters Event. Partner with pharma decision makers. We have lost count of the stories of new opportunities, partnerships, ideas, funding, take-home tactics, jobs, standards, and friendships that were born at Reuters Events Pharma (formerly eyeforpharma Barcelona). The conference is how pioneering initiatives develop into game-changing strategies. The ambition to redefine the

		<p>pharmaceutical industry, the proximity of like-minded people, and the abundance of industry leading case-studies are the main reasons so many executives come back to Reuters Events Pharma every year.</p> <p>10,000+ attendees; 200+ speakers; 100% Top 50 Pharma; 87% Senior Leaders; 40+ Hours of Content.</p> <p>US\$1499 Networking Included; \$2799 Best Value Premium</p> <p>https://reutersevents.com/events/barcelona/conference-speakers.php</p>
INFARMA	22 to 24 March 2022 IFEMA - Feria de Madrid, Spain	<p>32nd edition of Infarma, the European Pharmacy Meeting that integrates the European Congress of the Pharmacy Office and the Medicine and Parapharmacy Exhibition. The Medicine and Parapharmacy Room is the ideal space to meet suppliers, products and technologies and find all the news that can be incorporated into the Pharmacy Office. The European Congress of the Pharmacy Office is a meeting point to discuss current issues. In a globalized environment, the pharmacy is news when facing new challenges.</p> <p>Organizer: Interalia, ferias Profesionales y Congresos S.A. Barcelona, Spain</p> <p>https://www.interalia.es/infarma/ https://www.interalia.es/ecosalud/</p>
BIO International Convention	June 13-16, 2022 San Diego, CA, USA	<p>Through education, collaboration and advocacy, BIO strives to drive a bio-revolution that cures patients, protects our climate, and nourishes humanity. As the largest global non-profit biotechnology trade association representing startups to Fortune 500 companies, BIO is proud to host a portfolio of partnering conferences that not only unite and empower biotech innovators and their ecosystem to improve lives but also offer a broad and unbiased venue to seek investment and Business Development and Licensing (BD&L) opportunities.</p> <p>https://www.bio.org/events/bio-digital</p>
COSMETICA KOSMETIC International Messe	2021 Cancelled 2022 TBD Berlin, Frankfurt, Hannover	<p>Cosmetics, Beauty products, Hygiene, Beauty, Health.</p> <p>https://www.cosmetica.eu/cosmetica-frankfurt/exhibitor-list/</p> <p>Organizer: KOSMETIK international Messe GmbH</p>
COSMOPROF North America	July 12-14, 2022 Las Vegas Convention Center, Las Vegas, NV, USA	<p>Cosmoprof North America (CPNA), the leading B2B trade show in the Americas, is recognized for its dynamic growth and unique programs. The event offers the entire industry an opportunity to come together, make new relationships, and foster collaboration. The show is a powerful platform that has the ongoing support and presence of leading beauty associations and key industry entities. In 2019, over 40,000 attendees engaged with a record-breaking 1,435 exhibitors from 43 countries to discover unique brand launches, product innovations, new channels for distribution, packaging, and manufacturing and to form key relationships with top industry professionals and retailers. The three-day event, which takes place under one roof, encompasses all sectors of the beauty industry.</p>

<https://s23.a2zinc.net/clients/pba/cosmoprof2020/public/Exhibitors.aspx?ID=9051&sortMenu=102000#>

Source: Authors. Event organizers websites.

4.9.3 Target Markets

Table 4-15. Target Markets

Market	Description
USA	The USA is the largest market for pharmaceutical and other health & hygiene products. It is also home to a large diaspora population from El Salvador and other Central American countries that are always interested in finding home products near them. Thus, this brings opportunities for USA companies (SMEs) looking at potential opportunities to establish a business in other offshore locations for efficiency and Latin market opportunities. Biogalenic, a company already manufacturing in ES is exporting to the USA veterinary products, this is a good example of how to seize opportunities, not only in the veterinarian area, but also in human health and cosmetics.
Europe	Europe is a recipient of some exports from Central America, and there is a growing market for natural products both in the healthcare as well as cosmetics related products. This is an open-minded market, customers are looking into natural ingredients, less chemical and biopharma products. As such, a market to be considered of high importance (Germany, UK, Spain, France, Italy). There are various associations in these countries that provide support to foreign countries (exports and investments) to facilitate these market access
South America	South America is an important regional market, specifically such countries such as Colombia, Argentina, Brazil, Perú, Ecuador, among others, with a growing number of indigenous companies that are already exploring options to have a manufacturing/marketing presence abroad. El Salvador offer a competitive landscape, market access by means of FTAs and a strategic location within the region. Tecnoquímicas is an example of a Colombian pharma with presence in El Salvador (by means of acquisition) that should be on top of mind to explore additional expansion and innovation with the appropriate natural resources available in the country. Colombia has a cluster in the cosmetics area that should be further studied to integrate El Salvador in its value chain and promote investments into the country.
Mexico	This is the second largest market in Latin America. They promote several events in the country and are looking at business opportunities for both inbound and outbound as well as looking for natural resources for ingredients.

4.10 ANNEX I - Pharma Chemical Associations and Publications

CPhI Online. <https://www.cphi-online.com/>

CPhI 365 digital opportunities. <https://www.cphi.com/en/digital-solutions/thought-leadership.html>

BIO – Biotechnology Innovation Organization. <https://www.bio.org/about>

Drug Information Association (DIA) is a global association that mobilizes life science professionals from across all areas of expertise to engage with patients, peers and thought leaders in a neutral environment on the issues of today and the possibilities for tomorrow. <https://www.diaglobal.org/>

The **European Federation of Pharmaceutical Industries and Associations (EFPIA)** represents the biopharmaceutical industry operating in Europe. Through its direct membership of 36 national associations, 39 leading pharmaceutical companies and a growing number of small and medium-sized enterprises (SMEs), EFPIA's mission is to create a collaborative environment that enables our members to innovate, discover, develop, and deliver new therapies and vaccines for people across Europe, as well as contribute to the European economy. <https://www.efpia.eu/about-us/>

American Association of Pharmaceutical Scientists. <https://www.aaps.org/home>

American Pharmacists Association (APhA). <https://www.pharmacist.com/>

National Association of Boards of Pharmacy. <https://nabp.pharmacy/>

National Community Pharmacists Association. <https://ncpa.org/>

National Association of Chain Drug Stores (NACDS). <https://www.nacds.org/>

The **Global Self-Care Federation** is a federation of regional and national associations, and manufacturers and distributors of non-prescription medicines on all continents. We are a Swiss association based near Geneva, Switzerland. We support the development of industry associations around the world to aid in the understanding and development of responsible self-care and self-medication. The Global Self-Care Federation requires member associations to develop voluntary codes of advertising practice and encourages consumer-friendly labelling. Companies in the self-care industry, research, manufacture and distribute non-prescription medicines and dietary supplements, designed and labelled for use without medical supervision. The public is made aware of these health products via direct advertising, and they are available in pharmacies and, in many countries around the world, in other outlets. <https://www.selfcarefederation.org/>

International Alliance of Dietary/Food Supplement Association

<https://www.iadsa.org/>

<https://www.nutritioninsight.com/news/iadsa-launches-online-portal-to-promote-information-on-dietary-supplements.html>

The **Professional Beauty Association (PBA)** is the nation's largest, community led non-profit membership organization representing licensed professionals, salons, manufacturers, distributors, schools, and students. PBA exists to elevate, unite, and serve the beauty industry, and the professionals who improve people's lives. WWW.PROBEAUTY.ORG

ILAR Industria Latinoamericana de Autocuidado Responsable. La Asociación Latinoamericana de Autocuidado Responsable (ILAR) es una organización latinoamericana sin fines de lucro, que trabaja para promover el autocuidado en el uso de Medicamentos de Venta Libre, optimizando recursos y sistemas de bienestar social, contribuyendo a la salud pública a través de la medicación responsable. Fundada en diciembre de 2001, la Asociación está formada por fabricantes de productos y compañías farmacéuticas líderes en la región, así como por Asociaciones Nacionales de Medicamentos de Venta Libre, comprometidas con el uso adecuado de medicamentos sin receta en América Latina.

ILAR también es miembro de la Federación Mundial de Autocuidado (GSCF), organización no gubernamental que tiene una relación oficial con la Organización Mundial de la Salud (OMS) y a la que pertenece junto con otras 54 asociaciones de los cinco continentes. <https://infoilar.org/>

ALANUR has established themselves as the **Latin American Alliance for Responsible Nutrition**, since 2011, as a sum of efforts with the industry and authorities to provide reliable information regarding nutritional supplements. They are the main regional benchmark in the food supplement sector in Latin America; Their objective is to promote scientific knowledge about nutritional supplements, to promote responsible access to these products among the Latin American population. <https://alanurla.org/en/home/>

IKW - German Cosmetic, Toiletry, Perfumery and Detergent Association. The Association supports its members, amongst other things, through a comprehensive service at the implementation of regulations, agency services for foreign trade shows and the processing of market data. It advises within the framework of diverse trainings, seminars, events, and workshops as well as through written position papers and represents the interests of member companies through a comprehensive package of PR and communication activities as well as a far-reaching network. For manufacturers and distributors of cosmetic products in Germany you can find on the website of IKW. www.ikw.org

Cosmetics Europe is the European trade association for the cosmetics and personal care industry. Our members include cosmetics and personal care manufacturers, also associations representing our industry at national level, right across Europe. <https://cosmeticseurope.eu/>; <https://cosmeticseurope.eu/news-events/>; <https://cosmeticseurope.eu/library/>

Ingredient consortia bring together independent companies active in the cosmetics sector, under cv one single direction and budget, with the aim of preparing safety dossiers for submission to the European Commission under the Cosmetic Products Regulation (N° 1223/2009). consortia@cosmeticseurope.eu

https://www.makingcosmetics.com/Who-is-Who-in-the-Cosmetic-Industry_ep_70.html
<https://www.fda.gov/cosmetics>

The FDA-Cosmetic Site

The official site of the U.S. Center for Food Safety & Applied Nutrition: tells you everything about cosmetics including policies, programs, labeling, products & ingredients, international activities and links to other informative sites.

Federal Food, Drug, and Cosmetic Act from 1997

List of adulterated and misbranded cosmetics in the USA.

Cosmetic Ingredient Review (CIR)

CIR thoroughly reviews and assesses the safety of ingredients used in cosmetics in an open, unbiased, and expert manner, and publishes the results in peer-reviewed scientific journals.

MedLine Plus for Cosmetics

Comprehensive database from the US National Library of Medicine and National Institute of Health covering news, dictionaries and articles about cosmetics.

Society of Cosmetic Chemists

US society of cosmetic chemists strives to increase and disseminate scientific information through meetings and publications and to promote research in cosmetic science and industry.

I.F.S.C.C. (The International Federation of Societies of Cosmetic Chemists)

Worldwide federation dedicated to international cooperation in cosmetic science and technologies committed to advancing the knowledge of cosmetic science and to encouraging the dissemination of this knowledge through international meetings.

Canadian Soap and Detergent Association

Applicable basic requirements for notification of cosmetics in Canada.

Health Canada

Applicable basic requirements for notification of cosmetics in Canada.

ICMAD (Independent Cosmetic Manufacturers & Distributors)

Leading US trade association for the personal care products industry.

Cosmetic, Toiletry & Perfumery Association of the UK

Leading UK trade association for the personal care products industry.

Fragrance Foundation

International Trade Association of fragrance manufacturers

STEP Exhibitions (STEPEX)

Organization that promotes exhibitions and conferences and publishes magazines in the personal care and healthcare markets around the world.

Commodity.com

Comprehensive directory of chemistry resources.

4.11 ANNEX IV - Interviews

- AMCHAM
- America Logistic Group
- ASIPLASTIC
- Asociación de Laboratorios Farmacéuticos de El Salvador (ALFA)
- Asociación Salvadoreña de la Empresa Privada (ASI)
- Biogalenic, S.A. de C.V.
- Blue Logistic
- COEXPORT
- FUSADES
- Grupo PAILL, S.A. de C.V.
- Guardado, S.A. de C.V. Laboratorios Fardel
- INSAFORP
- SALVAPLASTIC
- Superintendencia General de Electricidad y Telecomunicaciones – SIGET
- Zona Franca Miramar

4.12 ANNEX V – Investment News

4.12.1 Sinovac instalará en Chile planta de producción de vacunas para Latinoamérica



La producción de las vacunas comenzará en el primer semestre del 2022

Foto: REUTERS

Agencia EFE

El laboratorio chino **Sinovac** anunció este miércoles 4 de agosto del 2021 que instalará en **Chile** una planta de fabricación de **vacunas Coronavac** contra el **covid-19** con capacidad para producir 60 millones de vacunas al año, que también serán exportadas a otros países de **Latinoamérica**.

La inversión total es de USD 60 millones y se contará con dos sedes: en la norteña región de **Antofagasta** se instalará un centro de innovación y desarrollo, y en la capital se realizará la producción, que comenzará en el primer semestre de 2022, informaron desde Santiago representantes de **Sinovac** y autoridades chilenas.

Además de Coronavac, vacuna mayoritaria en Chile y presente también en otros países de la región como Brasil, Colombia, Ecuador, México o Uruguay, la planta producirá dosis de preparados contra la influenza y la hepatitis.

4.12.2 Tres empresas invertirán 170 millones de dólares en Guatemala

Agosto 10, 2021 @ 10:17 AM

Dos firmas españolas y una mexicana proyectan una millonaria **inversión en áreas de farmacéutica, textiles y bebidas**.

Dos millonarias inversiones españolas en Guatemala se han concretado este año afirma la Cámara Oficial Española de Comercio de Guatemala, mientras que autoridades de gobierno dieron a conocer que una compañía mexicana de bebidas anunció otra inversión para ampliación de su fábrica en el Atlántico.

Las inversiones españolas suman US\$70 millones. Una proviene de la compañía **Faes Farma, que adquirió la farmacéutica guatemalteca Global Farma por US\$30 millones para expandir su presencia en la región**.

La otra empresa es grupo Nextil Group, que se dedica a la fabricación textil, con inversión de US\$40 millones, indicó Rafael Briz, presidente de Cámara Oficial Española de Comercio de Guatemala (Camaco).

Eduardo Costa, gerente general de Global Farma en Guatemala, confirmó la cifra de Faes Farma y refirió que la planta de producción se ubica en San José Pinula.

De la producción, el 42% es para consumo local y el 58% se exporta a Centroamérica, a Venezuela, además a Francia, entre otros países. La empresa genera 226 empleos y puede ampliarse en el área de planta comercial, aparte de lo que se invierta en investigación y desarrollo.

Su interés de invertir en Guatemala es poder **atender más el mercado regional**, además ven al país con ventajas por el importante crecimiento que ha tenido, su ubicación geográfica, mano de obra muy responsable y el apoyo que han recibido para instalarse en el país por parte de las cámaras empresariales y del gobierno, agregó. “La apertura que existe de comercializar desde Guatemala a los

países de la región centroamericana es uno de los ejes importantes que nos hicieron pensar en una inversión.

<https://forbescentroamerica.com/2021/08/10/tres-empresas-invertiran-170-millones-de-dolares-en-guatemala/>

4.12.3 La farmacéutica colombiana que llegará a las grandes ligas en Wall Street

La farmacéutica Procaps es la próxima firma colombiana que aterrizará en Wall Street. La productora de cápsulas convertida en grupo estará en Nasdaq, la bolsa en donde se cotizan las acciones de las empresas más valiosas del mundo.

Algunas de sus plantas emblemáticas están en Sao Paulo (Brasil) con su filial Softcaps o en **San Salvador, El Salvador (subsidiario por las adquisiciones de Laboratorios López y Biokemical)**, pero la de Barranquilla, que fue la primera planta farmacéutica de Latinoamérica aprobada por la Administración de Medicamentos y Alimentos de Estados Unidos (FDA, por sus siglas en inglés), es la casa matriz.

Hasta hoy operan con un modelo mixto de fabricación por contrato dirigido a negocios -con el que le producen marcas como Dolex y Advil para GSK- y de desarrollo propio dirigido a consumidores, con el que producen y distribuyen antibióticos, vitaminas y distintos tipos de medicamentos.

Cargando ese legado que su familia fundó en 1977, Ruben Minski apareció hace unas semanas en su primera llamada con prospectos inversionistas para anunciar que al fusionarse con Union Acquisition Corp II, una firma con sede en Islas Caimán hará uso del mecanismo de Empresa de Adquisición con Propósito Especial (SPAC, por sus siglas en inglés), para hacerse pública en la bolsa de Nasdaq en Nueva York a partir del tercer trimestre de 2021 bajo el símbolo 'PROC'.

"Union ya está listada en Nasdaq. Hay un fenómeno de mucho dinamismo de las SPACS, en el último año ha habido más SPACS que IPOs y Nasdaq se ha posicionado como una de las bolsas donde hay mejores condiciones", le dijo a Forbes el CFO de Procaps Sergio Mantilla. "Parte de nuestro ADN de innovación, esa gran característica, nos hace muy compatibles con Nasdaq".

A special purpose acquisition company (SPAC) is a company with no commercial operations that is formed strictly to raise capital through an [initial public offering \(IPO\)](#) for the purpose of acquiring an existing company. Also known as "[blank check companies](#),"

<https://forbes.co/2021/05/20/negocios/procaps-llegara-a-nasdaq/20-05-2021>

4.12.4 Tecnoquímicas compra Bayer ES

El grupo colombiano Tecnoquímicas concretó la compra, a la alemana Bayer, de la corporación Bonima, dueña de la marca MK en 23 países y territorios de Latinoamérica, así como de una planta ubicada en El Salvador. El acuerdo también convierte a Tecnoquímicas en titular único de la marca MK en Centroamérica, el Caribe y Suramérica, exceptuando Venezuela.

Según Tecnoquímicas, luego del negocio especializará sus sedes productivas, tanto las actuales plantas farmacéuticas de Colombia y El Salvador como la nueva factoría adquirida.

<https://www.eltiempo.com/economia/empresas/fusion-y-adquisicion-de-mk-por-parte-de-tecnoquimicas-238994>

03Jul2018

4.12.5 Colombian medical cannabis company receives country's first approval to begin launching CBD and THC products

Khiron Life Sciences Corporation, a Colombian medical cannabis firm, has announced it has been given the regulatory green light to begin manufacturing and selling pharmaceutical products based on cannabidiol (CBD) and delta-9-tetrahydrocannabinol (THC) in Colombia. Khiron is the first company in Colombia to be allowed to produce medical cannabis products, and aims to utilise them to treat anxiety, chronic pain, refractory epilepsy, and Parkinson's disease.

<http://www.pmfarma.com.mx/noticias/16612-empresa-colombiana-de-cannabis-medicinal-logra-colocar-a-la-venta-su-primer-producto.html>

4.12.6 Bayer Buys Properties for its Long-Term Project in Costa Rica

Bayer sees Costa Rica as having strong potential for its business plans.

Costa Rica offers many options for Bayer, such as its strategic location, pro-development, and private investment policies.

Costa Rica, March 3, 2021. Bayer, a global company with headquarters in Germany and focused on bio-health sciences and nutrition, has decided to buy property adjacent to the Coyol Industrial Park in Alajuela as part of its long-term regional business expansion plans.

With more than forty years in Costa Rica, the multinational has administrative offices in Escazú and a medical device plant in Heredia and has expanded its regional operations through its Shared Services Center, located in Alajuela, which has grown from 25 employees in 2017 to more than 600 in 2020. The need for health resources, **including Bayer's pharmaceutical products**, is growing continuously with a growing and aging global population and an expanding panorama of chronic diseases.

For Bayer, Costa Rica is still a key site where it promotes research and development of agricultural solutions on two properties: one in Limón for fruit trees, and another in Guanacaste for cottonseed production.

"As a company, we appreciate enormously the availability of **technically skilled talent, the solid cooperation between the business community and public sector, and the demonstrated leadership in environmental sustainability**," affirmed Christian A. Meyer, company president and CEO of Bayer's pharmaceutical division for the region that includes Costa Rica.

<https://www.cinde.org/en/essential-news/bayer-buys-properties-for-its-long-term-project-in-costa-rica>

4.12.7 Balaxi Pharma's Dubai arm fully acquires Balaxi Healthcare Honduras

The acquisition was completed on May 11, 2021, and the cost of acquisition was USD 10,000. May 12, 2021 12:09 IST | India Infoline News Service

Balaxi Global DMCC, Dubai (BGD), Wholly Owned Subsidiary of Balaxi Pharmaceuticals Limited has acquired 100% shares of Balaxi Healthcare Honduras, S. DE R.L. De C.V., Honduras, Central America (BHH). Balaxi Healthcare Honduras has consequently become the Step-down subsidiary of Balaxi Pharmaceuticals. BHH is engaged in Balaxi's pharmaceutical formulation products in Honduras. The acquisition was completed on May 11, 2021 and the cost of acquisition was USD 10,000.

At around 12.12 pm, Balaxi Pharmaceuticals Limited was trading at Rs580.35 per piece up Rs2.55 or 0.44% on the BSE. It touched an intraday high of Rs589.90 per piece on Wednesday.

https://www.indiafoline.com/article/news-top-story/balaxi-pharma%E2%80%99s-dubai-arm-fully-acquires-balaxi-healthcare-honduras-121051200250_1.html



Medical Services Sector

5 Sectoral Study: Medical Devices

5.1 Introduction

The purpose of this document is to provide a comprehensive review and analysis of Medical Devices, as an identified priority sector, in line with the Terms of Reference (TOR) of this project. The overarching objective is to support the ongoing efforts to promote and attract FDI into El Salvador, outlining the readiness of the sector and identifying specific messages to the target audience.

El Salvador's experience in attracting foreign direct investment in medical devices is very limited, therefore, for the purposes of this study, an extensive bibliographic compilation was made to illustrate all the components of the industry, the main participants, the value chain, the regulations, among others, for the key stakeholders, to understand the nature of each of the processes, and especially the key drivers for decision-making on investments in such a highly regulated sector.

Thus, the main purpose of this study is to provide an updated picture of the Medical Devices landscape, and the analysis of the regional competitors to El Salvador in the promotion and attraction of Foreign Direct Investment projects to the country.

A series of recommendations are presented at the end of this report, to enhance knowledge of the industry and to identify a series of actions to carry out over a period of time.

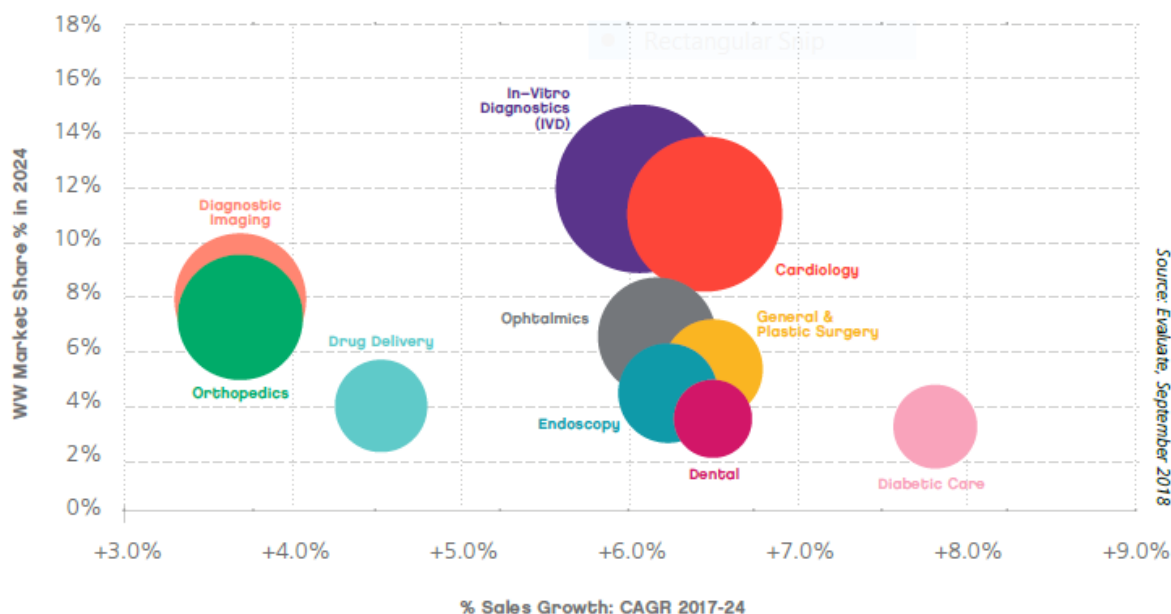
5.2 General Overview and Global Trends

5.2.1 Medical Devices global market size and forecast

The global medical devices market size was US\$432.23 billion in 2020. The global impact of COVID-19 has been unprecedented and staggering, with medical devices witnessing a negative impact on adoption rates across all regions amid the pandemic. Based on the analysis of Fortune Business Insights (1), the global market exhibited a decline of 3.7% in 2020. The market is projected to grow from US\$455.34 billion in 2021 to \$657.98 billion in 2028 at a CAGR of 5.4% in the 2021-2028 period. The sudden rise in CAGR is attributable to the market's demand and growth, returning to pre-pandemic levels once the pandemic is over.

Increasing investment by medical technology companies in research & development and favorable scenarios provided by regulatory authorities for their approval are expected to boost the medical devices industry in the forecast period. For instance, according to the U.S. FDA database, around 59 new devices were approved by the FDA during the 2019-2020 period. (Annex Bibliography reference 1)

Figure 63. World medical technology market by area and sales growth 2017-2024



Source: Emurgo, 2021

A recent Emurgo survey (based on 1,087 responses) noticed that medical device and IVD companies indicate stable growth rates compared to 2020, except for firms reporting sales increases of 15% or higher. This year’s results found more than 18% of respondents seeing such growth, versus 14% from the 2020 survey. However, larger firms (those with 250 or more employees) reported rates of sales decreased compared to their performance in 2020 in comparison to smaller companies. Across the board, the number of firms reporting sales decreases ticked up slightly from last year. (Annex Bibliography reference 2)

The most significant shifts in growth expectations this year compared to the 2020 results were toward the US and European markets. The number of respondents expecting strong US market growth increased from 40% last year to 44% for 2021, while expectations for growth in Europe increased from 37% of firms in 2020 to 40% now. Growth expectations for the Chinese market remained stable at 22% of respondents, identical to the 2020 survey results. (Annex Bibliography reference 2)

Figure 64. Medical Devices market growth by geography

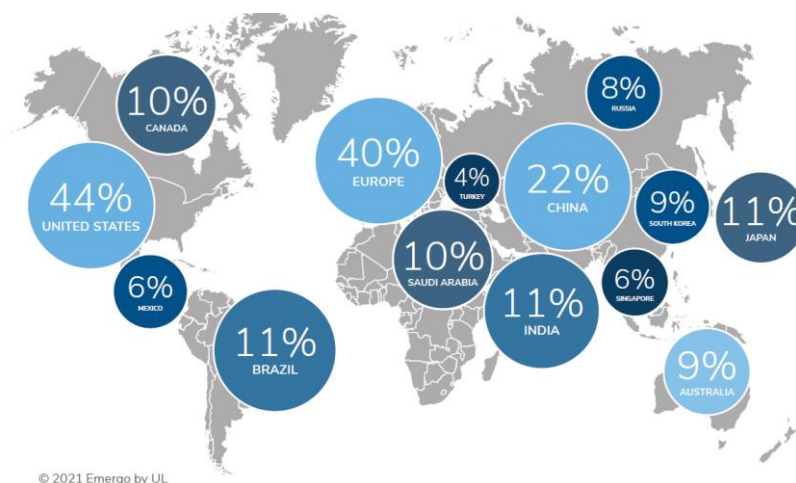


Table 5-1. Top medical devices noteworthy changes 2020 and 2021

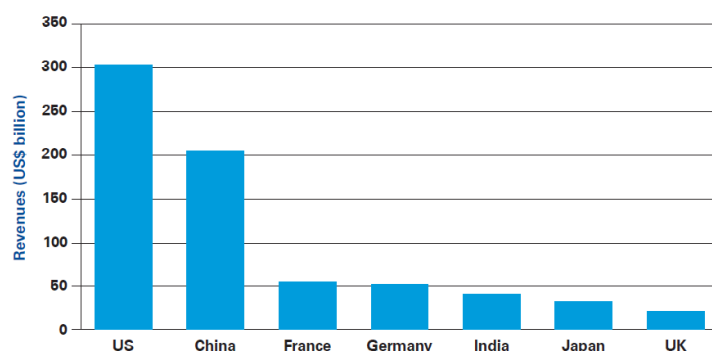
Noteworthy changes between 2020 and 2021		
Market	Mar 2020	Mar 2021
Australia	8%	9%
Brazil	11%	11%
China	22%	22%
Europe	37%	40%
India	12%	11%
Japan	11%	11%
Mexico	7%	6%
Russia	7%	8%
USA	40%	44%

Based on 1,110 responses.

© 2021 Emergo by UL

The United States of America continues to be the largest medical technologies market, followed by China. Emerging countries, such as India and Russia, represent an important business opportunity for this sector. Developed countries are growing at a slower pace.

Figure 65. Top global medical device markets by forecast revenues in 2030



Source: KPMG Advisory China, 2018

5.2.2 FDI Trends

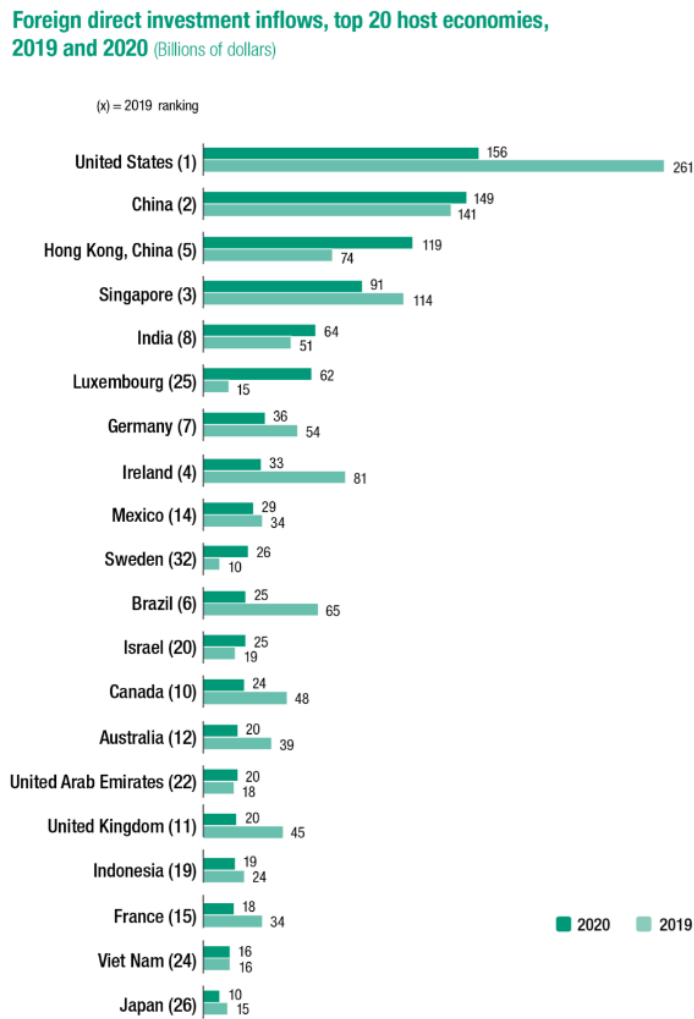
In 2020, both the number of FDI projects and capital investment in FDI plummeted by a third from 2019's levels according to fDi Markets Report (5).

- The US has retained its spot as the top destination country, attracting \$61bn of FDI.
- China, which ranked second in 2019, dropped into third position in 2020 attracting 40% less capital investment.
- Asia-Pacific was the top destination region for FDI by capital investment with \$162.2bn-worth of FDI recorded despite a 37% decline in 2020 from the previous year.
- Western Europe attracted the highest number of FDI projects with 3,882 announcements recorded. Western Europe was the leading source region for FDI in 2020, accounting for 49% of FDI projects globally and \$221.5bn in capital investment.
- Of the top 10 destination countries in Europe, **Ireland** was the only country to record a higher number of FDI projects in 2020 compared with 2019, with a 2% increase.

Key trends in 2020 include:

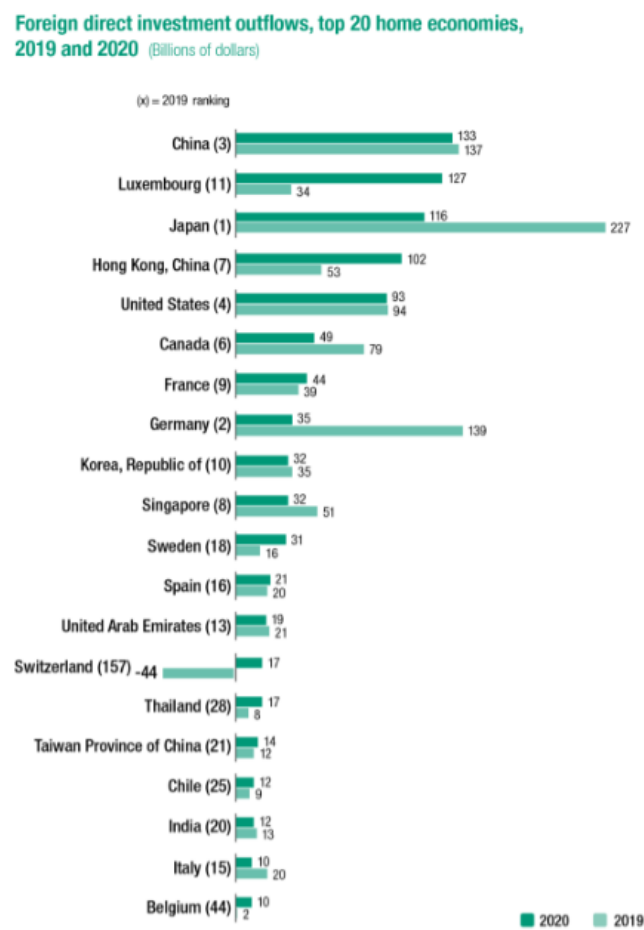
- For the first time since **FDI Markets** began recording, renewable energy replaced coal, oil & gas as the top sector by capital investment, accounting for \$87.2bn in 2020.
- The **biotechnology sector** experienced the biggest increase in capital investment during 2020, a jump of 88% from a year earlier. An estimated 12,852 jobs were created in this sector in 2020, rising from 8,086 in 2019. **The medical devices sector, despite drops in capital investment and the number of projects announced, also created more jobs in 2020.**
- Biotechnology and medical devices were the only two sectors to experience year-over-year **growth in STEM FDI projects** last year. Vaccine development most notably dominated the headlines in 2020 and it was the large pharmaceutical and biotechnology companies, with STEM workers at their core, that produced viable vaccine candidates.
- The number of FDI projects in the healthcare sector dropped by 79% in 2020 from 2019. Capital expenditure and job creation also fell by 68% and 82%, respectively, in the period (<https://report.fdiintelligence.com/files/ThefDiReport2021.pdf>).

Figure 66. Foreign direct investment inflows, top 20 host economies, 2019 and 2020 (Billions of dollars)



Source: UNCTAD.

Figure 67. Foreign direct Investment outflows, top 20 home economies, 2019 and 2020 (Billions of dollars)



Source: UNCTAD.

Source: fDi Markets report

Foreign direct investment into Latin America plunged by 45% during the pandemic. The number of FDI projects announced into Latin America and the Caribbean decreased to 973 projects in 2020, down by 37% from 2019. In the same period, capital investment decreased by 49% to \$55.4bn. (5)

Foreign direct investment (FDI) flows to Latin America plummeted by 45% in 2020 to \$88 billion, according to UNCTAD's World Investment Report 2021, published on 21 June. Investment flows to and from the region are expected to remain at a low level in 2021 and, most likely, will not recover their pre-crisis level before 2023. (6).

- In Central America, FDI inflows declined by 24% to \$33 billion, partly shored up by reinvested earnings in Mexico, where they dipped by only 15% to \$29 billion.
- In **Costa Rica**, a sudden halt in investment in special economic zones was responsible for most of the decline in FDI inflows to \$1.7 billion.
- In the Caribbean, excluding offshore financial centres, flows declined by 36% following the collapse in tourism and the halt in investment in the travel and leisure industry. The contraction was due to lower FDI (\$2.6 billion) in the **Dominican Republic**, the largest recipient in the subregion.

- The recovery of inflows will vary across countries and industries, with foreign investors set to target clean energy and the minerals critical for that – pushed by a worldwide drive towards a sustainable recovery. Other industries showing signs of a rebound include information and communication, **electronics, and medical device manufacturing.**
- The region’s lower growth projections compared with other developing regions, and the political and social instability in some countries put a downward risk on prospective FDI inflows.

Figure 68. Latin America and the Caribbean by Project Numbers 2020

Latin America and the Caribbean

Key trends in 2020 include:

- Announced FDI projects into Latin America and the Caribbean decreased to 973 projects in 2020, down by 37% from 2019. In the same period, capital investment decreased by 49% to \$55.4bn.
- Mexico was once again the top destination for FDI in the region with a total of 273 projects in 2020, giving it a 28% regional market share. Capital investment nonetheless decreased to \$13.3bn in 2020, down by 46% from a year earlier.
- Brazil and Colombia also held their spots at second and third place in the region in terms of project numbers but experienced a year-on-year 49% and 56% drop in capital investment, respectively, in 2020.
- Costa Rica and Uruguay fared relatively well in 2020, experiencing a modest 9% and 6% decrease in project numbers from 2019.
- In 2020, Paraguay saw a leap in capital investment to \$3.4bn, up by 283% from 2019. This can be almost entirely attributed to a \$3.2bn investment from pulp producer Paracel. Meanwhile FDI project numbers into Paraguay dropped by 29% in the same period.
- Argentina and Costa Rica also experienced increases in capital investment, with a 4% and 13% rise, respectively, in 2020 from a year earlier.

Table 1

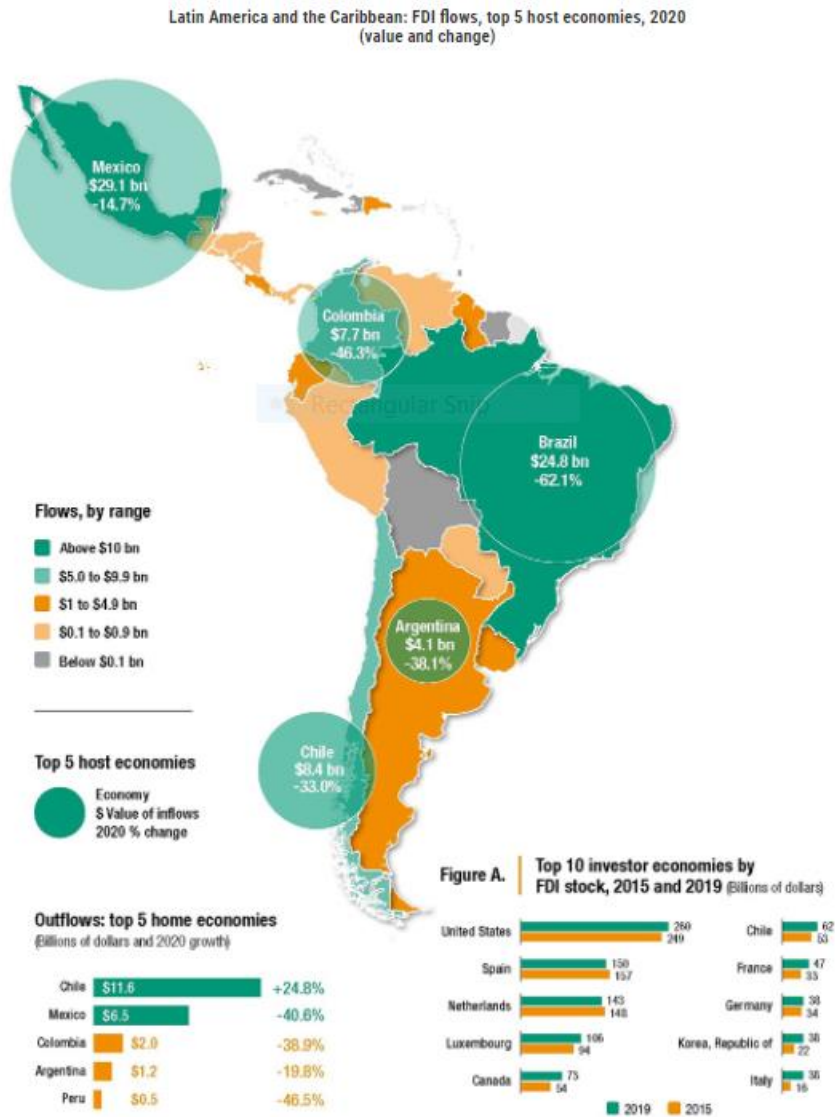
FDI INTO LATIN AMERICA AND THE CARIBBEAN BY PROJECT NUMBERS 2020	
Country	Projects
Mexico	273
Brazil	215
Colombia	96
Costa Rica	95
Chile	77
Argentina	58
Peru	35
Panama	22
Dominican Republic	16
Uruguay	15
Other	71
Total	973

Source: FDI Markets



Source: FDI Markets report

Figure 69. Latin America and the Caribbean: FDI flows, top 5 host economies, 2020 (Value and change)



Source: UNCTAD, World Investment Report 2021.

Source: <https://unctad.org/news/foreign-direct-investment-latin-america-plunges-45-amid-pandemic>

Foreign investments were often driven by specific “market-seeking” initiatives to capture local demand. Over the past decade, this approach has been combined with a tendency to relocate certain manufacturing operations to cheaper destinations to cut costs and improve competitiveness, looking at efficiency-seeking opportunities.

Location selection for these global production facilities varies based on a variety of factors, including presence of qualified human capital, cost, established presence of supply chain actors and distance to market, among others, depending on the product category.

5.2.3 Medical Devices driving and restraining factors

Table 5-2. Medical Devices sector: Driving and Restraining factors

Driving Factors	Restraining Factors
<p>During 2020, few segments, including IVD, diabetes care, and other medical and hospital supplies, witnessed significant growth of the market due to a sudden rise of devices to manage patients suffering with coronavirus. While not a lasting industry trend, some companies were able to pivot their manufacturing to support the emergency production of masks and respiratory equipment to attend COVID-19 health emergency.</p>	<p>In 2020, the pandemic impacted the global medical device industry by causing the deferral of elective procedures and shifting the priority of hospitals' purchasing departments to the diagnosis, treatment, and prevention of COVID-19. The <u>dramatic decline of elective procedures</u> led to revenue losses for device manufacturers as well as hospitals. When we look at the trend in the largest OEMs, it's clear that those exposed to elective procedures had a down year, particularly in minimally invasive surgery and medical imaging. Additionally, the pandemic halted clinical research, slowing the release of new high-value products.</p>
<p>Rising prevalence on chronic and communicable diseases including obesity, hypertension, diabetes, dementia, and cardiovascular disorders, mainly due to a sedentary lifestyle, increase the demand for medical devices.</p>	<p>High cost of MD to restrict the market growth. The MD industry has witnessed new developments, new technologies and new design modifications, however, there is a high cost involved, not only a higher acquisition cost, but a subsequent maintenance cost. Some of the advanced devices come with various other components such as chips, batteries, sensors, and other accessories, requiring periodic replacements (i.e., insulin pumps cost around US\$4,500 to US\$6,500 per device, and the accessories around US\$1,500, which leads to a higher cost of ownership to the patient).</p>
<p>Rapid rise in the geriatric population is supplementing ophthalmic and orthopedic devices, home care and monitoring devices and supplies, among others.</p>	<p>Nonexistent or inadequate reimbursement policies for medical devices have also been a restricting factor in the adoption of advanced medical technologies in emerging countries.</p>
<p>Growing emphasis on healthcare agencies and government toward routine diagnosis of patients and their timely treatment have resulted in rising awareness and empowerment among the population and is subsequently propelling the market's growth during the forecast period (2021-2028).</p>	<p>Regulation changes and timing for approvals and implementation of new rules.</p>

Source: Alira Health's findings MedTech Contract Manufacturing Report released on March 3, 2021 (4). Fortune Business Insights (1).

5.2.4 Financial Activity Trends for OEM's: Mergers & Acquisitions and Expansions 2020 and 2021

The strong M&A and IPO activity in 2020 indicates that while the challenges of COVID-19 have been significant, the long-term growth of the OEM industry is stable. (8)

Despite a decline in revenue and profits that started to emerge early in 2020, by year end, large MedTech companies had funded the acquisition of both mature (≥6 deals worth >\$1 billion) and VC-backed targets (16 deals*). Additionally, a record 11 IPOs took place in 2020, with median valuations of \$469 million.

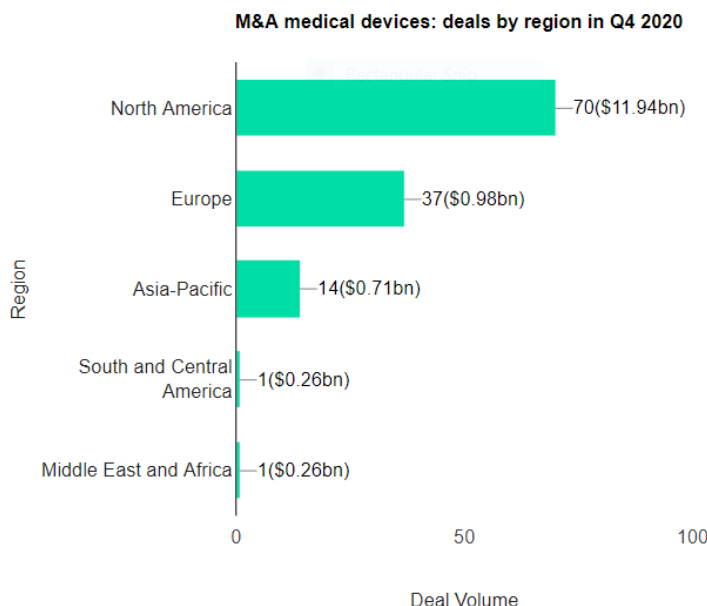
Such robust activity demonstrates an industry focus on long-term goals – founded in both the development of an innovation pipeline as well as the relative quick recovery from the near-term roadblocks of the pandemic. In fact, it was Medtronic and Stryker – two companies particularly exposed to the downturn of the elective procedure market – that led all 2020 M&As with four and three acquisitions, respectively.

2020 was also a record year for venture funding, with total fundraising by life sciences-focused VCs** hitting \$16.8 billion, a peak of new liquidity that will fuel long-term investments in healthcare innovation. VC funding of in-vitro diagnostic products (IVDs) and device companies grew year-over-year in 2020, with the diagnostics sector doubling the dollar amount raised in 2019. While the bulk of these funds was directed to late-stage and pre-IPO deals, the large number of exits is poised to attract more capital to the MedTech industry, with positive long-term effects also for early-stage VC-backed companies. (Pocket guide to Medtech’s market Outlook in 2021, Carlo Stimamiglio, Alira Health). (8)

*M&A deals counted if up-front payments are equal to \$50 million or above.
 **Includes fundraising in the segments of biotech/pharma and digital health.

Total medical devices industry M&A deals in Q4 2020 worth \$13.1bn were announced globally, according to GlobalData’s deals database (10). The top country in terms of M&A deals activity in Q4 2020 was the US with 65 deals, followed by the UK with 14 and Canada with five.

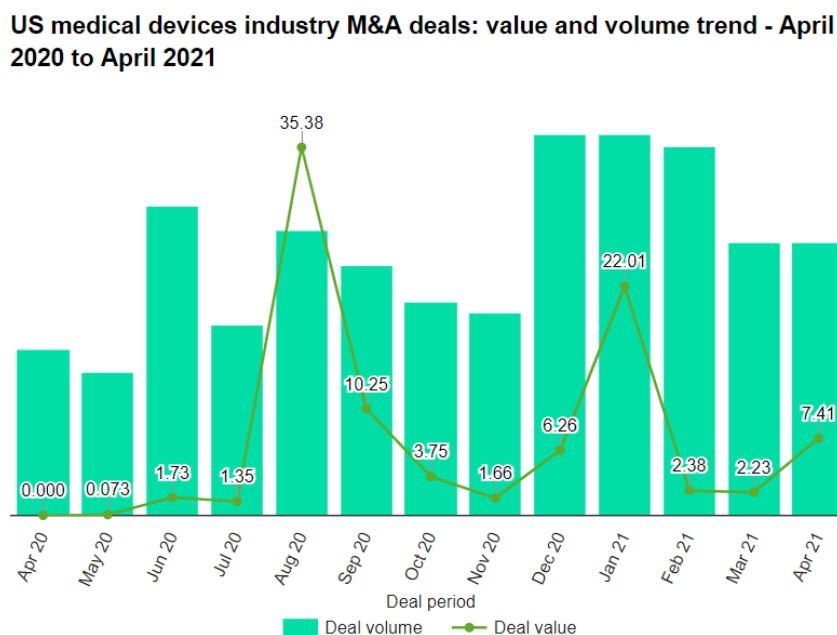
Figure 70. M&A medical devices deals by region in Q4 2020



Source: <https://www.medicaldevice-network.com/deals-analysis/medical-devices-industry-ma-deals-in-q4-2020/>

Total medical devices industry M&A deals worth \$7.4bn were announced in the US in April 2021, with \$5bn merger of CA Healthcare Acquisition and LumiraDx being the sector’s biggest investment, according to GlobalData’s deals database. (10).

Figure 71. US medical devices industry M&A deals: value and volume trend – April 2020 to April 2021



Source: <https://www.medicaldevice-network.com/deals-analysis/medical-devices-industry-ma-deals-total-7-4bn-in-us-in-april-2021/>

Most of the studied firms invested in research and development centers, as well as new manufacturing spaces for medical devices. The E.E.U.U. has been the preferred location for most of the new investments. India is becoming a great site for R&D centers, due to the high presence of experienced engineers.

Boston Scientific has an R&D center in Costa Rica, the main activities are related to sustaining engineering, nonetheless, the group of over 100 engineers is growing the value of the research and starting to work in collaboration with the local academy to run clinical studies. Other MD international firms, such as Hologic and MicroVention, are also starting to work on R&D initiatives in Costa Rica.

Table 5-3. Top MedTech companies' profile including M&A's and Expansions

Company	Revenue	Employee	Locations	HQs	M&A	Expansions
Cardinal Health (CH)	\$152.92 Billion, increased 5%	48,000	Over 250 locations. On June 30, 2020, the medical segment operated manufacturing facilities in the United States, including Puerto Rico, Canada, Costa Rica, the DR, Germany, Ireland, Japan, Malaysia, Malta, Mexico, and Thailand.	OH, USA	CH did not complete any acquisitions during fiscal 2020. CH announced that it signed a definitive agreement to sell its Cordis business to Hellman & Friedman (H&F) for approximately \$1 billion. The company anticipates the transaction to close in the first quarter of fiscal 2022.	In the Medical segment, during 2020 the company implemented cost savings initiatives, particularly within its global manufacturing and supply chain. Also, during the year continued to make investments that enhanced the strategic positions in Cardinal Health at-Home and Medical services businesses. <u>Note: CH continue to seek alternate and additional sources for these products (personal protective equipment ("PPE"), such as masks, gowns, and gloves) and otherwise mitigate cost increases.</u>
Johnson & Johnson (J&J)	US\$82.6 Billion (0.64% increase from 2019)	134,000	Worldwide operations including Mexico, Dominican Republic, Ireland, In Costa Rica they only manufacture thru Contract Manufacturers	New Jersey, USA	Momenta (Aug 2020) acquired for \$6.5B	2020. J&J pharma subsidiary Janssen announced it will make an undisclosed investment amount to expand the presence of its research and development facilities in the San Francisco Bay Area, to be ready by 2022.
Fresenius	€35 billion	300,000 in 4 companies	Over 100 locations including Germany, Ireland, USA, Mexico, DR, Panama (distribution, services)	Germany	NxStage Medical, Inc. (NxStage)	Expands into a new production line for dialysis fluids at its St. Wendel-Germany, plant in response to higher demand caused by COVID-19 pandemic (2020). Fresenius Kabi inaugurates €30 million expansion of transfusion and apheresis disposables plant in Haina, Dominican Republic (Jan 2020). These products are used, for example, to collect blood components such as platelets or plasma.
Abbott	\$34.6 Billion, 8.48% increase from 2019	109,000	Locations in 160 countries, including E.E.U.U., Canada, Costa Rica, Brasil, Puerto Rico, Ireland, India, China	IL, USA	Largest acquisition reported was in 2016 St Jude Medical	2020. New site and expansion in Maine (1,200 people to help with production of COVID-19 testing kits). Libre Sense glucose sports biosensor. Demand for Abbott's COVID-19 antigen and molecular tests is expected to remain high throughout 2021.

Medtronic	\$28.9 billion (5.4% decreased from 2019)	90,000		Worldwide operations including Mexico, Costa Rica, Dominican Republic, Ireland	Dublin, IRE	<p>Aug 2021 Medtronic acquired IntersectENT (ear, nose, throat portfolio) approximately \$1.1 billion deal. 2020. Just as the COVID-19 pandemic was beginning, Medtronic announced the acquisition of London-based Digital Surgery in a move expected to accelerate the medtech giant's plans to incorporate artificial intelligence and data in laparoscopic and robot assisted surgery. Digital Surgery will join Medtronic's Surgical Robotics business in the Minimally Invasive Therapies Group. Financial terms of the deal were not disclosed.</p>	<p>Apr 2021. Largest R&D Center outside the US in India. 150,000 sq.ft. The current team of 400+ engineers at MEIC have already been involved in work that has contributed to more than 150 patents and 400 intellectual property disclosures. With the expansion, the number of MEIC employees could more than double in the next five years. June 2021. Innovation Center in Colorado. 1100 new employees, 400,000 sq.ft. No longer looking to build a \$133 million corporate campus in Louisville because of a lengthy and uncertain development approval process.</p> <p>Aug 2021. Medtronic continue to expand in Juncos, Puerto Rico. New investment in MD manufacturing \$34million & 700 new employment direct & indirect</p>
Philips	\$22.3 Billion, the highest annual revenue for the company since 2014.	81,600		32 facilities, including Netherlands, Germany, India, China, UK, Brazil, USA, Costa Rica	The Netherlands	<p>Recent acquisitions include Intact Vascular, BioTelemetry (\$2.8 B), Capsule Technology (\$635 M).</p>	<p>Costa Rica: the plant employs 2,850 people and is expected to exceed 3,000 employees before the end of the year, due to a hiring program that forecasts an additional 300 more employees in the areas of manufacturing, research and development engineering, and quality and process engineering. (2020 to 2021)</p>
Danaher	\$22.3 Billion, increased 24.5% from 2019	69,000		Manufacturing facilities are located in North America, Europe, Asia, Latin America and Australia. Mexico, IRE, DR (Beckman Coulter)	Washington, DC, USA. Other HQs in China, UK, and India	<p>2020 to acquire privately held Aldevron. Danaher has acquired 44 companies, including 8 in the last 5 years. A total of 12 acquisitions came from private equity firms. It has also divested 9 assets. The Company's most targeted sectors include test/measurement equipment (22%) and medical products (20%) GE LSciences division business now called Cytiva in 2020. Beckman Coulter, IDT, Leica Microsystems, Molecular Devices, Pall, Phenomenex, SCIEX.</p>	<p>Cytiva and Pall, plan to invest a total of \$1.5 billion to expand 13 sites in the US, Europe, and Asia, creating 2,000 new jobs. The investment program focuses on products used to make biologic medicines. The firms will spend about \$600 million on chromatography resins, including a new facility in the US, and about \$400 million to expand production of cell culture media. Some \$300 million will go toward bioreactor bags and other products used to grow cells. The project follows five acquisitions completed by the companies this year.</p>
Becton, Dickinson BD	\$17.1 Billion	70,000		USA, Mexico, Japan, EU (18 facilities, including IRE, UK, France, Hungary, Spain), DR (Carefusion)	NJ, USA	<p>In recent years BD has completed dozens of tuck-in acquisitions including TVA Medical, Medafor, and Kiestra Lab Automation. In 2020: NAT Diagnostics, Straub Medical.</p>	<p>To build a €165 million (US\$200 million) high-tech manufacturing facility in the city of Zaragoza, located in the Aragon region of Spain, that will create up to 600 jobs by 2030, the 4th one in Spain, will produce drug delivery devices.</p>

Stryker	\$14.35 Billion (decrease 3.58%)	43,000		Over 75 countries including operations in the following geographic areas: the United States (including Puerto Rico); Europe, Middle East, Africa; Asia Pacific; Canada and countries in the Latin American region (including Costa Rica)	MI, USA	2020. Acquisition of Wright Medical Group N.V. (NASDAQ: WMGI), a global medical device company focused on extremities and biologics, Wright has design and engineering operations in Costa Rica. It also acquired OrthoSensor, Inc., a leader in the digital evolution of musculoskeletal care and sensor technology for total joint replacement.	2020. Expansion of its finance shared services center.
Baxter	\$11.7 Billion, up 3% from 2019	50,000		USA including Puerto Rico, Europe, Dominican Republic, Costa Rica, Thailand, Singapore, China, Mexico	IL, USA	2021. HillRom acquisition to gain more vertical integration to supply hospitals. Acquisition of PerClot Polysaccharide Hemostatic System to Expand Advanced Surgery Portfolio	\$50 million expansion of its sterile fill/finish manufacturing facilities located in Bloomington, IN (2020)
Boston Scientific	\$10 Billion (down 7.8% from 2019)	38,000		USA including Puerto Rico, Malaysia, Ireland and Costa Rica (2 plants and an R&D Center)	MA, USA	Recent acquisitions: Lumenis Ltd, Preventice Solutions, Inc., Farapulse, Inc.,	Globalizing research and development with centers in Shanghai, China; Gurugram, India; Heredia, Costa Rica and Galway, Ireland.
Zimmer Biomet	\$7.025 Billion (down 12% from 2019) due to deferral of elective procedures	20,000 (8,500 in manufacturing)		USA, EU, Japan and China	IN, USA	WM World Medical Importacao and Exportacao (Apr 2021), A&E Medical (Dec 2020), ReLign Corporation (Nov 2020)	2021 announced its intention to spin off the Company's Spine and Dental businesses to form a new and independent, publicly traded company ("NewCo"). The planned transaction will enhance the focus of both Zimmer Biomet and NewCo to meet the needs of patients and customers and is expected to achieve faster growth and deliver greater value for all stakeholders.

Source: Authors (company website, SEC filings, 10-K, company press releases)

5.3 Characterization of the MD Sector and Subsectors

5.3.1 Definition and Classification

Medical technologies are products, services or solutions used to save and improve people’s lives. In their many forms, they are with you all the time, from prevention to diagnosis to cure. There are three main categories of medical technologies:

Table 5-4. Main categories of medical technologies

Medical devices (MDs)	In-vitro diagnostics (IVDs)	Digital health and care
<p>These are products, services or solutions that prevent, diagnose, monitor, treat and care for human beings by physical means.</p>	<p>These are non-invasive tests used on biological samples (for example, blood, urine, or tissues) to determine the status of one’s health.</p>	<p>This refers to tools and services that use information and communication technologies (ICTs) to improve prevention, diagnosis, treatment, monitoring and management of health and lifestyle.</p>

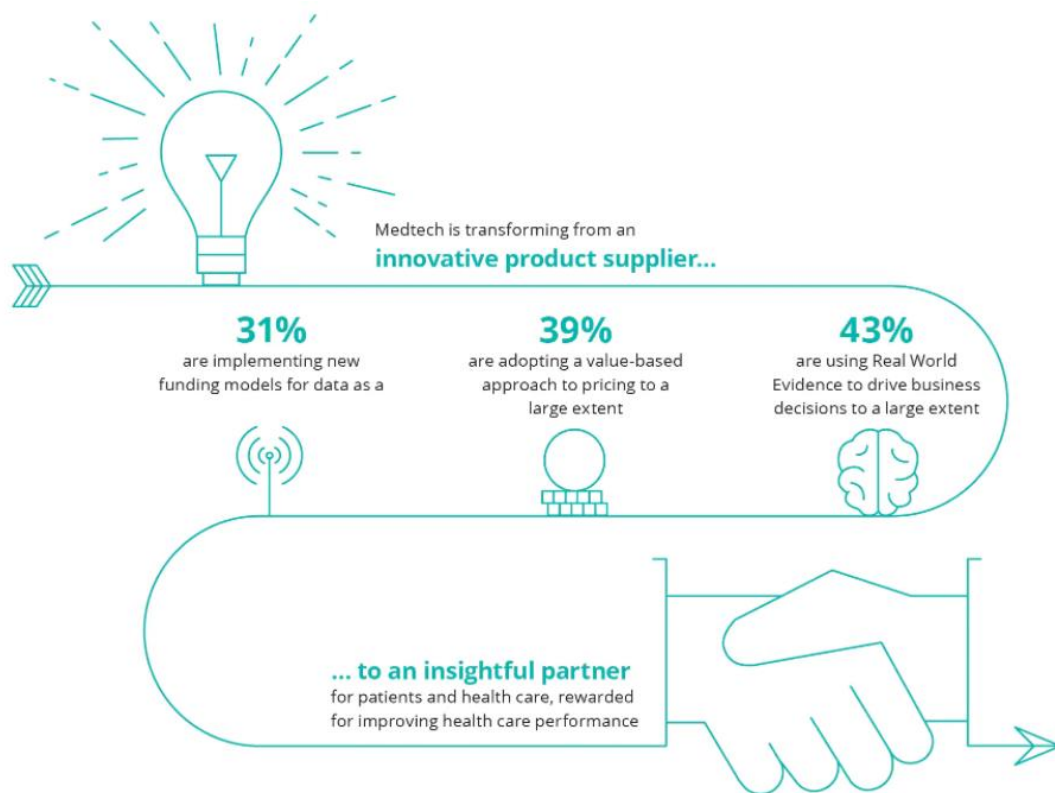
Source: FDA website.

Medical technology (MedTech) companies manufacture more than 500,000 different types of medical devices, including wearable external medical devices (skin patches, insulin pumps and blood glucose monitors), implanted medical devices (pacemakers and implantable cardioverter defibrillator devices) and stationary medical devices (home monitoring devices, connected imaging devices and scanning machines). Most patient interactions with the health care system involve the use of medical equipment and devices. (12).

Connectivity between sensors and devices aids real-time patient care, even from remote locations, while improving communication within and between medical facilities. The large volume of data generated creates opportunities for new models of care and supports the delivery of 4P medicine – medicine that is predictive, preventive, personalized and participatory. (12).

The pandemic is accelerating the rate of use of these medical technology products. Telemedicine is on the rise and monitoring devices are available at home for personal use. Hospitals, and clinics are bringing an additional level of support to facilitate traceability, control, and preventive healthcare events. Countries, such as Costa Rica, in the Central American region have implemented the EDUS (Expediente Digital Unico en Salud) digital health records. They are used across borders to facilitate treatments, health information and interactions between patients, physicians, insurance companies and other healthcare service providers.

Figure 72. Connectivity is transforming the MedTech industry



Source: Deloitte (12).

The above percentages of Figure 10 are taken from our survey of 237 respondents from connected medical device companies. 31% are implementing new funding models for data as a service to a large extent. 39% are adopting a value-based approach to pricing to a large extent. 43% are using Real World Evidence to drive business decisions to a large extent.

The medical device (MDs) manufacturing industry produces equipment designed to diagnose and treat patients within global healthcare systems. Medical devices range from simple tongue depressors and bandages to complex programmable pacemakers and sophisticated imaging systems. Major product categories include surgical implants and instruments, medical supplies, electro-medical equipment, in-vitro diagnostic equipment and reagents, irradiation apparatuses, and dental goods.

There are various classifications according to products, user, function, regulatory control/classes, and more upon commercial applications and regulatory bodies and countries.

Device classification depends on the intended use of the device and upon indications for use. For example, a scalpel's intended use is to cut tissue. A subset of intended use arises when a more specialized indication is added in the device's labeling such as, "for making incisions in the cornea". Indications for use can be found in the device's labeling but may also be conveyed orally during sale of the product.

Table 5-5. Medical devices by product type, user, function

PRODUCT TYPE	END USER	FUNCTIONS
Based on product type, the medical devices market is segmented into surgical devices, infection control devices, general medical devices, cardiovascular devices, orthopedic devices, home healthcare devices, and others.	By end user, the market is segmented into hospitals, homecare, ambulatory surgical centers, and others.	Based on function, the medical devices market is segmented into diagnostic and monitoring, therapeutics, surgical, and others.

The Food and Drug Administration (FDA) has established classifications for approximately 1,700 different generic types of devices and grouped them into 16 medical specialties referred to as panels.

Each of these generic types of devices is assigned to one of three regulatory classes based on the level of control necessary to assure the safety and effectiveness of the device. The three classes and the requirements, which apply to them, are listed in the below Table 6.

Table 5-6. Medical Devices by class and regulatory controls

DEVICE CLASS	RISK to the patient and/or end user	EXAMPLE	REGULATORY CONTROL
CLASS I	Low	Simple bandages or wound care products, enema kits, manual stethoscopes, bedpans	General Controls 510 (k) With Exemptions Without Exemptions
CLASS IIa, IIb	Medium	Syringes for pump infusion, powered wheelchairs, surgical gloves, hearing-aids, blood transfusion tubes, catheters Anesthesia machines, ventilators, intensive care monitoring equipment	General Controls and Special Controls 510 (k) With Exemptions Without Exemptions
CLASS III	High	Heart valves, stents, implantable pacemakers, breast implants	General Controls and Premarket Approval (PMA)

Source: FDA

Table 5-7. Medical Devices classification by finished products

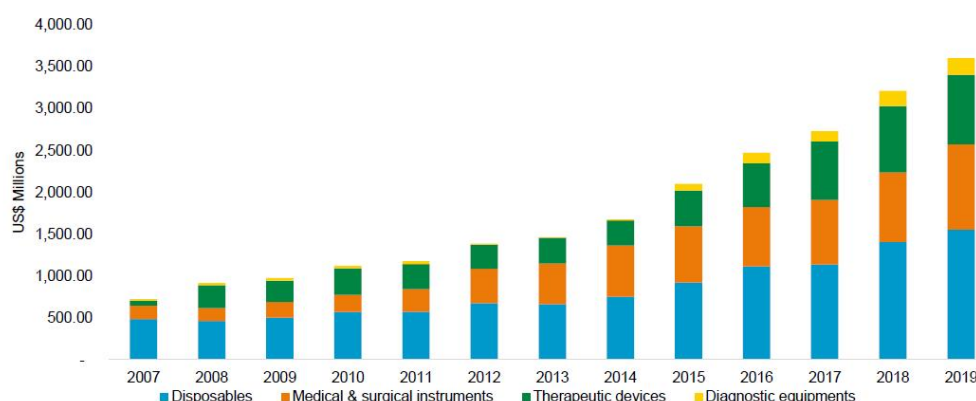
Type of finished product	Description
Disposables or high-volume commodities	These are “low tech” products, commonly single-use and cost driven. Some examples are bandages, plastic syringes, catheters, needles, surgical gloves. The process of manufacturing requires less medical expertise than others, nonetheless, it is necessary to comply with the specific MD quality standards for the manufacture.
Surgical and medical instruments	These are generally multi-use products that are sterilized between uses with different patients. Some instruments may be electrically powered. The production of many surgical and medical instruments is increasingly

	cost-driven. Some examples are the forceps, medical scissors, and dental drills, as well as specialized surgical instruments used in cosmetic and endoscopic surgery.
Therapeutic devices	Include both implantable and non-implantable devices. For example, hearing aids, pacemakers, heart valves, and prosthetics are considered therapeutic devices. These products are directed towards specialists. Due to their prolonged use inside the body, the production of implantable devices requires considerable expertise, particularly with respect to biocompatibility, and obtaining regulatory approval for implantable devices is a costly process. This increases the value of each device considerably.
Capital equipment	Includes single-purchase equipment that can be used repeatedly over a number of years, such as patient monitoring, diagnostics and imaging, infusion pumps, blood pressure monitors, MRI equipment or computed tomography. These products require ongoing account management for accessories, services, and parts. Siemens Medical, GE Healthcare and Philips Healthcare are the leading producers within this category. Japan, China, USA, and Korea are leaders in the capital equipment product segment, which draws heavily on the electronics value chain.
Others	Medical IT systems, for example, include information systems used in the administration of laboratories and hospitals, as well as software interfaces used with different therapeutic devices, monitoring and diagnostic equipment, combination products, such as drug eluting stents (MD + pharma or biotech medication).

Source: EvaluateMedTech, iHealthcareAnalyst, Inc.

The following figure illustrates the case of Costa Rica and how they show the results of the MD exports over the years, according to the finished products classification.

Figure 73. Costa Rica: exports of MD by level of sophistication



- **Total medical devices exports 2019:** \$3,699 million. Represented 12.3% growth over 2018's exports
- Costa Rica is the **2nd largest exporter of medical devices in Latin America.**
- Disposables represent **43.2%** of exports compared with 90% in 2001

Source: CINDE based on data from Procomer and Duke University Trade Classification, 2020

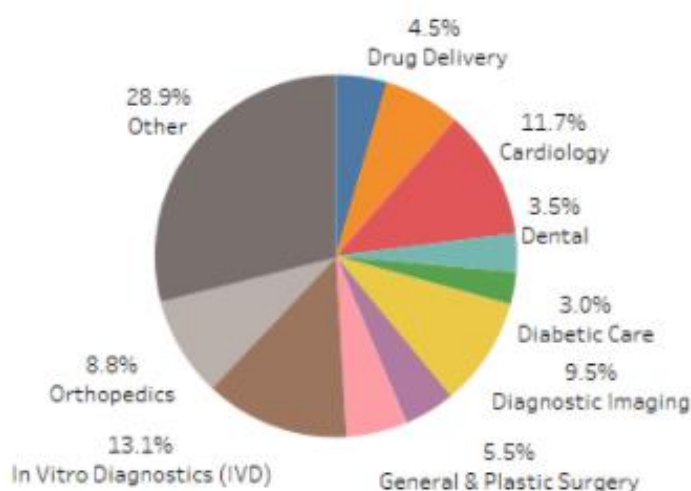
5.3.2 MD Sub-Sectors

Medical Device Therapeutic Area

Among the top 10 medical device areas (In-Vitro Diagnostics, Cardiology, Diagnostic Imaging, Orthopedics, Ophthalmology, General & Plastic Surgery, Endoscopy, Drug Delivery, Dental Care, and Diabetic Care), In-vitro diagnostics (IVD) is anticipated to be a top therapy area worldwide in 2025, with sales of \$79.6 billion.

- Among the leading device areas, diabetic care is forecast to remain the fastest growing segment in MedTech in 2025, with an annual growth rate of 5.9%, followed by general & plastic surgery, and dental care.
- The in-vitro diagnostics market was the largest segment of the medical devices market segmented by product, accounting for 15.7% of the total in 2020. Going forward, the hospital supplies segment is expected to be the fastest growing segment in the medical devices market segmented by product, at a CAGR of 10.8% during 2020-2025.
- The slowest growing segments in the top 10 device area are diagnostic imaging and orthopedics, both set to experience growth of just 3.0% CAGR between 2019 and 2025.

Figure 74. Top Medical Device Therapeutic Area



Source: <https://www.ihealthcareanalyst.com/medical-device-areas-analysis/>

Table 5-8. Type by Therapeutic Area by end market segment and Top Players

Therapeutic Area by end market segment	Top Player
Anesthesia And Respiratory Devices	B.Braun, BD, Teleflex Incorporated, SunMed, Smiths Group Plc., ResMed Inc., Medtronic Plc., Masimo Corporation, Philips N.V., Invacare Corporation, Hamilton Medical AG, GE Healthcare, Fisher & Paykel Healthcare Limited, Drägerwerk, AirSep Corp.
Cardiovascular, Cardiology Devices	Medtronic PLC, Johnson & Johnson, Cardinal Health, Inc., Abbott Laboratories, Baxter International Inc., Boston Scientific, Edwards Lifesciences, Getinge, Terumo, W.L. Gore & Associates, Lepu Medical Technology, LivaNova, Biotronik.
Dental Equipment & Accessories	3M, Danaher, Dentsply Sirona, Patterson Companies, Henry Schein, Hu-Friedy Group.
Diabetes Care Devices	DexCom, Medtronic, Abbott, Novo Nordisk, Nemaura, One Drop, BeatO Smart Glucometer, Ypsomed AG, Ascensia Diabetes Care Holdings AG, Roche, Johnson & Johnson, BD, Terumo.

Diagnostic Equipment	Medtronic, Johnson & Johnson, Thermo Fisher Scientific, Abbott, GE Healthcare, Philips, Fresenius Medical Care, Siemens Healthineers, Boston Scientific.
ENT Devices	Medtronic, Cochlear, Olympus, Smith & Nephew, Siemens Healthineers Sonova Holding AG, Resound, Interfon.
Gastroenterology	KARL STORZ Endoscopy-America, Inc. Stryker, Boston Scientific, Pentax Medical, Richard Wolf Ind., Johnson & Johnson (Acclarent, Ethicon), Optim Inc., Lenox Instrument Co., Sohniks Endoscopy, Inc., Myelotec, Inc., EndoGastric Solutions, Inc., Hologic, Olympus, Applied Medical, Cook Medical.
Gynecology/ Women's Health Technology/FemTech	Hologic, CooperSurgical, Boston Scientific, Minerva Surgical, Elmed Inc., Halton Healthcare, Integral Diagnostics, BioTelemetry (Acq. By Philips) and Qiagen.
Hospital Supplies	Cardinal Health, Medtronic, AmerisourceBergen, OhioHealth, Henry Schein, McKesson, BD, Owens&Minor, Medtronic, AMSINO, Medline, Merit Medical, Hollister, Providien, Sage Products, Harmac Medical, Baxter, Moog Medical, ICU Medical.
Nephrology And Urology Devices	B.Braun Medical, Boston Scientific Corporation, C R Bard, Coloplast, Cook Medical, Dornier MedTech GmbH, Endo Pharmaceuticals, Fresenius Medical, Healthtronics, Intuitive Surgical Inc, KARL STORZ SE & Co KG, Lumenis (BSC), Medtronics, NIKKISO CO. LTD., Olympus Corporation, Siemens Healthineers, Stryker Corporation, Teleflex, Urologix, Asahi Kasei, Baxter.
Neurology Devices	Terumo, Abbott, DePuy Synthes, Medtronic, Stryker, Boston Scientific, B.Braun, Smith & Nephew, J&J, Penumbra, Inc., MicroPort Scientific Corp., Nihon Kohden Corp.
Ophthalmic Devices	EssilorLuxottica, J&J Vision, Hoya Corp., Alcon, Zeiss AG, CooperVision, Bausch and Lomb Inc., TopCon, NIDEX, Glaukos Corp.
Orthopedic Devices	Stryker, DePuy Synthes (J&J), Smith & Nephew, Zimmer Biomet, Medtronic Spine, SeaSpine, ConMed Orthopedic Surgery, Orthofix, NuVasive, DJO.
Patient Monitoring Devices	DexCom, Medtronic, GYANT, Huma (Medopad), Chronisense Medical, Ejenta, Cardiomo Care, Inc., 100Plus, Vitls, Neteera, ContinUse Biometrics (Cu-Bx™), iHealth, Binah.ai, ICU Medical, Baxter, Senseonics, Resideo.
Wound Care and Ostomy Devices	Ethicon, Acelity, Medtronic, Cardinal Health, Medline, Baxter, 3M, Integra Lifesciences, B.Braun, Coloplast, ConvaTec Group, GenereX Biotechnology Corp., Hollister Inc., J&J, Medline, Smith & Nephew, Paul Hartman AG, Mölnlycke Health Care, Flexicare Medical, Marlen Manufacturing & Development, NB Products, Torbot, Peak Medical, Cymed, Salts Healthcare, Nu-Hope, Schena Ostomy Technologies, CliniMed, Smiths Medical, Stimatix GI, Mercyhme and Tekni-Plex.

Source: Authors (the study writers research by means of websites)

5.3.3 MD Regulatory Environment

- The standards that apply to MD are very strict, since the consequences of defective products for safety and health can be very serious, including disability and death.
- There are Regulatory Authorities to obtain permits and certifications, depending on the destination market, it is necessary to comply with the protocols to sell both locally and export.
- For local sale of locally manufactured product, the Free Sale Certificate is issued.
- For local sale of imported product, the Product Registration is used with all the requirements according to the market and the Public and/or Private standards (FDA of the United States, CE mark in the EU, China Food and Drug Administration CFDA of China, Pharmaceuticals and Medica Devices Agency PMDA of Japan; ANVISA of Brazil).
- Standards to be considered:

➤ ISO 9001 Norm

- ISO 13485 Norm
- Quality Systems (QS) such as the Good Manufacturing Practices (GMP's, cGMP's)
- Clean room Management Systems. ISO 14644-1 clean room standard

About the Public Standards

The medical devices sector is governed by a combination of public and private standards that are closely related and are designed principally to ensure a safe, quality product for the health of the patient using the device. Failure of a medical device can have severe and fatal consequences.

Regulatory controls may include technical documentation, clinical trials and testing of the biocompatibility of materials, among others. In addition to regulatory controls, criteria laid out by public and private healthcare insurers in major markets regarding which devices are eligible for reimbursement can also affect which products survive from the prototype stage to market. These insurers can often require more rigorous clinical evidence of effectiveness than required by regulatory controls (Lin et al., 2010).

Due to their significant market shares, these standards set by the United States, the EU and to a lesser extent, Japan, control the development and commercialization of new products in this sector.

About the Private Standards

In addition to the public standards described above, there are two additional private standards that are central to the manufacturing and sourcing stages of the value chain, in particular:

- Quality management
- Cleanroom operations

Medical device manufacturers, like most businesses, have based the core of their quality system on the ISO family of standards. This ISO standard is complemented by the industry specific standard: ISO 13485, Medical Devices, Quality Management systems. The ISO 13485 standard is aligned with the FDA regulations for good manufacturing practices in the medical devices sector (FDA, 2012b) and this standard applies to all medical devices manufacturing firms, regardless of size. The primary objective of ISO 13485 is to “Facilitate harmonized medical devices regulatory requirements for quality management systems” (ISO). The ISO 13485, although a voluntary standard, has been widely adopted in the sector.

In addition to the ISO 13485 standard, medical devices manufacturing also requires different degrees of cleanroom standards. A cleanroom is an environment, typically used in manufacturing or scientific research, which has a controlled level of pollutants such as dust, airborne microbes, aerosol particles and chemical vapors.

Cleanrooms are classified by the number of particles per cubic meter at a specified particle size. Cleanroom facilities are essential in the manufacturing process of medical devices to avoid contamination of sensitive, often life-saving equipment.

Table 5-9. Clean Room Classification

Class	FED STD 209E Equivalent
ISO 6	Class 1,000
ISO 7	Class 10,000
ISO 8	Class 100,000

Source: <https://www.americancleanrooms.com/clasificaciones-de-cuartos-limpios/?lang=es>

The European Union (EU), along with countries such as Japan, Canada, and Australia all operate strict regulatory regimes like that of the FDA, and international consensus is moving towards more stringent regulations. Stricter regulations for new devices may slow-release dates and may negatively affect companies within the industry.

COVID-19 has transformed regulation in the MedTech sector. Since February 2020, the FDA has authorized over 250 emergency use authorizations (EUAs), while the EU chose to defer its [Medical Device Regulation](#) (initially slated for May 2020) by a year. These moves are symptomatic of a wider industry trend that has seen the loosening of stringent regulatory conventions across the globe.

During the pandemic, regulators and MedTech organizations have been receptive to one another and have come together to meet the urgent demand for vital equipment (including in-vitro diagnostics and other tests, as well as PPE and ventilators). Beyond COVID, this sense of collaboration is set to continue.

Regulatory Overview in the European Union

Medical device manufacturers face [a single regulatory body across the EU](#) by means of the European Medicines Agency (EMA). For a medical device to be allowed on the market, it must meet the requirements set by the EU Medical Devices Directive. Devices must receive a Conformité Européenne (CE) Mark certificate before they are allowed to be sold in that market. This CE marking verifies that a device meets all regulatory requirements, including EU safety standards. A set of different directives apply to different types of devices, potentially increasing the complexity and cost of compliance.

The **Medical Devices Regulation** ([Regulation \(EU\) 2017/745](#)) applies since 26 May 2021, following a four-year transition period. Manufacturers must comply with the regulation when placing new medical devices on the market. It repeals [Directive 93/42/EEC](#) on medical devices and the [Directive 90/385/EEC](#) on active implantable medical devices (<https://www.ema.europa.eu/en/human-regulatory/overview/medical-devices>).

Classification of medical devices (estimated to be more than 500,000) drives many pre- and post-market requirements. Due to the large variety of products, the level of control made by a third-party (the “notified body”) before placing them on the market depends on the level of impact on the human body that their use might imply. The same notified body, together with the Competent National Authorities, is involved post-market to ensure the continued safety and performance of medical device

Combination Products. Some medicines are used in combination with a medical device, usually to enable the delivery of the medicine. If the **principle intended action** of the combination product is achieved by the medicine, the entire product is regulated as a [medicinal product](#) under Directive 2001/83/EC or Regulation (EC) No 726/2004.

There are two **types of combination**:

integral: the [medicinal product](#) and device form a single integrated product e.g. pre-filled syringes and pens, patches for transdermal drug delivery and pre-filled inhalers; and

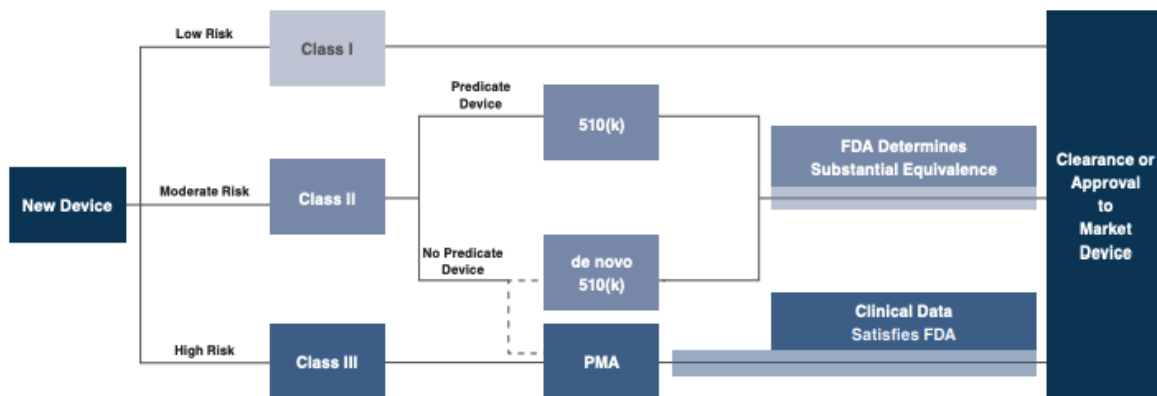
co-packaged: the [medicinal product](#) and the device are separate items contained in the same pack e.g. reusable pen for insulin cartridges, tablet delivery system with controller for pain management.

Medical devices that are co-packaged or obtained separately must be CE marked in accordance with the medical device legislation.

Regulatory Overview in the E.E.U.U.

In the United States of America, the FDA generally oversees the implementation of regulations. Some relatively simple devices deemed to pose low risk are exempted from this clearance requirement and can be marketed in the U.S. without prior authorization. For the remaining devices, commercial distribution requires marketing authorization from the FDA, which comes in primarily two areas (510k and PMA).

Figure 75. FDA Regulatory Process Approval



Source: FDA

- The premarket notification (“510(k) clearance”) process requires the manufacturer to demonstrate that a device is “substantially equivalent” to an existing device (“predicate device”) that is legally marketed in the U.S. The 510(k)-clearance process may occasionally require clinical data.
- The premarket approval (“PMA”) process is more stringent, time-consuming, and expensive. A PMA application must be supported by valid scientific evidence, which typically entails collection of extensive technical, preclinical, clinical, and manufacturing data.
- Combination products are therapeutic and diagnostic products that combine drugs, devices, and/or biological products, the Office of Combination Products (OCP) at the FDA oversees the process through the correspondent guidelines and regulator (MD or Pharmaceutical).

5.3.4 Future Trends in MD Industry

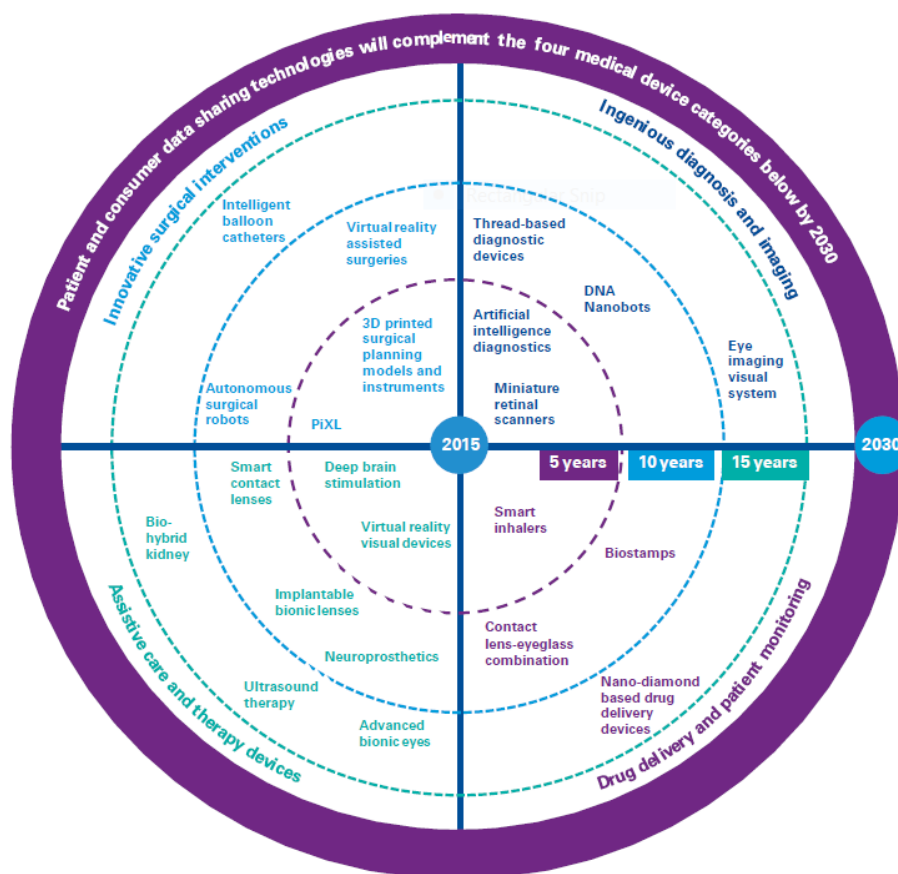
- [Enhanced Cybersecurity](#). Robust security measures are required whenever data is exchanged through medical devices to mitigate breaches in security. In fact, the FDA is actively holding manufacturers of medical devices accountable for problems that arise related to security, which is why risk management must remain a priority.
- [Wearable Fitness Technology](#). There are many people who wear fitness technology and an even greater number that want to wear it. The technology is used to help medical professionals optimize the quality of care provided to patients, and this trend will continue in 2021.
- [Internet of Medical Things](#). Internet of Medical Things (IoMT) is a variety of applications and medical devices used for the purpose of connecting IT systems in healthcare, also analyzes data that’s shared, which enables healthcare providers to make sound decisions.
- [Medical Robots](#). A current trend that’s accelerating is the use of robots in medicine. For instance, there is a surgical robot called the “da Vinci Surgical System” that’s currently used to assist in the operating room. Future medical robots will be able to provide targeted radiation therapy.
- [3D Printed Objects](#). The use of 3d print technology is expanding. For instance, it’s possible to reproduce customized organs, some of the tools used for surgical procedures, and prosthetics that are customized to patients. These printed objects can be used for the purpose of research and the

development of prototypes. There are also 3d printer capabilities in orthodontics and dentistry.

- **Genomic Medicine.** This type of personalized medicine has been used for cancer and cystic fibrosis, infectious disease, pharmacology, among other conditions. When genomic data is used to make decisions about a patient’s medical care, it involves the use of machine learning and artificial intelligence.
- **Computer Vision.** This technology is essentially used for the purpose of providing intelligence in healthcare that can improve results. For instance, they can detect whether a patient is hemorrhaging or if there is a tumor on a scan. It’s a way of helping to ensure diagnoses are accurate.
- **Device Connectivity.** Software as a medical device (SaMD) is software that’s being used to improve medical device connectivity. For instance, it can help patients feel more empowered by providing them with information about their medical history that can be used to better manage their health. One of the trends that are expected to advance in 2021 is tighter governmental regulations geared towards protecting the privacy of patients when new devices hit the market.
- **Virtual Reality.** Virtual reality in healthcare often involves software that’s beneficial in many ways, such as training surgeons and medical students. The medical devices used in virtual reality also benefit patients with depression, autism, vision problems, and many other conditions.











































Source: <https://www.cbi.eu/market-information/medical-laboratory-devices/trends>


Figure 76. Medical Devices Technology Roadmap to 2030 KMPG





Source: KMPG


Table 5-10. Future impact of innovative technologies across the care journey


		Prevention	Diagnosis	Treatment	Care
Innovative surgical intervention	Autonomous surgical robots/ Robotic eye surgery			 	
	3D printed surgical planning models and instruments			  	
	Augmented reality assisted surgeries			 	
	Intelligent balloon catheters				
	Photorefractive intrastromal cross-linking				
Ingenious diagnosis and imaging	Artificial intelligence		  		
	Thread-based diagnostic devices		 		 
	DNA nanobots				
	Eye imaging visual systems				
	Miniature retinal scanners				
Drug delivery and patient monitoring	Biostamps				 
	Smart inhalers				
	Nanodiamond based drug delivery systems				
	Contact lens-eyeglass combination				
Assistive care and therapy devices	Leadless pacemakers				
	Neuroprosthetics				
	Bio-hybrid kidneys				
	Deep brain stimulation				
	Ultrasound therapy				
	Implantable bionic lenses/ Advanced bionic eyes				
	Smart contact lenses				
	Virtual reality devices				



Cardiovascular



Neurology



Diabetes


Orthopedics


Ophthalmic


Nephrology


Respiratory


Oncology

Source: KMPG

5.3.5 MD – Global Value Chain (GVC)

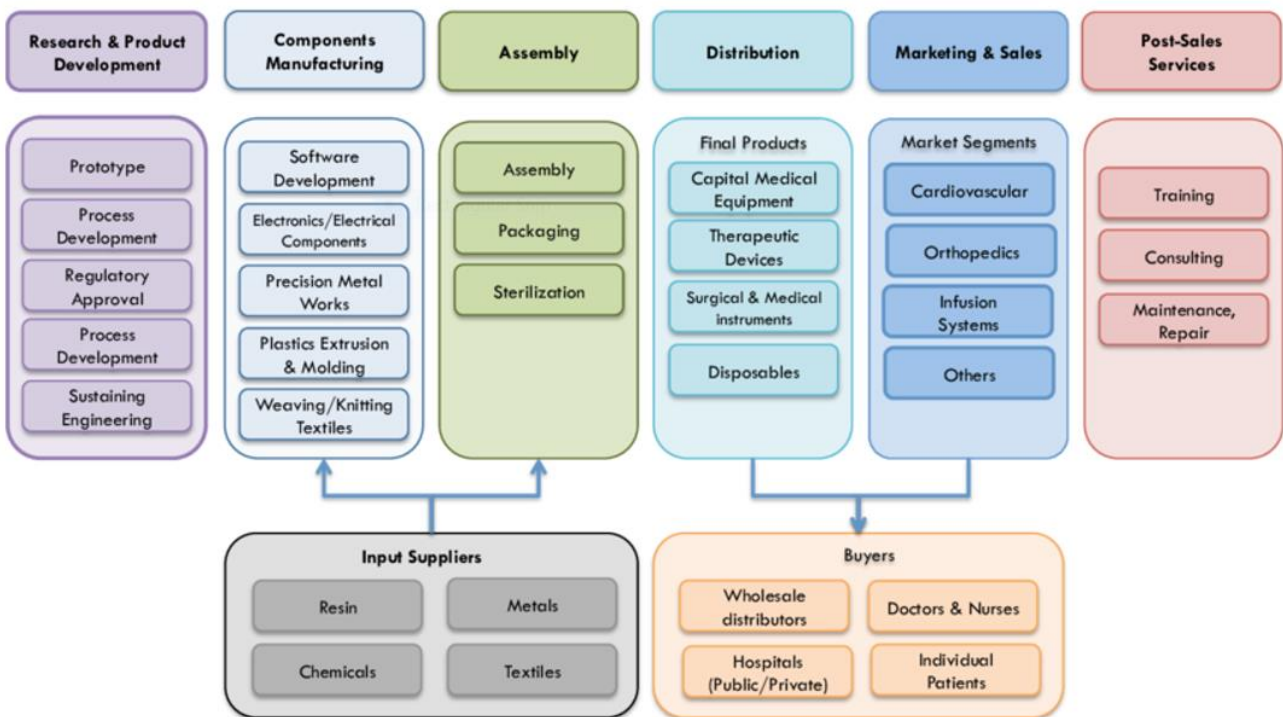
The production of medical devices is concentrated in a relatively small number of companies. Lead firms with a global presence account for more than half of the world’s market share. Although the supply side of the market is consolidated, there is also an important degree of price pressure. Faced with rising health care costs.

As a result, over the past decades, the medical devices sector has begun to focus on global production networks to improve economic efficiencies, target key growth opportunities in emerging markets and harness qualified human capital around the world.

This offshoring of production provides important opportunities for developing countries with available skilled labor to leverage cost arbitrage and a favorable location to participate in this potentially lucrative sector.

A good example to approach the chain mapping is presented below; it is a very good attempt to date, especially due to the larger number of different products than can be categorized as medical devices, and a very wide value range of end products whose prices vary from a few cents to hundreds of thousands of dollars. (18).

Figure 77. Medical Devices Global Value Chain mapping



Source: https://www.researchgate.net/figure/Medical-Devices-Global-Value-Chain_fig1_265333160

The available literature shows various ways to address the GVC and the potential ecosystem of this industry. The main point about this is to be able to thoroughly understand the market needs and how each component of the map is fully developed, considering the entry requirements (regulations, volume, prices, labor force, infrastructure, deliveries, logistics, validations, among others).

As follows is an example that illustrates the process from the Research and Development clinical stage to the marketing stage, each of these areas requires great collaboration from all entities across the GVC.

Bamber and Gereffi, 2013 (21) Costa Rica in the Medical Devices Global Value Chain: Opportunities for Upgrading, discussed about the segments of the chain as follows:

The highest value segment of the chain is **research and product development (R&D)**. During this stage, new products are conceptualized, prototypes are produced and tested, and potential manufacturing capabilities are assessed. Following initial concept tests, the product is then registered for regulatory approval in the desired market(s).

Process development: That is, establishing the manufacturing parameters - takes place in conjunction with input from the engineers at the manufacturing plants to determine the most efficient means of production. Inputs and production processes must be validated by the firm's quality assurance department to obtain regulatory approval.

Once the device enters production, a team of engineers continues to improve upon the production process (*sustaining engineering*). These engineers work in close contact with the product development teams. Increasingly, lead firms are acquiring new products through mergers and acquisitions (M&As) rather than undertaking the product development process internally. This provides an opportunity for smaller firms to enter the market.

The production segments, components manufacturing and assembly, are typically the lowest value-added segments of the chain and are comprised of several different functions depending on the final product.

Components manufacturing: Knitting, weaving and cutting are used for products such as compression socks and mastectomy bras; extrusion and molding are essential processes for producing plastics components for products such as intravenous drug delivery catheters; precision metal works are required for stents and pumps; while electronics components and software development are needed for a range of products from small therapeutic devices such as pacemakers and neuromodulators to large equipment such as X-ray and ultrasound equipment. These components may also require special treatments, such as, coating, electroplating, or polishing prior to assembly to protect them from chemical, electrical and environmental corrosion. The value added for each of these components depends on the inputs used (such as resins, precious metals, etc.) and the complexity of the production process. (21)

Assembly: This may be done either manually or by automation, depending again on the final product. Products such as infusion pumps have as many as 500 different components and require up to 200 different assembly processes, parts of which can be automated, others which must be done by hand; other products such as bovine tissue heart valves must be assembled very carefully by hand. Once final assembly is complete, the product must be labeled, packaged, and sterilized before distribution. Labeling and inserts are important parts of the production process, since incorrect information regarding use attached to a medical device can have fatal consequences. (21)

Sterilization: Once packaged, most products are then sterilized using one of three types of sterilization: E-beam (electrons are accelerated through the product); ethylene-oxide (E-O) (product is sterilized by gas); and gamma ray sterilization. While gamma ray sterilization is required for dense products, such as those containing liquids, most other products can either undergo e-beam or E-O sterilization. However, due to high costs of validation, usually one method is selected for regulatory approval per product. (21)

Distribution, Marketing and Sales: Medical devices producers may distribute through wholesale distributors, such as Cardinal Health, or directly to their end clients via internal distribution centers. End clients may be hospital or clinic administrators, those responsible for direct patient care such as doctors, nurses, and specialists, and through retail directly to the patient themselves, such as with gauze, adhesive bandages, and plastic syringes. Distribution channels depend on the type and value of products. Lower-value products tend

to be distributed through wholesale distributors, while high-value products are likely to be sold directly to hospital administrators. (21)

5.3.6 MD Key Ecosystem Players

Main Participants

Table 5-11. The ecosystem participants in the medical devices sector

OEM	CM	Supplier
<p>The Original Equipment Manufacturer is an entity that designs, develops, generates prototypes and production lines, validates products and processes, manufactures, registers, markets and / or distributes products of its brand; can be innovative, improved, and/or acquired from a third party.</p> <p>OEMs invest heavily in Research and Engineering, establishing such specialized center where there is abundant engineering and scientists with higher skills and experience. R&D area is a key differentiator of global industry leaders.</p>	<p>The Contract Manufacturer is an entity that carries out the contract manufacturing of part or all the manufacturing process of a product to a third party.</p> <p>They can offer comprehensive solutions options (end to end solutions).</p> <p>There are design and development contractors.</p> <p>CMs do not own the product, may or may not participate in the improvements of the product and production lines, may or may not oversee logistics and supply chain, may or may not have exclusivity of the manufacturing.</p> <p>Its characteristic is versatility, some CM are specialist in a few processes, some are vertical integrated and offer a wide range of services to attend many types of products assemblies.</p>	<p>The Supplier or Vendor is an entity that supplies goods and/or services for original manufacturers and / or manufacturing contractors.</p> <p>Production of metal-plastics-silicon-other type of materials parts, pieces, raw materials, cables, connectors, chemicals, textiles, packaging, are some examples, as well as, coating services, heat treatment, inspection of supplies and raw materials, sterilization, logistics, labeling, design, engineering, among others.</p> <p>Changing a supplier is not an easy task, implies time, cost, and willingness, and varies according to the regulation (510k, PMA). Usually, a supplier is involved since the development process.</p> <p>OEMs often invest in development of suppliers to guarantee the quality and continuity of their business.</p>

Source: Authors (the study writers)

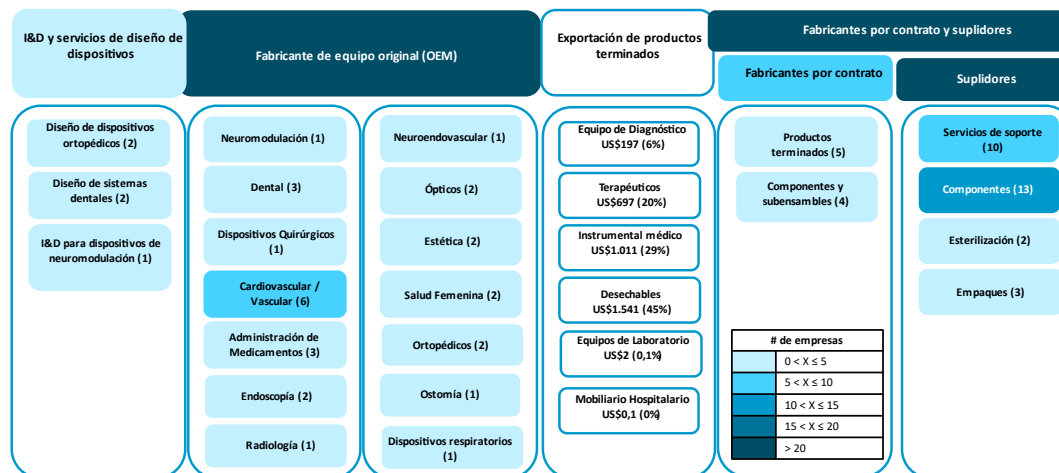
In the Central American region, Costa Rica is leading the medical devices sector, upgrading the value of products by means of complexity of processes and end-products, and scaling up all the way to Research and Development initiatives with the participation of multinational companies, academia, local suppliers, finance, and venture capital entities among others to establish a Life Sciences Center Hub.

The Dominican Republic is another country on its way to enhancing the suppliers base, one of the main pillars to the recently established MD cluster is precisely to attend the gaps of their supply chain.

As follows is the most updated review of Costa Rica GVC, as a guide tool to improving the ecosystem and bring more specialized and sophisticated partners.

Figure 78. Medical Devices in Costa Rica: Participation in the Global Chain Value (2019)

DISPOSITIVOS MÉDICOS EN COSTA RICA: PARTICIPACIÓN EN LA CADENA GLOBAL DE VALOR (2019)



Fuente: Elaboración propia, sobre la base de datos de la Coalición Costarricense de Iniciativas de Desarrollo (2020) y CEPAL (2020). Éntesis se muestra la cantidad de empresas extranjeras del sector.

Medical device manufacturing & processes

According to MED DEVICE online, medical device manufacturing includes all aspects of the fabrication of a medical device, from designing a manufacturing process to scale-up to ongoing process improvements. It also includes the sterilization and packaging of a device for shipment.

Throughout the manufacturing process, medical device makers strive to be faster and more efficient, but they also wish to be responsible corporate citizens. Thus, manufacturing demands constant insight into renewable resources, sustainable materials, equipment that is more energy efficient, and methods to reduce waste creation. Solutions to these issues can come in the form of improved processes, technological advances in machines or equipment components, or safer/more reliable materials. The same principles apply to the packaging process.

Such "LEAN" manufacturing is considered an industry best practice: eliminating any activity, process, or material that does not add value for which a customer will pay.

Still, while speed and cost-savings are vital to successful manufacturing, quality control is of the utmost importance — particularly as medical device market demands shift toward a more value-driven landscape. Packaging validation, proving to the FDA that a product is sterile when it ships, is the final step. Many medical device manufacturers excel in the ideation, concept, and prototyping phases of product development and outsource the production of components or entire devices to contract manufacturers.

This is as true of established original equipment manufacturers (OEMs) as it is for mid-sized companies and startups. Contract manufacturers vary in size and expertise, as well — some comprise small, precise operations specializing materials or components, while others are massive cleanroom facilities equipped for large-scale production.

Source: <https://www.meddeviceonline.com/resource/medical-device-manufacturing>

The Manufacturing Process is increasingly complex:

- **Subassemblies:** assembled parts and/or pieces, subassembly of components
- **Full assembly:** product assembly sterilized or not to produce final devices
- **Manufacturing:** involves making processes such as molded, extruded, or thermoformed parts or components, machined or other metalwork process, silicone parts, packaging, labelling, sterilization
- **Design and Engineering:** product redesign, validation, process redesign, automation, improvements to the product or the manufacturing process, changing suppliers and/processes and submitting new manufacturing protocols to the competent authorities, among others
- **Research and Development:** new product development, new process development, tests and prototyping, clinical and preclinical studies
- **Processes involve some of the following:**
 - Plastics and silicone, injection molding, extrusion, thermoforming, insert molding, silicone molding and lamination;
 - Metalwork, precision machining of parts, components, molds & dies, tubing, cables, braiding, swiss turning, EDM (electrical discharge machine); and
 - Others: sterilization, surface treatment such as PTFE coating, Parylene coating, textured, laser marking, heat treatment, calibration, chemical solutions, solvents, lab tests, bioburden analysis, packaging -thermoformed trays, corrugated cardboard, flexible films, pouches, containers, labels, flyers, cables, connectors, sensors, and more.

Suppliers are key entities within the MD ecosystem; thus, they have a high degree of responsibility in the supply chain. OEMs and CMs, are always looking at new suppliers, not only to reduce cost, to have redundancy of supplies, or to upgrade quality, but to develop strong partnership to increase efficiencies. Most of them have requirements to be fulfilled by the suppliers, below is an example from Baxter Healthcare's website <https://www.baxter.com/partners-suppliers/new-suppliers>.

“Baxter considers price, quality, environmental criteria, human rights, and other factors when selecting and evaluating its new suppliers.

Baxter works to create mutually beneficial partnerships with our suppliers. If you are interested in doing business with Baxter and believe you have goods or services that will fit our needs, please register through our Registration Portal, and create a profile.

Baxter also strives to increase the diversity of its supplier base and develop relationships with small, minority, women, LGBTQ, disabled, and veteran owned companies. Our commitment to inclusion extends beyond the workforce and seeks to contribute to economic stability in our local communities. If you are a diverse supplier, please use the registration form to upload your certification.

Due to the large volume of inquiries, we are not able to accept direct solicitations or follow-up beyond this submission. Be sure to include specific details about your company's products and services during registration to increase your visibility within our company.

Due to the large volume of inquiries, we are not able to accept direct solicitations or follow-up beyond this submission. Be sure to include specific details about your company's products and services during registration to increase your visibility within our company.

Requests for Proposal and Supplier Agreements

We incorporate sustainability in requests for proposal (RFPs) and supplier contract templates globally. This reiterates our commitment and provides a means to assess each supplier's ability to support progress towards our sustainability goals and conduct business consistent with our supplier standards.

Suppliers are asked to provide the following information via an RFP:

- Their sustainability policy and mission statement.
- A description of company sustainability initiatives and outcomes.
- A list of sustainability-related awards received.
- Disclosure of environmental violations and fines for the past three years.
- Details on purchasing from diverse suppliers, particularly related to products and services in the RFP (as applicable).
- Information about other initiatives that would support progress against Baxter's sustainability goals.
- Our standard supplier agreement requires U.S.-based suppliers to certify compliance with federal and state equal opportunity laws. Suppliers also commit to making good-faith efforts to consider small, minority-owned, women-owned, veteran-owned and other diverse suppliers when engaging their own suppliers. See Diversity Supplier information below for more about our efforts in this area. The agreement also encourages suppliers to identify products and/or services for Baxter's use with reduced environmental impact. We ask our suppliers to provide regular updates on their sustainability activities".

Upgrading trajectories in the Medical Devices GVC, according to Gereffi (21) is of high importance as to understand the way countries participation in the chain has evolved, as this can shape future growth potential. Different upgrading trajectories are discussed by Gereffi (21) as follows:

1. **Entry into the value chain (subsidiary):** New subsidiaries typically enter the VC with a few product lines and must ramp up to meet productivity requirements in the proposed time frame. Transfer of new products to a production facility normally takes about 24 months to get stability of the process. No modifications can be made to the production process during this period. Certifications are a must to run these operations prior to the first production run, imply equipment validation as well.
2. **Process upgrading:** Production can be shifted from manual to automated assembly, barcodes can be introduced to track inventory and the plant layout can be improved to enhance productivity. Manufacturing sites may adopt processes such as Six Sigma and lean manufacturing to improve just-in-time delivery, efficiencies of resources, reduce downtime.
3. **Product upgrading:** Make take place within one product family, or it may involve moving into production of a completely new and more complex product family, i.e., shifting from a Class I to a Class II or III device. This process requires increased quality control and extensive training.
4. **Vertical integration and Backward and Forward linkages in production:** Developing backward (vertically integrated) and forward linkages in the value chain helps to reduce the time and cost of inventory in transit. It also facilitates other processes such as sustaining engineering, R&D, by having closer engineering support from the suppliers and able to adjust with the owners of the process.

Human Capital and Workforce Development

Achieving these upgrading trajectories requires the availability of an appropriately qualified workforce for each stage (Gereffi et al., 2011). Due to the fatal consequences of human error and the potential for liability

suits, the quality of the human capital involved in production of medical devices is essential to business success. Indeed, human capital has been identified in certain cases as the single most important factor driving site selection in the medical devices manufacturing sector (Field Research, 2012; Kimelberg & Nicoll, 2012).

In this section, we present a brief overview of workforce requirements for both lower and higher levels of the value chain. The experience and skill level of the workforce differs depending on the stage of the value chain (Gereffi et al., 2011). Lower-value segments of the chain such as components manufacturing and assembly require many unspecialized labor and technicians performing labor-intensive operations, while higher-value segments of the chain such as R&D require a more specialized workforce, including researchers and product designers with industry experience, venture capitalists and many engineers.

Table 5-12. Employee Profile for Select Segments of the Value Chain (Gereffi)

Value Chain Stage	Professional Labor with Tertiary Education	Technicians and Operators
R&D	Clinicians (incremental & radical innovation) Engineers (incremental innovation) (mechanical, Electronic, biomedical, electrical, chemical, industrial, process) Product designers PhDs with industry experience and capacity in applied research Government & regulatory affairs officers Risk capital specialists (angel investors, venture capitalists)	Highly skilled technicians (prototypes)
Components	Engineers (chemical, electrical, electronic, industrial, mechanical, automation) Validation engineers Quality assurance Microbiologists	Mechanics Electricians Technicians Machine operators Manual assemblers
Assembly	Engineers (chemical, electrical, electronic, industrial, mechanical, automation) Validation engineers Quality assurance Microbiologists Compliance officers (lawyers, documentation clerks)	Mechanics Electricians Technicians Machine operators Manual assemblers
Marketing & Sales	Government & regulatory affairs officers Health economics specialists Reimbursement specialists Marketers Product specialists	

Source: Araujo et al., 2011, Forfás, 2009, Expert Group on Future Skills Needs, 2008.

Identification Systems

As healthcare becomes more virtualized and moves towards an “anytime, anywhere” model, MedTech companies need to ensure their supply chains are ready to meet this change. However, several challenges stand in the way, problems of inefficiencies associated with supply intermediaries, lack of transparency for regulators and companies alike, backlash against globalization, seismic political events such as Brexit, changes to trade agreements. (Annex Bibliography reference 22).

Thus far, the MedTech sector has not sought to localize supply. Instead, it has responded to supply chain disruption by forging mutual partnerships between device manufacturers and component part manufacturers. In May 2020, for example, the MedTech trade association AdvaMed launched the VentConnect platform to link device manufacturers with component suppliers. In August, the platform rebranded as Med Device Network — its scope expanded to cover devices beyond the pandemic.

(Annex Bibliography reference 22)

More and more **healthcare** organizations are embracing the value of **GS1** global supply chain **standards** as a critical foundation for operational efficiency. (22).

Adoption and implementation of GS1 AIDCa Automatic identification systems (barcode or RFID) can have a very wide range of applications, including point-of-care scanning to match product data to patient data, verification of patient identity via a wristband, enabling the introduction of robotic dispensing systems, recording implant serial numbers in patient records and central registries, tracking and tracing of individual instruments through decontamination, stock control and supplies management, tracking assets throughout a network of facilities.

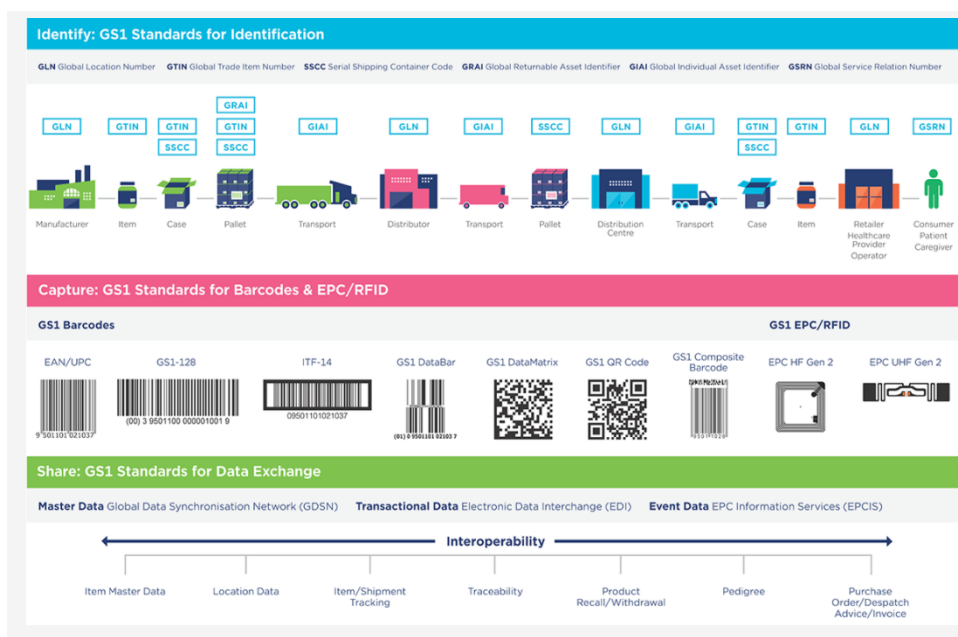
All these applications and systems enable the realization of associated health and economic benefits: reducing medication errors, preventing counterfeiting, saving costs, and increasing the Healthcare supply chain efficiency and transparency.

Numerous studies have shown that automatic identification throughout the entire healthcare supply chain, right to the point of delivery to the patient, is an extremely effective tool in preventing medication errors. However, global standards are needed for an effective and efficient roll-out of automatic identification systems in the healthcare sector.

Application standard, which provides a common set of data and data carriers for medical products at every packaging level, including specific guidance on selection and use of product identification keys, additional product, and production data -for example, lot number, expiration date, and/or serial number (where applicable)- and data carriers.

Automatic Identification and Data Capture (AIDC) Application Standard for Small Instruments, which specifically covers the marking of surgical instruments to enable traceability throughout the instrument reprocessing cycle, and particularly to and from the sterilization department. These standards are all an integral part of the GS1 General Specifications, the core standards document of the GS1 System, which can be obtained from your local GS1 Member Organization.

Figure 79. GS1 global supply chain standards for identification



Source : <https://www.gs1.org/industries/healthcare/standards>, Healthcare is by nature a global sector, with supply chains that often cross borders. A global standardized system for traceability, from product manufacture to patient treatment, is imperative to comply with the increasing legal requirements for product traceability around the world. In cases of cross border trading, a global trade item number (GTIN) can be used to identify that product in any country without any restrictions or errors.

The GS1 system of standards is a system that has proven its robustness over the last 30+ years in different sectors worldwide.

5.4 El Salvador Profile

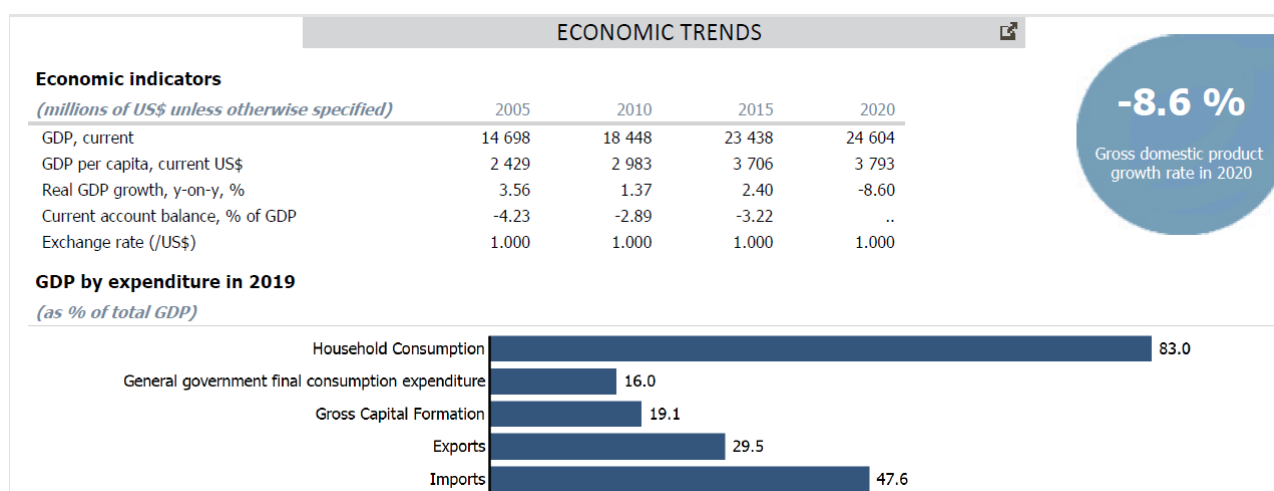
5.4.1 Country Profile

Official Name:	República de El Salvador
ISO Country Code:	sv, slv
Time Zone:	Local Time = UTC -6h
Population:	6.4 million people
Official language:	Spanish
Capital City:	San Salvador (pop. 1,107,305).
Territorial Organization:	The country is divided into 14 departments with the administrative, subdivided into 262 municipalities. San Salvador is surrounded by several municipalities, and this is called the Greater San Salvador Metropolitan Area (AMSS), with 2,177,432 inhabitants (2020)
Government:	Type: Republic. Independence: on 15 September 1821 (from Spain).
Currency:	US Dollar (US\$), and Bitcoin
Industries:	Food and beverage processing, textiles, footwear and clothing, chemical products, petroleum products, electronics.

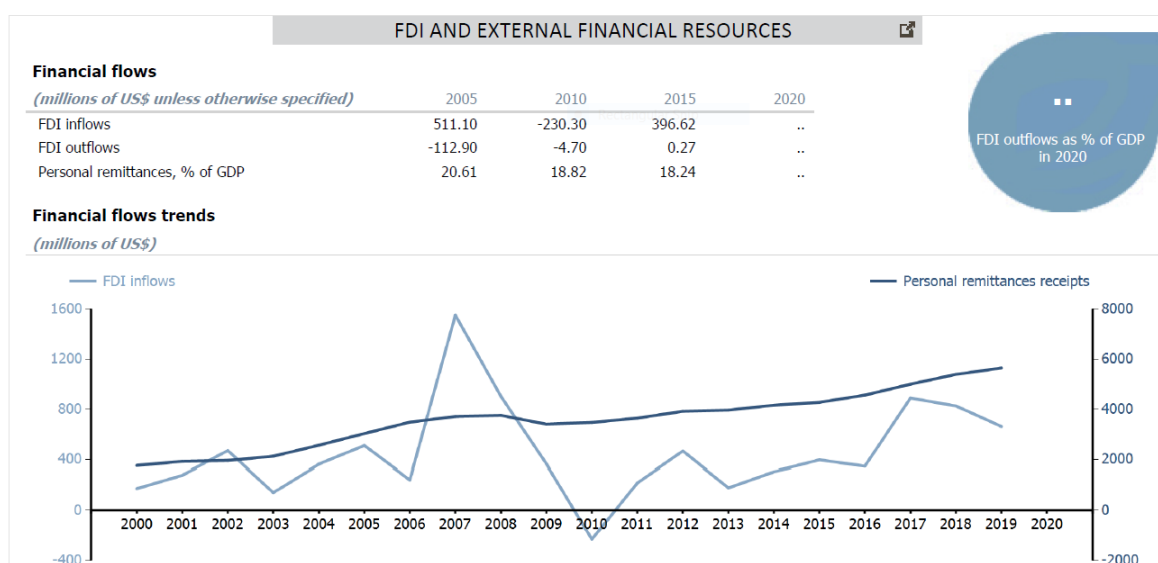
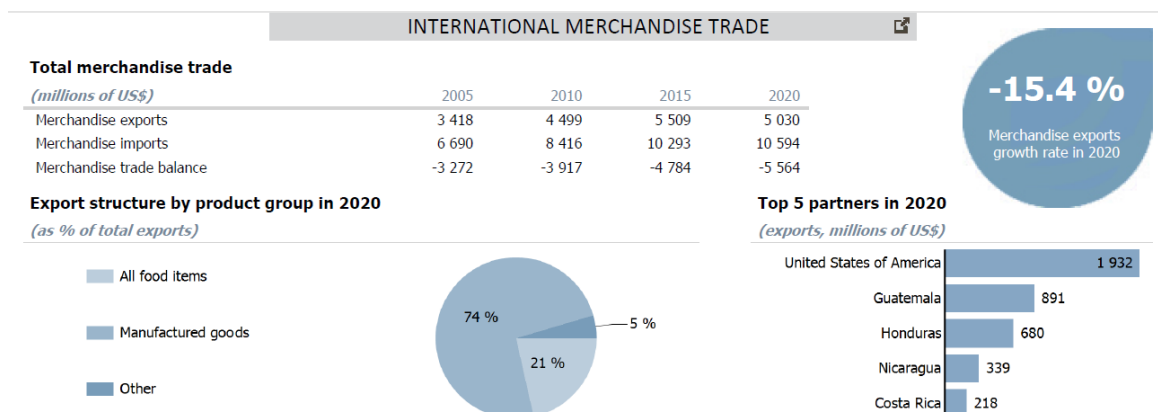
Exports-commodities: offshore assembly exports, coffee, sugar, textiles and apparel, gold, ethanol, chemicals, electricity, iron, and steel manufactures.

Imports-commodities: raw materials, consumer goods, capital goods, fuels, foodstuffs, petroleum, electricity.

Figure 80. El Salvador Country Profile



Source: UNCTADSTAT, 2020. Generation date: 22 July 2021



Source: UNCTADSTAT, 2020. Generation date: 22 July 2021

With an area of 21,000 km² it is the smallest country in Central America, about the size of Slovenia or slightly smaller than the U.S. state of Massachusetts. El Salvador's landscape offers three general regions, a narrow Pacific coastal belt, a central plateau, and the northern lowlands, formed by the wide Lempa River Valley. Its highest point is Cerro El Pital with 2,730 m.

Figure 81. Map of El Salvador



The Medical Devices sector in El Salvador, with a few exceptions (Forlife Health, Biogalenic, and a few local suppliers) is non-existent, thus, promoting and attracting FDI in this sector is an aspirational task to be embraced with a long-term vision by the country.

Operational efficiency and profitability are the primary drivers for medical devices manufacturers. There are many strategic factors to consider when moving manufacturing to another country, some of the most important are listed below, and will be benchmarked against main competitor countries, to analyze the positioning and potential that ES may have.

5.4.2 Benchmark

This section provides a review of the various topics considered by the investors when looking into a site location. For medical devices, a major factor is the Human Capital, the existence of a trained and experienced workforce, from operators all the way to engineers and management staff. Stability is another key driver, especially because of the long-planning strategy and regulatory environment. Investment incentives and market access, as well as reliable infrastructure, a good transportation network, and a good ecosystem of suppliers.

Human Capital

During this study, interviews with major stakeholders were conducted. The general perception is that Salvadorans have a great work ethic, low turnover, low absenteeism, high productivity, learn quickly, among other great attributes.

Wages in ES are competitive, but the recent 20% increase on minimum wages created a climate of unpredictability which is not positively appreciated by decision makers.

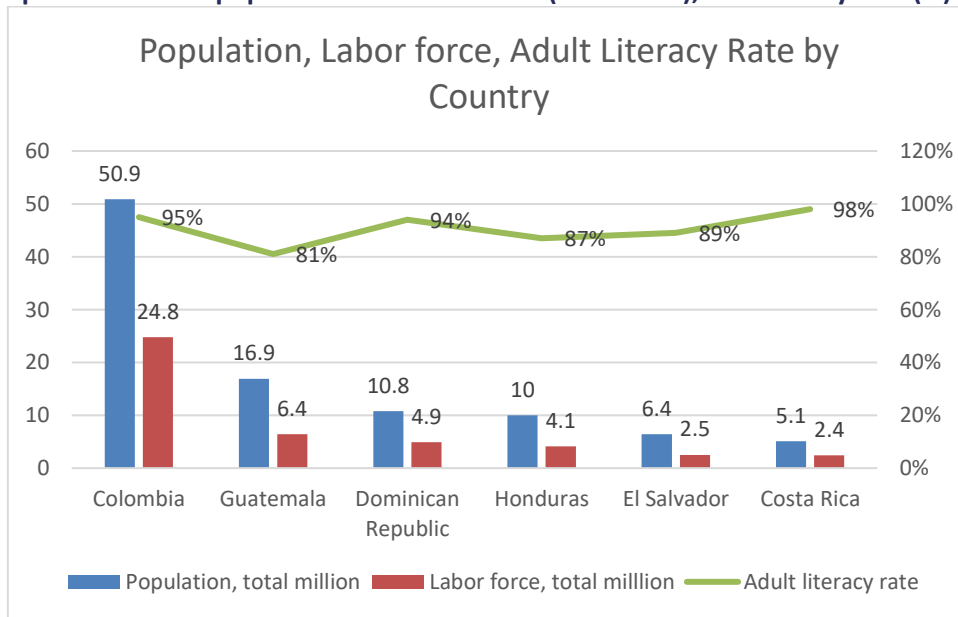
The workforce, in general, is low-skilled, however, there are excellent resources available in the public and private sectors to meet the training needs required in sectors such as textiles and clothing, aeronautics, and pharmaceuticals, and the rate at which many of these workers learn is high. Most companies turn to INSAFORP, technical schools, MEGATEC, ITCA/FEDAPE, Universities, and in-house training. There is a recent private initiative from ASIPLASTIC, it is a new training center through the foundation FUNDEPLAST. This initiative is providing scholarships to the young people interested in becoming qualified operators. They will be trained to develop the specific skills and capabilities required by the industry.

Quality training programs provide a trained workforce that match specific job skill requirements so that workers are ready to work as soon as the business opens its doors. Specific job training for a new or existing workforce is crucial to the success of a company's relocation or expansion. Specifically, quality job training that meets industry standards reduces the need for additional training once new employees are on the job, which saves the company time and money. When selecting a site, firms should look for specific assistance in training new or current workers for long-term, permanent technical jobs, or that provide short-term, job-specific training designed to fit the company's needs.

This is an area of improvement in ES and should be included in national programs as part of the benefits provided to FDI in the medical sector, with a long-term vision and strategy.

Some of its competitors, such as Costa Rica and Dominican Republic, are working on specific programs to bring more qualified labor to El Salvador. Through the INA (National Learning Institute), Costa Rica is providing trainings such as Introduction to Medical Devices for operators. Additionally, Costa Rica developed a specific Medical Devices Engineering Master’s degree program, a master’s degree Supply Chain at TEC (Costa Rica Institute of Technology), and other technical programs in quality and microbiology. Some other countries such as Ireland, offer special grants and payroll payment during the initial stages of establishment and/or expansions to FDI firms.

Figure 82. Comparison of total population and labor force (In millions), and literacy rate (%) by Country

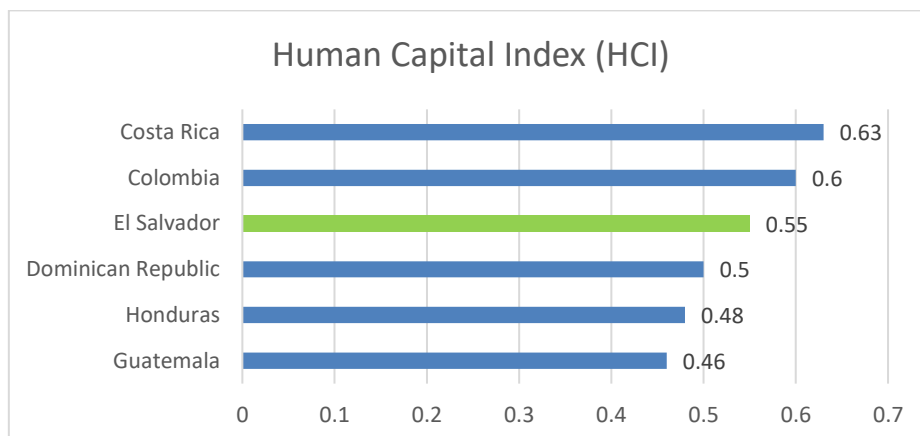


Source: World Bank, 2020. Data World Bank indicators.

Colombia and Guatemala have by far the largest population and labor force, but Guatemala has the lowest adult literacy rate. El Salvador has a similar size labor force as Costa Rica. The perception from the interviews we had with firms in ES is that labor is abundant and easy to recruit for the type of operations currently in place in the country. Costa Rica has a shortage of labor for the specialized industries with production facilities and/or services operations. In terms of size, Dominican Republic is a top competitor by number of people, and they also have a high adult literacy rate, but the report from investors is that there is an urgent need for more qualified labor to fulfill the increasing demand.

A highly skilled, well-educated, and growing workforce is an essential consideration for a new business location. Finding the right talent represents one of the most pressing challenges. Therefore, choosing a problematic labor market constitutes one of the biggest risks for successful site selection in the medical devices industry.

Figure 83. The Human Capital Index (HCI) by country, 2020



Source: World Bank calculations based on the 2020 update of the Human Capital Index (HCI). World Bank. 2021. The Human Capital Index 2020 Update: Human Capital in the Time of COVID-19. Washington, DC: World Bank. doi:10.1596/978-1-4648-1552-2. License: Creative Commons Attribution CC BY 3.0 IGO.

Note: The Human Capital Index (HCI) ranges between 0 and 1. The index is measured in terms of the productivity of the next generation of workers relative to the benchmark of complete education and full health. An economy in which a child born today can expect to achieve complete education and full health will score a value of 1 on the index. Lower and upper bounds indicate the range of uncertainty around the value of the HCI for each economy. The HCI provides a new definition of human capital and quantifies the contribution of health and education to the productivity of the next generation of workers. Countries can use it to assess how much income they are foregoing because of HC gaps, and how much faster they can turn these losses into gains if they act now.

For this indicator, El Salvador ranks #3 above Dominican Republic, Honduras, and Guatemala. This indicator should be included in the value proposition strategy because of the favorable score received.

The Human Capital Index (HCI) is an international metric that benchmarks key components of human capital across economies. The HCI was launched in 2018 as part of the Human Capital Project, a global effort to accelerate progress toward a world where all children can achieve their full potential. Measuring the human capital that a child born today can expect to attain by her 18th birthday, the HCI highlights how current health and education outcomes shape the productivity of the next generation of workers. In this way, it underscores the importance of governments and societies investing in the human capital of their citizens.

Over the past decade, many economies have made important progress in improving human capital. Today, however, the COVID-19 (coronavirus) pandemic threatens to reverse many of those gains. Urgent action is needed to protect hard-won advances in human capital, particularly among the poor and vulnerable. Designing the needed interventions, targeting them to achieve the highest effectiveness, and navigating difficult trade-offs in times of reduced fiscal space makes investing in better measurement of human capital now more important than ever.

Human capital consists of the knowledge, skills, and health that people accumulate over their lives. People’s health and education have undeniable intrinsic value, and human capital also enables people to realize their potential as productive members of society. More human capital is associated with higher earnings for people, higher income for countries, and stronger cohesion in societies. It is a central driver of sustainable growth and poverty reduction.

Globally, the HCI 2020 shows that, before the pandemic struck, a child could expect to attain an average of 56% of her potential productivity as a future worker. This global average masks considerable variation across

regions and economies. For instance, a child born in a low-income economy could expect to be 37% as productive as if she had full education and full health. For a child born in a high-income economy, this figure is 70%. Globally, the average HCI is slightly higher for girls (0.59) than for boys (0.56).

Table 5-13. El Salvador Engineering and Technical Graduates (2014 - 2018)

Programs	2014	2015	2016	2017	2018	TOTAL
Biomedical Engineering	12	9	20	10	13	64
Electrical Engineering	101	130	131	141	141	644
Electronic Engineering	7	17	21	43	23	111
Automation Engineering	11	8	4	11	5	39
Industrial Engineering	527	531	466	581	531	2636
Mechanical Engineering	65	56	53	67	67	308
Mechatronics Engineering	46	30	50	48	65	239
Licentiate in Orthotics and Prosthetics	0	2	3	1	0	6
TOTAL	770	784	750	906	847	4057
Automation Technician	0	0	0	11	0	11
Biomedical Technician	14	12	7	21	39	93
Electrical Technician	296	312	342	342	428	1720
Electronic Technician	130	140	153	139	128	690
Industrial Technician	97	79	101	103	90	470
Maintenance Technician	46	64	105	113	108	436
Mechanical Technician	38	57	53	39	71	258
Mechatronics Technician	27	44	43	44	39	197
Orthotic and Prosthetic Technician	59	25	32	32	28	176
Production Technician	1	0	0	0	0	1
TOTAL	708	733	836	844	931	4052

Source: Dirección Nacional de Educación Superior, Ministerio de Educación, EL Salvador, C.A. Nov 2019.

Data regarding graduates in technical areas and engineering is not readily available. This is in part due to the fact that most of the information is reported by non-official sources. Demand for highly skilled labor is high, while the supply is low. The most demanding areas are in the software/computer related areas. Technical labor is required during the manufacturing stage. Countries are working on the development of new initiatives to bring more technicians and experience to the production facilities. Automation and Mechatronics are new areas at the vocational technical level. Universities are also offering new programs in technical areas.

Table 5-14. Technical Centers and Universities by Country

Country	Number of Technical Centers *	Number of Universities Public & Private	Graduates annual: Technical/Industrial Programs **	Graduates annual: Engineering University Programs ***
El Salvador	17	24	931	4057
Costa Rica	226	63	13,000	12,824
Guatemala	NA	16	NA	NA
Colombia	36	110	20,497	NA
Honduras	20	21	NA	NA
Dominican Republic	7	32	NA	NA

Source: Authors. Ministry of Education by countries. Most countries have outdated data (2014, 2016) or non-available.

Notes: *El Salvador has 11 Specialized Institutes and 6 Technological Institutes. ** El Salvador data is from year 2018; Colombia all technical areas 2018. *** Costa Rica # STEM Graduate only in 2018.

Table 5-15. Technical Training Institute by Country.

Country	National Technical Training Institute
El Salvador	Instituto Salvadoreño de Formación Profesional (INSAFORP)
Costa Rica	Instituto Nacional de Aprendizaje INA
Colombia	Servicio Nacional de Aprendizaje SENA
Honduras	Instituto Nacional de Formación Profesional (INFOP) / CADERH
Guatemala	Instituto Técnico de Capacitación y Productividad (INTECAP)
Dominican Republic	Instituto Nacional de Formación Técnico Profesional INFOTEP

Source: Authors (the study writers).

All the evaluated countries in this benchmark have National Technical Training Institutes; they all play a very important role within each country and companies have a good perception of the services provided. They are vital stakeholders in the development of the technical expertise and specific skills required by the various sectors.

Quality of Life

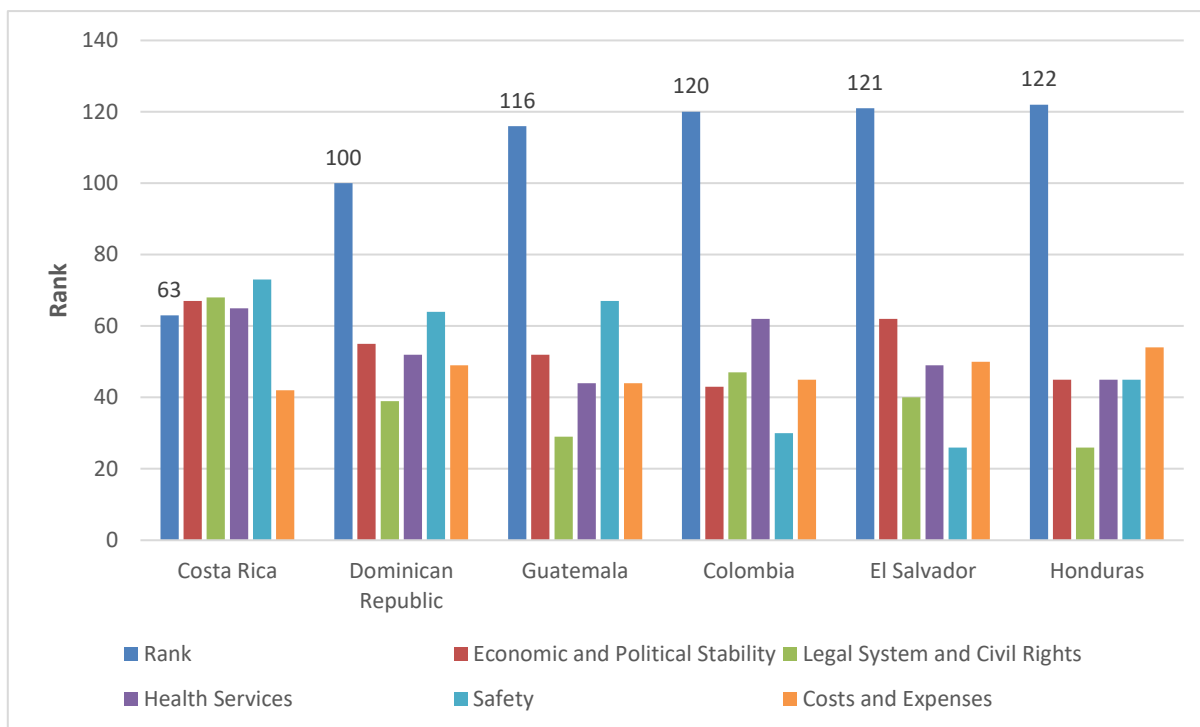
Table 5-16. Quality of Life in a country comparison

Rank	Country	Economic and Political Stability	Legal System and Civil Rights	Health Services	Safety	Costs and Expenses	Total
121	El Salvador	62	40	49	26	50	45
116	Guatemala	52	29	44	67	44	46
120	Colombia	43	47	62	30	45	45
63	Costa Rica	67	68	65	73	42	56
100	Dominican Republic	55	39	52	64	49	50
122	Honduras	45	26	45	45	54	45

Source: <https://www.worlddata.info/quality-of-life.php>

Notes: Quality of life in a country comparison. A total of 37 factors were included in the calculation of the overall index, which were divided into 7 subject areas here (for the purpose of this analysis climate and popularity were not included). This table applies primarily to residents who also receive their income and pay taxes in the respective country.

Figure 84. Quality of Life Comparison in five subject areas



Source: <https://www.worlddata.info/quality-of-life.php>

Costa Rica ranks the highest in quality of life in the Quality-of-Life indicator, followed by Dominican Republic. Honduras ranked the lowest. One of the lowest scores for ES is in safety. ES, Colombia, and Honduras have the same total score of 45, but the difference lies in the specific areas of analysis.

Stability and ease of doing business

When looking overseas for new sites, there are a number of indicators to take into account. Key factors include: trading blocks, tariffs/barriers to entry talent pool, labor costs, other operating costs, infrastructure, labor legislation, potential/social risk, available sites/buildings, economic zones, and accessibility.

Table 5-17. Competitiveness, Ease of Doing Business, and Governance Indicators by Country, 2019

Indicator	El Salvador	Guatemala	Colombia	Costa Rica	Dominican Republic	Honduras
Global Competitiveness rank /141 countries	103	98	57	62	58	101
Ease of Doing Business Rank	91	96	67	74	115	133
Short term political risk	3	2	2	2	2	2
Control of Corruption	32.69	18.75	48.08	75.96	25.00	23.08
Rule of Law	23.56	13.94	38.46	70.19	41.83	15.38
Regulatory Quality	56.25	44.23	66.35	68.95	52.40	34.13
Government Effectiveness	35.58	26.44	55.77	67.79	38.94	30.29

Political Stability and Absence of Violence/Terrorism	42.86	25.24	15.71	60.48	48.57	27.14
Voice and Accountability	51.72	35.47	55.17	85.71	53.69	31.03
Country Risk Classification *	5	4	4	4	4	5
Inflation % (2020)	1	4	1.61	2	3	4

Source: Doing Business database.

https://www.theglobaleconomy.com/rankings/political_risk_short_term/#

<https://info.worldbank.org/governance/wgi/Home/Reports>.

Notes: The six aggregate indicators (governance) are reported in percentile rank terms from 0 to 100, with higher values corresponding to better outcomes.

The Global Competitiveness Index 4.0 assesses the microeconomic and macroeconomic foundations of national competitiveness, which is defined as the set of institutions, policies, and factors that determine the level of productivity of a country.

The rankings are benchmarked to May 1, 2019, and based on the average of each economy's ease of doing business scores for the 10 topics included in the aggregate ranking. Rankings are calculated based on the unrounded scores, while scores with only one digit are displayed in the table.

Short-term political risk (1=low, 7=high), 2019 – Country rankings: The average for 2019 based on 201 countries was 3 index points.

*<http://www.oecd.org/trade/topics/export-credits/arrangement-and-sector-understandings/financing-terms-and-conditions/country-risk-classification/>

Country Risk Classifications of the Participants to the Arrangement on Officially Supported Export Credits, June 2021

El Salvador has a weak position in some of the above indicators, but it has some advantages over Guatemala and Honduras. It is important to highlight that this data is from 2019, and El Salvador has undergone significant changes that may vary its position when the most updated report is published by the end of September 2021. Also, of note is that the inflation rate in ES is the lowest.

To attract new FDI, El Salvador must improve the process of doing business; it needs to be easier to navigate and more predictable to investors. This is especially important in the Medical Devices sector. Due to the nature of the regulatory environment, stability and attention to rule of law is a must to be considered.

Foreign Trade and Investment Incentives

When selecting a site, MD companies seek those areas that have tax structures designed to reward investment and innovation. Corporate income tax, workers' compensation, tax credit incentives, property taxes, investment grants, as well as sales tax exemptions are factors usually considered by medical device companies during their site selection process.

More creative incentives are given in various countries to increase the accessibility and attractiveness of a site, e.g., infrastructure subsidies. Providing educational training programs is considered a key incentive and strategy. Additionally, initial wage subsidies, can help during the onset of the process.

For device companies that clean parts, or use chemicals or gases, it is necessary to be aware of local environmental regulations. A streamlined process that provides accurate and timely information regarding permitting and regulatory requirements is critical during the initial country evaluation. The presence of a green energy matrix is a positive factor in a site evaluation.

Environmental regulations are becoming of high importance to MD manufacturing. As follows is an article from Healthcare Global, "Driving Sustainability in Medical Device Production" (<https://healthcareglobal.com/medical-devices-and-pharma/driving-sustainability-medical-device->

production) discussing the topic of sustainability in medical devices manufacturing which is relevant to this industry.

Environmental protection and stewardship are rapidly rising to the top of the corporate agenda and medical device businesses are no exception. The healthcare sectors of the United States, Australia, Canada, and England combined emit an estimated 748 million metric tons of greenhouse gases each year, an output greater than the carbon emissions of all but six nations worldwide. In order to curb this situation various European standards have been introduced.

The Waste Electrical and Electronic Equipment (WEEE); Restriction on Hazardous Substances (RoHS); Registration, Evaluation, and Authorization of Chemicals (REACH) and the Energy Using Products (EuP) regulations have all significantly altered manufacturing processes, specific labelling, compliance with disposal restrictions, and creation of instructions for end-of-life management and recycling.

Now many medical devices are currently exempt from these regulations but several directives, including RoHS and WEEE, are in the process of being reviewed and could be applicable in the future. This is especially relevant for devices that are 'connected' and have a digital monitoring component. This brings them under the regulatory purview of authorities that govern devices with electronic components.

While medical device manufacturers have been working to respond to increasing demand for environmental sustainability from the market, they also have to contend with a key element of their mission: to ensure safety and usability to healthcare workers and patients. Parenteral and other invasive devices are strictly regulated to help reduce the risk of Healthcare Acquired Infection which typically runs as high as 5% and 8% in most developed countries, according to the European Centre for Disease Prevention and Control. As a result, they typically contain disposable single-use plastic elements.

Medical device disposal is a particularly burning issue; generally carried out through incineration in the EU, it typically releases nitrous oxide, as well as known carcinogens including polychlorinated biphenyls, furans and dioxins. Some of the strategies trailed by manufacturers to reduce waste matter destined to incineration include sterilization and reprocessing.

Sterilization, however, falls short on the environmental front, and may consume more energy and produce more emissions than incineration itself. In the United States for example, 50% of all sterile medical devices are sterilized with ethylene oxide but since this method releases harmful emissions, the US Food and Drug Administration is now encouraging the development of new methods or technologies.

Reducing the impact of packaging can also significantly reduce the materials that need to be dealt with through either waste or recycling. Packaging manufacturers are decreasing packaging volume by favoring sealed trays instead of pouches, laser-etching instructions directly on to the tray where regulation permits it, or reducing the number of components required overall. In addition to this, for recycling plans to be successful it is important to have a full understanding of the practices surrounding device use and to establish, where possible, closed loop recycling systems that recover the waste materials from hospitals or patients and bring them back into the recycling process.

The use of environmentally friendly materials should also be supported by an increase in clean renewable energy sources. Lower energy consumption means fewer carbon emissions but also financial savings, making this an appealing measure for manufacturers. New technologies are proving a major gamechanger on this front, helping manufacturers marry their environmental stewardship with cost savings and efficiency. 3D printing, for example, can help develop optimum product molds more quickly, refining production parameters to minimize raw materials volumes and maximizing output productivity.

Table 5-18. Foreign Trade and Investment Incentives comparison by Country

Country	Number of Industrial Parks /Free Zone	Investment Freedom Ranking 2021	Free Trade Agreement	Double Tax Treaties	Availability of Investment Incentives
El Salvador	17 (9 suitable for manufacturing)	70	6	1	Free Zone Law: 100% income tax exemption, municipal taxes for 15 years in SS Metro area; 20 years Outside SS Metro area
Guatemala	12	70	12	1	Free Zone Law: 100 % income tax exemption for 10 years
Colombia	41	80	17	14	Single income tax rate of 20% (the current rate in the National Customs Territory is 32% for 2020, 31% for 2021).
Honduras	39	65	10	0	Free Zone Law: 100% income tax exemption for 20 years
Dominican Republic	68	70	5	2	Free Zone Law: 100% income tax exemption, no time limit
Costa Rica	39 (12 for MD manufacturing)	70	14	3	Free Zone Law: 100% income tax exemption for 8 years in Metro area; 12 years Outside Metro area

Source:

https://www.theglobaleconomy.com/rankings/herit_investment_freedom/

<https://investincolombia.com.co/en/how-to-invest/investment-incentives/free-trade-zone-regime-colombia>

<https://cni.hn/honduras-beneficios-fiscales/>

<https://www.cnzfe.gob.do/index.php/es/preguntas-frecuentes>

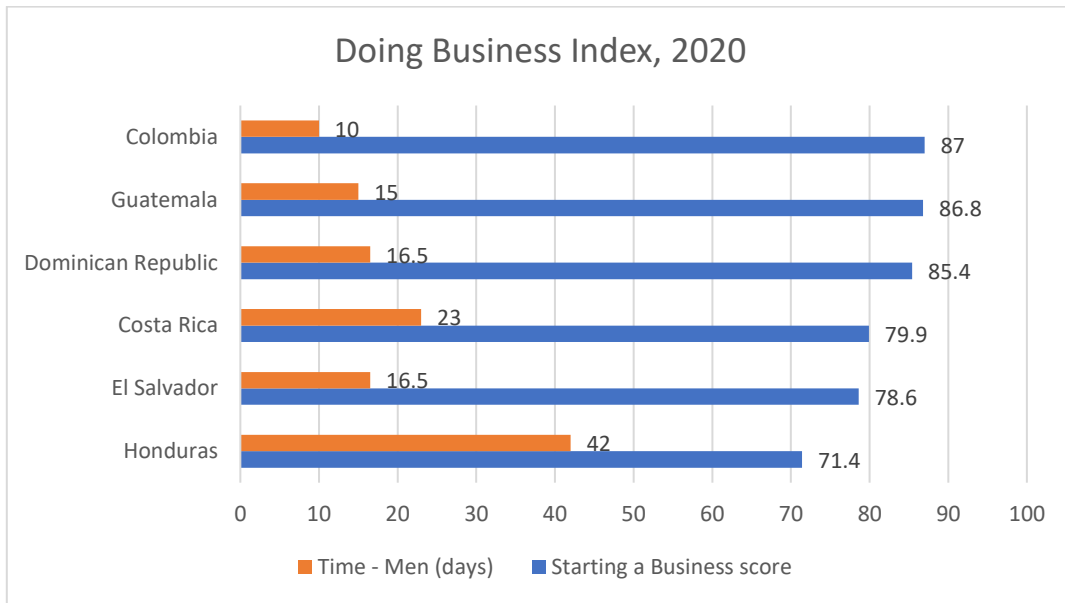
El Salvador has very attractive Free Zone incentives when compared to Costa Rica and Colombia. El Salvador offers a longer amount of time to enjoy the tax exemptions, and the possibility of extensions if proof of additional investments is provided. This is an important competitive advantage. Nevertheless, Honduras, Guatemala, and the Dominican Republic offer better incentives. Therefore, El Salvador should review additional options to offer more creative incentives.

Medical Devices are highly dependent on the labor force. The labor force must be very qualified and trained in understanding the regulatory environment. Providing specific training programs, certifications, etc is essential for this sector.

Infrastructure costs and quality and logistics

Each medical device company must assess how much it will cost to operate its business daily. An important area to research is utility costs, especially electricity. Such issues usually focus on the following: availability of electricity to the site, availability of temporary power during construction, regional generating sources, hookup fees, and cost per kilowatt hour. Cost of land and rental fees are also very important in the total equation.

Figure 85. Starting a Business score and Time -Men (days) Doing Business Index, 2020

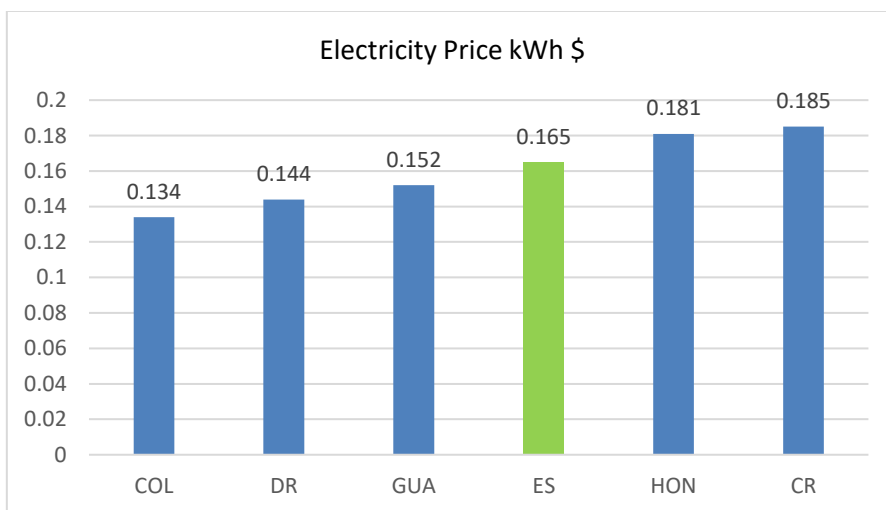


Source:

World Bank, Doing Business project (doingbusiness.org).
<https://www.doingbusiness.org/en/data/exploretopics/starting-a-business>. May 2020

According to this report, Colombia is the country with the best time and cost to start a business and Honduras received the lowest score. El Salvador shows the second lowest time to start a business. This information should be included in the information that is given to potential investors. Additionally, the support from PROESA’s Investment Executives is .is essential during the evaluation of the site, during the establishment process and lastly, during the aftercare services.

Figure 86. Electricity prices comparison by Country



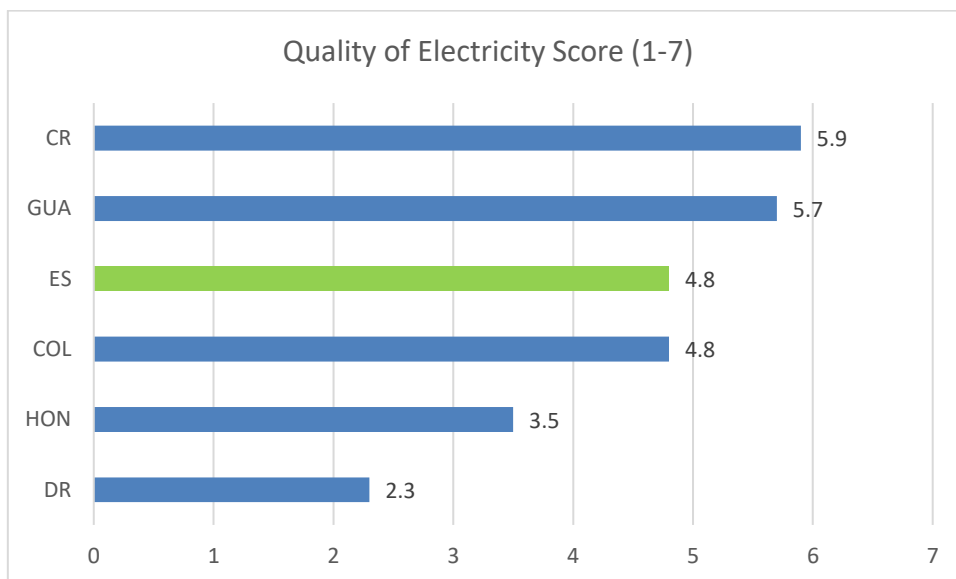
Source: <https://www.globalpetrolprices.com/countries/>

Notes. For **businesses**, the displayed data point uses 1,000,000 kWh annual consumption. Dec 2020.

Energy is expensive in the area; Costa Rica has the most expensive rates and yet the MD cluster continues to grow. MD manufacturing is very high in energy consumption, especially when clean rooms are involved in the process, since they must run A/C 24x7x365. A/C is a must to keep the air flowing and for cleanliness purposes.

Finding ways to reduce the price of electricity could be another competitive edge for El Salvador. It is something to take into consideration if the manufacturing processes involves plastic transformation.

Figure 87. Quality of electricity comparison by Country

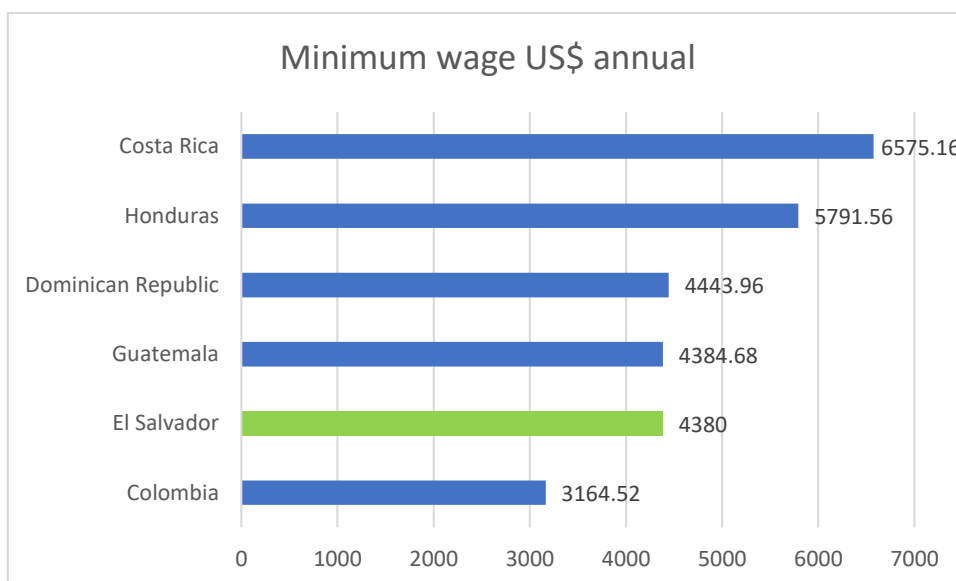


Source: 2.07 Quality of electricity supply - World Economic Forum 2018

Note: In your country, how reliable is the electricity supply (lack of interruptions and lack of voltage fluctuations)? [1 = extremely unreliable; 7 = extremely reliable]

Medical Devices manufacturing as well as Electronics, are very sensitive to the quality of energy, changes in voltage, interruptions, etc. These will impact the production in a very negative way. Quality is more important than cost in a MD production environment. Poor quality can affect not only the process, but it will disrupt the clean room conditions and validation.

Figure 88. Minimum wage comparison by Country



Source: <https://wageindicator.org/salary/minimum-wage>; Consejo Nacional de Salario Mínimo El Salvador; <https://www.salariominimocolombia.net/>;

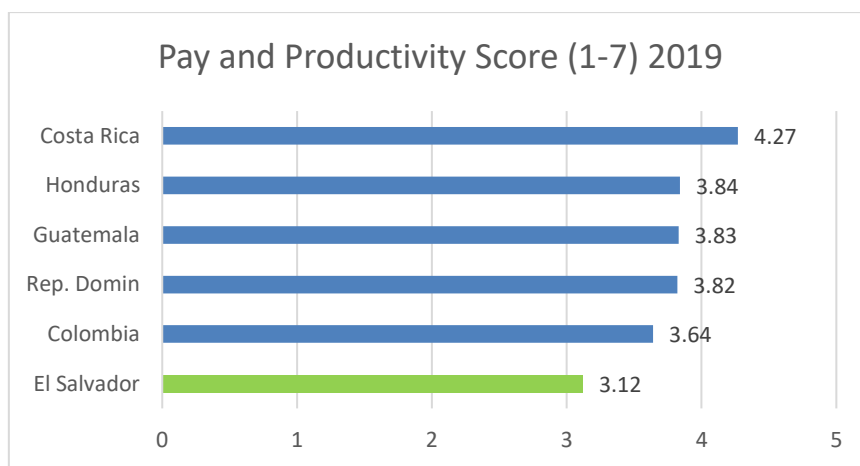
<https://tusalarario.org/honduras/salario/salario-minimo;>
[https://presidencia.gob.do/sites/default/files/content/documentos/Resolucion-1-2021-Salario-Minino.pdf;](https://presidencia.gob.do/sites/default/files/content/documentos/Resolucion-1-2021-Salario-Minino.pdf)
<https://www.mtss.go.cr/temas-laborales/salarios/lista-salarios.html>

Costa Rica report the highest minimum wage in US\$ for the year 2021 and Colombia reports the lowest from the list of competitors. Most countries in Latin America and the Caribbean have raised salaries in 2021, the most recent being El Salvador. Wages are listed in Figure 26.

El Salvador, Honduras, and Dominican Republic work on a 44 hour per week schedule, while Costa Rica, and Guatemala work on a 48 hours per week schedule. Colombia will be moving gradually from 48 hours to 42 hours per week. The industry pays above minimum wage

Competitive wages are important to MD manufacturing. DL’s account for 60% to 70% of the labor force. In this case, ES offers competitive wages, but they must be qualified workers as a requirement of this industry.

Figure 89. Pay and Productivity comparison by Country



Source:
https://tcddata360.worldbank.org/indicators/hb01e7faa?country=BRA&indicator=661&viz=line_chart&years=2017,2019

El Salvador ranks the lowest for the pay and productivity score. This is a strong factor to be analyzed when comparisons are made in the region. A more in-depth analysis of the situation should be conducted to implement corrective measures and to be more competitive in this regard.

Transportation Network

As the medical device industry becomes more global, it becomes increasingly important for firms to be part of a transportation system that can move people and materials both locally and throughout the world. Companies should investigate the accessibility of the region's interstate highway system, railroad networks, and airport. A convenient and continually developing transportation infrastructure in proximity to major trade corridors and offering access to major markets as well as to product suppliers, is critical to companies attempting to streamline their supply chain.

The kind of product a company manufactures is an important factor when exploring a region's transportation network. In the medical device industry, proximity to a major international airport is often the most important transportation consideration, allowing next-day delivery of products around the globe.

Table 5-19. Transportation network indicators comparison by Countries

Indicator	El Salvador	Guatemala	Colombia	Costa Rica	Dominican Republic	Honduras
Number of ports	2 in the Pacific	2 in the Atlantic and 1 in the Pacific	8 in the Caribbean and 2 in the Pacific	2 in the Caribbean and 1 in the Pacific	12	4 in the Atlantic and 1 in the Pacific
Maritime container traffic TEU'S (2019) *	249.500	1.529.000	4.254.900	1.530.000	1.338.403	790.800
Number of international airports	1	2	2	2	5	3
Air transport, freight (million ton-km)	13	0	1.548	11	0	0
Number of direct passenger flights	28 routes of origin and destination in 14 countries	11 country destination direct flights	15 country destination direct flights	32 routes per day to 13 countries	10 country destination direct flights	8 direct destinations in 4 countries

Source: Authors.

*<https://datos.bancomundial.org/indicador/IS.SHP.GOOD.TU>

Note: TEUS stands for twenty-foot equivalent unit.

**<https://datos.bancomundial.org/indicador/IS.AIR.GOOD.MT.K1>

El Salvador's international airport is one of the largest and most modern in the region, which is an advantage for MD air transportation. However, they do not have a strong air cargo system; it is mainly passenger flow. Amerijet and UPS are the only air freight cargo companies providing shipping 3 -5 days per week to the USA(Miami) and DHL occasionally. There is no redundancy which makes the network vulnerable and weak. Direct air cargo shipments from El Salvador to Central American countries, Dominican Republic, Mexico, and others, are not available, they must go through Panama or Miami. Connection within cities in Central America is for passengers only, not cargo.

Not having a port in the Atlantic is a weak point for moving cargo to the east coast, thus, cargo goes out through Guatemala and Honduras, adding pressure on cost and time, especially due to the inefficiencies of customs at each border.

Freight costs are going up as an impact of the pandemic, a container from China to the United States nowadays costs US\$20,000 and it used to be less than \$3,000 a year ago. This situation poses an advantage to reshoring production back to the Americas, and countries such El Salvador could benefit with the proximity to the USA market and lower transportation costs.

5.4.3 Stakeholders

It is very important to create a comprehensive mapping of the local stakeholders that will participate in the development of the medical devices sector for the attraction of FDI. Some key stakeholders are listed below:

Table 5-20. Key stakeholders to the MD sector

Stakeholder	Description
PROESA	During the interviews conducted with several manufacturing firms (foreign and local) PROESA was mentioned as a very important stakeholder. They provide aftercare services on regular basis, attending specific topics regarding information on changes in regulatory approvals, legal framework, procedures; matchmaking suppliers; network support with governmental institutions such as customs, electricity, construction permits, educational programs, and others. It will be necessary to provide specialized training in the MD sector to facilitate the interaction with potential investors, and to generate the appropriate skills to identify the opportunities and how to approach them.
Chambers, Associations	CAMTEX, ASI, AMCHAM, ASIPLASTIC
Ministry of Economy	In charge of policies and economic strategies for incentives to develop a long-term vision for competitiveness
Ministry of Education /Academia	A major partner to develop medical devices industry, to facilitate policies towards training in specific areas of demand Universities and Technical Centers, Institutes FUNDEPLAST, ITCA/FEPADE
INSAFORP	Key partner for the development of skills and qualified operators and technicians
National Medicine Department (Dirección Nacional de Medicamentos (DNM))	DNM is the competent health authority for the authorization of registration, import, manufacture, price control, control of the distribution chain, until the sale to the final consumer of medicines and related products.
Customs	A partner that needs to understand the industry, there is a need to provide knowledge transfer to the customs authorities and personnel for them to promote best practices and to be facilitators of the law and regulations, but not to be stoppers in the inbound/outbound global logistics and value chain
Ministry of Labor	Policies and strategies for human resources development, wages, legal framework
Suppliers	Logistics companies, plastics, metalwork, packaging, service providers utilities, among others

5.4.4 SWOT Analysis

Table 5-21. SWOT analysis

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • Free Zone Law incentives • Free Trade Agreements in place • Geographical proximity of the United States and Mexico • Infrastructure – energy providers and increasing number of projects (increasing energy offer and diversified sources) • Competitive Labor cost 	<ul style="list-style-type: none"> • El Salvador is not in the map for MD • Lack of presence of top multinational MD firms • Lack of trained labor no experience in MD • Low number of engineers and technicians • Poor energy quality and high price • Lack of qualified suppliers • No FDA/CE Mark certified firms • Safety issues

<ul style="list-style-type: none"> • Experienced pharmaceutical industry • Capacity of the textile and apparel industry • Low inflation rate • Training centers (INSAFORP, ITCA/FEDAPE, among others) 	<ul style="list-style-type: none"> • Lack of port in the Atlantic • Air freight is limited only to 1 carrier 3 days per week to the USA, no FDA products • Lack of predictability (currency, prices, regulations, legislation) • Customs inefficiencies
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Health care growing markets • Reshoring initiatives from China • Access to regional markets and GVC participation • Expansion of the national healthcare system is an opportunity for market seeking investors • High demand of Personal Protective Equipment (PPE) for COVID19, and home care products 	<ul style="list-style-type: none"> • Regional competitors (growing MD clusters) • Mexico and Colombia capturing reshoring (strategy in place) • Thailand and other lower cost countries in Asia • Educational programs and virtuality /Pandemic impact difficulty in training • Preference of imported products with respect to the national production that currently exports

The main conclusion from the above SWOT analysis is that El Salvador has in-house capabilities to develop more value-added and specialized manufactured products. It has attractive Free Zone investment incentives and competitive labor wages. Opportunities to be explored are in the Class I devices, lower risk, general control disposables and/or high-volume “low-tech” products.

Nonetheless, El Salvador must address its security issues, enhance the transportation network, further develop the infrastructure (create more stable energy and redundant service), and develop a more streamlined process at customs and institutions like DNM (Dirección Nacional de Medicamentos) and the Ministry of Health. Additionally, the education to generate qualified human resources for the industry that want to attract and offer opportunities for the development of suppliers.

Training the Investment Executives is important to generate trust, understanding the industry will result in a proactive attitude to reach out to new opportunities in a most professional way. Taking good care of requests (different sources such as website inbound, outreach, events, referrals, etc.) will be easier with the appropriate knowledge. There are on-line webinars about the industry, also a guided visit to medical devices facilities and talking to industry professionals is an ideal scenario.

5.5 Investment Readiness – The Opportunities

5.5.1 Competitor’s landscape

Central America’s geographic location is very attractive for companies in the USA due to its proximity to this North American market, its competitive production costs, investment incentives, as well as its low or non-existent duties due to the FTA’s.

Table 5-22. Medical Devices Sector: Comparative Analysis by Country

COUNTRY	# MD FIRMS	FDI ORIGIN	EMPLOYMENT	EXPORTS	PRODUCTS
Mexico	2400 + mostly located in Baja California, Mexico City, Chihuahua, Jalisco. The majority are SMEs. 400+ are exporters	USA, Germany, UK, Australia, Sweden, Japan, Italy, France, China	160,000 +	US\$11.2 billions	More than 10,000 medical devices products, over 75 therapies. Class I, II and III

Costa Rica	81+	USA, Canada, Japan, Ireland, UK, Denmark, France, Germany	38,200	US\$3.9 billions	Class I, II, III implantable, cardio, ortho, dental, optics, neuro, endo, infusion systems, women healthcare, esthetic, radiology, respiratory, ostomy, surgical. Dental parts and implants.
Dominican Republic	32	USA, Canada, Germany, France, Sweden	24,000	US\$1.67 billions	Blood transfusion devices (blood catheters and filters), dental floss, serum drops, surgical drapes, components for cardiovascular devices, stents, catheters, hypodermic needles, electrodes, pressure monitors.
Colombia	20	USA, Colombia	Not available	US\$92 millions	Plastic syringes, with and without needles. Tubular metal syringes and needles for sutures. Dental parts, artificial teeth. Furniture. Catheters, cannulas, wadding, gauze, bandages. Cleaning preparations. Diagnostic, lab reagents.
Guatemala	DeRoyal Scientific	USA	400+	Not available	Orthopedic and surgical instruments.
Honduras	Not available	Not available	Not available	Not available	Not available
El Salvador	2	USA (foreign investors with residency in the USA)	250 estimated)	Not available	Masks. Flexible packaging (specialty bags for veterinary serums use)

Source: Authors (ANDI, Cámara de Dispositivos Médicos e Insumos para la Salud de la Asociación Nacional de Empresarios de Colombia. CINDE Costa Rica. PRONACOM Programa Nacional de Competitividad del Ministerio de Economía (MINECO) *Guatemala*) <https://www.pronacom.org/investinguatemala/> <https://www.asedmedguatemala.com/quienes-somos.html>, <https://es.investinbogota.org/sectores-de-inversion/dispositivos-medicos>

It is important to note that Costa Rica has positioned itself as a hub for medical devices manufacturing – and has since scaled up into more value added and sophisticated products and processes. Furthermore, it is endowed with an important presence of global leaders of the industry and major suppliers, thereby providing a strong ecosystem for continued growth. It is the second largest exporter in Latin America after Mexico of medical devices.

Dominican Republic is the third largest exporter of medical devices in the region, with an increasing number of foreign manufacturers present in the country. The Dominican Republic is making strenuous efforts to attract more suppliers to facilitate the logistics, and is also working on the education system to ensure that qualified people are available to meet the demand of this growing industry.

Guatemala has a very large population which is attractive to foreign companies looking into local market expansion, but they have a low per capita income. Labor costs are low and they have an important local pharmaceutical and cosmetics manufacturing sector. However, they only have one medical devices company, DeRoyal Scientific, established in 2004 which has expanded to almost 400 employees. They have an important plastics industry as well. There is also good connectivity by air and ocean.

Colombia is in fact a net importer of medical devices rather than an exporter. The country has some medical devices manufacturers supplying nearby countries in South America. They have a large population and most global MD firms establish distribution centers for this market and the region. Safety and political instability are

major concern to MD investors. Pharma is a more consolidated sector in Colombia, as it is more market driven.

Honduras is fully dedicated to the textile industry and not oriented to medical devices. This country has low scores in most of the global indicators, and low educational level. However, it has good connectivity through ports and airports.

Currently, El Salvador has only two local medical devices firms. Therefore developing the sector is an aspirational task which require a significant commitment and an effective long-term strategy. Of critical importance is the development of the work force, not only to imbue them with the required skills and knowledge, but also improve to their English capabilities.

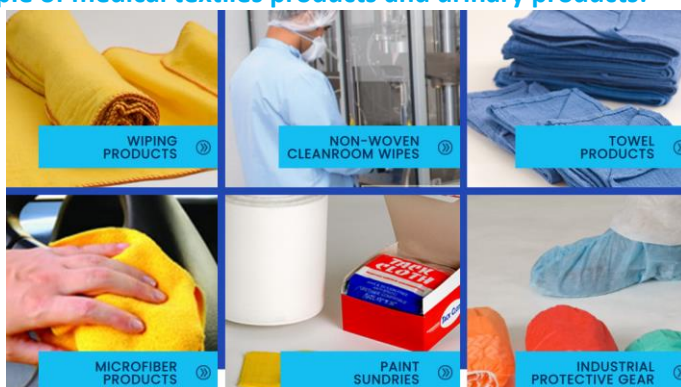
El Salvador has a few companies that have demonstrated the capacity for innovation and manufacturing, such is the case of **Biogalenic**, and can serve as an example for the country to take on new opportunities in the areas of Ostomy and Urology.

On possible approach would be to start with low-tech products but with the same quality and performance. Another company is **Forlife Health**, currently manufacturing masks, but previously had some experience knitting products for export markets. There are also suppliers in the plastics and precision machining areas that can be accompanied to obtain further certifications in the industry.

Example of ostomy and urology devices:



Example of medical textiles products and urinary products:





Urinals

Irrigation Trays

Straps-Holders-
Anchors

Example of Suture and needle



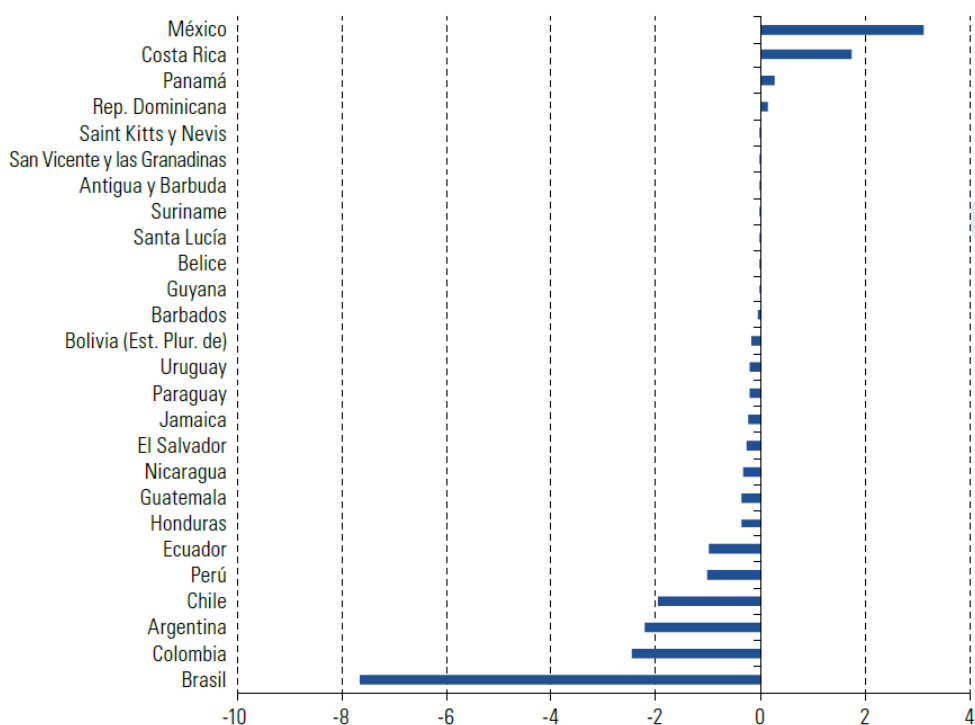
FS-2 19mm
3/8 Circle



5.5.2 Local supplier network and presence of other manufacturers

In the Americas, Baja California (Mexico), Costa Rica, and the Dominican Republic—all strategically located close to the United States—host important export-oriented medical devices clusters. Exports from these countries include both low-value and higher-value product categories and are primarily destined for the United States. The rest of the countries in Latin America and the Caribbean have a deficit balance and consider themselves more importers with few exporters of medical devices currently operating

Figure 90. Latin America and the Caribbean (26 countries) trade balance of essential medical products for the fight against COVID-19, 2018 (In billions of dollars)



Source: Comisión Económica para América Latina y el Caribe (CEPAL), sobre la base de UN Comtrade-Base de Datos Estadísticos sobre el Comercio Internacional. a Los datos de Guatemala, Honduras, Jamaica, Santa Lucía y Saint Kitts y Nevis corresponden a 2017 y los de Panamá a 2016.

The sector is slowly adopting outsourcing strategies to focus on core competencies, and a growing number of contract manufacturers are entering the sector to provide plastic and metal components, extrusion, specialized injection molding, and precision metalwork and machining, as well as some automation and assembly, and these are also beginning to be outsourced to external vendors. In this sector, quality assurance is of critical concern to facilitate this outsourcing.






Selection of suppliers thus occurs early in the product development process. Rigid and sophisticated qualifications apply to ensure quality, and suppliers must comply with complex documentation requirements to ensure that the final product meets regulatory demands (Weber et al., 2010).

Usually, several iterations of sample testing and improvements are made with suppliers before they are qualified (Weber et al., 2010). Switching costs for components can be very difficult and the process can be complicated and time consuming (Fennelly & Cormican, 2006).

In addition to quality concerns and liability, the large scale of the lead firms means that vendor decisions are primarily made within the corporate headquarters. Raw material contracts are negotiated for global supply using leverage for large orders, quality assurance and guarantees for on-time delivery.

5.5.3 Companies

- Mastectomy and prosthetic bras and swimwear:

 Amoena Amoena is a manufacturer of breast symmetry products.	 Pharm Forward Pharm Forward is a provider of medicines and medical devices.	 Organic Initiative Organic Initiative is a provider of healthcare services.	 Famy Care Famy Care is a company that focuses on female reproductive healthcare.	 FemCap FemCap is a medical device company developing a birth control solution.
1975	2013	2015	1990	N/A
Private	Private	Private	Private	Private
Healthcare medical devices women's health	Healthcare medical devices women's health	Healthcare medical devices women's health	Healthcare medical devices pharma women's health	Healthcare medical devices women's health
Raubling, DE HQ	Moskva, RU HQ	Auckland, NZ HQ	Mumbai, IN HQ	Del Mar, US HQ

- Anita International. 1,068. \$212 Million.
- Chantelle. 5,300. \$1 Billion.
- ThirdLove. 400. \$222 Million.
- Maidenform. 1,250. \$600 Million.
- Metrosource. 294. \$60 Million.
- Oysho. 1,412. \$269 Million.

- Frederick. 306. \$86 Million.
- Soma. 1,900. \$376 Million

Hospital supplies/Compression socks:

- Bauerfeind
- BSN medical
- Calze G.T.
- Enfermania
- Gibaud
- Gloria Med
- Kosemed Orthopedics
- Lohmann & Rauscher
- Cardinal Health
- Otricath
- BD
- Owens & Minor
- McKesson
- AmerisourceBerger

Manufacturers:

- 3M
- ABENA
- ABL MEDICAL
- ACELITY/SYSTAGENIX
- ADVANCIS MEDICAL
- ADVANTAGE URINAL SYSTEMS
- ALL TERRAIN CO.
- ALLIQUA INC
- AMERX HEALTHCARE CORP
- AMSINO INTERNATIONAL
- ANACAPA TECHNOLOGIES
- ARCUS MEDICAL LLC
- ARGENTUM MEDICAL LLC
- BIRCHWOOD LABORATORIES, INC
- BRENNEN MEDICAL
- BROWN MEDICAL
- BSN MEDICAL
- C&S OSTOMY POUCH COVERS
- CATALINA HEALTHCARE
- CELLERA
- CENTURION MEDICAL PRODUCTS
- CONVATEC
- COOK VPI
- CORE PRODUCTS
- COVALON TECHNOLOGIES
- CRAWFORD HEALTHCARE LTD
- DERMARITE
- DUKAL CORPORATION

- DUMOTECH LLC
- GEMCORE360
- GENADYNE BIOTECHNOLOGIES, INC.
- GENTELL
- GENUINE VIRGIN ALOE INC
- Global Biomedical Technologies, LLC
- GRAHAM-FIELD HEALTH PRODUCTS, INC.
- HARTMANN USA, INC.
- HEALTHPOINT, LTD.
- HERMELL PRODUCTS INC.
- HOLLISTER INCORPORATED
- HUMAN BIOSCIENCES INC
- HYDROFERA
- IMPLUS FOOTCARE
- INNOVACYN INC
- Innovative Therapies, Inc.
- KCI LICENSING, INC
- KENERIC HEALTHCARE
- LOHMANN & RAUSCHER
- MABIS DMI HEALTHCARE
- MAIDEN BIOSCIENCES
- MANUKAMED
- MEDELA
- MEDI USA
- MEDICAL ACTION INDUSTRIES INC.
- MEDIPURPOSE PRIVATE LIMITED
- MEDI-TECH INTERNATIONAL CORP.
- MEDLINE INDUSTRIES
- MEDWAY INC
- MICROTEK MEDICAL, INC
- MILLIKEN MEDICAL
- MPM MEDICAL, INC.
- NEW YORK ORTHOPEDIC
- NEXT SCIENCE
- NORTH COAST MEDICAL
- NU-HOPE
- PURITAN MEDICAL PRODUCTS
- RELIAMED
- REMINGTON MEDICAL
- SAFE N SIMPLE LLC
- SHIELDLINE
- SPAN AMERICA
- SPENCO
- STEADMED MEDICAL
- STERIGEAR LLC
- STRADIS HEALTHCARE
- TYTEX INC.
- URESIL CORPORATION

- URO CONCEPTS INC
- UROCARE
- ZENIMEDICAL

5.6 Recommendations

The Medical devices sector, while very attractive for El Salvador from the perspective of attracting FDI, remains an aspirational endeavor. Notwithstanding, there are some opportunities that should commence at this initial stage, including starting to work on the development of a long-term strategy. This will require a strong commitment as well as a shared vision from the entire ecosystem, including government and policy decision makers, academia, industry and support institutions, among others, to participate and identify its potential within the global value chain of this sector.

The recommendations proposed below are predicated on the findings identified through the assessment of the current country conditions as well as our SWOT and benchmark analysis. The interviews conducted during the country assessment with the various local and international firms established in El Salvador also provided an important insight to identify the following opportunities.

5.6.1 The Opportunities

Table 5-23. Proposed areas of work

The Opportunities	Value Proposition - Key Message
<p>Short Term Opportunity</p> <p>In the short term, it is recommended to start canvassing the local available resources related to the medical devices industry, assessing and eventually promoting the manufacturing opportunities within this sector for established foreign representations/ distributors.</p> <p>Make a short list of these firms, starting with the ones that carry Class I devices. Discuss with them the expansion strategies that their HQs are considering/implementing, keep them informed about the attractiveness of ES as a manufacturing, services, and/or regional logistics/distribution hub, among others.</p>	<ul style="list-style-type: none"> • Since these firms have already experienced the country’s business environment, the key message will be to convey the opportunities for manufacturing, sharing the success stories and track record of the “star companies” in the life sciences, informing them about the country’s value proposition (incentives, market access, labor training opportunities through INSAFORP, PROESA support).

<p>Short to Mid-term Opportunity Apparel/Textile medical manufacturing, such as:</p> <ul style="list-style-type: none"> Healthcare and hygiene products include hospital gowns and uniforms, clothing and wipes, surgical cover drapes, blankets, masks, caps, hospital bed products, surgical hosiery, surgical gloves, sports medicine products, compression garments, swaps. Surgical sutures, sub-divided into absorbable and non-absorbable sutures. Mastectomy and prosthetic bras and swimwear. Breast feeding accessories. <p>These products will require several key characteristics such as cleanness, contamination free, and infection control.</p>	<ul style="list-style-type: none"> El Salvador’s existing industrial eco-system and experience provide an impressive track record, especially in the apparel and textiles niches (These products do not require specific medical expertise). Competitive costs. Highly ethical, skilled, productive, and talented workforce in the textile/apparel sector. Privileged location and modern support infrastructure to access major international destinations. Attractive long term tax incentives and openness to global trade and investment.
<p>Mid to Long-term Opportunity</p> <ul style="list-style-type: none"> Stoma/Ostomy and Urology Care, such as: Ostomy bags and ostomy accessories (by surgery type, comprises ileostomy, colostomy, and urostomy; by end users: home care settings, hospitals, and specialty clinics). Consumables & accessories: dialysis bags, drainage systems and bags. Hospital supplies. Cables, connectors, harness, sensors for MD. Dental instruments/ tools. 	<ul style="list-style-type: none"> Attractive long term tax incentives and openness to global trade and investment. Privileged location and modern support infrastructure to access major international destinations. Competitive costs: labor, utilities, and availability of industrial property. Highly ethical, productive, and easy to train Human Capital. Experience in manufacturing orthopedic instruments/parts. Experienced plastics sector, industry presence and technical/specialized academic on-the-ground support. Success story BIOGALENIC (Lifesciences). Success story AVX (Electronics).
<p>Mid to long-term opportunities Class I products</p> <ul style="list-style-type: none"> Contract Manufacturers (CMs). Original Equipment Manufacturers (OEMs). Key Strategy: to develop human capital at all levels of the value chain, from operators to engineers and management as well as service providers especially in regulatory area, and English. 	<ul style="list-style-type: none"> Attractive long term tax incentives and openness to global trade and investment. Privileged location and modern support infrastructure to access major international destinations. Competitive costs: labor, utilities, and availability of industrial property. Well established academic centers (technical and engineering) to facilitate specialized training programs, including Biomedical and Mechatronics. Experience coming from the pharmaceutical business environment (regulatory system, GMPs, manufacturing space, versatile talented workforce) Basic suppliers’ ecosystem in-country (packaging, plastics, precision machining) and nearby suppliers including sterilization in the region.
<p>Short to long-term potential opportunity in the regional Value Chain</p>	<p>This section requires a more in deep analysis and consultation with the OEMs and/or CMs, since it is a</p>

<ul style="list-style-type: none"> • Packaging materials (special dimensions corrugated cardboards, flexible packaging/bags) for potential export to Costa Rica and Dominican Republic. • Specialized textiles (polyester fabric, nylon thread, spandex yarn) to evaluate its potential for export to Costa Rica. • Specialized containers for laboratories/sample collection, to evaluate its potential for Costa Rica and Dominican Republic. 	<p>dynamic environment and new providers are constantly under evaluation by the customer.</p> <p>The strategy for this sector is to establish a communication between PROESA- PROCOMER Linkages Program in Costa Rica, and PROESA-Cluster MD Dominican Republic, to explore specific opportunities to generate linkages within the region.</p> <ul style="list-style-type: none"> • Well-established textile and apparel sector, including yarn and fabric manufacturers (required specifications must be well understood; changing a supplier involve a validation process which translate into time and costs, plus the desire to do so). • Presence of a mature plastics industry in the region (upgrading of technology and MD certifications and validations are some of the requirements to be considered as key drivers). • Competitive costs are very important for sensible pricing (components manufacturing and assemblies are typically the lowest value-added segments of the chain).
--	---

5.6.2 Target Events

Proactive actions to be considered when attending or planning to attend trade show events:

- Systematic generation of new contacts – intelligence gathering lists of exhibitors and/or attendees of the international events in the medical devices sector.
- Augment the potential customer database – screening by areas of potential FDI attraction into ES. Create a short “wish list” of target companies, elaborate a company profile and keep track/follow up to make yourself visible, using the social media (LinkedIn, etc.) resources available. Intensive targeting methodology (strategic focus).
- Outreach to the selected firms/contacts by means of digital resources (LinkedIn, On-line networking events, Digital events) and/or referrals. Keep a systematic routine to communicate good news about the industrial and services sector. Define a term to follow up contacts (every 3- or 6-months period) on regular basis. Make use of the digital tools at the on-line events.
- More research/knowledge on the sector is needed (find a mentor within the established companies, involve yourself in MD professional chats, search for training programs provided for free by the MD associations, established partnership with other IPAs sectoral experts, attend the free online webinars and educational lectures at the events)

Table 5-24. Target events

Event Name	Date Location	Description (sub-sector focus, attendees)
FIME	July 27-29, 2022 Miami Beach Convention Center, Miami, FL, USA	The show provides a strong business platform to more than 500 exhibitors from more than 40 countries. MD and equipment manufacturers and suppliers, dealers, distributors, and other healthcare professionals from across the United States, Central, South America and the Caribbean. https://www.fimeshow.com/en/home.html https://connections.fimeshow.com/event/fime/exhibitors/RXZlbnRWaWV3Xzl1ODg2Ng%3D%3D
EXPOMED	29, 30 September and October 1, 2021 Online and Centro Citibaname CDMX	Trade only event +250 Exhibitors 8 International Pavilion Sector of interest: Equipment and medical devices, consumables, diagnostics, orthopedics and rehabilitation, IT systems, hospital medical infrastructure This year we have a hybrid format, where face-to-face and digital are combined. https://www.expomed.com.mx/es/visitantes/por-que-asistir.html https://www.jetro.go.jp/en/database/j-messe/tradefair/detail/120324
Medtec China	20-22 December 2021 in Hall1&2 at Shanghai World EXPO Exhibition & Convention Center	As one of the global MedTechWorld series exhibitions, nearly a thousand suppliers of medical design and R&D, raw materials, accessories, processing technology and manufacturing services to China's medical device industry since the first exhibition in China in 2005. Also have provided high quality resources support to set up medical equipment manufacturing research platform and promote the optimization of medical device industry chain. Different from other medical exhibitions which focuses on domestic medical equipment products and hospitals and terminal groups, Medtec China's audience comes from medical device manufacturers, including decision makers, purchasing staff, R&D engineers, product engineers and quality inspectors. They can find the parts and components needed for R&D and production, raw materials, design and manufacturing technologies and solutions at the Medtec show.
MD&M and BIOMEDevice	September 21-22, 2021, Boston Convention & Exhibition Center	MD&M and BIOMEDevice are joining forces to provide you with a fully dedicated medtech. Tune in to learn about the latest in digital health, 3D printing, software and security, surgical robotics, and more. BIOMEDevice Boston is the East coast's must-attend regional event that showcases emerging technologies and trends from cutting-edge engineers, innovative thinkers, and business leaders who impact the progression of the world's biotechnology.
Medical Fair Thailand	09 – 11 February 2022 Bitec, Bangkok (Physical) 12 – 18 February, 2022 Digital	10th International Exhibition on Hospital, Diagnostic, Pharmaceutical, Medical & Rehabilitation Equipment & Supplies. Reimagining the marketplace amidst a changing landscape, the 10th edition of MEDICAL FAIR THAILAND takes on an enhanced format this February by bringing you a new experience – a live 3-day exhibition in Bangkok, followed by a week-long digital extension so you can continue to network beyond Southeast Asia and conduct business with a global audience. Since 2003, MEDICAL FAIR THAILAND organized by Messe Düsseldorf Asia (MDA) continues to grow from strength to strength as Thailand's No. 1 medical and health care event.
MD&M West	12 -14 April, 2022 Anaheim Convention Center, CA, USA	MD&M West brings together medtech engineers, business leaders, disruptive companies, and innovative thinkers to create powerful solutions and life-changing medical devices. In collaboration with other four engineering trade shows, from packaging to plastics to robotics. WestPack, ATX West, D&M West, Plastec West 70 countries, 1400 exhibitors, 13000 attendees

5.6.3 Target Markets

Table 5-25. Target markets

Market	Description
USA	The USA is the largest source market for medical devices. El Salvador shares a time zone; its proximity is a geographical advantage for communications within investors and suppliers, which also facilitates ready mobility of raw materials and goods. The large diaspora is another key element, and it is important to identify Salvadorean entrepreneurs, and/or nationals working at target companies to facilitate the promotional approach of the country.
Mexico	Due to the high demand of medical products, companies are expanding and there are not enough resources in Mexico (industrial spaces, labor force, infrastructure) thus, companies either local or foreign, are looking at other locations for competitiveness.
China	Political issues are impacting the re-shoring opportunities; thus, a special effort must take place to make ES visible as a good location for consumables and low tech products at an initial stage.

5.7 ANNEX I - Bibliography

Documents provided by PROESA:

- Promoción de Inversiones en el Sector de Dispositivos Médicos – Reporte Final
- Documento FECEPE – Special Trust Fund
- Investment Opportunities in El Salvador – July 2021 – Country Presentation
- Oportunidades de Inversión en El Salvador – julio 2021 – Presentación del país
- Informe Anual de Inversiones – El Salvador – abril 2021
- Organismo Promotor de Exportaciones e Inversiones de El Salvador - mayo 2020
- InvestSV – junio 2020 - Adolfo Taylhardat
- Ley de Estabilidad Jurídica Para Las Inversiones
- Law of Legal Security for Investments - Decreto 905
- Ley de Fondos de Inversiones
- Marco Normativo Para Implementar Fondos de Inversión Financieros en El Salvador – octubre 2016
- Ley de Inversiones con Reformas – Decreto 423 de 2013
- Investment Law – Decree 423 of 2013
- International Services Law with Reforms – Decree 431
- Ley de Servicios Internacionales con Reformas – Decreto 431 de 2013
- Ley de Zonas Francas con Reformas – Decreto 318 de 2013

Other Reviewed documents

1. Fortune Business Insights
2. Emergo, 2021
3. KPMG Advisory China, 2018. Medical devices 2030: Making a power play to avoid the commodity trap
4. Alira Health's findings MedTech Contract Manufacturing Report released on March 3, 2021.
5. fDi Markets report 2021
6. UNCTAD's World Investment Report 2021
7. <https://unctad.org/news/foreign-direct-investment-latin-america-plunges-45-amid-pandemic>
8. Pocket guide to Medtech's market Outlook inn 2021, Carlo Stimamiglio, Alira Health

9. <https://www.medicaldevice-network.com/deals-analysis/medical-devices-industry-ma-deals-in-q4-2020/>
10. GlobalData's deals database
11. <https://www.medicaldevice-network.com/deals-analysis/medical-devices-industry-ma-deals-in-q4-2020/>
12. Deloitte Centre for Health Solutions. Medtech and the internet of Medical Things. July, 2018. Gx-lshc-medtech-iomt-brochure.
13. <https://www.medtecheurope.org/>
14. [https://www.fda.gov/medical-devices/classify-your-medical-device/device-classification-panels.](https://www.fda.gov/medical-devices/classify-your-medical-device/device-classification-panels)
[https://www.fda.gov/medical-devices/classify-your-medical-device/device-classification-panels.](https://www.fda.gov/medical-devices/classify-your-medical-device/device-classification-panels)
<https://www.fda.gov/media/123602/download>
15. <https://www.ihealthcareanalyst.com/medical-device-areas-analysis/>
16. *EvaluateMedTech*, iHealthcareAnalyst, Inc.
17. <https://www.thebusinessresearchcompany.com/report/medical-devices-market>
18. <https://www.meddeviceonline.com/>
19. <https://www.americancleanrooms.com/clasificaciones-de-cuartos-limpios/?lang=es>
20. <https://www.cbi.eu/market-information/medical-laboratory-devices/trends>
21. Gereffi. Bamber and Gereffi, 2013. Costa Rica in the Medical Devices Global Value Chain: Opportunities for Upgrading
22. <https://www.gs1.org/industries/healthcare/standards>
23. Harmonized codes <https://www.foreign-trade.com/reference/hrcode>
24. <https://www.mordorintelligence.com/industry-reports/global-neurology-devices-market-industry>
25. <https://www.verifiedmarketresearch.com/blog/worlds-leading-ophthalmic-companies/>
26. <https://www.medicaldesignandoutsourcing.com/the-10-largest-orthopedic-device-companies-in-the-world-2021/>
27. <https://www.plugandplaytechcenter.com/resources/10-remote-patient-monitoring-companies-you-should-know-about/>
28. <https://journals.sagepub.com/home/trj> Textile Research Journal
29. https://2016.export.gov/industry/health/healthcareresourceguide/eg_main_116254.asp
30. <https://www.state.gov/reports/2020-investment-climate-statements/honduras/>
31. HS1996 definitions from UNCOMTRADE and HS02-07 from UN Statistics Division

5.8 ANNEX II – MD Associations and Industry Publications

MD Associations:

American Association of Medical Colleges
American Hospital Association
American Medical Association
Health Information and Management Systems Society
Advanced Medical Technology Association (AdvaMed)
American Orthotic and Prosthetic Association
Association for the Advancement of Medical Instrumentation (AAMI)
BIOCOM
Contact Lens Manufacturers Association
Dental Trade Alliance
Health Industry Business Communications Council
Hearing Industries Association
Independent Medical Distributors Association
International Association of Medical Equipment Remarketers and Servicers
Medical Alley
Medical Device Manufacturers Association (MDMA)
Medical Imaging Technology Alliance (MITA)
National Association for Home Care & Hospice
The Association of Electrical and Medical Imaging Equipment Manufacturers
The Society for Biomaterials
The Vision Council
<https://www.mddionline.com/news/directory-organizations-and-associations>
<https://www.medtecheurope.org/>

Industry Publications:

Business Monitor International
FDA News
Health Affairs
Hospitals and Health Networks
Journal of Medical Devices
Managed Healthcare Executive
Medical Design
Medical Device and Diagnostic Industry
Medical Device Daily
Medical Product Manufacturing
Medtech Insight
Modern Healthcare
<https://www.mpo-mag.com/>
<https://directory.qmed.com/>

5.9 ANNEX III – Harmonized Codes

Harmonized codes <https://www.foreign-trade.com/reference/hrcode>

9018. Description: instruments and appliances used in medical, surgical, dental, or veterinary sciences, including scintigraphy apparatus, other electromedical apparatus and sight-testing instruments; parts and accessories thereof

901811 Medical, surgical instruments and appliances; electro-cardiographs

901812 Medical, surgical instruments and appliances; ultrasonic scanning apparatus

901813 Medical, surgical instruments and appliances; magnetic resonance imaging apparatus

901814 Medical, surgical instruments and appliances; scintigraphic apparatus

901819 Medical, surgical instruments and appliances; electro-diagnostic apparatus (including apparatus for functional exploratory examination or for checking physiological parameters), n.e.c. in item no. 9018.1

901820 Medical, surgical instruments and appliances; ultra-violet or infra-red ray apparatus

901831 Medical, surgical instruments and appliances; syringes, with or without needles

901832 Medical, surgical instruments and appliances; tubular metal needles and needles for sutures

901839 Medical, surgical instruments and appliances; catheters, cannulae and the like

901841 Dental instruments and appliances; dental drill engines, whether combined on a single base with other dental equipment

901849 Dental instruments and appliances; other than dental drill engines

901850 Ophthalmic instruments and appliances

901890 Medical, surgical, or dental instruments and appliances

9021. Description: orthopedic appliances, including crutches, surgical belts, and trusses; splints and other fracture appliances; artificial parts of the body; hearing aids and other appliances which are worn or carried, or implanted in the body, to compensate a defect or disability; parts and accessories thereof

902110 Orthopedic or fracture appliances

902121 Dental fittings; artificial teeth

902129 Dental fittings; other than artificial teeth

902131 Artificial parts of the body

902139 Artificial parts of the body; excluding artificial joints

902140 Hearing aids (excluding parts and accessories)

902150 Pacemakers; for stimulating heart muscles (excluding parts and accessories)

902190 Appliances worn, carried, or implanted in the body, to compensate for a defect or disability

9022. Description: Apparatus based on the use of X-rays or of alpha, beta or gamma radiations, whether or not for medical, surgical, dental or veterinary uses, including radiography or radiotherapy apparatus, X-ray tubes and other X-ray generators, high tension generators, control panels and desks, screens, examination or treatment tables, chairs and the like; parts and accessories thereof

902212 Apparatus based on the use of x-rays; including radiography or radiotherapy apparatus, whether or not for medical, surgical, dental or veterinary uses, computed tomography apparatus

902213 Apparatus based on the use of x-rays; including radiography or radiotherapy apparatus, for dental uses, excluding computed tomography apparatus

902214 Apparatus based on the use of x-rays; including radiography or radiotherapy apparatus, for medical, surgical or veterinary uses, not dental uses, excluding computed tomography apparatus

902219 Apparatus based on the use of x-rays, including radiography or radiotherapy apparatus; for other than medical, surgical, dental or veterinary uses

902221 Apparatus based on the use of alpha, beta or gamma radiations, including radiography or radiotherapy apparatus; for medical, surgical, dental or veterinary uses

902229 Apparatus based on the use of alpha, beta or gamma radiations, including radiography or radiotherapy apparatus; (for other than medical, surgical, dental or veterinary uses)

902230 X-ray tubes

902290 Apparatus based on use of x-rays and similar; parts and accessories (x-ray generators, tubes, high tension generators, control panels and desks, screens, examination or treatment tables, chairs and like)

HS Codes of Heading 3822: Diagnostic or laboratory reagents on a backing and prepared diagnostic or laboratory reagents whether or not on a backing, other than those of heading 3002 or 3006 certified reference materials

HS Codes of Heading 3402: Organic surface-active agents (other than soap), surface-active preparations, washing preparations (including auxiliary washing preparations) and cleaning preparations, whether or not containing soap, other than those of Heading 3401 Organic surface-activity.

Medical Devices Product Categories, based on Trade Data Classifications

Product Category	Product Examples	HS Code Aggregation	HS96 Codes 6-Digit (HS02-07 changes) and PROCOMER 10-Digit ³⁷
Disposables	Needles, syringes, catheters, tubing, IV sets, bandages, surgical gloves	90183 3005* 401511*	901831: Syringes, with or without needles 901832: Tubular metal needles and needles for sutures 901839: Needles, catheters, cannulae etc. (medical) (changes to Catheters, cannulae & the like in HS02) • 9018391010-90: Infusion equipment • 9018399010-20: Infusion and transfusion of serum • 9018399090: Other needles and catheters, cannulae and the like 3005: Wadding, gauze, bandages and similar 401511: Surgical gloves
Medical & Surgical Instruments	Dental Instruments, Forceps, Medical Scissors, Dialysis Devices, Defibrillators	90184 90185 90189	901841: Dental drill engines (expands to dental drill engines, whether/not combined on a single base with other dental equipment in HS02) 901842: Instruments and appliances, used in dentistry 901850: Ophthalmic instruments and appliances (expands to "" nes 90.18 in HS02) 901890: Instruments, appliances for medical, etc. science, nes (expands to Instruments & appliances used in medical/ surgical/veterinary sciences, incl. other electro-medical apparatus & sight-testing instrument, nes in 90.18 in HS02) • 9018900010-30: Surgical equipment for collection of semen and artificial insemination • 9018900090: Other medical devices
Therapeutic Devices	Artificial body parts, hearing aids, pacemakers, crutches, implants, prosthetics	9021	902111: Artificial joints (changes to 902131: Artificial joints HS02) 902119: Orthopedic/fracture appliances, nes (changes to 902110: Orthopedic/fracture appliances in HS02) 902121: Artificial teeth 902129: Dental fittings, nes 902130: Artificial body parts, aids, and appliances, etc. (changes to 902139: Artificial parts of the body other than teeth, dental fittings & joints in HS02) 902140: Hearing aids, except parts and accessories 902150: Pacemakers 902190: Orthopedic Appliances, nes (expands to appliances which are worn/carried/implanted in the body, to compensate for a defect/disability (excl. of 9021.10-9021.50) in HS02)
Diagnostic / Imaging Equipment	MRI, Ultrasound machine, X-rays, Patient Monitoring Systems, Blood Pressure Monitor	90181 90182 9022	901811: Electro-cardiographs 901812: Ultrasonic scanning apparatus 901813: Magnetic resonance imaging apparatus 901814: Scintigraphic apparatus 901819: Electro-diagnostic apparatus, nes (expands to "" used in medical/ surgical/dental/ veterinary sciences (incl. apparatus for functional exploratory examination/for checking physiological parameters), nes in 90.18) in HS02) 901820: Ultra-violet or infra-red ray apparatus (expands to "" used in medical/surgical/dental/veterinary sciences in HS02) 90221: Apparatus based on the use of X-rays, whether or not for medical, surgical, dental or veterinary uses, including radiography or radiotherapy 90222: Apparatus based on the use of alpha, beta or gamma radiations, whether or not for medical, surgical, dental or veterinary uses, including radiography or radiotherapy apparatus 902230: X-ray tubes 902290: Other, including parts and accessories

Source: Authors *indicates code is not included in statistics

Source: HS1996 definitions from UNCOMTRADE and HS02-07 from UN Statistics Division. Procomer.

Most medical devices can be classified by finding the matching description of the device in Title 21 of the Code of Federal Regulations (CFR), Parts 862-892. <https://www.fda.gov/medical-devices/classify-your-medical-device/device-classification-panels>. <https://www.fda.gov/medical-devices/classify-your-medical-device/device-classification-panels>. <https://www.fda.gov/media/123602/download>

As indicated above all classes of devices as subject to General Controls. General Controls are the baseline requirements of the Food, Drug and Cosmetic (FD&C) Act that apply to all medical devices, Class I, II, and III. <https://www.fda.gov/medical-devices/overview-device-regulation/classify-your-medical-device>

5.10 ANNEX IV - Interviews

- Asociación Salvadoreña de la empresa privada (ASI)
- Cámara de la Industria Textil, Confección y Zonas Francas de El Salvador (CAMTEX)
- FORLIFE HEALTH S.A. de C.V.
- AMCHAM
- Superintendencia General de Electricidad y Telecomunicaciones-SIGET
- AVX Kyocera Group
- FUSADES
- Asociación de Laboratorios Farmacéuticos de El Salvador (ALFA)
- Guardado, S.A. de C.V. Laboratorio Fardel
- Biogalenic S.A. de C.V.
- Grupo PAILL, S.A. de C.V.
- America Logistic Group
- Blue Logistics
- SALVAPLASTIC
- INSAFORP

5.11 ANNEX V – Investment News

Guatemala, 9 de marzo de 2021. El Programa Nacional de Competitividad (PRONACOM) del Ministerio de Economía (MINECO), continúa implementando diversos esfuerzos para promover a Guatemala como un destino atractivo a la inversión, como prioridad para la reactivación económica del país y la generación de nuevas fuentes de empleo.

Gracias a las acciones implementadas durante el mes de marzo, se iniciaron **4 proyectos de inversión y reinversión** que, en conjunto, representan alrededor de **US\$49.5 millones y generarán un aproximado de 800 nuevos empleos. Dos de los proyectos corresponden a nuevas inversiones** en los sectores de farmacéuticos y dispositivos médicos, y manufacturas diversas; y **dos a proyectos de reinversión** en los segmentos de logística y de agritech.

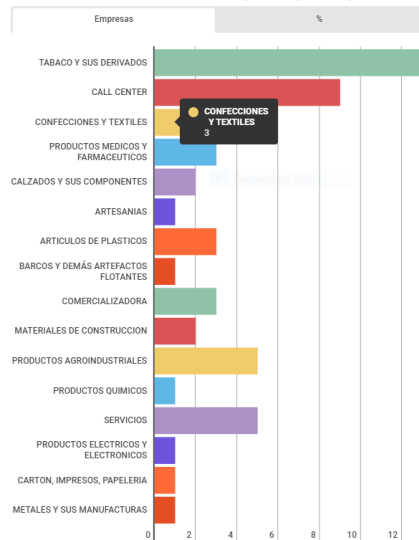
Los resultados acumulados a marzo del 2021 suman más de US\$250 millones en concepto de inversión extranjera directa, lo que representa la creación de un estimado de 2,500 nuevos empleos formales.

“Estos resultados comprueban que la estrategia Guatemala No se Detiene está empezando a rendir los frutos que todos visualizamos al construirla. Esto es consecuencia del esfuerzo interinstitucional de los ministerios de Economía, Relaciones Exteriores, Energía y Minas, Ambiente, Banguat, la Municipalidad de Guatemala, SAT, Agexport, Fundesa y sus distintos equipos de trabajo; con los cuales seguiremos trabajando para garantizar las condiciones necesarias para invertir en Guatemala y con esto mejorar la calidad de vida de más guatemaltecos”, comentó Rolando Paiz, Comisionado Presidencial para la Competitividad e Inversión.

Según el Fondo Monetario Internacional (FMI), Guatemala tiene una expectativa de crecimiento del 4.5% para el 2021, lo que permite aumentar la confianza de los empresarios, manteniendo el liderazgo como el país con mejor desempeño de la región centroamericana.

<https://www.mineco.gob.gt/guatemala-suma-cuatro-nuevos-proyectos-de-inversi%C3%B3n-en-marzo-por-us495-millones>

Dominican Republic Free Zone approved companies in 2021. During the period January - July 2021, 54 Free Zone Companies were approved, which will generate 7,877 new direct jobs, with a total investment of RD \$ 8,341,631,099 and a generation in foreign currency of US \$ 135,344,129.



<https://www.cnzfe.gov.do/index.php/es/publicaciones/empresas-aprobadas>

The rise of the Dominican Republic as a regional medtech manufacturing hub might have come as a surprise to many, but not to the insiders and executives of the Central America & Caribbean healthcare industry. With several decades of economic growth and political stability, the country has positioned itself as more than a paradisiacal tourism destination. Today, the Dominican Republic is racing to improve its healthcare system, leveraging its local-dominated pharma industry, the largest market in the region with over US 700 million in size, and betting on its strong trade relationship with the United States and geographical position to become a logistics hub.

Like neighboring Puerto Rico, the Dominican Republic has emerged as a significant player in medical device manufacturing. As the country transitioned away from exporting raw materials, it has burnished its footprint in this field, and now stands as a direct competitor to its more storied neighbor.

Fewer than 300 miles away from the Island of Enchantment, with a slow and steady approach that spans four decades, the Dominican Republic has been gaining ground, recently being called The Island of Medical Devices. The first medical device factories were installed in the country in the mid-1980s, in order to assemble and package products, while the more complex processes were done in places like Puerto Rico.

“It has been a gradual transformation that followed basic market dynamics, but it all began with the CBI, a United States program that aimed to provide several tariff and trade benefits to many Central American and Caribbean countries,” explains José Manuel Torres, executive VP for ADOZONA, the Dominican Association of Free Zones.

That evolution was accelerated with Section 936 of the US Internal Revenue Code that gave Puerto Rico fiscal advantages and benefited the Dominican Republic with the creation of joint ventures in manufacturing. Medical devices manufacturers operating in Puerto Rico began doing tech transfer to the Dominican Republic and stayed in the latter after the tax credits of Section 936 expired.

Companies with manufacturing operations in the Dominican Republic today include Medtronic, Johnson & Johnson, Cardinal Health, B Braun, Beckton Dickinson, Baxter, Edwards and Fresenius Kabi.

<https://pharmaboardroom.com/articles/dominican-republic-a-hidden-manufacturing-gem/>

Noticias Honduras. El Gobierno de *Honduras* lanzó una “poderosa” herramienta y puso en marcha una campaña para captar nuevas inversiones nacionales y extranjeras, destacando sus ventajas competitivas y su ubicación estratégica.

Jacqueline Foglia, secretaria ejecutiva del Consejo Nacional de Inversiones (CNI), presentó este jueves una guía que proporciona a potenciales inversores los trámites y mecanismos que necesitan para establecer o expandir su inversión.

La publicación, titulada Guía del Inversionista 2020-2021, es un “instrumento que les da a conocer a inversionistas potenciales y existentes los pasos a seguir para inversión según el sector”, explicó Foglia.

La guía, tanto en español como en inglés, ofrece datos generales sobre el sistema tributario, incentivos, leyes laborales, construcción y permisos, promoción y protección de inversiones privadas, e información sobre los pasos para establecer un negocio en Honduras.

Foglia afirmó que el país ofrece a los inversores una ubicación estratégica, ya que el país está “muy cerca de mercados potenciales de gran demanda, como EE. UU., México y Canadá”.

Además, ofrece mano de obra calificada en varios rubros, beneficios fiscales y acuerdos comerciales importantes, agregó.

“Mejorar el clima de inversión en el país es un objetivo de nuestra agenda como Gobierno”, dijo el subsecretario de Desarrollo Económico, David Alvarado.

Señaló que la SDE impulsó iniciativas de simplificación administrativa, entre ellas la Guía del Inversionista, que le permite a un empresario o emprendedor conocer los trámites y procedimientos requeridos para iniciar un negocio.

Por su parte, Santiago Herrera, del Consejo Hondureño de la Empresa Privada (COHEP), dijo que la empresa privada y el Consejo Nacional de Inversiones comparten “metas comunes” como la reactivación económica, la generación de empleo, apoyo y capacitación de pymes y grandes empresas.

Para Herrera, esta nueva guía del inversionista es “una poderosa herramienta para orientar y asesorar de la mejor manera a los inversionistas existentes y futuros”.

Honduras captó en el primer trimestre de este año US\$311,4 millones en inversión extranjera directa, un 7% menos de los US\$335 millones recibidos durante el mismo periodo de 2020, según cifras oficiales.

Según el Banco Central de Honduras, los sectores más atractivos para los inversionistas son la manufactura, servicios, comercio, restaurantes, hoteles, electricidad, gas y agua, industria de bienes para transformación, y agricultura, silvicultura, caza y pesca.

<https://www.republicainmobiliaria.com/editorial/honduras-guia-del-inversionista-2020-2021/>

Costa Rica nueva inversión de Coloplast. Generar 700 puestos de trabajo en los próximos años, espera Coloplast por su inversión de \$80 millones en innovadora planta de producción de dispositivos

médicos. Inversión que incluye la construcción de dos plantas de manufactura en nuestro país para esta multinacional enfocada en el cuidado de la ostomía y de la continencia.

La cifra de 700 empleos se proyecta a que se alcance antes del 2025, entre operarios, técnicos, personal administrativo y perfiles orientados a la gestión de la calidad, cadena de suministro y logística.

"Costa Rica ha cumplido plenamente con nuestras expectativas y estamos muy satisfechos con el apoyo que hemos recibido desde el día uno. Esta es nuestra primera planta de producción en América Latina, la cual nos acerca a Estados Unidos, un mercado prioritario para nuestro negocio", dijo Jim Schumer, vicepresidente de Operaciones Globales de Coloplast para América.

<https://www.larepublica.net/noticia/700-empleos-se-generaran-por-inversion-de-coloplast>



Baylis Medical Opens MedTech Facility in Costa Rica

- Headquartered in Canada, the company will manufacture in Costa Rica cardiovascular products to serve global markets.
- The 2.800 mts2 facility will be in La Lima Free Zone.

Cartago, Costa Rica. 3 August, 2021. [Baylis Medical](#), a Canadian company and leader in the development and commercialization of innovative medical devices in cardiology, announced today its arrival in Costa Rica.

The company is establishing a manufacturing plant in La Lima Free Zone, in Cartago, where it will manufacture cardiovascular products to serve global markets. It plans to hire almost 200 workers once it reaches its full capacity.

Baylis Medical highlighted Costa Rica's well-established medical device manufacturing sector, and its highly skilled workforce for its investment decision. In terms of core values, Costa Rica's similarities to Canada made the country attractive for its expansion.

Costa Rica nueva inversión de Terumo. Terumo Blood and Cell Technologies Set to Open a Modern Manufacturing Facility in Costa Rica and will Hire up to 700 People

- The facility will be headquartered in Cartago's La Lima Free Trade Zone.
- Investment totals approximately US \$60 million.
- Production will serve global customer demand with a focus on the Americas.

Cartago, Costa Rica. June 28, 2021. [Terumo Blood and Cell Technologies](#), a US-based medical technology company, subsidiary of Terumo Corporation from Japan, announced that it will open a modern medical

device **manufacturing** facility, and will hire up to 700 people, as the facility reaches its full operational capacity in December 2022.

The world-class manufacturing plant will produce medical device products used to collect and separate blood and cells that help treat and manage challenging diseases and conditions.

The company has already hired the members of its local leadership team and they are currently in the final stages of the facility construction process. Additionally, the company is already actively recruiting for professional and manufacturing positions like human resources, finance, quality control, supply-chain, purchasing, engineering, and production. In addition, they are hiring personnel in production processes, as well as technical and facilities maintenance.



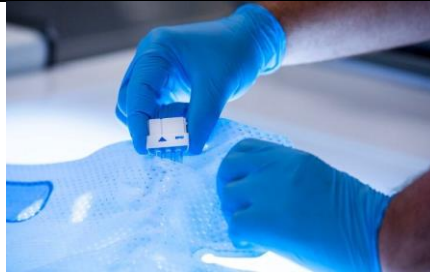
Costa Rica nueva inversión de NACS. Costa Rica ha sido el país seleccionado para expandir operaciones de la multinacional Burke Porter Group, a través de la empresa afiliada NACS Inc., la cual se dedica a ofrecer soluciones de automatización a empresas industriales.

Desde Costa Rica, NACS Inc, diseñará y producirá equipos que permitirán a empresas (sobre todo del sector de dispositivos médicos) automatizar procesos transaccionales y concentrar el talento humano en procesos de mayor valor agregado.

“Estamos emocionados de traer la marca NACS a Costa Rica para continuar apoyando a nuestros clientes existentes y a la vez expandirnos en el sector de las ciencias de la vida. Queremos continuar creando empleos de alto valor en Costa Rica fortaleciendo una marca que cumplirá ahora y en los próximos años”, comentó Robert Doty, director de la operación NACS Costa Rica.

La compañía NACS estará contratando personal técnico del idioma inglés, con experiencia en el ámbito de la fabricación de dispositivos médicos, en posiciones como, mecánicos de precisión, electricistas de control, ingenieros mecánicos y de control y personal administrativo.





Costa Rica nueva inversión de Nitrile Gloves. La empresa con socios de origen mexicano, Nitrile Gloves, anunció que invertirá en la construcción de una planta de 4.000 mts² para la manufactura de guantes de nitrilo en Costa Rica.

La compañía se instalará en el parque empresarial, Costa Rica Green Valley, un desarrollo de uso mixto bajo el formato de zona franca, ubicado en Grecia, Alajuela.

La experiencia de más de 55 años en la producción de guantes, la necesidad suscitada a raíz de la pandemia, así como también, el uso diario y concientización de la protección y cuidado de las manos, impulso a Nitrile Gloves a iniciar un nuevo proyecto de guantes de nitrilo en Costa Rica, aprovechando las facilidades y beneficios que proporciona el país para instalar proyectos de inversión de este tipo.

La empresa contratará en una primera etapa del proyecto a 25 personas, en áreas operativas y administrativas

<https://elguardian.cr/manufactura-de-guantes-de-nitrilo/>

Septiembre 1, 2021

Colombia nuevas inversiones 2021. De acuerdo con ProColombia, entre enero y junio de 2021 llegaron 110 proyectos con nuevas inversiones y reinversiones con montos que ascienden a US\$6.912,7 millones, cifra que representa un 22 % más que lo registrado en el mismo periodo de 2020, cuando arribaron 103 iniciativas con negocios por US\$5.647 millones. El 59 % corresponden a nuevas inversiones y el 41 % de los proyectos a reinversiones de compañías instaladas en el país.

Los proyectos provienen de 28 países, entre los que se destacan Estados Unidos, Reino Unido, España, Alemania, Argentina, Australia, Brasil, Canadá, Chile, China, Corea del Sur, Francia, México y Reino Unido.

Bogotá lidera la cantidad de inversiones con 52, le siguen Antioquia, con 15; Valle del Cauca, con 8; Atlántico, con 7; y Cundinamarca, con 4. Se estima que, con la puesta en marcha y desarrollo de estas iniciativas, los inversionistas estiman la creación de más de 90.400 nuevos puestos de trabajo.

Los sectores que están impulsando el crecimiento y auge de la inversión son, principalmente: infraestructura, energías renovables, software y TI, turismo, agroindustria, metalmecánica y químicos y ciencias de la vida. Seguidos de industria farmacéutica, BPO y centros de servicios compartidos; servicios financieros, vehículos y fondos de inversión.

En octubre, se realizará el Colombia Investment Summit, que tendrá lugar en formato virtual/presencial, un escenario estratégico para presentar a inversionistas de todo el mundo el portafolio de oportunidades de inversión en todos los sectores productivos no minero energéticos del país.

<https://www.portafolio.co/negocios/inversion/proyectos-de-inversion-extranjera-en-colombia-en-primer-semestre-del-2021-554074>



Fiscal, Financial, and Regulatory Incentives Plan

6 FISCAL, FINANCIAL, AND REGULATORY INCENTIVES PLAN

6.1 Introduction

This Report falls under the second phase of the engagement focused on the development of a proposal for an economic, fiscal, financial, and regulatory incentives plan to position El Salvador as an ideal location for new investment in the Remote Business Services, Software and IT Development, Pharmaceutical Chemistry, Medical Devices, and Textiles and Clothing sectors.

Given that all the countries in the Central American region have very similar tax incentive regulations to those applied in El Salvador, it is important to offer a financial incentive structure that differentiates El Salvador and gives it a comparative advantage over the rest of the countries in the region.

For PROESA to be successful in promoting strategic sectors, it is necessary to have updated sector studies and a proposal for a new financial incentive plan to facilitate the creation of new companies and the expansion of those already established, through the consolidation of value chains.³ (See bibliography for reference details)

6.2 Summary of Global FDI Incentives

National, regional and local governments are responsible for creating an attractive environment for businesses to operate. This is also a key element for attracting foreign direct investment. In addition to the existing infrastructure, population and ecosystem, the government can offer a range of incentives to increase the likelihood of a company investing in the location.

Incentives fall into a number of categories, which are outlined below:

Table 6-1: Incentive Categories

Incentive Category	Examples
Financial Incentives	Cash grants, subsidized utilities, matching grants, cost-sharing schemes, subsidized loans, subsidized land, loan guarantees, soft loans, interest subsidies, equity participation and reduced rates on land, real estate, public utilities and transportation
Fiscal Incentives	<p>Tax Exemptions, holidays, deductions, accelerated depreciation, investment allowance, reductions in corporate income tax, personal income tax, dividends tax, value added tax, general sales tax, withholding tax, profit tax, turnover tax, property tax, real estate tax, land tax, municipal tax and social security contributions</p> <p>Customs Exemptions, reductions, deferral, zero-rate on imports/exports of products, goods and merchandise</p>
Regulatory	Laws and regulations that provide advantages, exemptions, preferred conditions to foreign investors

Soft Incentives	Services that include administrative support, training, business support, export services, etc.
Other Incentives	Other incentives not included above.

Examples of incentive programs around the globe:

Table 6-2: Incentive Program Examples

Incentive	Description	Advantages	Disadvantages
Reduced corporate tax rate	lower corporate tax rates	<ul style="list-style-type: none"> • distortions minimized • longer benefit period • flat tax rates reduce confusion 	<ul style="list-style-type: none"> • must be below 35% to be effective • rewards old capital • tax incentives are most likely to be ineffective in the face of an unattractive investment environment
Sectoral incentives	reduced corporate tax rates for certain sectors/ activities	<ul style="list-style-type: none"> • signaling effect of government commitment • easier to implement 	<ul style="list-style-type: none"> • may distort market
Tax holidays	period of tax exemption/ reduced tax	<ul style="list-style-type: none"> • flexible, can be used to target certain industries • immediate benefit to income-earning firms 	<ul style="list-style-type: none"> • discretionary approach distortions, potential for mismanagement • favors existing firms over start-ups • can lead to tax leakage and avoidance through transfer pricing • rewards short term investment in 'footloose' industries
Investment tax allowances/credits	tax credit/ allowance for investment expenditure	<ul style="list-style-type: none"> • supports expansion in existing firms • encourages long term investment • less revenue leakage • are more favorable than tax deductions because they actually reduce the tax due, not just the amount of 	if incentives are overgenerous or poorly designed, they can result in giving money away without affecting investment and operating decisions

		taxable income	
Accelerated depreciation	depreciation deductions are calculated over a shorter time period	<ul style="list-style-type: none"> • supports expansion in existing firms • encourages long term investment • less revenue leakage 	<ul style="list-style-type: none"> • eroded by high inflation
Input sales tax credit	tax credit against input sales tax, especially on capital goods	It is commonly expected by investors as part of the basic offering	Vulnerable to abuse
Loss carry forward	write-off of losses against gross profits of following years	they offer a benefit to the company in the form of future tax liability savings	the investor does not see it as a real incentive when he has the option of income exemption for a long period of time
Export/ import Incentives	exemption on customs duties, zero-VAT rating on exports, export marketing assistance	<ul style="list-style-type: none"> • can be used to target sectors 	<ul style="list-style-type: none"> • restricted by trade treaties • dependent on capacity of customs administration
Subsidies/ grants	outright grants, upfront subsidies and subsidized loans	<ul style="list-style-type: none"> • flexible, can be used to target sectors 	<ul style="list-style-type: none"> • high upfront costs • dependent on capacity of tax administration • open to abuse
Regional incentives	grants/ tax allowances/ subsidized loans/ infrastructure provision when investing in certain regions	<ul style="list-style-type: none"> • flexible, can be used to target regions 	<ul style="list-style-type: none"> • dependent on capacity of regional administration • open to abuse

Sources: UNCTAD Policy Review Series; Tractus-Asia

A [study by the World Bank](#) confirms that tax incentives are far less effective at encouraging investment in weak investment climates than in strong ones – with the same difference in marginal effective tax rate having eight times the impact on investment for countries in the top half of the “Doing Business” index than those in the bottom half. OCTOBER 16, 2017. <https://www.cgdev.org/blog/good-bad-and-ugly-how-do-tax-incentives-impact-investment>.

The following examples are provided in the link above:

Figure 1. The effect of tax incentives on IRR and investment decisions

Figure 2. Why tax incentives are often ineffective: facing an unfavorable investment environment (Please refer to the article noted above).

6.3 Investors' Requirements

Usually, incentives for FDI apply to all sectors. However, some countries have specific incentives according to the following criteria: a) sectors considered strategic; b) project size (monetary and/or employment wise); and c) investment in less developed regions within the country. These incentives can either be sector, activity or region specific.

The most common requests for incentives center on reducing the initial or up-front investment (capital and expense). This tends to be a primary hurdle to an investment decision for companies considering investment, regardless of sector and location. However, many incentives do offset ongoing challenges such as costs, labor and infrastructure.

Most countries offer a mix of key factors or conditions that tend to make it easier for companies to decide on the specific country to establish a facility, and successfully operate in that location, such as the following:

- Government stability;
 - Communications/connectivity;
 - Land and port accessibility;
 - Cost of energy;
 - Labor availability and cost;
 - Preferential market access; and
 - Certainty in business climate.
- ✓ Labor issues are critical in the value chain:
 - Labor costs are critical for labor intensive operations. Cost analysis includes fringe benefits.
 - Labor availability, skills and trainability are important considerations.
 - Labor regulations are also important, especially flexible labor contracts, which may include part time work, hourly work, seasonal work, and the possibility of increasing and decreasing labor pool based on orders the company receives.
 - ✓ Energy issues are critical in the value chain:
 - Electricity cost and reliability are very important. For example, the absence of blackouts and ups and downs in electric tension.
 - Access and easiness in obtaining electricity.
 - ✓ Water supply and cost are very important, particularly, in the textile segment.
 - ✓ Preferential market access to main markets, as the US, is very important. Many countries in the world today have preferential market access to the US, European Union, and others. There has been a commoditization in this sense.-Other issues are also important and relevant:
 - ✓ Customs issues:
 - Expedited exports of final products, considering speed to market strategies.
 - Easiness of custom regulations and procedures for imports of raw materials, inputs and machinery and equipment.
 - Zero customs tariffs for imports of raw materials, inputs and machinery and equipment.
 - ✓ Connectivity with export markets:
 - Port infrastructure and efficiency.
 - Sea transportation to global markets: frequencies, destinations and cost.
 - Land transportation, cost and quality.

- Airport infrastructure, air cargo costs, frequencies and destinations. Commercial flights availability and frequencies.
 - Time to market from the production facility to target market.
- ✓ Production facilities infrastructure:
- Quality, availability, cost, closeness to labor pool.
- ✓ Certainty in business operating conditions. (e.g. stable and predictable labor costs, tax burden).
- ✓ Communications, internet, data transmission.
- ✓ Other aspects that are also considered:
- Special Incentive Packages;
 - Tax benefits; and
 - Labor training programs.
- ✓ Site selection typically **requires (1) high capability, (2) available capacity, and (3) cost competitive labor.**
- ✓ Assuming a country/location meets these three criteria, then Investor Requirements shift toward meaningful incentives that help reduce the initial, up-front investment (Ireland and Singapore do this particularly well on this). Examples include:
- Training grants;
 - Other grants: Employment, R&D, etc.;
 - Tax incentives (reducing the effective tax rate);
 - Participation in public procurement bidding processes (medications, medical equipment, and supplies);
 - Improved business climate (economic, social, and political stability; intellectual property rights; customs facilitation/training personnel and to ensure that they understand the importance and impact of foreign investment on the country's economic indicators; safety; transportation for employees to extend hours of public service; topic of new expropriation law not to affect FDI projects);
 - Bet on the education to generate qualified human resources for the industry they want to attract; and
 - Offer opportunities for the development of an ecosystem of local suppliers.

6.4 Competitive Analysis – 5 Countries

A key component of developing enhanced investment attraction legislation and incentives is understanding how El Salvador compares to primary competitor countries in the region. Based on a series of discussions with PROESA, the IOS' team determined to compare El Salvador to the following countries in the region:

1. Colombia;
2. Costa Rica;
3. Dominican Republic;
4. Guatemala; and
5. Honduras.

This section provides a profile for each country outlining the investment attraction legislation and incentives. Also, included is a comparative analysis of El Salvador to the five countries. Lastly, a SWOT analysis on the El Salvador offering is also provided.

6.4.1 COSTA RICA



COSTA RICA – INCENTIVES OVERVIEW

Multinational companies are encouraged to start up operations in Costa Rica under the Free Zone Regime. This regime is the mainstay of Costa Rica's export and investment promotion strategy. The Free Zone Regime is a set of incentives and benefits granted by the Costa Rican government to companies making new investments in the country, as stated in the Free Zone Regime Act No. 7210 Act No. 8794 and in its Bylaws.

The following companies may apply for the Free Trade Zone incentives:

- Export manufacturing companies;
- Export trade companies (not producers);
- Export service companies;
- Companies or organizations engaged in scientific research; and
- Manufacturing firms which can export or not (minimum export level is not required).

There are over 460 companies which operate under the Free Trade Zone System (FTZ), and they represent almost 50% of total exports of goods from Costa Rica, and about 40% of service exports. Regarding the location within the national territory, the FTZ has the particularity that it is not concentrated in a specific area of the country, but as long as the companies meet the investment and activity requirements, they will be able to obtain the System's tax incentives.

Costa Rica's tax incentives offers a strong framework to reach ROI with transparency and equal treatment to any and all investors. Costa Rica's Free Trade Zone Regime meets World Trade Organizations as well as Organization for Economic Co-operation and Development (OCDE) standards. There is no need for negotiation on a per case basis as incentives are granted to investors that meet requirements. In addition, entities wishing to set up operations in areas outside the Greater Metropolitan Area (GMA) can enjoy greater benefits.

Applicable Legislation and Regulations

<p>Free Zone Regime</p> <p><u>Governed by:</u></p> <ul style="list-style-type: none"> • Free Zone Regime Law, No. 7210 from 1990, • Executive Decree No. 34739-COMEX-H from 2008 and their amendments. 	<p>The Free Trade Zone Regime (FTZR) is defined in Costa Rica as a set of incentives and benefits granted by the country to companies making new investments and complying with local requirements and obligations. This regime is governed by the Free Zone Regime Law, Number 7210.</p> <p>This is not a permanent regime. Limitations have been established regarding the length of the benefits and incentives it grants, as they are intended to promote new investments and not to provide certain companies with unlimited commercial advantages over time. Companies that benefit from this regime establish their operations on Industrial Parks, which are specific areas strictly destined for these kinds of industries and companies. These areas are called Free Trade Zones (FTZ). Entities covered by the Free Trade Zone Law may enjoy exemption from import duties on goods, income tax, VAT, export tax, selective consumption tax, real estate transfer tax, and WHT on payments abroad, as well as the discretionary use of foreign currency generated abroad.</p> <p>An authorization may be obtained for a company to establish its operations or part of such operations outside a Free Trade Zone, but these are exceptional cases, requiring for some specific cases to justify such operations, a higher investment and a more extensive approval process. FTZs are supervised by a government entity called Promotora del Comercio Exterior (PROCOMER) which is a part of the Ministry of Foreign Trade of Costa Rica.</p>
--	--

<p>Inward Processing Regime</p> <p><u>Governed by:</u></p> <ul style="list-style-type: none"> • General Customs Law (Law No. 7557 of 20 October 1995), • the Regulations to the General Customs Law (Executive Decree No. 25270 of 14 June 1996) • the Regulations to the Inward Processing Regime (Executive Decree No. 40198-COMEX-H of 13 December 2016) 	<p>This regime enables goods to enter the national customs territory and benefit from the full suspension of taxes, including customs duties, if they are re-exported after being subjected to a process of transformation, repair, reconstruction, assembly, or incorporated in machinery and/or other devices.</p>
<p>Drawback Regime</p> <p><u>Governed by</u></p> <ul style="list-style-type: none"> • the General Customs Law 	<p>Customs regime granted by the General Customs Authority, which allows the reimbursement of amounts effectively, paid or deposited on account of taxes if the product is exported within twelve months since the date of import.</p>

Note: Preselected only the most relevant regulations across all geography

Type	Incentives	Conditions
Services Industry	<p>100% exemption on the following taxes:</p> <ul style="list-style-type: none"> - Corporate income tax (First 8 years at 0%, next 4 years at 15%; additional 8-year renewal may be granted if significant reinvestment is made) - Corporate repatriation tax - Local value-added tax - Import duty, export taxes, excise taxes - none <p>Free customized technical training available through National Training Institute - INA</p> <p>Fees to be paid to Procomer</p> <ul style="list-style-type: none"> - 0.30% of the monthly total sales (No upper limit) - Environment deposit 1% of total investment (refundable) - US\$ 5000 as guarantee deposit (refundable) 	<p>Within the first 3 years of operation the company should</p> <ul style="list-style-type: none"> • Invest \$150,000 in fixed assets • No Minimum exports
Manufacturing	<p>100% exemption on the following taxes</p> <ul style="list-style-type: none"> - Custom duties on imports/exports - Withholding tax on royalties and fees - Interest income - Sales tax on local purchases of goods/service - Stamp duty <p>Income taxes at 6% for first 8 years and at 15% for next 4 years; additional 8 year renewal may be granted if significant reinvestment is made -Medium Projects</p>	<p>Medium Projects</p> <ul style="list-style-type: none"> - Should be in Strategic Sector - No minimum exports - No minimum job creation - \$ 150,000 investment in fixed assets <p>Large Projects</p> <ul style="list-style-type: none"> - Should be in Strategic Sector - No minimum exports - 100 minimum jobs - \$ 10 million investment in fixed assets

	<p>Corporate Income taxes exemption for first 8 years and at 15% for next 4 years. Income tax deferral for 10 years as well; additional 8 year renewal may be granted if significant reinvestment is made – Large Projects</p> <p>Fees to be paid to Procomer</p> <ul style="list-style-type: none"> - Minimum of \$200, the charge is per m2 of the manufacturing site <ul style="list-style-type: none"> o \$0.25 per m2 for the first 5000m2 o \$0.2 per m2 for the range between 5000m2 to 7500m2. o \$0.15 per m2 for the range between 7501m2 to 10000m2. o \$0.125 per m2 for 10000m2 or more - \$ 5000 as guarantee deposit (refundable) 	
--	---	--

Type	Incentives	Conditions
Services Industry	<p>100% exemption on the following taxes:</p> <ul style="list-style-type: none"> - Corporate income tax (First 12 years at 0% next 6 years at 15%; additional 12 year renewal may be granted if significant reinvestment is made) - Corporate repatriation tax - Local value-added tax - Import duty, export taxes, excise taxes - none <p>Free customized technical training available through National Training Institute - INA</p> <p>Fees to be paid to Procomer</p> <ul style="list-style-type: none"> - 0.30% of the monthly total sales (No upper limit) - Environment deposit 1% of total investment (refundable) <p>US\$ 5000 as guarantee deposit (refundable)</p>	<p>Within the first 3 years of operation the company should</p> <ul style="list-style-type: none"> • Invest \$100,000 in fixed assets • No Minimum exports

<p>Manufacturing</p>	<p>100% exemption on the following taxes</p> <ul style="list-style-type: none"> - Custom duties on imports/exports - Withholding tax on royalties and fees - Interest income - Sales tax on local purchases of goods/service - Stamp duty <p>Corporate Income taxes at 0% for first 6 years, 5% from year 7 to year 12 and 15% from year 12 to year 18</p> <p>Income taxes exemption for first 12 years and at 15% for next 4 years. Income tax deferral for 10 years as well – Large Projects</p> <p>Fees to be paid to Procomer</p> <ul style="list-style-type: none"> - Minimum of \$200, the charge is per m2 of the manufacturing site <ul style="list-style-type: none"> o \$0.25 per m2 for the first 5000m2 o \$0.2 per m2 for the range between 5000m2 to 7500m2. o \$0.15 per m2 for the range between 7501m2 to 10000m2. o \$0.125 per m2 for 10000m2 or more - \$ 5000 as guarantee deposit (refundable) 	<p>Medium Projects</p> <ul style="list-style-type: none"> - Should be in Strategic Sector - No minimum exports - 100 minimum job creation - \$ 100,000 investment in fixed assets <p>Large Projects</p> <ul style="list-style-type: none"> - Any sector - No minimum exports - 100 minimum jobs - \$ 10 million investment in fixed assets
----------------------	--	--

Additional 8-year renewal may be granted if significant reinvestment is made

Strategic Sectors include; Advanced Manufacturing and Life Sciences projects, R&D activities, Innovation projects

The monthly rent paid to Procomer reduces for land 5000 sq meter and above manufacturing area does not include rest rooms, lockers, cafeteria, parking lots among others

GMA - Greater Metropolitan Area

Other Incentives		
Type	Incentive	Condition
Inward processing relief	<ul style="list-style-type: none"> - The Inward Processing Relief System (IPRS), is a system that allows companies to enter raw materials and other goods that are directly incorporated into a final product, without paying taxes on importation. To benefit of this System, companies must 	Companies that re-export all of their production to other countries will be eligible for this modality. That is, they cannot sell their

<p>system</p>	<p>subject the goods or products to processes of: Transformation, Repair, Reconstruction, and Incorporation of goods in sets to machinery, transport equipment or more complex devices.</p>	<p>products in Costa Rica. Those companies that re-export part of their production and sell the other part in Costa Rica are eligible. However, they must pay taxes on products sold on national soil. These goods must undergo a transformation process (Article 179, Law General Customs). This regime is regulated by Regulation of the Inward-Processing Regime, No. 40198.</p>
<p>Duty drawback system</p>	<ul style="list-style-type: none"> - The duty drawback, which allows companies to obtain a reimbursement from the treasury of import taxes and duties, especially when companies import supplies, packages or packaging used to incorporate them into products that will be exported. 	<p>This regime applies to those goods that are used to:</p> <ul style="list-style-type: none"> • produce other goods (inputs), • serve to contain and protect any kind of product (containers and packaging), • have the purpose of transporting the products (packaging). <p>No type of machinery and equipment is considered to be the object of this regime.</p>
<p>Digital Nomads Attraction System</p>	<ul style="list-style-type: none"> - The Gazette - Law Number 10008 ("Law to Attract Workers and Remote Service Providers of an International Nature")- establishes the regulatory framework to attract "digital nomads" to Costa Rica. - Through this law, its sought to strengthen tourism competitiveness and encourage remote workers to choose Costa Rica as a destination and headquarters to establish their office from the great variety of ecosystems that the national territory offers. Benefits include: - <u>Migratory Condition</u>: The migratory benefit will be granted for a period of 1 year, extendable -in case of complying with the requirements established in this file- for a period of 1 additional year. 	<p>The people covered by this law may not engage in paid work or services in the national territory other than what is allowed by their migratory subcategory of stay as a Worker or Remote Service Provider of an international nature.</p>

	<ul style="list-style-type: none"> - <u>Importation of Equipment</u>: It is exempted from the payment of all taxes on the importation of basic personal equipment necessary to fulfill the tasks or the provision of the services, according to the criteria that will be established by the National Customs Directorate of the Ministry of Finance. - <u>Income Tax</u>: It is established and exempted from income tax, also it is provided that the income obtained from abroad does not constitute income from a Costa Rican source. 	
--	---	--

TAX STRUCTURE IN COSTA RICA

Costa Rica taxes/others	Statutory	Free Trade Zone Regime	
Corporate Income tax	30%	Inside GMA Ser: Nil for 8 years, 15% next 4 years MMP: 6% for 8 years, 15% next 4 years MLP: Nil for 8 years, 15% next 4 years	Outside GMA Ser: Nil for 12 years, 15% next 6 years MMP: Nil for 6 years, 5% for next 6 years MLP: Nil for 12 years, 15% next 4 years
Custom duties on imports/exports	Depending on product	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <i>Ser: Services, MMP/MLP: Manufacturing medium/large projects</i> </div>	
Value-added tax	13%		
Stamp duty	1%		
Property transfer tax	1.5%		

Withholding tax on royalties, fees	up to 25%	
Limitation on expats in country	None	
Tax on expats	All Costa Rican residents and non-residents working within the Costa Rican Territory under a labor relationship are subject to withholdings and social security contributions. Personal income tax goes up to 15%.	

Costa Rica offers an attractive incentive scheme for investors. The country allows tax-free operations for 8-12 years, extendable on certain conditions, including reinvestment in the country. Private industrial parks offer foreign investors infrastructure facilities and simplify their location search. In addition, Costa Rica Investment Promotion Agency (CINDE) plays a crucial role in operating as a bridge between investors and the government and providing foreign investors with dedicated aftercare service.

Foreign investors remain attracted by the country's political stability and relatively high education levels, as well as the incentives offered in the free-trade zones; Costa Rica has attracted one of the highest levels of foreign direct investment per capita in Latin America. The US-Central American-Dominican Republic Free Trade Agreement (CAFTA-DR) entered into force on 1 January 2009 after significant delays within the Costa Rican legislature. CAFTA-DR has increased foreign direct investment in key sectors of the economy, including the insurance and telecommunications sectors.

Strategic Suppliers incentives under FTZ

A strategic supplier can reap the benefits under Costa Rica's FTZ regime as well. Companies are considered strategic suppliers if they sell at least 40% of their production to companies in Free Trade Zones. Thus, strategic suppliers can benefit from the following benefits under the FTZ regime:

- Exemption in the importation of merchandise necessary for the operation and administration of the activity authorized to the company;
- Exemption on the importation of vehicles;
- Tax exemption on local purchases, goods or services necessary for the operation and administration of the activity authorized to the company;
- Export exemption;
- Exemption for a period of 10 years from taxes on: (1) Transfer of real estate and (2) Municipal patent;
- Exemption from remittance tax;

- Exemption from all taxes on profits, as well as any other whose tax base is determined in relation to gross or net profits, dividends paid to shareholders or income or sales;
- Tax credits; and
- Access to training and education programs.

6.4.2 HONDURAS



HONDURAS – TAX CREDITS & INCENTIVES

Honduras holds some of the most competitive, wide, and safe legal systems and benefits in the Central American and Caribbean Region. Tax incentives that Honduras offers to investors include:

- 100% Exemption on income taxes, net assets and solidarity contribution and sales tax;
- Exemption from taxes, duties and other charges on imports and exports;
- 100% Exemption of municipal taxes;
- Exemption from taxes on petroleum-based fuels that are used for production;
- Foreign currency is owned by the exporter;
- Access to different markets on preferential terms (trade agreements);
- Permanent employment subsidy program (Government subsidize 50% of the minimum wage for each worker hired permanently during the first 3 months); and
- Domestic market sales:
 - For industrial companies up to 100% of its production.
 - For commercial companies up to 50% of its production.

Applicable Legislation and Regulations	
<p>Free trade zones (<i>Zonas Libre Comercio</i> or ZOLI).</p> <p><u>Governed by:</u></p> <ul style="list-style-type: none"> • LEY CONSTITUTIVA DE LA ZONA LIBRE DE PUERTO CORTES (Gaceta No.21,947 del 21/07/76) DECRETO No. 356 	<p>The Law of Free Zones and its new regulations confer the status of ‘free zone’ to national territories where commercial and industrial companies (national and foreign), that are specifically dedicated to export and related or complementary activities, can be established and function.</p> <p>Some of the tax benefits that this legislation grants are exemption from municipal taxes, exemption from income tax (ISR), duty-free importation for all machinery, raw materials and supplies, and many more.</p>
<p>Industrial processing zone (<i>Zona Industrial de Procesamiento</i> or ZIP)</p> <p><u>Governed by:</u></p> <ul style="list-style-type: none"> • LEY DE LAS ZONAS INDUSTRIALES DE PROCESAMIENTO PARA EXPORTACIONES DECRETO No.37-87 	<p>This law allows private Industrial Export Processing Zones (ZIPs) to establish themselves in any part of the country and that the companies that settle there can enjoy the same benefits as free zones.</p> <p>ZIPs are owned and privately managed and located in areas of the country approved by <i>Secretary of Industry and Commerce Republic of Honduras</i>. Moreover, ZIPs should use local labor, manufacturing and services to create the exported goods.</p>
<p>Temporary import regime</p> <p>(<i>Régimen de Importación Temporal</i> or RIT)</p> <p><u>Governed by:</u></p> <ul style="list-style-type: none"> • DECRETO N° 37 DEL 20 DE DICIEMBRE DE 1984 REGIMEN DE IMPORTACIÓN TEMPORAL 	<p>The Temporary Import Regime is a mechanism to encourage exports by companies that do not receive the benefits contemplated in other Honduran laws. Companies must apply for this scheme to the <i>Directorate General of Productive Services of the Ministry of Industry and Trade</i>.</p> <p>One of the tax benefits contemplated in this law is the suspension of the payment of customs duties, the general sales tax and other import taxes on raw materials, semi-finished products, containers, packaging, and other inputs to produce,</p>

	assemble, transform, modify or incorporate goods or services that are exported to non-Central American countries.
<p>Tourism Incentive Law</p> <p><u>Governed by:</u></p> <ul style="list-style-type: none"> Decree 68-2017 	<p>The purpose of this law is to grant tax and customs benefits to investments of established or to be established companies in the tourism sector, in order to create new sources of employment.</p>
<p>Renewables Incentive Law</p> <p>(Ley de Promoción a la Generación de Energía Eléctrica con Recursos Renovables)</p> <p><u>Governed by:</u></p> <ul style="list-style-type: none"> Decreto N° 70/07 	<p>This law promotes the generation of electric energy with renewable resources by granting tax exemptions for ten years for projects generating 50MW and over.</p>

Incentive applicable in Free Zone (ZOLI)		
Type	Incentive	Condition
Service and Manufacturing Sector	<p><u>Tax:</u> Grants income tax exemption and municipal taxes exemption indefinitely</p> <p><u>Import duties on raw materials, components:</u>100% exception</p> <p><u>Local sales and armhole taxes:</u>100% exception</p> <p><u>Repatriation of earnings taxes:</u> 100% exception</p> <p><u>Capital repatriation:</u> 100% exception</p> <p><u>Taxes on repatriation of earnings:</u> 100% exception</p> <p><u>Currency conversion:</u> Without restrictions</p> <p><u>Customs:</u> Exemption from the payment of tariff taxes, charges, surcharges, internal taxes, consumption and other taxes and levies of merchandise introduced in the Zone, which are directly or indirectly related to import and export customs operations.</p>	<p><u>Eligibility requirements:</u> Industrial and commercial companies</p> <p><u>Obligations:</u> It does not stipulate number of employees. Commercial companies allocate 50% of their annual to export and industrials 95%</p> <p><u>Procedure:</u> They currently present their application at the offices of the national port company in Tegucigalpa, Puerto Cortes, and at the free zone superintendency of Puerto Cortes</p> <p><u>Location:</u> It can be located anywhere in the country in a delimited area. The cities designated as ZOLI are: Puerto Cortes, Omoa, Choloma, Tela, La Ceiba, Amapala.</p> <p><u>Sale to the local market:</u> Only 5% of the total production, need to be paying VAT</p>

Incentive applicable in Export Processing Zone (ZIP)		
Type	Incentive	Condition
Manufacturing	<p><u>Tax:</u> Grants income tax exemption for 20 years and municipal tax exemption for 10 years.</p>	<p><u>Eligibility requirements:</u> Industrial and support companies</p> <p><u>Obligations:</u> It must employ a minimum of 5,000 people in a 5-year</p>

<p>Sector</p>	<p><u>Import duties on raw materials, components:</u> 100% exception.</p> <p><u>Local sales and armhole taxes:</u> 100% exception.</p> <p><u>Repatriation of earnings taxes:</u> 100% exception.</p> <p><u>Capital repatriation:</u> 100% exception.</p> <p><u>Taxes on repatriation of earnings:</u> 100% exception.</p> <p><u>Currency conversion:</u> Without restrictions.</p> <p><u>Customs:</u> Import free of charges, customs duties, charges, surcharges, consular duties, internal consumption and sales taxes and other taxes, fees and charges that are directly or indirectly related to import customs operations, of all goods that import and that are applied or incorporated exclusively to the development and exploration of the Industrial Export Processing Zone, including construction materials, equipment, spare parts, machinery and office equipment, as long as these goods are not produced in the country and with the prior authorization of the Secretariat of State in the Offices of Economy and Commerce.</p>	<p>term. You can sell in the national market, when there is no national production</p> <p><u>Procedure:</u> They present their application in the general secretary of the secretary of industry and commerce</p> <p><u>Location:</u> It must be located in a delimited zone of the country and without a resident population. The ZIPs are located in Choloma, Bufalo, La Lima, San Pedro Sula, Villanueva and Tegucigalpa</p> <p><u>Sale to the local market:</u> Must pay VAT</p>
----------------------	---	--

Other Incentives		
Type	Incentive	Condition
<p>Temporary Import Regime</p>	<p><u>Tax</u>: Income tax exemption is not granted, nor municipal taxes.</p> <p><u>Import duties on raw materials, components</u>: 100% exception if you export Central America</p> <p><u>Local sales and armhole taxes</u>: 100% exception</p> <p><u>Customs</u>: The suspension of the payment of customs duties, the general sales tax and other import taxes of:</p> <ul style="list-style-type: none"> a) Raw materials, semi-finished products, containers, packaging and other inputs to produce the goods or services that are exported to non-Central American countries, or when they are assembled, transformed, modified or physically incorporated into products or services that are export to non-Central American countries. b) Machinery, equipment, molds, tools, spare parts and accessories exclusively for assembling, transforming, modifying or producing goods or services destined for export to non-Central American countries. These assets may be freely disposed of after five years have elapsed from the date of their temporary importation, with prior authorization from the Ministry of Finance. c) Samples, instructions, patterns, mannequins and models necessary to adjust the production of goods and services to the standards and designs required in the international market and for demonstration, research or instructional purposes. 	<p><u>Eligibility requirements</u>: Industrial or agro-industrial companies</p> <p><u>Obligations</u>: It does not stipulate the number of employees. You can export to Central America. You must not sell in the national market</p> <p><u>Procedure</u>: They present their application in the general direction of productive sectors</p> <p><u>Location</u>: It can be located anywhere in the country</p> <p><u>Sale to the local market</u>: Does not apply</p> <p><u>Repatriation of earnings taxes</u>: Must be paid</p> <p><u>Capital repatriation</u>: Depends on Central bank's decision</p> <p><u>Taxes on repatriation of earnings</u>: Depends on Central bank's decision</p>

		<u>Currency conversion</u> : Depends on Central bank's decision
Tourism Incentive Regime	<ul style="list-style-type: none"> • Exemption from income tax, net asset tax and the solidarity contribution and related rights for 15 years. • Exemption from income tax and any other retention of payment for services and linked fees to the construction in all its facets for 5 years. • Exemption from income tax in local works of good and services linked directly to the construction, renovation or restoration, new infrastructure, complementary investment in touristic activities. • Benefits in import of machinery and all the necessary equipment for the construction and maintenance of the projects. • Exemption of custom import duties, selective consumption and tariffs tax and other custom duties for the touristic projects up to 10 years. 	To receive the tourism incentive benefits, companies must operate in: <ul style="list-style-type: none"> • Services of touristic industry • Related infrastructure • Targeted investment in tourism • Related touristic activities • Services of tourist offering • Tourist services of transport
Renewable Incentive Regime	<ul style="list-style-type: none"> • Tax exemptions for ten years 	Projects must derive from renewable source and generate 50MW and over.

TAX STRUCTURE IN HONDURAS

Taxes/others	Statutory	Comments
Corporate Income tax	25%, plus a surcharge of 5% on net taxable income over \$ 40,000	Honduran resident companies are taxed on territorial income. Non-resident companies are subject to corporate income tax (CIT) only on income derived from Honduran sources. The CIT rate for a resident company is 25% of its net taxable income. Foreign entities providing sea, land, and aerial transport services in Honduras should consider a net taxable income equivalent to 10% of their total Honduran-source gross income in order to apply the correspondent income tax rate.
Personal Income Tax	25%	The tax system in Honduras is based on a territorial concept of income. Citizens and residents are taxed on income earned from worldwide sources. Non-residents are taxed

		only on income from Honduran sources, and the tax on any type of income paid to a non-resident must be withheld by the payer.
Value-added tax	15%	In Honduras, VAT is known as sales tax (impuesto sobre ventas). The general sales tax rate is 15%. It applies to most goods and services, with the exception of machinery and equipment, basic grains, pharmaceutical products, raw materials for the production of non-taxable goods, petroleum products, school supplies, and insecticides, among others. The import and sale of beer, other alcoholic beverages, cigarettes, and other tobacco products are subject to 18% sales tax.
Withholding tax (WHT) rates (Dividends/Interest/Royalties)	Resident: 10% / 10% / 25%; Non-resident: 10% / 10% / 25%	Distribution or payment of dividends or any other form of distribution of retained earnings or reserves to resident or domiciled individuals and/or legal entities is taxed via WHT at 10%. For non-residents in Honduras, any income derived from Honduran sources is taxable under different conditions as stipulated by the Income Tax Law.
Corporate capital gains tax rate	10%	In general, a 10% tax is applied on capital gains, regardless of the person's residence status. Under the Zolitur law territory, a special regime, the tax rate is a 4% flat tax on capital gains.
Individual capital gains tax rate	10%	Same as above.

The government permits the establishment of export processing zones (EPZ) anywhere in the country. Companies operating in EPZs are exempt from paying import duties and other charges on goods and capital equipment. In addition, the production and sale of goods within EPZs are exempt from state and municipal income taxes for the first 10 years of operation. The government permits companies operating in an EPZ unrestricted repatriation of profits and capital. Companies are required, however, to purchase the Lempiras needed for their local operations from Honduran commercial banks or from foreign exchange trading houses registered with the Central Bank.

Most industrial parks and EPZs are located in the northern Department of Cortes, with close access to Puerto Cortes, Honduras' major Caribbean port, and San Pedro Sula, Honduras' largest commercial city. The government treats industrial parks and EPZs as offshore operations, requiring companies to pay customs duties on products manufactured in the parks and sold in Honduras. In addition, the government treats Honduran inputs as exports, which companies must pay for in U.S. dollars. Most companies operating in these parks are involved in apparel assembly, though the government and park operators have begun to diversify into other types of light industry, including automotive parts and electronics assembly.

The Honduran government does not grant direct export subsidies, but it does provide tax breaks to companies who operate in a free trade zone. Moreover, it is important to note that the *Temporary Import Law* allows exporters to introduce raw materials, parts, and capital equipment (except vehicles) into Honduras exempt from surcharges and customs duties if a manufacturer incorporates the input into a product for export (up to five percent can be sold locally).

6.4.3 GUATEMALA



GUATEMALA – TAX CREDITS & INCENTIVES

In Guatemala there are special regimes to promote foreign investment. Free Zones allow companies that manufacture products for export and companies that offer services in international trade to benefit from favorable tax conditions. In addition, export goods from the maquila sector are especially promoted, in which concessions are offered, regardless of whether the companies operate in a Free Zone.

Guatemala's tax incentives are provided mainly for companies operating in free zones, export companies, companies entitled to a duty drawback, and those engaged in activities relating to renewable sources of energy. Incentives include an exemption from corporate income tax, the solidarity tax, VAT and import taxes.

Applicable Legislation and Regulations	
Law to promote the activities of export and assembly factories (Decree Number 29-89 of the Guatemalan Congress and its reforms)	Its aim is to promote, encourage and develop the production of goods in the textile industry and the services activities of call centers and data processing in the national customs territory. By fulfilling certain requirements set out in the law, it is possible to qualify for exemption from direct taxes [Income Tax for up to ten (10) years] and indirect taxes [VAT and tax stamps during the time of business activities].
Duty Free Zone Law (Decree Number 65-89 of the Guatemalan Congress and its reforms)	Its aim is to encourage and regulate the establishment of duty-free zones within the country, the aim of which is to focus on foreign trade. Those industries that qualify can obtain direct tax exemption [Income Tax for up to ten (10) years] and indirectly taxes [VAT and tax stamps during the time of the business activity]. The regulation restricts its use to certain industrial and commercial activities, so it is necessary to ensure that the activity carried out in Guatemala can qualify under this regulation.
ZOLIC Law –Industry and Trade Duty Free Zone Law “Santo Tomás de Castilla” (Decree Number 22-73 of the	Its objective is to promote industrial and commercial development where industrial, commercial or service production activities can be carried out. The agreement allowing the

<p>Guatemalan Congress and its reforms)</p>	<p>establishment of zones for Special Public Economic Development (ZDEEP in Spanish) was recently issued, granting, in addition to import and export benefits, tax incentives in direct taxes [Income Tax for up to ten (10) years] and indirect taxes [VAT and tax stamps during the time of the commercial activity], which have been limited to certain activities within the regulations of duty-free zones and export and assembly factory activity.</p>
<p>Law of Promotion and Development of Exports Activities and Drawback Industries (<i>Maquila</i>)</p>	<p>This law seeks to promote, encourage, and develop the manufacture of products within areas controlled by the Customs Authority for export to countries outside the Central American region, as well as to regulate exporting and drawback activities.</p> <p>The exporter may apply for authorization to operate under any of the following three systems provided by the law:</p> <ul style="list-style-type: none"> • Export under a temporary admission system. • Export under the reimbursement of duties system. • Export under the total added national component system. <p>Tax incentives and benefits of the law include the following:</p> <ul style="list-style-type: none"> • Exemption of taxes, import duties, and other charges on imports of machinery and equipment, including VAT. • Discontinuance of VAT payments on temporary raw material imports. • Exemption of income tax for ten years on profits obtained under this law.
<p>Law on Incentives for Development of Renewable Energy Projects (Decree of the Congress 52-2003)</p>	<p>The law aims to promote the development of renewable energy projects and establish fiscal, economic and administrative incentives for the sector. It designates the Ministry of Energy and Mines as the body responsible for creating an inventory of renewable resources that can be used to generate energy. In addition, the ministry should also encourage research in this area and facilitate the certification process.</p> <p>Energy producers will be granted a certification of emission reduction that is expected to enhance trade of renewable energy. Related regulation declares the rational development of national renewable energy sources as a key and urgent national interest and provides economic incentives for duty-free import of machinery and equipment for renewable energy and a 10-year exemption from income tax and the tax on commercial and agricultural enterprises.</p>

Incentive applicable in Free Zones (Decree 65-89)		
Type	Incentive	Condition
Manufacturing Sector	<p><u>Financial Incentives:</u> 100% income tax exemption for 10 years and 25% post this period</p> <p><u>Non-financial Incentives (other tax exemptions):</u> VAT and Tariff duties exemption on imported goods and production inputs to be incorporated into the final product and services</p> <p>VAT exemption on the acquisition of local inputs to be incorporated into the final product and services</p>	<p><u>Type of activity:</u> Most type of manufacturing allowed. Investment in agriculture/alcoholic beverages/cement and other polluting sectors come with restrictions.</p> <p><u>Legal Concept:</u> A limited physical area of land that has been planned and designed, subject to a special customs regime, in which natural persons or legal entities can undertake either to the production or commercialization of goods for export or re-export, as well as providing services linked to international trade.</p> <p><u>Ownership:</u> Private</p> <p><u>Local sales must pay tax:</u> VAT, tariff duties & Income Tax (up to 20% of production can be sold domestically, rest exported)</p> <p><u>Duty free import condition:</u> Raw materials imported should be within the FTZ</p> <p><u>Minimum Export/job creation:</u> None</p> <p><u>Authorization time:</u> 3 months</p>

Incentive applicable in Special Public Economic Development Zones –ZDEEP’s- (Decree 30-2008)		
Type	Incentive	Condition
Services and Manufacturing Sector	<p><u>Financial Incentives:</u> 100% income tax exemption for 10 years and 25% post this period</p>	<p><u>Type of activity:</u> Any activity</p> <p><u>Legal Concept:</u> A geographically defined area within the national territory that is an extra-customs area where industrial goods and</p>

	<p><u>Non-financial Incentives (other tax exemptions):</u> VAT and Tariff duties exemption on imported goods and production inputs to be incorporated into the final product and services</p> <p>VAT exemption on the acquisition of local inputs to be incorporated into the final product and services</p>	<p>services are developed or commercial activities are undertaken under special tariffs, a temporary customs and foreign trade regime, authorized by ZOLIC (Free Trade Zone).</p> <p><u>Ownership:</u> By the government</p> <p><u>Local sales must pay tax:</u> VAT and tariff duties</p> <p><u>Duty free import condition:</u> Raw materials imported should be within the FTZ</p> <p><u>Minimum Export/job creation:</u> None</p> <p><u>Authorization time:</u> 3 months</p>
--	--	---

Incentive applicable for the promotion and development of export and maquila activity (Decree 29-89)		
Type	Incentive	Condition
<p>Services and Manufacturing Sector</p>	<p><u>Financial Incentives:</u> 100% income tax exemption for 10 years and 25% post this period</p> <p><u>Non-financial Incentives (other tax exemptions):</u> VAT and Tariff duties exemption on imported goods and production inputs to be incorporated into the final product and services</p> <p>VAT exemption on the acquisition of local inputs to be incorporated into the final product and services</p>	<p><u>Type of activity:</u> Apparel and textile, Services: BPO & ITO</p> <p><u>Legal Concept:</u> The objective of this law is to promote, encourage and develop the activities undertaken by natural persons or legal entities domiciled in the country and operating within customs systems in the national customs territory, in accordance with this law. Limited to 2 sectors: textile and apparel and service industry.</p> <p><u>Ownership:</u> By the government. These are mainly for exports or Contract Manufacturing and not a free zone</p> <p><u>Local sales must pay tax:</u> VAT, tariff duties & Income tax</p> <p><u>Duty free import condition:</u> Items imported should be only used for export purpose</p>

		<p><u>Minimum Export/job creation:</u> None</p> <p><u>Authorization time:</u> 3 months</p>
--	--	--

Other Incentives		
Type	Incentive	Condition
Renewable Energy Incentives	<ul style="list-style-type: none"> - Exemption from taxes, VAT and import duties on imports of machinery, equipment, components and accessories necessary for energy production during a construction period not exceeding 10 years - 10-year exemption from the corporate income tax. 	<ul style="list-style-type: none"> - Must be company that develops energy projects with renewable energy sources

TAX STRUCTURE IN GUATEMALA		
Taxes/others	Statutory	Comments
Corporate Income tax	<p>System on earnings: 25% on net income; Simplified optional system: 7% on gross income</p>	<p>The tax system of Guatemala is a unitary system, whereby income of all kinds, other than capital gains, is lumped together and subject to a single tax. The components of gross income subject to tax are usually business income, interest, dividends, rent, salaries, and services. Companies are subject to income tax only on their Guatemala-source income. Dividends and other income payable abroad are taxed separately by way of withholding taxes (WHTs).</p> <p>For income tax purposes, there are two main systems that taxpayers may subscribe to: the system on earnings from lucrative activities and the simplified optional system on income from lucrative activities. The</p>

		taxpayer chooses what system the company is registered for. Once a system is chosen, it cannot be modified until the next tax period.
Personal Income Tax	7%	Guatemala taxes its citizens and resident or non-resident individuals on their compensation attributable to services rendered in Guatemala and on other Guatemalan-source income. Income taxes for individuals are generated by any remuneration or income in cash, whatever its denomination might be, from personal labour provided in a dependence relationship by individuals residing in the country.
Value-added tax	12%	A 12% VAT is levied on the sale or transfer of merchandise and on non-personal services rendered or effected in Guatemala. The tax is payable to the government by way of the invoice method, whereby the tax charged to the customers is offset by the VAT paid over purchases, and the government collects the net resulting amount. The issuance and circulation of credit titles is VAT-exempt.
Withholding tax (WHT) rates (Dividends/Interest/Royalties)	Resident: NA; Non-resident: 5% / 10% / 15%	WHT rates apply on payments to non-resident corporations or individuals.
Corporate capital gains tax rate	10%	In Guatemala, income from capital and capital gains is considered taxable when the income originates from goods or rights whose ownership corresponds to the taxpayer. Thus, tax is applicable when capital gains derive from: <ul style="list-style-type: none"> • The transfer of movable or immovable assets, lottery tickets, raffle tickets or similar items • The transfer of shares issued by resident entities • The incorporation of assets located in Guatemala into the taxpayer's property • The transfer of shares issued by foreign entities that own movable or immovable property located in Guatemala.

Individual capital gains tax rate	10%	Same as above.
-----------------------------------	-----	----------------

Guatemala's main investment incentive programs are specified in law and are offered nationwide to both foreign and Guatemalan investors without discrimination.

- Guatemala's primary incentive program – *the Law for the Promotion and Development of Export Activities and Maquilas* (factories that produce products in free trade zones) – is aimed mainly at the apparel and textile sector and at services exporters such as call centers and business processes outsourcing (BPO) companies. The government grants investors in these two sectors a 10-year income tax exemption. Additional incentives include an exemption from duties and value-added taxes (VAT) on imported machinery and equipment and a 1-year suspension of the same duties and taxes on imports of production inputs, samples, and packing material.
- The *Free Trade Zone Law* provides similar incentives to the incentive program described above, but its beneficiaries include only some services providers and a limited number of manufacturing activities such as apparel manufacturers and motorcycle assemblers.
- The public *Free Trade Zone of Industry and Commerce Santo Tomas de Castilla* (ZOLIC) that operates contiguous to the state-owned port Santo Tomas de Castilla issued a regulation in January 2019 allowing the establishment of ZOLIC's special public economic development zones outside of ZOLIC's customs perimeter. The ZOLIC law grants businesses operating within the new special public economic development zones a 10-year income tax exemption. Additional exemptions include an exemption from VAT, customs duties, and other charges on imports of goods entering the area, including raw materials, supplies, machinery and equipment, as well as a VAT exemption on all taxable transactions carried out within the free trade zone when goods are exported. The law states that the incentives are available to local and foreign investors engaged in manufacturing and commercial activities as well as the provision of services.

6.4.4 DOMINICAN REPUBLIC



DOMINICAN REPUBLIC – TAX CREDITS & INCENTIVES

The Dominican Republic (DR) has several special regimes to promote foreign investment. Free Zones allow manufacturing companies and service companies to benefit from favorable tax conditions along with the ability to sell in the domestic market at just 3.5% tax. There are 75 free trade zone parks in DR across industries such as

pharmaceutical, medical devices, tobacco and its derivatives, clothing and textile, and services, footwear and electronics. Tax incentives are provided mainly for companies operating in free zones, and companies engaged in activities relating to renewable sources of energy are entitled to a duty drawback. Free zone incentives include exemption on goods and services tax, municipal, or export taxes, import duties and related charges on raw materials, equipment, construction materials, vehicles, office equipment and other goods necessary for the preparation, construction, and operation of the business.

Applicable Legislation and Regulations	
Industrial FTZ operations - Law 8-90	Entities that would like to benefit from said Law shall be engaged in manufacture/service within a confined space (FTZ park).
Industrial renovation and modernization incentives - Law 392-07	Promote policies and support programs to bring innovative practices industrial parks that can compete with international markets.
Border development incentives - Law 28-01	Incentives for certain industry that share borders of Dominican Republic and Haiti.
Alternative energy incentives - Law 57-07	Encourages investment in the renewable energy sector.
Equal treatment - Law 16-95	Foreign investors are bound by the same rules and regulations applicable to local investors and can freely hold equity in local businesses and joint ventures, as well as buy real estate in their names.
Foreign Investment Law 16-95	Eliminated all barriers formerly imposed on international investments in the Dominican Republic. Investors contributing capital are granted unlimited access to all sectors except certain sensitive industries. Registration of foreign investments with government authorities is not mandatory. Nor is state approval required for the repatriation abroad, in foreign currency, of the capital invested or the benefits received by investors.
Government Guarantees for Foreign Loans	Government assists investors by pledging its full faith and credit to loans provided by international agencies for significant infrastructure projects. Foreign investors in large projects commonly use capital and political/exchange insurance risk facilities provided by the Multilateral Investment Guarantee Agency (World Bank Group) and the Overseas Private Investment Corporation (now the US Development Finance Corporation). The Dominican Republic has signed agreements with both entities.
Incentives for International Investors Law 171-07	Residency permit for foreign nationals who invest \$200,000 and above in the Dominican Republic.

Incentive applicable in Free Zone		
Type	Incentive	Condition
Services Sector	<ul style="list-style-type: none"> - Companies operating in free zones are subject to considerable tax exemptions for renewable 15-year periods, such as no income, goods and services, municipal, or export taxes, no import duties nor related charges on raw materials, equipment, construction materials, vehicles, office equipment and other goods necessary for the preparation, construction, and operation of the business. 	<ul style="list-style-type: none"> - No minimum investment - Minimum job creation is 50 over 3 years - Local sales attract income tax rate of 3.5% on gross sales
Manufacturing Sector	<ul style="list-style-type: none"> - Companies operating in free zones are subject to considerable tax exemptions for renewable 15-year periods, such as no income, goods and services, municipal, or export taxes, no import duties nor related charges on raw materials, equipment, construction materials, vehicles, office equipment and other goods necessary for the preparation, construction, and operation of the business. 	<ul style="list-style-type: none"> - No minimum investment - Minimum job creation is 15 over 3 years - Local sales attract income tax rate of 3.5% on gross sales

Other Incentives		
Type	Incentive	Condition
Alternative energy incentives	<ul style="list-style-type: none"> - Exemption from payment of import duties and VAT (ITBIS) on the equipment, machinery and accessories necessary for the production, transmission and interconnection of renewable energy. - Reduction to 5% of the withholding tax for the payment of interest abroad for external financing. 	<ul style="list-style-type: none"> - The renewable energy sources subject to biofuel, bio-diesel, ethanol, and wind, solar, and other renewable energy.

Other Incentives		
	<ul style="list-style-type: none"> - The credit on investment expense granted to self-power producers is 40%. - In addition, producers authorized under the law may sell Certified Emission Reductions units in accordance with the Kyoto Protocol. 	
Industrial renovation and modernization incentives	The main objective of Law 392-07 about competitive development and innovation. Main benefits include VAT exemption on import of machinery and materials, priority on imports granted at customs, and accelerated depreciation.	<ul style="list-style-type: none"> - Proof of investment made in modernization of existing facility and certified by the Center for Development and Industrial Competitiveness (PROINDUSTRIA) agency.
Special Incentives for Logistic Operators	Logistic operators benefit from a significant reduction in their income tax, which is set at just 3.5% of sales made in the local market, and from import duties on merchandise brought into the country, repackaged and then exported, if done within a specified time period.	<ul style="list-style-type: none"> - Companies authorized by the Customs Department of the Dominican Republic to supply, within a logistic center, services such as storage, inventory administration, classification, consolidation, cargo distribution, packaging, labeling, division of cargo, refrigeration, re-export, and transport.
Incentives for Investors in the Tourism Industry	<ul style="list-style-type: none"> - Hotels and resort-related investments are granted 100% exemptions from taxes and duties related to the acquisition of the equipment, materials and furnishings needed to renovate their premises. - Hotels and resort-related investments that are fifteen years or older will receive the same benefits granted to new projects if the renovation or reconstruction involves 50% or more of the premises. - Individuals and companies get an income tax deduction for investing up to 20% of their annual profits in an approved tourist project. 	<ul style="list-style-type: none"> - Confotour, is the government agency in charge of reviewing and approving applications by investors for these exemptions. - Once Confotour approves an application, the investor benefitting from the incentives must start and continue work in the authorized project within a three-year period to avoid losing all benefits under the program

Other Incentives		
Incentives for Investors in the Film Industry	<ul style="list-style-type: none"> - Persons who administer, support, promote or develop cinema and other audio-visual works benefit exemption from payment of the goods and services tax, income tax exemption for the construction of movie theaters and film or recording studios, and a transfer - Tax credit up to 25% of expenditures in the Dominican Republic 	<ul style="list-style-type: none"> - A film permit by the Inter Sectoral Council for the Promotion of the Film Industry and the General Film Office - Liability insurance policy that covers cases of damages and injuries caused to third parties - 20% of the project budget is spent in the DR
Foreign tax credit	<ul style="list-style-type: none"> - Taxes paid abroad on foreign income taxed in the Dominican Republic may be credited up to the amount of the Dominican tax liability generated by such income. The credits should be determined on a case-by-case basis. 	<ul style="list-style-type: none"> - The amount of the credit cannot exceed the sum of the Dominican Republic taxes imposed over the same income - A certificate from the tax auditor
Border development incentives	<ul style="list-style-type: none"> - Companies that are within the border of the Dominican Republic and Haiti will benefit from 100% exemption on CIT and VAT, as well as customs duties. Other benefits include government subsidies to lease space and preferential loans with lower interest rates. 	<ul style="list-style-type: none"> - Should be within the border of the Dominican Republic and Haiti - Sector focus is only industrial, agro-industrial, agriculture/livestock, metal/mechanic, tourism, metallurgical, and energy

TAX STRUCTURE IN DOMINICAN REPUBLIC

Taxes/others	Rate	Comments
Corporate Income tax	27%	The corporate income tax (CIT) rate is 27%. In addition, the 1% rate assets tax is considered an alternative minimal income tax, payable when the CIT is

Taxes/others	Rate	Comments
		<p>lower than the assets tax.</p> <p>Dividends/profits remitted abroad or paid locally are subject to a withholding tax (WHT) of 10% as a definitive tax payment. Free trade zone (FTZ) entities should also make the 10% withholding on profit remittance (in case of branches) or dividend distribution (subsidiaries).</p>
Personal Income tax	25%	<p>The Dominican Republic follows a territorial concept for the determination of taxable income. Dominican-source income is subject to tax, while foreign-source income is generally not. However, residents are subject to taxation on foreign investments and financial gains. In the case of individuals who become residents, this foreign-source income is taxed only after the third year.</p>
Value-added tax (VAT)	18%	<p>Tax on the Transfer of Industrialized Goods and Services (ITBIS) is a VAT applied to industrialized goods (movable) and services at a rate of 18%, with exemptions established by law to certain goods and services.</p> <p>Exempt goods include a wide variety of goods, among which are basic products (eggs, milk, grains, live animals, frozen meats), seeds for planting, fruits and vegetables, medicine, insecticide and pesticides, books/magazines, educational material, wheelchairs, and prosthesis.</p> <p>Exempt services include educational, health, financial (including insurance), pensions, ground transportation of people and cargo, electricity, water and waste pick-up, housing rental and personal care, and exported services.</p> <p>A 0% rate applies to exports, including sales to FTZs.</p>

Taxes/others	Rate	Comments
Withholding tax (WHT) rates (Dividends/Interest/Royalties)	Resident: 10 / NA / NA; Non-resident: 10 / 10 / 27	Dividends paid in cash to resident and non-resident individuals or corporations are subject to a WHT of 10%.
Corporate capital gains tax rate	NA	Capital gains are subject to the normal CIT rate.
Individual capital gains tax rate	NA	Capital gains are subject to the normal PIT rate.
Tax on gross sales made by FTZs to local market	3.5%	A 3.5% tax was created on the gross sales of goods and services made by companies in Dominican FTZs to individuals and legal entities in the local market.
Customs duties	Depends	Customs duties are assessed at various rates depending on the nature of the goods and their country of origin. Free trade agreements exist (e.g. the Central America-Dominican Republic-US Free Trade Agreement [DR-CAFTA]) that decrease the customs duty rates for goods imported from the member countries.
Selective consumption taxes (ISCs)	Between 10-50%	There are ISCs that vary based on the product, which range from: <ul style="list-style-type: none"> • 10% on the transfer of alcoholic beverages, applied on the retail price. Imports and transfers made by local manufacturers are accountable for this tax. • 50% on the transfer of 20 units of tobacco products and 25% on the transfer of 10 units of tobacco products, applied on the retail price. Imports and transfers by local manufacturers are accountable for this tax. • 10% on telecommunications services. • 16% on insurance services.

Taxes/others	Rate	Comments
Real Property Transfer Tax	3%	The Real Property Transfer Tax is assessed at a basic rate of 3% on any transfer of ownership of real estate.
Payroll taxes	1%	<p>In addition to the social security contributions (see below), a 1% contribution from the payroll amount shall be made to the Governmental Training Institution (INFOTEP) on a monthly basis. This is paid solely by the employer (not subject to withholding). In addition, a 0.5% contribution shall be paid to INFOTEP, and the employer shall withhold said 0.5% contribution from employees' bonus (not salary).</p> <p>Employers must share 10% of their net profits with their employees. The Dominican Labor Code, however, allows employers to cap the amount distributed as follows: an employee with less than three years on the job will receive a maximum of 45 days' salary; an employee with three years or more will receive a maximum of 60 days' salary.</p>
Pensions	7.10%	Employers contribute 7.10% of salaries and withhold 2.87% from employees' salaries for pensions. The quotable salaries for contribution are 20 minimum wages.
Family healthcare	7.09%	Employers contribute 7.09% of salaries and withhold 3.04% from employees' salaries for family healthcare. The quotable salaries for contribution are ten minimum wages.
Labor risks insurance	1.2%	Employers contribute 1.2% of salaries for labor risks insurance. The quotable salaries for contribution are four minimum wages.

Over the past two decades, the Dominican Republic has fostered a highly receptive environment for international investors, adopting sustainable growth policies that minimize red tape and offer significant tax incentives. The country has become a focus for the manufacturing and services industry. The establishment of most of these companies has been motivated by tax incentive regimes such as the free trade zones and investors remain attracted by the country's political stability and relatively high education levels.

6.4.5 COLOMBIA



COLOMBIA – TAX CREDITS & INCENTIVES

Colombia experienced an accelerated foreign direct investment growth since early 2000s, mainly due to improvements in domestic security, rising commodity prices, and favorable economic market policies. The Colombian government has entered into several free trade agreements with European and Asian partners.

Colombia's tax incentives are provided mainly for companies operating in free zones, export companies, companies entitled to a duty drawback, and those engaged in activities relating to clean sources of energy. Incentives include an exemption from corporate income tax, VAT and import taxes. The incentives have been directed both at certain less developed regions and industries considered important for national development.

Applicable Legislation and Regulations	
FDI regimen based on four fundamental principles	<p>Equal treatment - The Colombian Constitution states foreign nationals have identical rights as Colombian nationals for investment purposes</p> <p>All sectors – Exception include on activities related to defense and national security and toxic or radioactive waste not originated in the country.</p> <p>Automatic - FDI in Colombia does not require prior authorization, except for investment in sectors such as insurance, finance mining and hydrocarbon</p> <p>Stability - The conditions which were in effect on the date of registration of foreign investment may not be modified in a manner that adversely effects the foreign investor with respect to the repatriation of foreign investment, and the remittance of profits associated to it.</p>
Orange economy incentives - Law 1834	Aims to develop, promote creative industries and shall include the sectors that combine the creation, production, and commercialization of goods and services based on intangible contents of a cultural nature, and/or those that generate protection within the framework of copyrights.

Investments in renewable energy - Decree 829 of 10 June 2020	The updated regulations expand the investments that qualify as renewable energy sources (RES) or energy efficiency (EE) investments, including activities such as plant expansion and process improvements.
ZOMAC - The Decree 1650	The ZOMAC is a group of municipalities considered as most affected by the conflict, defined by the Ministry of Finance and Public Credit.

Incentive applicable in Free Zone		
Type	Incentives	Conditions
Services Industry	<p>Tax Incentives</p> <ul style="list-style-type: none"> - Flat Income tax of 20% - Exclusion of VAT on the export of services - 50% tax rebate on R&D <p>Human Resources</p> <ul style="list-style-type: none"> - IT relief on employing disabled, senior citizens and youth between 8-28 years 	<ul style="list-style-type: none"> - For services, 100% of the FOB value of imported goods should be exported - Up to 50% tax rebates for investments in research, technological development, and innovation - 200% of social benefits paid to disabled reduced from IT - 120% of salary & social benefits paid to senior citizens reduced from IT - State contributes 10% (men) and 20% (women) of social security and parafiscal payments until August 2023. For youth employed aged 18-28, state pays 25%.

Incentive applicable in Free Zone			
Manufacturing	Tax Incentives	<ul style="list-style-type: none"> - Flat Income tax of 20% - Deferred VAT for Capital goods imported - Import of raw materials free of VAT and tariff 	<ul style="list-style-type: none"> - Minimum export is 1.5 times the FOB value of the capital goods imported - Minimum 60% of the value of raw materials imported should be exported - 200% of social benefits paid to disabled reduced from IT - 120% of salary & social benefits paid to senior citizens reduced from IT - State contributes 10% (men) and 20% (women) of social security and parafiscal payments until August 2023. For youth employed aged 18-28, state pays 25%.
	Human Resources	<ul style="list-style-type: none"> - IT relief on employing disabled, senior citizens and youth between 8-28 years 	

Other Incentives		
Type	Incentive	Condition
Clean energy Investment	<ul style="list-style-type: none"> - Income tax exemption for income derived from the sale of electricity generated solely from wind energy, biomass, or agricultural waste - VAT exclusion and exemption from import tariffs 	<ul style="list-style-type: none"> - 100% income tax exemption for 15 years - 100% VAT exclusion for indefinite period <p>Government authorization required and project must meet certain qualifying criteria</p>
Innovation, development, and investigation	<ul style="list-style-type: none"> - Tax deduction - Tax credit 	<ul style="list-style-type: none"> - Deduction of 100% of investment - Tax credit of 25% of investment

Other Incentives		
		- Government authorization required
Environmental Investment	- Tax credit	- Tax credit of 25% of investment - Government authorization required
Income tax deduction and income tax credit	- Tax credit and investment deduction for all taxpayers whose investigation, technological development, or innovation project has been approved by the National Council of Tax Benefits	- Tax credit of up to 25% of the investment, and deduction of 100% of the investment
Mega Investments	- Benefits include a reduced 27% tax rate, accelerated depreciation regime, exclusion from presumptive income calculation, exemption from equity tax, and exemption from dividends tax where dividends are taxed at the corporate level	- Taxpayers that generate at least 400 direct jobs, 250 for information technology sector and e-commerce - Make new investments of at least 30 million tax value units in a commercial, industrial, and/or service activity in Colombia. Certain industries (e.g., oil and gas) are excluded, and high investment threshold limits applicability to SMEs - The investment and creation of new direct jobs must be realized within 5 years
Trainees' wages and payroll contributions special deduction	- Enhanced deduction for wages, social security, and other payroll contributions in respect of students of the National Learning Services Institute	- Deduction of up to 130% of wages, social security, and other payroll contributions
Incentives for development in ZOMAC areas	- Reduced corporate income tax rates for companies that have their principal residence in and commence activities in ZOMAC areas, and meet certain investment and employment criteria	- Micro and small enterprises: corporate income tax rate 0% from 2017 to 2021, 25% of the standard rate from 2022 to 2024, and 50% of the standard rate from 2024 to 2027 - Medium-sized enterprises: corporate income tax rate 50% of the standard rate from 2017 to 2021, and 75% of the standard rate from 2022 to 2027

Other Incentives		
Recycle and process or waste	<ul style="list-style-type: none"> - VAT exclusion for machinery or equipment not produced in Colombia, intended to recycle and process refuse or waste, or purify or treat sewage, atmospheric emissions, or solid waste, for the recovery of rivers or basic sanitation, provided the program is approved by the Environment Ministry. VAT exclusion also applies to equipment for environmental control and monitoring 	<ul style="list-style-type: none"> - Unlimited VAT exclusion on qualifying expenditure
Tax credits for donations	<ul style="list-style-type: none"> - Tax credits for donations to non-profit entities under the special tax regime 	<ul style="list-style-type: none"> - 25% tax credit for donations to non-profit entities
Orange economy incentives	<ul style="list-style-type: none"> - 100% exemption from Corporate Income tax (CIT) and VAT for seven years 	<ul style="list-style-type: none"> - The companies must have their main domicile within the Colombian territory, and their exclusive corporate purpose must be the development of technological value-added industries and/or creative activities - The companies must be incorporated and start their economic activity before June 30th, 2022. - Annual income should be less than \$ 750,000 - Minimum job creation is 3
Foreign tax credit	<p>Foreign income taxes over non-domestic-source income are creditable against CIT, subject to certain limitations.</p>	<p>The amount of the credit cannot exceed the sum of Colombian taxes imposed over the same income</p> <p>A certificate from the tax auditor of the company that distributes the dividends must be available, in which the value of the commercial profit, the value of the taxable profit, the tax</p>

Other Incentives		
		rate, and the tax actually paid by said company can be verified
Other Corporate Income Tax (CIT) exemptions		
<ul style="list-style-type: none"> Income from the sale of electric power generated from wind, biomass, or agricultural waste, for a period of 15 years since 2017, provided the seller issues and negotiates Greenhouse Gas Reduction Certificates in accordance with Kyoto's Protocol and that 50% of the income obtained in the sale of the certificates is invested in social projects benefiting the region in which the generator operates. Income obtained from ecotourism services, for 20 years. This benefit has been repealed as of 1 January 2018 but is still in effect for those that qualified prior to 1 January 2018. The taxpayer will be subject to CIT at a 9% rate during the benefit period. The incomes obtained from the provision of the fluvial transport service. Such exemption will be in force until the year 2036. Income received by start-ups that carry orange economy activities will be exempt for seven years, provided that they employ at least three employees and make investments of at least approximately \$ 50,000 within three years. Companies that carry out investment in the Colombian agricultural sector will have a ten-year exemption, provided they hire at least ten employees and make investments of at least approximately \$ 16,000 in six years. Income related to social interest or priority housing is exempt, provided that the taxpayer gets the corresponding permission from the government and the assets are transferred to a trust with a term of a maximum of ten years, which must carry out the project. The incomes of the companies incorporated in the Departments of La Guajira, Norte de Santander, and Arauca until 2022 will have a five-year exemption, as long as they met the requirements set in the law. The exemption will be of 50% the following five years. 		

TAX STRUCTURE IN COLOMBIA

Taxes/others	Rate	Comments
Corporate Income tax	The nominal rate for FY 2021 is 31%, this rate will decrease to 30% in 2022	National companies (i.e. incorporated in Colombia under Colombian law) are taxed on worldwide income. Foreign non-residents are taxed on their Colombian-source income only. Taxable income is generally defined as the excess of all operating and non-operating revenue over deductible costs and expenses.

Taxes/others	Rate	Comments
		Qualifying businesses located in Free Trade Zones (FTZs) enjoy a reduced rate of 20% (while subject to capital gains tax at 10%, where applicable).
Personal Income Tax	39%	<p>The concept of fiscal residency defines the nature of the source that the individual has to declare as follows:</p> <ul style="list-style-type: none"> • Fiscal residents (nationals or foreign) are taxed on worldwide income and should report equity owned in Colombia and abroad. • Non-residents (nationals or foreign) are taxed only on Colombian-sourced income and should report only the equity owned in Colombia.
Value-added tax	19%	<p>VAT is applicable in the following cases:</p> <ul style="list-style-type: none"> • Sale of movable or immovable assets, except those expressly excluded. • Sale or assignment of rights upon intangible assets, related exclusively with industrial property. • Provision of services in Colombia or from abroad (if the beneficiary is located in Colombia), unless there is an exception available. • Import of assets or goods that have not been expressly excluded. • Operation, circulation, or sale of games of chance or gambling, except the lotteries or chance games operated online.
Withholding tax (WHT) rates (Dividends/Interest/Royalties)	Resident: between 1% and 20% Non-resident: Variable / 20% /20%	The Colombian tax system provides for WHT as a general mechanism of advance tax collection. Under the law, as a general rule, all corporate entities are required to collect or withhold taxes from payments made to third parties. The WHT collection agents must collect the applicable WHT amounts, deposit the withheld amounts with the authority, file monthly WHT returns, and issue WHT certificates to the payees. The payees who are also CIT return filers credit the withheld taxes against the annual CIT liability computed on their returns.
Corporate capital gains tax rate	10%	The current general capital gains tax rate is 10%.

Taxes/others	Rate	Comments
Individual capital gains tax rate (%)	<p>If the assets were held for two or more years, the gain will be taxed as a capital gain at a 10% flat rate.</p> <p>If the assets were held for less than two years, the gain will be taxed as ordinary capital income (31% for FY 2021)</p>	<p>Capital gains are considered extraordinary income received by an individual from the occurrence of an exceptional economic act. The different kinds of capital gains in Colombian tax law are gains derived from:</p> <ul style="list-style-type: none"> • the sale of assets (shares, bonds, etc.) held for at least two years. • the liquidation of a company that has been in existence for at least two years. • inheritances, legacies, or donations • lotteries or gaming (taxed at 20% instead of 10%)

Colombia's active measures to innovate and streamline its Foreign Investment policy has paid off in the last two decades. Colombia, since the adoption of Resolution 51, has witnessed a steady attraction and growth of Foreign Investment. Its FDI regimen based on four fundamental principles of equal treatment of foreign investors, Automatic Approvals, barrier-free entry, prohibition in very few sectors, and remittance policy and other investor friendly policy have greatly helped in overcoming the issues it earlier faced due to its closed and restrictive approach toward foreign investment.

In addition, Pro Colombia, the Investment Promotion Agency with offices globally plays a crucial role in operating as a bridge between investors and the government and providing foreign investors with dedicated aftercare service.

6.4.6 EL SALVADOR



El Salvador – TAX CREDITS & INCENTIVES

The Free Zones Law in El Salvador allows manufacturing companies to operate with total tax exemptions for up to twenty years and with partial exceptions afterwards. The International Services Law gives services companies full tax exemptions indefinitely. El Salvador’s tax incentives are provided mainly for companies operating in free zones or DPA, export companies, companies dedicated to providing services to foreign customers, and those engaged in activities relating to clean sources of energy and tourism. Incentives include an exemption from corporate income tax, VAT and import duty.

Applicable Legislation and Regulations	
International Services Law	<p>Provides tax incentives to companies dedicated to providing services to foreign customers. To enjoy these benefits companies may establish in:</p> <ul style="list-style-type: none"> • Service Parks: Limited areas considered to be outside of the national customs territory, where exporters of services are installed and operate under the benefits of this law. • Service Centers: When a company – in an eligible activity specified in this law – for physical or technical reasons, is unable to operate inside a service park, it can be authorized to operate outside as a Service Center and enjoy all the benefits of this law.
Law of Industrial Free Zones and Commerce	The law offers generous tax incentives to export oriented manufacturing companies located in Free Zones or Warehouses for Inward Processing (DPA, for its acronym in Spanish).
Renewable Energy Incentives Law	Promote investment by taking advantage of hydraulic, geothermal, wind and solar resources as well as biomass and to favor research, exploration and project development activities.

Tourism Law	The goal of this law is to promote national and foreign investment in El Salvador, in the field of Tourism.
-------------	---

Incentive applicable in Service Parks/free zones or outside (operating as Service Centers)		
Type	Incentives	Conditions
<p>Services Industry</p> <p>(BPO/IT)</p> <p><i>International Services Law - D431 with reforms</i></p>	<p>Exemption within free zone</p> <ul style="list-style-type: none"> • Corporate income tax 0% • Municipal taxes 0% • Import duty 0% • Real-estate transfer tax 0% (exemption applicable for service park developers) 	<ul style="list-style-type: none"> • Full exemption from customs duties and other taxes on the import of machinery, equipment, tools, replacement parts, accessories, furniture and office equipment, and other goods required for the execution of the incentivized activity • Total exemption from income tax, exclusively for income deriving from the incentivized activity during the period of operation in the country • Total exemption from municipal taxes on company assets during the period of operation in the country

Incentives applicable in or outside Free Zone					
Manufacturing	Exemption within free zone	<ul style="list-style-type: none"> Income tax exemption according to the following table: 			
	- Corporate income tax 0%	Location of the Free Zone or DPA	Percentage of Exemption	Period of Exemption for Companies in a Free Zone	Period of Exemption for Companies Operating as DPA
	- Municipal taxes 0%	San Salvador	100%	For 15 years	For 10 years
	- Real-estate transfer tax 0%	Metropolitan Area	60%	For the following 10 years	For the following 5 years
	- Import duty 0%		40%	For the following 10 years	For the following 10 years
		Outside San Salvador	100%	For 20 years	For 15 years
		Metropolitan Area	60%	For the following 15 years	For the following 10 years
			40%	For the following 10 years	For the following 10 years
	Shareholders also benefit with full exemption from income tax on the distribution of profits and dividends – originating from the incentivized activity – during the first 12 years				
	<ul style="list-style-type: none"> Exemption from municipal taxes, according to the following table: 				
	Location of the Free Zone or DPA	Percentage of Exemption	Period of Exemption for Companies in a Free Zone	Period of Exemption for Companies Operating as DPA	
		100%	For 15 years	For 10 years	
	San Salvador				
	Metropolitan Area	90%	For the following 10 years	For the following 5 years	
		75%	Hereinafter	Hereinafter	

		<p>Outside San Salvador</p> <p>Metropolitan Area</p>	<p>100%</p> <p>90%</p> <p>75%</p>	<p>For 20 years</p> <p>For the following 15 years</p> <p>Hereinafter</p>	<p>For 15 years</p> <p>For the following 10 years</p> <p>Hereinafter</p> <p>Municipal councils, with the purpose of promoting the development of their municipalities, have the legal power of granting additional benefits to investors.</p> <p>Upon the expiration of the full exemptions period, investors established in free zones can benefit of an additional five years of total exemptions if they have increased their investment (in relation to their initial investment) by 100 % in the last five years.</p> <ul style="list-style-type: none"> • Full exemption from customs duties and other taxes on the import of machinery and equipment used for production • Full exemption from customs duties and other taxes on the import of raw materials and other goods used for production • Full exemption from customs duties and other taxes on lubricants, fuel and other substances used for production • Full exemption from taxes on the transfer of real-estate property, for the acquisition of real estate that will be used in the incentivized activity
--	--	--	-----------------------------------	--	--

Type	Incentives	Conditions
Services Industry (BPO/IT)	<ul style="list-style-type: none"> - Corporate income tax 30% - Municipal taxes: Varies - Real-estate transfer tax 3% - Local value-added tax 13% - Import duty 0-40% (depending on type of product and country) 	<p>VAT is due on:</p> <ul style="list-style-type: none"> - the sale by VAT taxpayers of movable goods located in El Salvador - services specified in the law, provided they are performed in El Salvador - the final importation of personal property - the use or exploitation in El Salvador of services supplied by non-residents (i.e. import of services). <p>To apply the Municipal taxes, the Municipal Administrations have the authority to levy the taxes they deem convenient for meeting their objectives, in general taking into consideration the following items:</p> <ul style="list-style-type: none"> - Nature of the economic activity performed - Amount of the assets - Profits earned - Any other manifestation of the economic capacity of the taxpayers.
Manufacturing Industrial and Commercial Free Zones Law Decree No 405	<ul style="list-style-type: none"> - Corporate income tax 30% - Municipal taxes: Varies - Real-estate transfer tax 3% - Local value-added tax 13% - Import duty 0-40% (depending on type of product and country) 	<p>VAT is due on:</p> <ul style="list-style-type: none"> - the sale by VAT taxpayers of movable goods located in El Salvador - services specified in the law, provided they are performed in El Salvador - the final importation of personal property - the use or exploitation in El Salvador of services supplied by non-residents (i.e. import of

		<p>services).</p> <p>To apply the Municipal taxes, the Municipal Administrations have the authority to levy the taxes they deem convenient for meeting their objectives, in general taking into consideration the following items:</p> <ul style="list-style-type: none"> - Nature of the economic activity performed, Amount of the assets - Profits earned, Any other manifestation of the economic capacity of the taxpayers.
--	--	--

Other Incentives		
Type	Incentive	Condition
Promotion of Renewable Energies in power generation	This system seeks to encourage investments through harnessing hydraulic, geothermal, wind, solar, marine, biogas and biomass resources, and any other source identified as renewable. It provides income tax exemption and import duties exemption on goods for investment and pre-investment in the construction and expansion of power generation plants.	<p>Income tax exemption for:</p> <ul style="list-style-type: none"> - A period of 5 years for projects greater than 10 megawatts - 10 years for projects of 10 or less megawatts <p>import duties exemption during the first 10 years</p> <p>Total tax exemption on income directly from the Certificates for Reduced Emissions.</p> <p>Geothermal plants may deduct from income tax (for up to 10 years), all expenses or costs on associated with the reinjection process of the total geothermic resource</p>
Tourism	This system establishes that a tourism company may qualify to be declared a tourism project of national interest and opt for benefits such as: tax exemption on the transfer of real estate for the project, customs duties exemption on the	<ul style="list-style-type: none"> - A minimum investment of \$25,000

Other Incentives		
	importation of goods and construction materials for project buildings, total income tax exemption for a period of 10 years and partial exemption on municipal taxes (50%) for a period of 5 years.	

TAX STRUCTURE IN EL SALVADOR

Taxes/others	Statutory	Comments
Corporate Income tax	30%	<p>The CIT rate is 30%, and this rate is applicable on the total amount of the company's revenues. There is a reduced CIT rate of 25% for companies that obtain taxable income equal to or less than USD 150,000 in the fiscal year.</p> <p>CIT is based on the principle of territoriality, and, by general rule, taxes are paid on goods located, activities realized, and capital invested in El Salvador as well as on services rendered or utilized in the country. Nevertheless, there is a special rule regarding securities and financial instruments, since such income is considered to be obtained in El Salvador if the issuing entity is domiciled in El Salvador</p>
Personal Income Tax	30%	El Salvador taxes its citizens, residents, and non-residents on their income earned in the country and on other Salvadoran-source income. Non-domiciled individuals shall compute their income taxes at 30%.
Value-added tax	13%	VAT (i.e. Impuesto al Valor Agregado or IVA) is levied at a rate of 13% over the taxable amount. As a general rule, the taxable amount is the price or remuneration agreed upon by the parties. For imports, the taxable amount is the customs value.
Withholding tax (WHT) rates (Dividends/Interest/Royalties)	Resident: 5% / 10% / 5% or 10%; Non-resident: 5% / 10% or 20% / 20%;	Payments or amounts credited to non-residents arising from income obtained in El Salvador are subject to a 20% WHT. Income earned in El Salvador covers income from assets located in the country, from any activities performed or capital invested in the land, and from services

Taxes/others	Statutory	Comments
	Non-resident in a tax haven: 25%/ 10% or 25% / 25%	rendered or used in the national territory, regardless of whether they are provided or paid outside the country.
Corporate capital gains tax rate	10 or 30%	Capital gains are taxed at a flat rate of 10% of net profits, except when gains are realized within 12 months following the purchase date, in which case they are taxed as ordinary income. Capital gains for securities are also subject to capitals gains tax; however, the 12-months rule described above does not apply for securities. According to the Bitcoin Law, exchanges in bitcoins will not be subject to capital gains tax or any legal tender. This bitcoin law will be in effect as of September 7, 2020.

El Salvador’s only tax treaty in force is with Spain. The treaty is based on the Organisation for Economic Co-operation and Development model, with some minor differences. The statutory taxes at 30% are quite high when compared to DR, Guatemala and Honduras.

El Salvador’s Free Zones offers an attractive incentive scheme for investors. The country tax-free operations for 10-15 years is seen very positively and this should be promoted to new investors and the infrastructure across free zones should be welcoming for new businesses to set up operations.

The Free Zones in El Salvador, allow manufacturing companies to operate at zero tax for ten years and gives services companies fifteen years of nil tax. El Salvador’s tax incentives are provided mainly for companies operating in free zones, export companies, and those engaged in activities relating to clean sources of energy. Incentives include an exemption from corporate income tax, VAT and import duty.

Applicable Legislation and Regulations	
International Services Law	Provides tax incentives to companies dedicated to providing services to foreign customers. To enjoy these benefits companies may establish in: <ul style="list-style-type: none"> • Service Parks: Limited areas considered to be outside of the national customs territory, where exporters of services are installed and operate under the benefits of this law.

	<ul style="list-style-type: none"> Service Centers: When a company – in an eligible activity specified in this law – for physical or technical reasons, is unable to operate inside a service park, it can be authorized to operate outside as a Service Center and enjoy all the benefits of this law.
Law of Industrial Free Zones and Commerce	The law offers generous tax incentives to export oriented manufacturing companies located in Free Zones or Warehouses for Inward Processing (DPA, for its acronym in Spanish).
Renewable Energy Incentives Law	Promote investment by taking advantage of hydraulic, geothermal, wind and solar resources as well as biomass and to favor research, exploration and project development activities.
Tourism Law	The goal of this law is to promote national and foreign investment in El Salvador, in the field of Tourism.

6.4.7 Comparative Tax Assessment

COMPARATIVE TAX ASSESSMENT

Corporate taxes	30%	31%	30%	27%	25%	25%
Dividend Withholding Taxes	5%	10%	15%	10%	5%	10%
No of days to set up a company	16.5	11	23	16.5	15	13
Employer Social Contributions	7.50%	21%	26.33%	15.21%	12.67%	10%
Double Tax Treaties – SV	Spain					
Double Tax Treaties – Colombia	Spain, Chile, Switzerland, Mexico, Canada, Portugal, India, Czech Republic, Portugal, South Korea, and the countries/jurisdictions of the Andean community (Peru, Bolivia, and Ecuador). Colombia is negotiating treaties with, France, United Kingdom, Italy and Japan, among others.					

Double Tax Treaties – Costa Rica	Germany, Mexico and Spain
Double Tax Treaties – Dominican Republic	Canada and Spain
Double Tax Treaties – Guatemala	Guatemala signed a double tax treaty with Mexico in March 2015, which is not yet in effect. The treaty will enter into effect after both countries complete their respective legislative approval processes.
Double Tax Treaties – Honduras	Honduras has not entered into any income tax treaties with other countries.

6.4.8 Trade Agreements

	SV	Colombia	CR	DR	Guatemala	Honduras
Participating Countries	<ul style="list-style-type: none"> • United States • European Union • Chile • Cuba • Dominican Republic • Ecuador • Northern Triangle (El Salvador, Guatemala, Honduras) • Panama • Taiwan 	<ul style="list-style-type: none"> • Canada • Chile • Northern Triangle (El Salvador, Guatemala, Honduras) • Costa Rica • EFTA (Iceland, Liechtenstein, Norway, and Switzerland) • EU • Korea, Republic of 	<ul style="list-style-type: none"> • Canada • Chile • China • Colombia • EFTA (Iceland, Liechtenstein, Norway, and Switzerland) • Peru • Singapore 	<ul style="list-style-type: none"> • Central America (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua) • Panama • United States 	<ul style="list-style-type: none"> • Chile • Colombia • Panama • Taiwan 	<ul style="list-style-type: none"> • Canada • Chile • Colombia • Panama • Peru • Taiwan

		<ul style="list-style-type: none"> • Mexico • Peru • United Kingdom • United States 				
--	--	---	--	--	--	--

Overview of established free trade agreements by country:

	SV	Colombia	CR	DR	Guatemala	Honduras
Teams reviewing incentive application	<ul style="list-style-type: none"> - PROESA - Ministry of Finance 	<ul style="list-style-type: none"> - The selected FZ - Local Chamber of Commerce - Colombian Tax and Customs Authorities - Colombian Central Bank 	<ul style="list-style-type: none"> - The selected FZ - Ministry of Foreign Trade - Ministry of Finance - Procomer - President of the Republic 	<ul style="list-style-type: none"> - National Council of FZ - Department of Free Zones and Parks of the Tax Authorities (Direction General de Impuestos Internos) - Local Chamber of Commerce 	<ul style="list-style-type: none"> - Mercantile Registry - Guatemalan Social Security Institute - Ministry of Labor - Superintendence of Tax Administration 	<ul style="list-style-type: none"> - Municipality where the FZ is located - Ministry of Finance's Revenues Administration Service - Social Security Institute
<p>- In all cases, the national IPA have confirmed that they will coordinate the incentives process and act as the single window</p>						
Compliance related to incentives	NA	<ul style="list-style-type: none"> - Proof of investments/imports/employment carried over 	<ul style="list-style-type: none"> - Proof of investments/imports/employment carried over - To be legally incorporated prior the application - To be registered with the social security (Caja Costarricense del Seguro Social, 	<ul style="list-style-type: none"> - Proof of investments/imports/employment carried over 	NA	NA

			CCSS) system and with the Tax Authority (Dirección General de Tributación) at the start of operations			
Application Timeline	NA	- 3-6 weeks after submitting documents	- 4-9 weeks after submitting documents	- 10-15 weeks after submitting documents	NA	NA

6.4.9 Incentives Processing

Comparison of IT and Manufacturing Sector in a Free Zone

	SV	Colombia	CR	DR	Guatemala	Honduras
Software Development/Business Processing Outsourcing in FZ						
Tax rate	NIL -15 years	20%	NIL - 8 years 15% - Next 4 years	Nil – 15 years	NIL - 10 years 25% post this period	NIL
No of years with zero tax	Indefinitely	NA	8 years	15 years	10 years	20 years
VAT	100% exemption	100% exemption	100% exemption	100% exemption	100% exemption	100% exemption
Customs duty	100% exemption	100% exemption	100% exemption	100% exemption	100% exemption	100% exemption
Domestic market sales allowed (y/n)	Yes: International distribution (50%), international logistics operations (50%), international call center	YES	YES	YES	YES	YES

	SV	Colombia	CR	DR	Guatemala	Honduras
	(40%), information technologies (30%), research and development (30%), international financial services(40%).					
Grade "A" real estate Sq Mt rate in US\$	\$23-26	\$12-16	\$16-24	\$15-30	\$10-16	\$12-18
Green energy incentives	YES	YES	NA	YES	NA	NA
IPA annual fee	NIL	NIL	YES	NIL	NIL	NIL
Min job creation	10 (If located in a service park) 20 (If authorized as service center)	NA	No	50 in three years	NIL	NA
Min investment	US\$150,000 (If located in a service park) US\$250,000 (If authorized as service center)	NA	\$150,000 in fixed assets	NIL	NIL	NA
Innovation incentives	NA	YES	NA	YES	NA	NA

	SV	Colombia	CR	DR	Guatemala	Honduras
Manufacturing in FZ						
Tax rate			None - 8 years		None - 10 years	

	SV	Colombia	CR	DR	Guatemala	Honduras
	None	20%	15% - Next 4 years (Large projects)	None – 15 years	25% post this period	None
No of years with NIL tax	10 or 15 years	NA	8 years	15 years	10 years	20 years
VAT	NA	100% exemption	100% exemption	100% exemption	100% exemption	100% exemption
Customs duty	100% exemption	100% exemption	100% exemption	100% exemption	100% exemption	100% exemption
Domestic market sales allowed (y/n)	NO	YES	YES	YES	YES	Only up to 5% of production
Green incentives	YES	YES	NA	YES	NA	NA
IPA annual fee	None	None	YES	None	None	None
Min export criteria	None	NA	No	None	Certain zones require 80% production to be exported	NA
Min job creation	Inside Free zones: Operate with a number equal to or greater than 50 permanent jobs, from the first year of operation. Outside Free zones: 75 permanent jobs	NA	100 jobs in 3 years	50 jobs in three years	None	NA
Min investment	Inside free zones: US \$ 500,000.00 in fixed	NA		None	None	NA

	SV	Colombia	CR	DR	Guatemala	Honduras
	assets, achievable in the first two years of operations Outside free zones: US\$800,000		\$10 million in fixed assets			
Innovation incentives	NA	YES	NA	YES	NA	NA

Comparing Incentives between El Salvador and the 5 Selected Countries

	SV	Colombia	CR	DR	Guatemala	Honduras
Free zone Incentive	Yes - International Services Law - Law of Industrial Free Zones and Commerce	Yes - Special permanent free-trade zone - Permanent free-trade zone	Yes - Free Zone Regime Law, No. 7210 from 1990	Yes - Industrial operations - FTZ Law 8-90	Yes - Decree Number 65-89 - Decree 30-2008 - Decree Number 29-89 - Decree Number 22-73	Yes - Zonas Libre Comercio (ZOLI Regime) - Zona Industrial de Procesamiento (ZIP Regime)
Import Tariff Incentive	No	Yes - Decree 272/2018	Yes - Inward Processing Regime - Drawback Regime	No	No	Yes - Temporary import regime

Tourism Incentive	Yes - Tourism Law	Yes - General Tourism Regime - Law 2068 of 2020	No	Yes - Tourism Incentive Act 158-01	No	Yes - Decree 68-2017
Renewable Energy Incentive	Yes - Renewable Energy Incentives Law	Yes - Decree 829 of 10 June 2020	No	Yes - Alternative energy incentives - Law 57-07	No	Yes - Decreto N° 70/07
Digital Nomads Incentive	No	No	Yes - Gazette -Law Number 10008	No	No	No
Least developed region incentive	No	Yes - ZOMAC - The Decree 1650	Yes (When outside the GMA)	No	No	No
Innovation/ R&D incentive	No	Yes - Innovation, development, and investigation regime	No	Yes - Industrial renovation and modernization incentives - Law 392-07	No	No
Employment incentive	No	Yes - Trainees' wages and payroll contributions special deduction	No	No	No	No

* Standalone legislation which relates to import tariff incentives

Comparing Incentives under Free Zone Regimes between El Salvador and the 5 Selected Countries

	SV	Colombia	CR	DR	Guatemala	Honduras
Corporate Income tax (CIT) exemption	100% exemption For first 10-15 years	No exemption Flat CIT of 20%	100% exemption For first 6-12 years	100% exemption For renewable 15-year periods	100% exemption For first 10 years	100% exemption Indefinitely (ZOLI) For first 20 years (ZIP)
VAT exemption	NA	100% exemption Import of raw materials free of VAT for manufacturing firms	100% exemption	No exemption	100% exemption	No exemption
Tariff exemption	100% exemption	100% exemption Import of raw materials free of tariff for manufacturing firms	100% exemption For manufacturing firms	NA	100% exemption	100% exemption

6.4.10 Summary of Comparative Assessment

The laws and regulations of El Salvador are relatively transparent and generally foster competition. Legal, regulatory, and accounting systems are transparent and consistent with international norms. However, the discretionary application of rules can complicate routine transactions, such as customs clearances and permitting applications. Regulatory agencies are often understaffed and inexperienced in dealing with complex issues. In addition to applicable national laws and regulations, localities may impose permitting requirements on investors.

Regarding overall incentives offered, El Salvador is doing better than Guatemala and Honduras and is on par with the Dominican Republic but falls short when compared to Colombia and Costa Rica. This conclusion is based on the analysis of El Salvador's four principal laws that promote and protect investments: the Free Trade Zones Law; the International Services Law; the Tourism Law and the Renewable Energy Incentives Law.

All 6 countries under examination have a type of Free Zone regime. In the case of El Salvador, the two principal free zones regime are the Free Trade Zones Law and the International Services Law. These regimes offer 100% CIT and import tariff exemption for firms in a FZ for first 10-15 years depending on if a firm is located (1) inside/outside metropolitan area and (2) is in the manufacturing or service industry. Countries like El Salvador which offer 100% CIT exemption for a given period of time are leading in the FZ regime unlike Colombia which maintains a flat CIT of 20% for firms in an FZ.

Regarding tourism incentives, 4 of the 6 countries have legislation in place to promote tourism investment. The two countries that do not have a tourism incentive legislation in place which promotes tourism investment are Costa Rica and Guatemala. Guatemala's fiscal incentives for investment largely target the promotion of exports. Incentives also exist for the development of renewable energy. A tourism promotion law, which contained several fiscal incentives, was repealed in 1997. A new law has been under discussion since 2005 but not yet adopted in Guatemala.

For El Salvador, this competitive legislation is the Tourism Law which offers companies that invest over \$25,000 the following 3 benefits:

- total income tax exemption for a period of 10 years and partial exemption on municipal taxes (50%) for a period of 5 years;
- customs duties exemption on the importation of goods and construction materials for project buildings; and
- tax exemption on the transfer of real estate for the project

The above three benefits are as competitive as the benefits offered by Colombia, the Dominican Republic and Honduras. El Salvador's tourism benefits are similar to the ones offered by its neighbor Honduras which makes it competitive:

- Exemption from income tax, net asset tax and the solidarity contribution and related rights for 15 years; and
- Exemption of custom import duties, selective consumption and tariffs tax and other custom duties for the touristic projects up to 10 years.

Regarding renewable energy incentives, 5 of the 6 countries have legislation in place to promote renewable energy investment. The one country that does not have such a piece of comparable legislation in place is Costa Rica. Costa Rica offers the Public Transportation Incentives and Promotion Act (No. 9518) which incentivizes the use of electric vehicles, but it is not comparable to what is being examined. For El Salvador, the nation offers the following benefits through its Renewable Energy Incentives Law:

- Income tax exemption for: (1) A period of 5 years for projects greater than 10 megawatts and (2) 10 years for projects of 10 or less megawatts.

This is comparable to Guatemala which offers companies that develop energy projects with renewable energy sources the following benefits:

- Exemption from taxes, VAT and import duties on imports of machinery, equipment, components and accessories necessary for energy production during a construction period not exceeding 10 years; and
- 10-year exemption from the corporate income tax.

Some of the key incentives that El Salvador is missing in our opinion include:

- An Innovation/R&D incentive. SV policy makers should review the Dominican Republic's industrial renovation and modernization law or Colombia's innovation, development, and investigation regime; and
- A digital nomad incentive law. There has been an increase in the numbers of workers operating from home as a result of the COVID-19 pandemic and SV policy makers should therefore examine Costa Rica's recently implemented digital nomad law.

If El Salvador can have these incentives programs added, the country will be very competitive with its neighbors in the information technology and manufacturing sectors. This also needs to be marketed well and have the attention of international investors. From our analysis of the other countries in this study, we can conclude that, a competitive, stable, less red tape, single window clearance and transparent business environment is worth much more than several incentives that evaporates over time if other policies are not in place, thus El Salvador should look at the overall picture and the focus should be on the priority items in the long term.

6.4.11 Summary of Incentives – El Salvador

Since President Nayib Bukele took office on June 1, 2019, his administration has sought to attract foreign investment and has taken steps to reduce cumbersome bureaucracy and improve security conditions. The COVID-19 pandemic complicated implementation of reforms and dampened investment.

El Salvador has various laws that promote and protect investments, as well as providing benefits to local and foreign investors. These include: the Free Trade Zones Law; the International Services Law; the Tourism Law and the Renewable Energy Incentives Law.

There are 17 free trade zones in El Salvador. They host 202 companies in sectors including textiles, distribution, call centers, business process outsourcing, agribusiness, agriculture, electronics, and metallurgy. Owned primarily by Salvadoran, U.S., Taiwanese, and Korean investors, free trade zone firms employ more than 73,000 people. Companies in the free trade zones are also allowed to sell goods or services in the Salvadoran market if they pay applicable taxes on the proportion sold locally. Additional rules apply to textile and apparel products.

Qualifying firms located in the free trade zones and bonded areas may enjoy the following benefits:

- Exemption from all duties and taxes on imports of raw materials and the machinery and equipment needed to produce for export;
- Exemption from taxes for fuels and lubricants used for producing exports if they not domestically produced;

- Exemption from income tax, municipal taxes on company assets and property for either 15 years (if the company is located in the metropolitan area of San Salvador) or 20 years (if the company is located outside of the metropolitan area of San Salvador);
- Exemption from taxes on certain real estate transfers, e.g., the acquisition of goods to be employed in the authorized activity; and
- Exemption from value-added tax on goods and services sourced locally to be employed in the authorized activity, including goods that are not incorporated into the final product, security and transportation services, as well as construction services and materials.

The International Services Law, approved in 2007, established service parks and centers with incentives similar to those received by El Salvador's free trade zones. Services park developers are exempted from income tax for 15 years, municipal taxes for ten years, and real estate transfer taxes. Services park administrators are exempted from income tax for 15 years and municipal taxes for ten years.

Firms located in the service parks/service centers may receive the following permanent incentives:

- Tariff exemption for the import of capital goods, machinery, equipment, tools, supplies, accessories, furniture, and other goods needed for the development of the service activities;
- Full exemption from income tax and municipal taxes on company assets.

Service firms operating under the existing Free Trade Zone Law are also eligible for the incentives, though firms providing services to the Salvadoran market cannot receive the incentives. Eligible services include: international distribution, logistical international operations, call centers, information technology, research and development, marine vessels repair and maintenance, aircraft repair and maintenance, entrepreneurial processes (e.g., business process outsourcing), hospital-medical services, international financial services, container repair and maintenance, technology equipment repair, elderly and convalescent care, telemedicine, cinematography postproduction services, including subtitling and translation, and specialized services for aircraft (e.g., supply of beverages and prepared food, laundry services and management of inventory).

The Tourism Law establishes tax incentives for those who invest a minimum of \$25,000 in tourism-related projects in El Salvador, including: value-added tax exemption for the acquisition of real estate; import tariffs waiver for construction materials, goods, equipment (subject to limitation); and, a ten-year income tax waiver. The investor also benefits from a five-year exemption from land acquisition taxes and a 50 percent reduction of municipal taxes. To take advantage of these incentives, the enterprise must contribute five percent of its profits during the exemption period to a government-administered Tourism Promotion Fund.

The Renewable Energy Incentives Law promotes investment projects that use renewable energy sources. In 2015, the Legislative Assembly approved amendments to encourage the use of renewable energy sources and reduce dependence on fossil fuels. These reforms extended the incentives to power generation using renewable energy sources, such as hydro, geothermal, wind, solar, marine, biogas and biomass. The incentives include a 10-year exemption from customs duties on the importation of machinery, equipment, materials, and supplies used for the construction and expansion of substations, transmission or sub-transmission lines. Revenues directly derived from renewable power generation enjoy full income tax exemptions for a period of five years in case of projects above 10 MW and 10 years for smaller projects. The Law also provides a tax exemption on income derived directly from the sale of certified emission reductions under the Mechanism for Clean Development of the Kyoto Protocol, or carbon markets.

6.5 Strategic Evaluation El Salvador

SWOT analysis of El Salvador’s incentives vs. five selected countries

<p style="text-align: center;">STRENGTHS</p> <ul style="list-style-type: none"> • 100% CIT exemption for firms in FZ for first 10-15 years depending on if a firm is located (1) inside/outside metropolitan area and (2) is in the manufacturing or service industry; • Competitive tourism incentive law; • Competitive renewable energy incentive; • According to the Bitcoin Law, exchanges in bitcoins will not be subject to capital gains tax or any legal tender; • The 2 main FZ in SV, Zona Franca Internacional and Zona Franca San Marcos, are both located within 2 hour driving distance from the deep-water port of Puerto de Acajutla which allows for quick imports/exports to the western coasts of North and South America; • INSAFORP capabilities and funds to provide specialized training; • PROESA guides investors through all business-related issues. 	<p style="text-align: center;">WEAKNESSES</p> <ul style="list-style-type: none"> • El Salvador lacks an Innovation/R&D incentive. SV policy makers can draw on Colombia’s Innovation, development, and investigation regime for inspiration; • El Salvador lacks a digital nomad incentive law. SV policy makers can examine in Costa Rica’s digital nomad law; • Potential lack of budget at PROESA to conduct investment attraction activities; • Lack of English legal documents as well as economic statistics relevant for site selection purposes on the PROESA and InvestElSalvador websites; • Educational programs don’t address current business needs. SV’s pace of educational reform to meet business needs & language skills is slow and SV is being outcompeted by Colombia and Costa Rica on this front.
<p style="text-align: center;">OPPORTUNITIES</p> <ul style="list-style-type: none"> • With SV’s Bitcoin Law, SV has the opportunity to attract companies focused on Blockchain systems development or using Bitcoin as their principal currency; • With SV’s tourism incentive law, SV has the opportunity to attract companies in the tourism industry; • SV has the opportunity to introduce a Digital Nomads Law like Costa Rica; • Rising trend of MNCs relocating to LATAM in sectors such as ICT and manufacturing. 	<p style="text-align: center;">THREATS</p> <ul style="list-style-type: none"> • Costa Rica taking away digital nomads from SV due to their recently passed digital nomads attraction law; • Colombia may be taking away innovative companies from SV due to their competitive Innovation/R&D incentive regime; • Colombia has a competitive investment agency with offices throughout the world and sufficient funding for FDI promotion activities thereby potentially taking away investment from SV; • Investor perception of El Salvador/Northern Triangle as a dangerous/risky place for their investments.

6.6 El Salvador Strategic Proposal for Fiscal, Financial and Regulatory Incentives Plan:

In this regard, we provide below a list of possible improvements to the overall FDI attraction ecosystem, including Basic Incentives and Sector Particulars.

✓ FISCAL/FINANCIAL:

- a. Approve the FZ law reforms which were presented to Congress on October 27, which include increased incentives for Free Zone developers and a relaxation of bureaucratic requirements, among other things.
- b. If the reform does not include them already, they might consider the following amendments for a second round:
 - i. Amend green area requirement of 30% of the total area, including ecological green area, sports areas, vehicle parking areas, etc., The 30% requirement is considered very high and costly, which affects competitiveness.
 - ii. Provide additional benefits if the materials used in the construction are environmentally friendly, green-renewable and/or recycled.
 - iii. Provide additional benefits for LEED certification (Leadership in Energy and Environmental Design).
 - iv. Fast-track approval of FZ and other FDI incentives/benefits, in days not weeks or months.
 - v. Enable new areas, such as, creating a satellite facility, a secondary facility and/or warehouse, similar to Costa Rica's satellite plants.
 - vi. Establish an agreement with the Directorate-General for Customs, to issue authorizations in a time no longer than one week, instead of 20 days.
- c. Eliminate the prohibition of sugar and alcohol to be used as inputs in the Free Zones, which should help health services, pharmaceutical and cosmetics companies. Other countries do not have such a limitation, alcohol for example, is not used just for direct production processes (in chemical and pharmaceutical production), but for cleaning parts, furniture, work areas, etc. (Please see the additional note on sugar & alcohol for your ready reference).
- d. Extend Free Zone benefits to "significant" or "strategic" local suppliers, which will result in creating an ecosystem of backward and forward linkages. In Costa Rica for example, there are 11,000 companies providing services and products to FZ/FDI companies for a total of about \$ 2.5 billion in 2021. As indirect exporters they receive incentives and tax breaks as per the FZ law.
- e. Negotiate clean electricity contracts at lower and more stable prices for FZ/FDI companies.
- f. Provide start-up incentives for new employees, this can be done through INSAFORP which receives private sector funds.
- g. Generate a fund to finance technical training programs, education, certification, and accreditation in new sectors, and new high value-added projects of already established companies. When existing academic centers (technical and universities) and INSAFORP, do not have the capacity to provide the training and education services required to meet the current and potential labor demand of the free trade zone regime, the Government may make public-private alliances that allow it to design and execute training programs, education, training, certification, and accreditation to equip the workforce with better qualifications, skills, and abilities. Subsidies during the training period prior to recruitment in full (partial payment to 1st job or to workers over 40 years).
- h. Create incentives to attract highly trained personnel, through personal income tax exemption. In exchange for this benefit, these professionals must make a mandatory contribution to the training of human resources in each of their areas of expertise in new sector and new technologies.

- i. HONDURAS CASE. Permanent employment subsidy program. (Government subsidize 50% of the minimum wage for each worker hired permanently during the first 3 months).
- ✓ **REGULATORY:**
 - a. Relax the regulations related to work shift, **part**-time, and labor regs flexibility, work from home, etc.
 - b. Establish a predictable methodology for changes in minimum wages.
 - c. Streamline Customs procedures.
 - d. Facilitate access to domestic market as an additional incentive. Even so it is a small market, access may improve attractiveness of ES somewhat.
 - e. Include Pharmaceutical, Biopharmaceutical and Medical Technologies as strategic industrial activities.
 - ✓ **BUSINESS CLIMATE:**
 - a. Develop and ensure that there are clear “rules of the game” – to prevent turbulence and volatility of policy decisions – Legal security.
 - b. Provide expedited English language training through new countrywide initiatives
 - c. Recruit and support the development of a software bootcamp to increase programming skills required by industry
 - d. Generate training programs addressing specific needs of FZ/FDI companies, in cooperation with universities and technical schools.
 - e. Address security concerns, particularly for 3rd shift employees.
 - i. Improve public transportation, quantity and hours.
 - ii. Highway signaling.
 - iii. Pedestrian crossings with adequate lighting.
 - f. Set up day care centers – in cooperation with FZ Developers.
 - g. Strengthen intellectual property legislation, particularly in medical devices and health sciences.
 - h. Simplify bureaucratic requirements and eliminate obstacles and constraints that hinder growth potential.
 - ✓ **PROMOTION:**
 - a. Strengthen the FDI promotion effort:
 - i. Provide greater support to existing champions within the PROESA team.
 - ii. Prevent the high rotation of key employees.
 - iii. Allocate more resources, funds and personnel.
 - iv. Build and fund global FDI attraction program
 - b. Enhance synergies:
 - i. PROESA and the Secretariat of Commerce and Investments need to work together for a common goal.
 - ii. Develop formal alliances with Free Zone Developers, Chambers of Commerce and other stakeholders to create a promotion ecosystem.
 - iii. Create programs for recruiting and training personnel together with Free Zone Developers.

6.7 Approval and Governance Model

Approval and governance models for incentives vary by location, and types of incentive programs a jurisdiction offers in support of attracting foreign direct investment. Often, countries have a mix of incentives and administrators due to the timing and legacy of older programs that have been in place for many years. This

approach of adding on different incentives with different administrators is not the best or most efficient model for incentives approval and governance.

Many governments are seeking to establish one-stop-shops for incentive approval and governance. In many cases these “single-windows” can be established on top of the existing administrators by developing an incentives framework that allows for a single system that touches all the legacy players. As part of this arrangement, a memorandum of understanding is established to bring all the parties together under one umbrella, and service level agreements are put in place to ensure that approvals and administration are completed in a timely manner

When considering the development of an incentives system, there are several components that should be considered in the overall system

Component	Description
Incentive Design	<p>Incentives should be designed to:</p> <ul style="list-style-type: none"> • Attract/grow a specific industry • Offset costs or deficits • Implement a strategic policy initiative • Increase FDI attraction competitiveness <p>All incentive programs must comply with all national laws. In some cases, incentives must comply with regional or global organizations such as the OECD and the European Union.</p> <p>Investment promotion agencies (IPA) typically lead this initiative in partnership with key government agencies.</p>
Application Process	<p>The application process should be online through a secure system (one-stop-shop) where all information regardless of incentive or data-point is entered and the interface provides clear instructions, timelines, application support, and an updated status of the application across the various steps.</p>
Approval	<p>Incentive approvals are completed by an incentive administrator, or in some cases by a Board or Public Hearing. Approved incentives should be issued through a contract/agreement with clear terms and obligations of both parties. Clear termination or claw-back clauses should be included should the investor not fulfill its obligations.</p>
Administration/Compliance	<p>Incentive administration and compliance serves to ensure that the investor fulfills the obligations of the incentive agreement in exchange for the benefits received. An incentives administrator (in many cases the IPA) is responsible for collecting key data from the investor on a periodic basis (semi-annual or annual) related to the performance measures outlined in the incentive agreement or contract.</p>

In most cases, incentives are static, meaning that they are clearly defined by the incentive legislation in defining the terms of the program. In some cases, incentives can be discretionary and award decisions are taken by a particular body. Discretionary incentives are very difficult to administrate and are dependent on the individuals involved in the transaction. Occasionally there are opportunities for very strategic FDI projects that are in a highly competitive situation with other countries to have based incentives supplemented with some discretionary incentives. This is something that is normally offered and approved by the either the executive branch of the government or the ministry and not the investment promotion agency.

In summary, incentives should support and reflect the strategic objectives of the country. The best governance model is to have a one-stop-shop/online system for all incentive programs with as much transparency as possible. Incentive programs must have clear deliverables for both parties and be clearly stated in an incentive agreement that is monitored for compliance on an annual basis at the minimum.

6.8 Summary/Conclusions

This section provides a recap of the key findings and conclusions of this report and highlights.

Investor Requirements

Incentives for FDI generally apply to all sectors. However, some countries have specific incentives according to the following criteria: a) sectors considered strategic; b) project size (monetary and/or employment wise), and c) investment in less developed regions within the country. These incentives can either be sector, activity or region specific.

Most countries offer a mix of key factors or conditions such as the following to attract investment:

- Government stability;
- Communications/connectivity;
- Land and port accessibility;
- Cost of energy;
- Labor availability and cost;
- Preferential market access; and
- Certainty in business climate.

Labor issues are critical in the value chain:

- Labor costs are critical for labor intensive operations;
- Labor availability, skills and trainability are important considerations; and
- Labor regulations such as flexible labor contracts, which may include part time work, hourly work, seasonal work and the possibility of increasing and decreasing labor pool based on orders the company receives.

Energy issues are critical in the value chain:

- Electricity cost and reliability are very important. Absence of blackouts and ups and downs in electric tension; and
- Access and easiness in obtaining electricity.

Water supply and cost very important elements, particularly in the textile segment.

Preferential market access to main markets like the US:

Customs:

- Expedited exports of final products, considering speed to market strategies;
- Preferred regulations for imports of raw materials, machinery and equipment; and
- Zero tariffs for imports of raw materials, inputs and machinery and equipment.

Market Connectivity:

- Port infrastructure and efficiency;
- Sea transportation to global markets: frequencies, destinations and cost;
- Land transportation, cost and quality;

- Airport infrastructure, air cargo costs, frequencies and destinations. Commercial flights availability and frequencies; and
- Time to market from the production facility to target market.

Production infrastructure:

- Quality, availability, cost, proximity to labor pool.

Communications, internet, data transmission.

Other aspects that are also considered by companies:

- Special Incentive Packages;
- Tax benefits;
- Labor training programs;
- Training grants;
- Other grants: Employment, R&D, etc;
- Access to public procurement bidding processes (medications, medical equipment, and supplies); and
- Improved business climate

Comparative Assessment

The laws and regulations of El Salvador are relatively transparent and generally foster competition. Legal, regulatory, and accounting systems are transparent and consistent with international norms. However, the discretionary application of rules can complicate routine transactions, such as customs clearances and permitting applications. Regulatory agencies are often understaffed and inexperienced in dealing with complex issues. In addition to applicable national laws and regulations, localities may impose permitting requirements on investors.

Regarding overall incentives offered, El Salvador is doing better than Guatemala and Honduras and is on par with the Dominican Republic, but falls short when compared to Colombia and Costa Rica. This conclusion is based on the analysis of El Salvador's four principal laws that promote and protect investments: the Free Trade Zones Law; the International Services Law; the Tourism Law and the Renewable Energy Incentives Law.

Some of the key incentives that El Salvador is missing in our opinion include:

- An Innovation/R&D incentive. SV policy makers should review the Dominican Republic's industrial renovation and modernization law or Colombia's innovation, development, and investigation regime; and
- A digital nomad incentive law. There has been an increase in the number of workers operating from home as a result of the COVID-19 pandemic and SV policy makers should therefore examine Costa Rica's recently implemented digital nomad law.

If El Salvador can have these incentives programs added, the country will be very competitive with its neighbors in the information technology and manufacturing sectors. This also needs to be marketed well and have the attention of international investors. From our analysis of the other countries in this study, we can conclude that, a competitive, stable, less red tape, single window clearance and transparent business environment is worth much more than several incentives that evaporates over time if other policies are not in place, thus El Salvador should look at the overall picture and the focus should be on the priority items in the long term.

We believe El Salvador fares well in most scores; however, other incentives could be offered in order to help improve the country's competitiveness:

We recommend that El Salvador establish new and/or enhance and strengthen existing one-stop-shops. In many cases “single-windows” can be established on top of existing administrators by developing incentives frameworks that allow for a single system, that touches all the legacy players. As part of this arrangement, memoranda of understanding should be established to bring all the parties together under one umbrella, and service level agreements need to be put in place to ensure that approvals and administration are completed in a timely manner.

We further recommend minimizing as much as possible any “discretionary” incentives, which require the involvement of particular individuals in the approval and/or governance of the transaction.

In summary, incentives should support and reflect the strategic objectives of the country. The best governance model is to have a one-stop-shop/online system for all incentive programs with as much transparency as possible. Incentive programs must have clear deliverables for both parties and be clearly stated in an incentive agreement that is monitored for compliance on an annual basis at the minimum.

Our general conclusion is that El Salvador is generally well positioned for attracting FDI and has strategic strengths that should allow the country to take advantage of the significant opportunities that are out there, particularly in light of the new trend to shorten and restructure the global product value chains. Of course, the country also has weaknesses, which are clearly identified, and can be neutralized or even eliminated by the application of smart, well focused investment climate improvement policies.

7 BIBLIOGRAPHIES

Sector Study: Remote Business Services and Software/IT Development

Item	Organization	Title	Link/ Internal Document Title
1	Netherlands Ministry of Foreign Affairs Centre for the Promotion of Imports	What is the demand for Business Process Outsourcing services on the European market?	https://www.cbi.eu/market-information/outsourcing-itobpo/what-demand
2	Information Services Group	ISG Index™	https://isg-one.com/research/articles/isg-index
3	Information Services Group	ISG Index™ Q2-2021 Slides	https://isg-one.com/docs/default-source/default-document-library/2q21-isg-index.pdf?
4	Information Services Group	ISG Index™ Q2-2021 Press Release	https://ir.isg-one.com/news-market-information/press-releases/news-details/2021/Global-Demand-for-IT-and-Business-Services-Continues-Upward-Surge-in-Q2-ISG-Index-Finds/default.aspx
5	Information Services Group	2019 ISG Momentum® Market Trends & Insights Geography Report	https://research.isg-one.com/reportaction/2019-Momentum-Geography-Report/Marketing?SearchTerms=report
6	Information Services Group	Americas Demand for IT and Business Services at Record High in Q2, ISG Index® Finds	https://ir.isg-one.com/news-market-information/press-releases/news-details/2021/Americas-Demand-for-IT-and-Business-Services-at-Record-High-in-Q2-ISG-Index-Finds/default.aspx
7	Gartner Digital Markets	Global Software Trends for 2021: A New and Normal Future	https://emtemp.gcom.cloud/ngw/globalassets/en/digital-markets/documents/software-and-saas-global-outlook-ebook.pdf
8	Gartner Digital Markets	Software Industry Trends Report: Buyers Uneasy With Unfamiliar Brands	https://www.gartner.com/en/digital-markets/insights/software-industry-trends-report
9	Uniface, A Rocket Company	Five major software development trends in 2021	https://www.uniface.com/updates/five-major-software-development-trends-in-2021
10	Global Trade Magazine	Software development trends in 2021	https://www.globaltrademag.com/software-development-trends-in-2021/
11	University of California, Berkeley	11 Most In-Demand Programming Languages in 2021	https://bootcamp.berkeley.edu/blog/most-in-demand-programming-languages/
12	GlobalData	APAC business process outsourcing market set to grow at CAGR of 10% between 2018 and 2023, says GlobalData	https://www.globaldata.com/apac-business-process-outsourcing-market-set-to-grow-at-cagr-of-10-between-2018-and-2023-says-globaldata/
13	S&P Global Market	Global Industry Classification Standard	https://www.spglobal.com/marketintelligence/en/documents/112727-gics-mapbook_2018_v3_letter_digitalspreads.pdf

	Intelligence MSCI		
14	PYPL	PYPL PopularitY of Programming Language	https://pypl.github.io/PYPL.html
15	Github	The 2020 State of the Octoverse	https://octoverse.github.com/
16	Stack Overflow	2021 Developer Survey	https://insights.stackoverflow.com/survey/2021#section-most-popular-technologies-programming-scripting-and-markup-languages
17	TIOBE	TIOBE Index	https://www.tiobe.com/tiobe-index/
18	Github	Popularity of programming languages among developers	https://madnight.github.io/github/#/pull_requests/2021/2
19	Time Doctor	Top 17 Business Process Outsourcing (BPO) Companies	https://biz30.timedoctor.com/bpo-companies/
20	Running Remote	The 22 Top BPO Companies in the World	https://runningremote.com/bpo-companies/
21	AT Kearney	The 2021 Kearney Global Services Location Index	https://www. Kearney.com/digital/article/?/a/the-2021-kearney-global-services-location-index
22	Statista	Leading countries in offshore business services worldwide in 2021	https://www.statista.com/statistics/329766/leading-countries-in-offshore-business-services-worldwide/
23	Concert8	Top 5 Countries for Outsourcing in 2020	https://concert8.com/2020/04/top-5-countries-for-outsourcing-bpo-in-2020
24	India Brand Equity Foundation	IT & BPM September 2020 Report	https://www.ibef.org/download/IT-and-BPM-September-2020.pdf
25	Backoffice Pro	BPO White Paper	https://www.backofficepro.com/white-paper/business-process-outsourcing/
26	Site Selection magazine	Where the top BPO performers go to perform	https://siteselection.com/issues/2020/jan/business-process-outsourcing-and-shared-services.cfm
27	Site Selection magazine	Not Waiting For the World to Change - FCR Pivots to Diversity and Remote Work in One Fell Swoop	https://siteselection.com/issues/2021/jan/business-process-outsourcing-not-waiting-for-the-world-to-change.cfm?utm_source=Sidebar&utm_medium=Web&utm_campaign=Optimize&utm_content=RA
28	Outsource Accelerator	Top 30 BPO companies in the USA	https://www.outsourceaccelerator.com/guide/top-us-bpo-companies/
29	IBIS World	Business Process Outsourcing Services in the US - Market Size 2002–2027	https://www.ibisworld.com/industry-statistics/market-size/business-process-outsourcing-services-united-states/
30	Report Linker	Global Business Process Outsourcing (BPO) Industry	https://www.reportlinker.com/p04778730/Global-Business-Process-Outsourcing-BPO-Services.html
31	BSA Foundation - Software.org	Software: Supporting US Through COVID	https://software.org/reports/software-supporting-us-through-covid-2021/
32	BSA Foundation - Software.org	Software: Supporting US Through COVID	https://software.org/wp-content/uploads/2021SoftwareJobs.pdf
33	Forbes	Top 100 Digital Companies	https://www.forbes.com/top-digital-companies/list/#tab:rank

34	Tholons	TGI Index	http://tholons.com/tsgindex/
35	IBIS World	Software Publishing in the US - Market Size 2005–2027	https://www.ibisworld.com/industry-statistics/market-size/software-publishing-united-states/
36	Invest Canada	Technology Sector Briefing	https://www.investcanada.ca/industries/technology
37	Waterloo EDC	What is the Toronto-Waterloo Corridor?	https://blog.waterlooeDC.ca/what-is-toronto-waterloo-corridor
38	Waterloo EDC	Mapped: North America's top technology clusters	https://blog.waterlooeDC.ca/mapped-north-america-top-tech-clusters
39	India Brand Equity Foundation	IT & BPM Industry in India	https://www.ibef.org/industry/information-technology-india.aspx
40	TeaTymes	Top 8 IT Hubs In India Every Indian Must Know	https://teatymes.com/top-8-it-hubs-in-india-every-indian-must-know/
41	PROESA	Digital technology services Investment opportunities	Digital Technology services guide.pdf
42	USAID	PROYECTO DE USAID PARA LA COMPETITIVIDAD ECONÓMICA	InvestSV Final 030920.pdf
43	PROESA	ESTUDIO COMPARATIVO DE COSTOS DE OPERACIÓN EN EL SECTOR DE SERVICIOS EMPRESARIALES A DISTANCIA EN CENTROAMERICA, REPÚBLICA DOMINICANA Y MÉXICO	Resumen Estudio Comparativo SED El Salvador 20170511.pdf
44	USAID	PROYECTO DE USAID PARA LA COMPETITIVIDAD ECONÓMICA	SVDigital Informe Final.docx
45	UNCTAD	World Investment Report 2021	wir2021_en.pdf
46	Technavio	BUSINESS PROCESS OUTSOURCING MARKET BY END-USER AND GEOGRAPHY - FORECAST AND ANALYSIS	Technavio - BPO. Sample Report.pdf
47	CompTIA	IT INDUSTRY OUTLOOK 2021	report---2021-comptia-it-industry-outlook.pdf
48	Bain & Company	Technology Report 2020 - Taming the Flux	bain_report_technology-report-2020.pdf
49	S&P Global Market Intelligence	CapIQ	https://www.spglobal.com/marketintelligence/en/
50	CEPAL	Economic Commission for Latin America and the Caribbean	https://www.cepal.org/en

50	World Economic Forum	The Global Competitiveness Report 2018-2020	https://reports.weforum.org/global-competitiveness-report-2018/
51	The fDi Market	THE fDi REPORT 2016-2020	www.fdimarkets.com
51	NERA	Assessing the Contribution of Connectivity Investments to the Development of Latin American Societies	https://www.nera.com/publications/archive/2020/assessing-the-contribution-of-connectivity-investments-to-the-de.html
52	World Economic Forum	Bridging the Skills and Innovation Gap to Boost Productivity in Latin America	http://www3.weforum.org/docs/WEF_Competitiveness_Lab_Latin_America_15.pdf
52	ECLAC	Digital technologies for a new future	https://www.cepal.org/sites/default/files/publication/files/46817/S2000960_en.pdf
53	UNESCO	EDUCATION AND ICT IN LATIN AMERICA	https://en.unesco.org/gem-report/fellowship
53	ECLAC	Latin American Economic Outlook 2020	https://www.oecd.org/publications/latin-american-economic-outlook-20725140.htm
54	ECLAC/ILO	Employment Situation in Latin America and the Caribbean	https://www.cepal.org/en/publications/41371-employment-situation-latin-america-and-caribbean-labour-immigration-latin-america
54	Deloitte	Doing Business El Salvador	https://www2.deloitte.com/content/dam/Deloitte/sv/Documents/tax/ELSALVADOR/ENG-%20Doing%20Business-El%20Salvador-JUL2020.pdf
55	UNITED NATIONS/ECLAC 2018-2021	Foreign Direct Investment in Latin America and the Caribbean	https://www.cepal.org/en/https%3A//www.cepal.org/en/publications/type/foreign-direct-investment-latin-america-and-caribbean
55	UNCTAD	World Investment Report 2017-2021	https://unctad.org/fdistatistics
56	GSM Association	The mobile economy Latin America - 2020	https://www.gsma.com/mobileeconomy/latam/
57	IDC	Worldwide IT Industry 2021 Predictions and Latin America Implications: Building Resiliency to Thrive in the Next Normal	http://www.idclatin.com/2020/webinars/9_nov_fe/FutureEscape2021_LatAm.pdf
58	Dept. of Electrical and Computer Engineering National University of the South-CONICE	Information and Communications Technologies in Latin America	https://www.ifip.org//projects/IT-Pract-R-Santos.pdf
59	IDC/CISCO	Networking Skills in Latin America	https://www.cisco.com/c/dam/assets/csr/pdf/IDC_Skills_Gap_-_LatAm.pdf
60	LAVCA	LAVCA's 2021 Review of Tech Investment in Latin America	https://lavca.org/industry-data/lavcas-2021-review-of-tech-investment-in-latin-america/#:~:text=Collaborative%20investing%20between

			%20local%20and,sectors%20including%20healthtech%20and%20edtech.
61	OECD	2020 POLICY NOTE ON LATIN AMERICA LEVERAGING THE IMPACT OF NEW TECHNOLOGIES	https://www.oecd.org/dev/EMnet-Latin-America-Policy-Note-2020.pdf
62	Inter-American Development Bank	Sources of Data on Digital Talent in Latin America and the Caribbean	https://publications.iadb.org/en/sources-of-data-on-digital-talent-in-latin-america-and-the-caribbean
63	Swiss RE Institute	Latin America market report 2021: a long road to recovery	https://www.swissre.com/institute/research/sigma-research/sigma-2020-04/latin-america-caribbean.html
64	Santander	Import/Export data	https://santandertrade.com/en/portal/establish-overseas
65	Observatory of Economic Complexity	Import/Export data	https://oec.world/en/profile/country/hnd
66	The World Bank	Ease of doing business indicators	https://www.doingbusiness.org/en/rankings
67	The Global Economy	Political and other risks	https://www.theglobaleconomy.com/rankings/political_risk_short_term/#
68	Speed Test	Broad band and mobile speed	https://www.speedtest.net/global-index/costa-rica#mobile
69	Air Connectivity	Transport Indicators	https://www.flightconnections.com/flights
70	Air Connectivity	Transport Indicators	https://www.iata.org/en/iata-repository/publications/economic-reports/air-connectivity-measuring-the-connections-that-drive-economic-growth/
71	Near Shore Americas	Workforce	https://nearshoreamericas.com/comparing-working-hours-overtime-and-vacation-in-core-nearshore-markets/
72	EF SET	English Proficiency Index	https://www.ef.com/wwen/epi/
73	Costa Rica labor Law	Workforce	https://www.costaricalaborlawyer.com/workhourandovvertime.htm#:~:text=Costa%20Rica%20Labor%20Code%20allows,from%20midnight%20to%206%20am.
74	Pay Pal Global	Workforce	https://papayaglobal.com/countrypedia/country/
75	Global Petrol Prices	Electricity prices comparison	https://www.globalpetrolprices.com/countries/
76	World Economic Forum	Quality of electricity comparison	http://reports.weforum.org/pdf/gci-2017-2018-scorecard/WEF_GCI_2017_2018_Scorecard_EOSQ064.pdf
77	Ministry of Labor and Social Security	Workforce	https://www.mtss.go.cr/temas-laborales/salarios/lista-salarios.html
78	Wage Indicator	Workforce	https://wageindicator.org/salary/minimum-wage;
79	World Data	Quality Index	https://www.worlddata.info/quality-of-life.php

Sector Study: Pharmaceutical Chemistry

1. https://www.proclinical.com/blogs/2021-7/who-are-the-top-10-pharma-companies-in-2021
2. Pharmaceutical market: worldwide revenue 2001-2020. Published by Matej Mikulic, May 4, 2021
3. Statista. https://es.statista.com/
4. Grandview Research. https://www.grandviewresearch.com/industry-analysis/pharmaceutical-manufacturing-market
5. https://www.ifpma.org/wp-content/uploads/2021/04/IFPMA-Facts-And-Figures-2021.pdf
6. Various: Quintiles IMS Institute (2019) Global Medicines Use in 2019 and: Outlook to 2023: forecasts and areas to watch. Available at: https://www.iqvia.com/insights/the-iqvia-institute/reports/the-global-use-of-medicine-in-2019-and-outlook-to-2023
248 Pharma Boardroom (2020). Africa Pharma Market Snapshot 2020. Pharma Boardroom analysis based on IQVIA Institute data.
Retrieved from: Available at: https://pharmaboardroom.com/facts/africa-pharma-market-snapshot-2020/
7. Research and Markets. Global Pharmaceuticals Market Report 2021. www.researchandmarkets.com
8. Pharmaceutical market: worldwide revenue 2001-2020. Published by Matej Mikulic, May 4, 2021
9. Statista
10. Grandview Research. https://www.grandviewresearch.com/industry-analysis/pharmaceutical-manufacturing-market
11. https://www.ifpma.org/wp-content/uploads/2021/04/IFPMA-Facts-And-Figures-2021.pdf
12. Various: QuintilesIMS Institute (2019) Global Medicines Use in 2019 and: Outlook to 2023: forecasts and areas to watch. Available at: https://www.iqvia.com/insights/the-iqvia-institute/reports/the-global-use-of-medicine-in-2019-and-outlook-to-2023
IQVIA Institute (2019) Global Medicines Use in 2019 and Outlook to 2023: forecasts and areas to watch. Available at: https://www.iqvia.com/insights/the-iqvia-institute/reports/the-global-use-of-medicine-in-2019-and-outlook-to-2023
Pharma Boardroom (2020). Africa Pharma Market Snapshot 2020. Pharma Boardroom analysis based on IQVIA Institute data. Retrieved from: Available at: https://pharmaboardroom.com/facts/africa-pharma-market-snapshot-2020/
13. Global Pharmaceuticals Market Report 2021: Market is Expected to Grow from \$1228.45 Billion in 2020 to \$1250.24 Billion in 2021 - Long-term Forecast to 2025 & 2030. March 31, 2021 04:28 ET Source: Research and Markets
14. Dublin, March 31, 2021 (GLOBE NEWSWIRE) -- The "Pharmaceuticals Global Market Report 2021: COVID-19 Impact and Recovery to 2030" report has been added to ResearchAndMarkets.com's offering
15. https://www.statista.com/topics/1008/cosmetics-industry/
16. https://cosmeticseurope.eu/cosmetics-industry/
17. https://www.pharmaceutical-technology.com/deals-insights/
18. https://www.businesswire.com/news/home/20210212005317/en/United-States-Cosmetics-Market-Report-2021-Skin-care-Hair-Care-Bath-Shower-products-Makeup-Color-Cosmetics-Fragrances-Deodorants--ResearchAndMarkets.com
19. Trends-and-Forecast for the Pharmaceutical Markets of Mexico and Latam. Breakthrough IPIntelligence, 2020.
20. Research and Markets. Global Pharmaceuticals Market Report 2021. www.researchandmarkets.com
21. https://www.fda.gov/cosmetics/cosmetics-laws-regulations/cosmetics-us-law
22. https://www.semana.com/mejores-multilatinas-en-salud-y-cosmetica-en-colombia/245292/

23. https://www.efpia.eu/media/602709/the-pharmaceutical-industry-in-figures-2021.pdf
24. https://www.ifpma.org/wp-content/uploads/2021/04/IFPMA-Facts-And-Figures-2021.pdf
25. PhRMA (2019) 2019 Biopharmaceutical in Perspective. Washington DC: Pharmaceutical Research and Manufacturers of America. Available at: https://www.phrma.org/en/Report/Chart-Pack-Biopharmaceuticals-in-Perspective-Summer-2019
26. U.S. Food and Drug Administration. New Drug Approvals 2019. Visited January 2020. Available at: https://www.fda.gov/drugs/new-drugs-fda-cders-new-molecular-entities-and-new-therapeutic-biological-products/novel-drug-approvals-2019
27. Adis R&D Insight Database. Available at: https://adis.springer.com Visited June 2020
28. Medicines in development may be attributed to more than one therapeutic area. Adis R&D Insight Database. Available at: https://adis.springer.com Visited June 2020
29. https://www.medicamentos.gob.sv/index.php/es/normativa-m/normativa-por-unidad/unidad-de-inspeccion-y-fiscalizacion
30. AGEXPORT. https://export.com.gt/inicio
31. https://www.perspectiva.gt/empresa/industria-farmaceutica-pilar-fundamental-del-crecimiento-economico/
32. https://asinfar.org/somos-asinfar/
33. http://www.andi.com.co/Home/Camara/18-industria-farmaceutica
34. http://www.andi.com.co/Home/Camara/18-industria-farmaceutica
35. https://www.dnb.com/business-directory/company-information.pharmaceutical_and_medicine_manufacturing.do.html
36. https://www.thecentralamericangroup.com/pharmaceutical-manufacturing-costa-rica/
37. IFPMA (2011) Technology Transfer: A Collaborative Approach to Improve Global Health. Geneva: International Federation of
38. Pharmaceutical Manufacturers and Associations, p. 17. Available at: http://www.ifpma.org/fileadmin/content/Publication/
39. IFPMA_ Technology_ Transfer_ Booklet_ 2011.pdf
40. DiMasi et al, Journal of Health Economics, January 2016
41. https://naturalmedicines.therapeuticresearch.com/databases/manufacturers.aspx
42. https://naturalmedicines.therapeuticresearch.com/databases/food_-herbs-supplements.aspx

Sector Study: Medical Devices

32. Fortune Business Insights
33. Emergo, 2021
34. KPMG Advisory China, 2018. Medical devices 2030: Making a power play to avoid the commodity trap
35. Alira Health's findings MedTech Contract Manufacturing Report released on March 3, 2021.
36. fDi Markets report 2021
37. UNCTAD's World Investment Report 2021
38. https://unctad.org/news/foreign-direct-investment-latin-america-plunges-45-amid-pandemic
39. Pocket guide to Medtech's market Outlook inn 2021, Carlo Stimamiglio, Alira Health
40. Source: https://www.medicaldevice-network.com/deals-analysis/medical-devices-industry-ma-deals-in-q4-2020/
41. GlobalData's deals database
42. https://www.medicaldevice-network.com/deals-analysis/medical-devices-industry-ma-deals-in-q4-2020/

43.	Deloitte Centre for Health Solutions. Medtech and the internet of Medical Things. July, 2018. Gx-lshc-medtech-iomt-brochure.
44.	https://www.medtecheurope.org/
45.	https://www.fda.gov/medical-devices/classify-your-medical-device/device-classification-panels . https://www.fda.gov/medical-devices/classify-your-medical-device/device-classification-panels . https://www.fda.gov/media/123602/download
46.	https://www.ihealthcareanalyst.com/medical-device-areas-analysis/
47.	Source: EvaluateMedTech, iHealthcareAnalyst, Inc.
48.	https://www.thebusinessresearchcompany.com/report/medical-devices-market
49.	https://www.meddeviceonline.com/
50.	https://www.americancleanrooms.com/clasificaciones-de-cuartos-limpios/?lang=es
51.	https://www.cbi.eu/market-information/medical-laboratory-devices/trends
52.	Gereffi. Bamber and Gereffi, 2013. Costa Rica in the Medical Devices Global Value Chain: Opportunities for Upgrading
53.	https://www.gs1.org/industries/healthcare/standards
54.	Harmonized codes https://www.foreign-trade.com/reference/hscodex
55.	https://www.mordorintelligence.com/industry-reports/global-neurology-devices-market-industry
56.	https://www.verifiedmarketresearch.com/blog/worlds-leading-ophthalmic-companies/
57.	https://www.medicaldesignandoutsourcing.com/the-10-largest-orthopedic-device-companies-in-the-world-2021/
58.	https://www.plugandplaytechcenter.com/resources/10-remote-patient-monitoring-companies-you-should-know-about/
59.	https://journals.sagepub.com/home/trj Textile Research Journal
60.	https://2016.export.gov/industry/health/healthcareresourceguide/eg_main_116254.asp
61.	https://www.state.gov/reports/2020-investment-climate-statements/honduras/
62.	HS1996 definitions from UNCOMTRADE and HS02-07 from UN Statistics Division.

Fiscal, Financial and Regulatory Incentives Plan

Item	Organization	Title	Link/ Internal Document Title	Section
1	IEA	Costa Rica Green Policies	https://www.iea.org/countries/costa-rica	Costa Rica
2	SICE the OAS Foreign Trade Information System	Costa Rica's Trade and Investment Agreements	http://www.sice.oas.org/ctyindex/cr/cr/criagreemnts_e.asp	Costa Rica
3	CINDE	Free Trade Zones	https://www.cinde.org/en/free-zones	Costa Rica
4	PROCOMER	Special Regimes	https://www.procomer.com/inversionista/regimenes-especiales/	Costa Rica
5	PROCOMER	GUÍA RÉGIMEN ZONA FRANCA	https://www.procomer.com/wp-content/uploads/Guias-Zonas-Francas-2-2-2.pdf	Costa Rica
6	PROCOMER	GUÍA RÉGIMEN PERFECCIONAMIENTO ACTIVO	https://www.procomer.com/wp-content/uploads/Gu%C3%ADa-R%C3%A9gimen-Perfeccionamiento-Activo-3-1.pdf	Costa Rica

7	PROCOMER	GUÍA RÉGIMEN DEVOLUTIVO DERECHOS	https://www.procomer.com/wp-content/uploads/Guia-Devolutivo-Derechos.pdf	Costa Rica
8	Wolters Kluwer	Costa Rica: Country and Foreign Investment	https://www.lowtax.net/information/costa-rica/costa-rica-free-trade-zone.html	Costa Rica
9	International Tax Treaties	Costa Rica Treaties	http://www.internationaltaxtreaty.com/treaty/costa-rica	Costa Rica
10	KPMG	Tax incentives to attract “digital nomad” workers	https://home.kpmg/us/en/home/insights/2021/09/tnf-costa-rica-tax-incentives-attract-digital-nomad-workers.html	Costa Rica
11	KPMG	Investment in Costa Rica	https://assets.kpmg/content/dam/kpmg/cr/pdf/Investment-in-Costa-Rica.pdf	Costa Rica
12	ILO	Ley núm. 8794 de Reforma de la Ley de Régimen de Zonas Francas núm. 7210, de 23 de noviembre 1990.	https://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=en&p_isn=83534&p_country=CRI&p_count=482	Costa Rica
13	Primerus Law	Free Trade Zones In Costa Rica	https://www.primerus.com/international-business-articles/free-trade-zones-in-costa-rica-03282014.htm	Costa Rica
14	Lang & Asociados	Free Zone Regime in Costa Rica	https://www.langcr.com/free_trade_costa_rica.html	Costa Rica
15	CINDE	Costa Rica Free Zones Regime	https://f.hubspotusercontent30.net/hubfs/5082883/Resources/CINDE%20-%20Free%20Trade%20Zone%20Regime%20EN.pdf	Costa Rica
16	PWC	Costa Rica Overview	https://taxsummaries.pwc.com/costa-rica	Costa Rica
17	PROCOMER	N° 7210 - LEY DE REGIMÉN DE ZONAS FRANCAS	https://www.procomer.com/wp-content/uploads/Materiales/Ley-Regimen-Zonas-Francas-N-7210-22020-03-19_18-40-22.pdf	Costa Rica
18	CONSEJO NACIONAL DE INVERSIONES (CNI)	SPECIAL REGIMES	https://cni.hn/regimenes-especiales/#1548105271709-280fb558-d20b	Honduras
19	CONSEJO NACIONAL DE INVERSIONES (CNI)	HONDURAS INVESTORS GUIDE 2021	https://cni.hn/guias-del-inversionista/	Honduras
20	KPMG	Honduras Investors Guide	https://assets.kpmg/content/dam/kpmg/pa/investment-in-central-america/EN-Honduras-Investment.pdf	Honduras

21	Marca Honduras	Beneficios Fiscales para la inversión en Honduras	https://www.marcahonduras.hn/4-beneficios-fiscales-para-la-inversion-en-honduras/	Honduras
22	Honduran Manufacturers Association	DECRETO-N08-2020-REFORMAS-LEY-DE-ZONA-LIBRE	http://www.ahm-honduras.com/wp-content/uploads/2020/06/DECRETO-N08-2020-REFORMAS-LEY-DE-ZONA-LIBRE.pdf	Honduras
23	Honduran Manufacturers Association	ACUERDO215-retencion-impuesto-sobre-ventas	http://www.ahm-honduras.com/Leyes/ACUERDO215-retencion-impuesto-sobre-ventas.pdf	Honduras
24	Honduran Manufacturers Association	DECRETO-181-2007-REFORMA-LEY-GENERAL-DEL-AMBIENTE	http://www.ahm-honduras.com/Leyes/DECRETO-181-2007-REFORMA-LEY-GENERAL-DEL-AMBIENTE.pdf	Honduras
25	Honduran Manufacturers Association	DECRETO-SOBRE-LOS-DIAS-FERIADOS-50-2003	http://www.ahm-honduras.com/Leyes/DECRETO-SOBRE-LOS-DIAS-FERIADOS-50-2003(1).pdf	Honduras
26	Honduran Manufacturers Association	LEY-DE-ZONAS-LIBRES	http://www.ahm-honduras.com/Leyes/LEY-DE-ZONAS-LIBRES.pdf	Honduras
27	Honduran Manufacturers Association	LEY DEL REGIMEN DE IMPORTACION TEMPORAL	http://www.ahm-honduras.com/Leyes/ley_RIT.pdf	Honduras
28	Honduran Manufacturers Association	LAWS THAT PROTECT AND PROMOTE INVESTMENT	http://www.ahm-honduras.com/?page_id=1302	Honduras
29	PWC	Honduras Overview	https://taxsummaries.pwc.com/honduras	Honduras
30	SICE the OAS Foreign Trade Information System	Honduras' Trade and Investment Agreements	http://www.sice.oas.org/ctyindex/HND/HNDagree_ments_e.asp	Honduras
31	KPMG	Indirect Tax Guide	https://assets.kpmg/content/dam/kpmg/es/pdf/2016/11/indirect-tax-guide-honduras-2016.pdf	Honduras
32	Garcia & Bodan Law	New Tourism Incentives Law in Honduras	https://garciabodan.com/en/new-tourism-incentives-law-in-honduras/	Honduras
33	Inter-American Development Bank	Honduras SREP investment plan emphasizes renewable energy	https://blogs.iadb.org/sostenibilidad/en/honduras-srep-investment-plan-emphasizes-renewable-energy-production-distribution/	Honduras

		production and distribution		
34	EcoLex	Decreto Nº 70/07 - Ley de promoción a la generación de energía eléctrica con recursos renovables	https://www.ecolex.org/details/legislation/decreto-no-7007-ley-de-promocion-a-la-generacion-de-energia-electrica-con-recursos-renovables-lex-faoc092283/	Honduras
35	KPMG	Guatemala Investors Guide	https://assets.kpmg/content/dam/kpmg/pa/investment-in-central-america/EN-Guatemala-Investment.pdf	Guatemala
36	Lexology	Guatemala - amendments to the Free Zone Law (decree 65-89)	https://www.lexology.com/library/detail.aspx?g=24da4b8c-f3b9-43d6-bc8e-a2aa1ee41734	Guatemala
37	Deloitte	Guatemala Highlights 2021	https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-guatemalahighlights-2021.pdf	Guatemala
38	MINECO	Invest in Guatemala	https://www.mineco.gob.gt/content/invest-guatemala	Guatemala
39	International Tax Treaties	Guatemala Treaties	http://www.internationaltaxtreaty.com/treaty/guatemala	Guatemala
40	PWC	Guatemala Overview	https://taxsummaries.pwc.com/guatemala	Guatemala
41	Dentons	Global tax guide to doing business in Guatemala	https://www.dentons.com/en/issues-and-opportunities/global-tax-guide-to-doing-business-in/guatemala	Guatemala
42	BLP Legal	Reforms to the Free Zones Law in Guatemala	https://www.blplegal.com/en/Reforms-to-the-Free-Zones-Law-in-Guatemala	Guatemala
43	London School of Economics	Law on Incentives for Development of Renewable Energy Projects (Decree of the Congress 52-2003)	https://www.climate-laws.org/geographies/guatemala/laws/law-on-incentives-for-development-of-renewable-energy-projects-decree-of-the-congress-52-2003	Guatemala
44	PWC	Dominican Republic Overview	https://taxsummaries.pwc.com/dominican-republic	Dominican Republic
45	KPMG	Dominican Republic: Tax incentives for industries subject to competitiveness	https://home.kpmg/us/en/home/insights/2021/01/tnf-dominican-republic-tax-incentives-for-industries-subject-to-competitiveness-and-innovation-regime.html	Dominican Republic

		ss and innovation regime		
46	Guzman Ariza Law	Law Nº 8-90 on the Promotion of Free Zones, Official Gazette 9775, January 15, 1990	https://www.drlawyer.com/deutsch/law-no-8-90-promotion-free-zones-official-gazette-9775-january-15-1990/	Dominican Republic
47	International Tax Treaties	Dominican Republic Treaties	http://www.internationaltaxtreaty.com/treaty/dominican-republic	Dominican Republic
48	PH Law	Law No. 28-01 and its Implementation Regulation through which a Special Frontier Development Zone is created	http://www.phlaw.com/imagen?file=articulos/304/law-no-28-01-its-implementation-regulation-through-which-special-frontier-development-zone-is	Dominican Republic
49	Invest in Colombia	INVESTMENT INCENTIVES	https://investincolombia.com.co/en	Colombia
50	Invest in Colombia	FREE TRADE ZONES	https://investincolombia.com.co/en/how-to-invest/investment-incentives/free-trade-zone-regime-colombia	Colombia
51	Baker McKenzie	Colombia: Promulgation of General Tourism Law – Law 2068 of 2020	https://www.globalcompliancenews.com/2021/02/15/colombia-promulgation-of-general-tourism-law-law-2068-of-2020-22012021/	Colombia
52	PWC	Colombia Overview	https://taxsummaries.pwc.com/colombia	Colombia
53	SICE the OAS Foreign Trade Information System	Colombia's Trade and Investment Agreements	http://www.sice.oas.org/ctyindex/COL/COLagree_ments_e.asp	Colombia
54	PROESA	El Salvador Investment Incentives	https://proesa.gob.sv/investment/sector-opportunities	El Salvador
55	PWC	El Salvador Overview	https://taxsummaries.pwc.com/el-salvador	El Salvador
56	International Tax Treaties	El Salvador Treaties	http://www.internationaltaxtreaty.com/treaty/el-salvador	El Salvador
57	Ande Chamber of User Free Zones	Legal economic and fiscal impact of the free trade zone	http://www.andi.com.co/Uploads/LEGAL,%20ECONOMIC%20AND%20FISCAL%20IMPACT%20STUDY%20OF%20THE%20FREE%20TRADE%20ZONES.%20EXECUTIVE%20SUMMARY%202020.pdf	Multiple
58	Georgetown University	Tax incentives for FDI in seven	https://publications.iadb.org/en/publication/tax-incentives-fdi-seven-latin-american-countries	Multiple

		Latin American countries		
59	Organization for Economic Co-operation and Development	Attracting Knowledge-intensive FDI to Costa Rica: Challenges and Policy options	https://www.oecd.org/costarica/E-book%20FDI%20to%20Costa%20Rica.pdf	Costa Rica