

10-2020

Corporate Compliance in International Technology Licensing

Homa Badamchi

Golden Gate University School of Law, hbadamchi@my.ggu.edu

Follow this and additional works at: <https://digitalcommons.law.ggu.edu/theses>



Part of the [Intellectual Property Law Commons](#), and the [International Law Commons](#)

Recommended Citation

Badamchi, Homa, "Corporate Compliance in International Technology Licensing" (2020). *Theses and Dissertations*. 82.

<https://digitalcommons.law.ggu.edu/theses/82>

This Dissertation is brought to you for free and open access by the Student Scholarship at GGU Law Digital Commons. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of GGU Law Digital Commons. For more information, please contact jfischer@ggu.edu.

Corporate Compliance in International Technology Licensing

A Dissertation Submitted

to

Golden Gate University School of Law

Department of International Legal Studies

In

Fulfilment of the Requirement

For

The Conferment of the Degree

Of

Scientiae Juridicae Doctor (SJD)

By

Homa Badamchi

San Francisco, California

October 2020

Dissertation Committee:

Professor Dr. William T. Gallagher

Professor of Law

Director, IP Law Program

Golden Gate University School of Law

Professor Dr. Warren E. Small

Professor of Law

Golden Gate University School of Law

Professor Dr. Hamed Adib Natanzi

Professor of Law

Golden Gate University School of Law

With valuable guidance of:

Professor Dr. Christian Nwachukwu Okeke, Ph.D., C.O.H.

Professor of International & Comparative Law

Director of SJD International Legal Studies

Director, Sompong Sucharitkul Center for Advanced International Legal Studies

Golden Gate University School of Law

Golden Gate University

The Dissertation Committee for Homa Badamchi

Certifies that this is the Approved Version of the Following Dissertation:

Corporate Compliance in International Technology Licensing

Approved By

Committee Chair:

Professor Dr. William Gallagher

Acknowledgments

I found guidance, love and wisdom in writing this dissertation from the following people to whom I owe deep gratitude. I want to thank my family, for always being supportive of whatever endeavor I undertake.

I humbly thank my dissertation committee members, Professor Dr. William Gallagher, Professor Dr. Warren Small, and Professor Dr. Hamed Adib Natanzi, my mentors in academia, profession and life for your profound expertise, endless patience and enthusiastic encouragement throughout the completion of this work.

Deep and sincere gratitude I extend to Professor Dr. Christian Okeke for guiding me ever since I joined Golden Gate University, I have learned a lot from you both academically and personally. Thank you for providing me the support I needed to accomplish this work through from beginning to end.

I also would like to acknowledge Professor Dr. Arthur J. Gemell, who encouraged me to peruse the SJD program; for the pleasure of being your student and knowing you I am always grateful.

At last but not least gratitude goes to all my faculty and advisors and peers who directly or indirectly helped me to complete this dissertation.

Any omission in this brief acknowledgment does not mean lack of gratitude.

Thanking you,

Homa Badamchi

Copyright

By

Homa Badamchi

2020

Table of Contents

Abstract	10
1.1. Research Problem and Background	11
1.2. Purpose of this study	12
1.3. Relevance of this Research	13
1.4. Research Questions	13
1.5. Methodology	14
1.6. The Scope of the Study	15
Introduction	
2.1. The meaning of law	17
2.2. The Emergence of Technology	19
2.2.1. The Principles of Technology	22
2.2.2. The Influence of Technology	23
2.2.2.1. Technology and Marketing	25
2.3. The Technology Licensing and Intellectual Property	28
2.3.1. Intellectual Property Assets	30
2.3.2. Valuation of Intellectual Property and Copyright	31
2.4. Types of Licenses	33
2.4.1. Express licenses	34
2.4.2. Implied licenses	35

2.5. Antitrust	35
Antitrust	
3.1. Japan	37
3.1.2. Japanese Fair Trade Commission Guidelines	38
3.1.2.1. The Antitrust Regulation in Japan (JFTC)	39
3.1.2.2. Practices of Unfair Trade	40
3.1.2.3. The Application Guidelines to the Licensing Contrasts	44
3.1.2.4. The Substance of the Guidelines	45
3.1.2.5. Restrictions of Sale or Resale Prices in Japan	47
3.1.2.6. Comparisons of Japanese and United States Intellectual Property Antitrust Law	48
3.1.2.7. The Perspective of Foreign Licensor	48
3.1.2.8. The Japanese Perspective	50
3.1.3. The Application of the Antimonopoly Act to Licensing Agreements	52
3.1.3.1. Unreasonable Restraints Concerning Patent and Know-How Agreements	53
3.1.3.2. Restrictions in Licensing Agreements	55
3.1.4. Unfair trade practices	57
3.1.4.1. Copyright Licensing	60
3.1.5. Administrative Controls Related to Licensing	60
3.2. Europe	62
3.2.1. The Treaty of Rome and The Single European Act	62
3.2.1.1. The Treaty of Rome	63
3.2.1.2. The Single European Act	67

3.2.2. Article 81 & 82 of European Community Treaty	69
3.2.3. Technology Transfer Block Exemption Regulation (TTBER) and Court Decisions	71
3.2.3.1. Features on Technology Transfer Agreements	72
3.2.3.2. The effects of the Block Exemption Regulation	72
3.2.4. Introduction to EEC Competition (Antitrust) Law	74
3.2.4.1. The Basic Prohibition of the Article, Article 85	74
3.2.4.2. Application to Intellectual Property Matters, Article 86	78
3.2.5. Enforcement Principles, Interface of Competition Law and Patent Law	80
3.2.6. Patent, Know-How and Copyright License Agreements at the European Community Level	84
3.2.6.1. Patent	85
3.2.6.2. Copyright	86
3.3. United States	87
3.3.1. The Principles of Antitrust-IP in the United States	88
3.3.2. U.S. The Sherman Antitrust Act (1890)	89
3.3.4. The Basic Facts and Holdings of the Cases	92
3.3.5. FTC and Department of Justice Guidelines on Antitrust and IP Report 2007	98
Tax	
4.1. Tax Law	101
4.2. Types of Taxes	102
4.2.1. Direct Tax	102
4.2.1.1. Income Tax	103

4.2.1.2. Corporate Tax	104
4.2.1.3. Wealth Tax	105
4.2.2. Indirect Tax	105
4.2.2.1. Consumption Tax	106
4.2.2.2. Customs Duty	106
4.2.2.3. Excise Duty	107
4.2.2.4. Service Tax	107
4.2.2.5. Sales Tax	108
4.2.2.6. Value Added Tax (VAT)	108
4.2.2.7. Securities Transaction Tax (STT)	108
4.3. Royalty Payments	108
4.4. Japan Royalties	109
4.5. European Royalties	110
4.6. U.S. Royalties	111
4.7. The Comparison of Royalties of Japan, Europe, and U.S.A.	112
 Intellectual Property	
5.1. IP Law	116
5.2. Japan Patent	116
5.2.1. Basic Law	117
5.2.2. Conventions	118
5.2.3. Patentable subject matter	121
5.2.3.1. Invention and Utilizing a Law of Nature	122
5.2.3.2. Explanation about important categories	123
5.2.4. Examination Procedures	125

5.2.4.1. Accelerated Procedures	125
5.2.4.2. Computerized Procedures	128
5.3. Japan Copyrights	129
5.3.1. General Principles	130
5.3.2. Application to Computer Programs	131
5.3.3. Trade Secrets and Know-How	132
5.3.3.1. Contractual Protection of Information	133
5.3.3.2. Criminal Sanctions	134
5.3.3.3. Civil Remedies in Tort	135
5.3.4. Utility Model Law	136
5.3.5. Compulsory Licensing	138
5.4. EU Intellectual Property Protection at the National and Community Level	138
5.4.1. The European patent system	140
5.4.1.1. The Patent Cooperation Treaty (PCT)	142
5.4.2. Copyrights and Neighboring Rights	143
5.4.3. Semiconductor Integrated Circuits	145
5.4.3.1. The Legal Situation within the EC	145
5.4.3.2. The Object of Protection	146
5.4.4. Software Protection Rights	148
5.4.5. Copyrights Protection for Software	150
5.4.5.1. The Legal Definition of Software	151
5.4.5.2. Subject of the Protection and Copyright	151
5.4.6. Industrial Models and Designs	153
5.4.6.1. The Paris Convention for the Protection of Industrial Property	155

5.4.6.2. The TRIPS Agreement	155
5.4.6.3. Design Protection in the EU	156
5.4.6.3.1. Directive on the Legal Protection of Designs (1998)	157
5.4.6.3.2. Justification of the European Laws	157
5.5. U.S. Intellectual Property Rights Based on Federal Statutes	158
5.5.1. Notable Economic Theories	159
5.5.2. Notable Political Theories	162
5.5.3. International Intellectual Property Issues	163
5.5.4. Licensable Rights based on Federal statutes	166
5.5.4.1. Limits of State Copyright Legislation	168
5.5.5. Licensable Patent Rights	171
5.5.6. Licensable Copyrights	173
5.6. International Intellectual Property Establishments and Agreement	174
5.6.1. International Regimes and Intellectual Property Regime Shifting	175
5.6.2. Regime Shifting from WIPO to GAT to TRIPs	181
5.6.2.1. Motivations for the Shift from WIPO to GATT	183
5.6.2.2. The Consequences of TRIPs for Developing Countries	187
5.6.2.3. The Importance of WIPO	189
5.6.3. TRIPs and the Dynamics of Intellectual Property Lawmaking	192
 Computer Technologies	
6.1. Types of Computer Technology	196
6.1.1. Hardware	197
6.1.1.2. Input Devices	198
6.1.1.3. Central Processing Unit (CPU)	198

6.1.1.4. Output Devices	199
6.1.1.5. Secondary Storage Devices	200
6.1.1.6. Primary Memory	200
6.1.2. Software	201
6.1.2.1. Operating System Programs	202
6.1.2.2. Application Programs	203
6.1.2.3. Program Documentation	204
6.1.2.4. Accessories	204
6.1.2.5. Firmware	204
6.1.2.6. Modems	205
6.2. Computer Technology and Protection of Proprietary Rights	205
6.2.1. Trade Secret Protection	207
6.2.1.1. Historical Perspective	208
6.2.1.2. Advantages and Disadvantages	209
6.2.1.3. Requirements	212
6.3. Utility of Patent Protection	215
6.3.1. Patentable Subject Matter	216
6.3.2. Advantages and Disadvantages of Patent Protection	219
6.4. Copyright Protection	222
6.4.1. Special Aspects of Copyright Protection for Computer Software	224
6.4.1.1. Deposit Requirement	226
6.4.1.2. Requirements for Registration	226
6.4.1.3. Infringement Test	227
6.4.1.4. The Constituents of Copying	230
6.4.1.5. Right to Make Archival Copies	231

6.4.2. Advantages and Disadvantages of Copyright Protection	231
6.5. Mask Work Protection	232
6.6. Design Patent Protection	232
6.7. Trademark and Trade Dress Protection	235
6.8. Contract Protection	240
6.9. Technological Protection	241
6.9.1. Restricting Access to the Source Code	242
6.9.2. Copy-Protected Programs	244
6.10. Unfair Competition	246

Comparison and Recommendation

7.1. Licensing in Different Jurisdictions	248
7.2. How a Company Takes Advantage of International Software Licensing?	249
7.3. The Comparison of Different Companies' Software Licenses in Different Jurisdictions and Countries	251
7.3.1. Blancco End-user Agreement	251
7.3.1.1. The Importance of Data Erasure Certifications	254
7.3.1.1.1. The Importance of Third Party Validation	256
7.3.2. MICROSOFT SOFTWARE LICENSE AGREEMENT	257
7.4. The Role of Antitrust in Computer Software	260
7.4.1. The Fundamental Economics of Software	261
7.4.1.1. Systems and Network Effects	261
7.5. Software Industry Problems in Iran	263
7.5.1. The Classification of Software in aspect of Software Layers	267
7.6. Intellectual Property Rights for Developing Countries	267

7.6.1. The Outlook of IP in Iran	270
7.7. Reasons for Considering Licensing Agreements	274
7.8. Discussion of Results	276
7.9. Implications and Recommendations	277
7.10. Limitations of The Study	278
7.11. Suggestions for Further Research	279
7.12. Summary	279
Bibliography	281

Corporate Compliance in International Technology Licensing

Abstract

According to the U.S. Congress, it can be inferred that "In general, the process of commercializing intellectual property is very complex, highly risky, takes a long time, cost much more than you think it will, and usually fails."¹

This quote from the Congressional Committee on Science and Technology is validation on how complex commercializing intellectual property protected technology and transferring it is. International businesses are required to comply with a vast range of domestic and foreign laws and regulations when transferring or licensing their technology. A key concern is how the achieved technology would be used elsewhere and the responsibility they feel for having access to it.

The objective of this work is to provide a comprehensive comparative study on the formulation of international technology licensing transactions in compliance with corporate regulations and fair competition, tax regulations and intellectual property protection rights.

Also, this paper is headed to hopefully provide a game plan for developing countries which are not in possession of a comprehensive regulation for the discussed matter, to help them benefit through this comparative study of three very developed texts of law and practices in three very diverse legal systems.

¹ US Congress, Committee on Science and Technology, 1985, p. 12

CHAPTER ONE

1.1. Research Problem and Background

Human beings have always brought many innovations and inventions up until these days in order to facilitate the provision of their requirements in various fields of life. Technology is a set of techniques, skills, methods and processes used to produce goods or services or to achieve goals such as scientific researches. However, technology is not always received the same in all countries of the world. When a new technology is introduced to the community, the registration of this technology and the permission to use it in different parts of the world requires a formal authorization to maintain the credibility of the company and the country of residence. A license is an official permission to own, use, deal or conduct something at a national or international level. According to the World Intellectual Property Organization (WIPO), the word license simply means that one person allows others to do something. Based on the relationships existing between the countries and the rules governing international relations, the creation of technology and the use of it in different regions require formal certification. In this regard, it is stated that "license is a term which has a wide applicability in a number of areas. The common denominator of all licenses is that the licensee receives from the licensor, for an agreed consideration, the right to enjoy something the licensor has the right to grant, without interference by the licensor".^{2,3}

It is noteworthy to mention that the licensing of technology and intellectual property has grown dramatically over the past decade, outpacing the expectations of many officials and industry players.

² L. Eckstrom, Licensing In Foreign And Domestic Operations (1984).

³ D. M. Epstein, Eckstrom's Licensing In Foreign And Domestic Operations (2002).

Technology licensing touches on a variety of legal and business disciplines: Agency, corporate law, competition law, tax law and intellectual property law, to name just a few. For example, the assembly of the final high-tech product involves the understanding of the respective components that go into the creation of the final product, as well as a basic understanding of the protectability of each component type. Many core computer rights include technology and inventions that may be developed by the ultimate owner of the property or obtained by assignment or authorization from a third party.

Because of the interdisciplinary nature among some of the legal issues involved in technology licensing, this paper focuses on only the corporate compliance issues that will be involved in the Technology transfer; Specifically Antitrust and Competition Laws, Tax Laws on royalties received from the license agreement, and the I.P. laws and the provided protections for technology licensing by the studied jurisdictions.

1.2. Purpose of this study

This dissertation involves a comparative study focused on Japan, France, with an overview of the European Union and the United States Laws (three jurisdictions with a very diverse legal system). It will review the laws, regulations and restrictions that companies have to comply with them in International Technology Licensing. In the course of the study, it came clear that the three main laws that are essential to comply in this kind of Licensing agreements are Intellectual Property Law, Antitrust or Competition Law and Tax Law and Royalty Calculations.

Compliance generally refers to the conformance to a set of laws, regulations, policies, best practices, or service-level agreements.⁴ It is important because there is increasing regulatory

⁴ Silveira, P., Rodriguez, C., Birukou, A., Casati, F., Daniel, F., D'Andrea, V., Worledge & C., Zouhair, T. (2012), Aiding Compliance Governance in Service-Based Business Processes, IGI Global, pp. 524–548

pressure on companies to meet a variety of policies and laws.⁵ Failing to meet these regulations means safety risks, hefty penalties, loss of reputation, or even bankruptcy.⁶ This research focuses on the intersection between Intellectual Property Law, Business Law and International Trade Law, related International treaties and also Corporate Compliance Codes and Policies. The aim of this work is to provide a framework and a set of codes that businesses must fulfill when transferring or licensing technology internationally.

1.3. The Relevance of this Research

The modern world today is engaging in a variety of business relationships. "One of the key challenges for businesses today is to remain profitable in a slowing but increasingly global economy."⁷ "More than 100 countries now have competition laws, although few to date have developed a significant body of precedent regarding the application of those laws to I.P. licensing transactions."⁸ Successful Technology Licensing is primarily concentrated on business audiences, the managers of technology and scientists who need to manage licensing throughout their work.⁹ For this reason, many companies in developed countries require licensing to do business, transactions and establish security in international and national relations.

Unfortunately, it should be noted that this is not the case in many developing countries, and there are some vacuums in these societies regarding the issues that currently prevail over the global market for sufficient knowledge of licensing rules. The importance of this thesis is to create a comparative analysis of international technology licenses to fill these gaps.

⁵ Id.

⁶ Id.

⁷ See WIPO, "Licensing Of Intellectual Property Assets; Advantages And Disadvantages." Available online: <http://www.wipo.int/export/sites/www/sme/en/documents/pdf/licensing.pdf> (accessed 9 October 2017)

⁸ Evrard, et al., "International Licensing of Intellectual Property Rights: Issues Arising Under U.S., European, and Japanese Competition Law." (Issue 148 April 2009)

⁹ See WIPO, "Successful Technology Licensing." Available online:

<http://uncw.edu/oic/documents/WIPOTechnologyLicensinghandbook.pdf> (accessed 9 October 2017)

1.4. Research Questions

Commercialization of intellectual property and technology is complex, and the transfer of ownership and technology, if not more complicated, is at least equal. When transferring or licensing technology, international businesses need to comply with a wide range of internal and external laws and regulations. It is stated that "While the mechanism of licensing provides enterprises with a wide variety of possibilities for improving their market position, it has its pitfalls and risks. Therefore, from a business perspective, it is important to weigh the advantages of licensing against its disadvantages in comparison with other alternatives for commercializing products and services."¹⁰

11

This study aims to comparatively explore the laws and conventions of the licensing of international technology to yield some confidential answers toward the following questions:

- Does a set of guidelines or internal codes help companies and business actors to be more confident in transferring or licensing their technology internationally?
- How can companies take advantage of the technology licensing for the development and optimization of international corporate business?
- How can international licensing constraints be circumvented for the better performance of companies in international trade?

1.5. Methodology

This dissertation builds on domestic legislations on business law and I.P. law of the three Jurisdictions in issue. Additionally, it relates to international agreements, such as Trade Related

¹⁰ See WIPO, "Licensing Of Intellectual Property Assets; Advantages And Disadvantages." Available online: <http://www.wipo.int/export/sites/www/sme/en/documents/pdf/licensing.pdf> (accessed 12 October 2017)

¹¹

Aspects of Intellectual Property Rights (hereinafter TRIPS), Trade Related Investment Measures (TRIMS) and reports from the World Trade Organization (hereinafter WTO) and World Intellectual Property Organization (hereinafter WIPO) reports and publications, Kyoto Protocol.

It also covers models of compliance programs used by companies from the same industry in each of the four countries, their domestic corporate compliance and I.P. laws, international trade law and the related international treaties that the selected states are subject to.

Moreover, the utilization of the leading titles and articles on the subject, and conference reports from international organizations such as WTO and WIPO, are considered.

1.6. The Scope of the Study

International business compliance programs are employed by companies that engage in any business transactions overseas, such as exporting or importing products and services, licensing software or technology overseas, conducting financial transactions with foreign parties such as banking, issuing securities and insurance, operating foreign subsidiaries, branches and joint ventures. With the rapid expansion of globalization, this covers a significant number of companies.¹²

It has to be mentioned that an international compliance program of a company is generally centered around the domestic and foreign rules and regulations that are relevant to that particular industry.

Therefore, there is a need to mention that the specialized Export Laws and licensing standards, if applicable to company operations are:

1. Specialized laws related to industries such as offshore and shipping, chemicals, banking, atomic energy, electric power, pharmaceuticals, and firearms.

¹²International Business Compliance Programs By: Thomas B. McVey, Esq., p.4

2. FRAND, which is typically used to describe patent licensing terms. Many Standard Developing Organizations require their participants to disclose patents covering standards prior to adoption or finalization and/or require participants to license such patents on "fair, reasonable and non-discriminatory" (FRAND) terms.

Historically, international compliance programs have focused on a few core business activities, such as the export and import of goods and the prohibition of illegal payments to foreign officials. But recent developments and changes in business, particularly the shift to the widespread use of technology has broadened the range of activities covered under these programs.¹³

This paper will focus on the computer software industry, which challenges the recent issues of corporate compliance in licensing and transferring technology on an international level.

¹³ Id.

CHAPTER TWO

Introduction

2.1. The meaning of law

Throughout history, the human being has always intended to dwell with a society of his kind. The goals of life, however, are varied from one to another but are also relevant to the instinctive or non-instinctive desires of mankind. Nevertheless, following each purpose, the will or desire of a single individual may draw the world into the phase of anarchy, and thus it will bring chaos. The worst picture of a community is known by most as the jungle of animals where the whole conventions are around the act of survival and are based on priorities that seek out the process of tracking and hunting in nature. During various periods of human life, men have sought to restore the balance between different societies. Thus, to order up their world, it was decided to build up laws to take reign over the crowd of their societies. In order to create a balance among communities, both within countries and internationally, humans have always been seeking an organizational and systematic solution. Given the importance of regular systems in nature, including the inextricable relationship between climatic factors in nature or the human body and living organisms, human beings recognize the importance of the existence of order in the vital systems in the world and to optimize their life cycle in relation to social behaviors for survival, men introduced the law to their community. However, the meaning of this phenomenon has become complicated in history, due to various events, such as the existence of social, religious, and cultural discrimination, as well as various political views in most parts of the world.

The legislation and law are the most significant social system for safety and addressing the balance in any civilization. Especially in modern times, law overshadows the significant aspects of social networks. "In a layman's language, law can be described as' a system of rules

and regulations which a country or society recognizes as binding on its citizens, which the authorities may enforce, and violation of which attracts punitive action. These laws are generally contained in the constitutions, legislations, judicial decisions, etc."¹⁴ it has to be noted that there has not yet been found a unanimous definition for law. It is considered by some jurists as "a 'divinely ordered rule' or as 'a reflection of divine reasons.' Law has also been defined from philosophical, theological, historical, social and realistic angles."¹⁵

According to Marmor et al. (2015). "law is a unique social-political phenomenon, with more or less universal characteristics that can be discerned through philosophical analysis."¹⁶ Ronald L. Akers has another perspective toward the definition of law, "law is part of the larger system of pressures toward conformity and attempts to prevent deviation from social norms that are termed social control."¹⁷ There are also varieties of views in the case of the definition of law. Basically, Plato (Greek philosopher born 427 BC) and Aristotle (Greek philosopher born 304 BC) define law as "an embodiment of Reason", whether in the individual or the community'.¹⁸ On the other hand, Oliver Wendell Holmes, an American judge and jurist born in 1841, describes law in terms of "the prophecies of what the courts will do ... are what I mean by the law."¹⁹ Karl Llewellyn (American legal scholar born 1893) at his book "The Bramble Bush" (1951) refers to law as "what officials do about disputes".²⁰ However, Glanville Williams, in his "Learning the law" relates in a much more convenient terms that "law is the cement of society and also an essential medium of change. Knowledge of law increases one's

¹⁴CBSE. "Supplementary Material for Legal Studies Citation: Nature and Sources of Laws." Available at http://cbseacademic.in/web_material/doc/Legal_Studies/XI_U2_Legal_Studies.pdf (accessed 15 October 2017)

¹⁵ Id.

¹⁶ Marmor, Andrei and Sarch, Alexander, "The Nature of Law", The Stanford Encyclopedia of Philosophy (Fall 2015 Edition), Edward N. Zalta (ed.), URL = <<https://plato.stanford.edu/archives/fall2015/entries/lawphil-nature/>>.

¹⁷ Ronald L. Akers, "Toward a Comparative Definition of Law", Journal of Criminal Law and Criminology (Volume 56, Issue 3, 1965, Article 5) Davis, Society and the Law 39-61 (1962).

¹⁸ Id. 1.

¹⁹ Oliver Wendell Holmes, "Collected Papers: The Path of the Law." New York Harcourt, Brace and Company, (1920)

²⁰ Grant Gilmore, "Book Review: The Bramble Bush" (1951). Faculty Scholarship Series. Paper 2669. http://digitalcommons.law.yale.edu/fss_papers/2669

understanding of public affairs. Its study promotes accuracy of expression, facility in argument and skill in interpreting the written word, as well as some understanding of social values".²¹

In this regard, taking into account what has been defined in various titles of the law, it can be inferred that the law is a systematic network and, in simplest terms, is so complex and rooted in the human community. In addition, the existence of law in the human social system, even in the smallest social networks, is essential to optimize the growth and progress of the range that it covers.

2.2. The Emergence of Technology

On the path of life, men have always been seeking to discover the ways and means to remove obstacles along the path. Eliminating obstacles and overcoming the difficulties of life has not always been easy to apply. This has always encountered the highest level of individual innovation and creativity to provide the necessities. With the advent of technology in the earliest human needs, from the earliest period of human need to the existence of technology to remove barriers of human life, another area was added to the human community. "Past studies have shown that defining the concept of technology is not easy (Reddy and Zhao, 1990); therefore technology has been defined from different perspectives."^{22,23} In the language of Charlie Wilson and Arnulf Grubler "technology is defined as consisting of both hardware and software (the knowledge required to produce and use technological hardware)."²⁴ "Yet, technology concepts are not consistently defined in the literature (Jones, 1997) and there is still much confusion in the technology education community with regard to what are technology

²¹ Glanville Williams, "Learning the law", Sweet & amp; Maxwell 2002-06-20

²² Sazali Abdul Wahab, "Defining the Concepts of Technology and Technology Transfer: A Literature Analysis". National Defense University of Malaysia, Kuala Lumpur 57000, Malaysia. (Vol. 5, No. 1; January 2012)

²³ Reddy, N. M., & Zhao, L. (1990). International Technology Transfer: A Review. Research Policy, 19, 285-307. [http://dx.doi.org/10.1016/0048-7333\(90\)90015-X](http://dx.doi.org/10.1016/0048-7333(90)90015-X)

²⁴ Charlie Wilson and Arnulf Grubler, "Energy Technology Innovation". International Institute for Applied Systems Analysis, Austria, Charlie Wilson, University of East Anglia. (18 December 2013, pp 332-346)

concepts. Although various technology concepts such as design and systems are presented in different curricula, often the nature of technology concepts as big ideas are missing or get lost in the teaching of craft skills, knowledge and problem solving (design and make activities)."^{25,26} Technologies change all the time individually, and in their aggregate, typically in a sequence of replacements of older by newer technologies. But it needs to be stated that "the most essential terminology distinguishes between invention (discovery), innovation (first commercial application) and diffusion (widespread replication and growth) of technologies."²⁷ Remarkably, coming long the term 'technology', it can be said that it "is an inherently abstract concept which is difficult to interpret, observe and evaluate (Blomstrom and Kokko, 1998)." However, although there have been so many extensive researches done on this subject, "many of the literatures are fragmented along different specialties and generally there is no commonly accepted paradigm (Reddy and Zhoa, 1990)."^{28,29}

Researchers in the social sciences typically see technology in a broader context. The expansion of what constitutes material construction is considered to be social significance. The use of the term "technology" of social science scholars refers to the use of material structures, as well as intellectual and social contexts. It refers to the organization of knowledge to achieve practical goals, as well as any means or technique of making or building through which it has expanded. "Solomon (2000) defines technology as the systematic application of all sources of organized knowledge (i.e., literature, science, the arts), suggesting that art, craft, and science all have roles to play in technology application."^{30,31} In the view of Braham (1977), the term technology

²⁵ Dov Kipperman, "Teaching Through Technology Concepts", ORT Israel. (2006)

²⁶ Jones, A, (1997). Recent Research in Learning Technological Concepts and Processes, International Journal of Technology and Design Education. Vol.7 (1-2).

²⁷ Id. 11.

²⁸ Blomstrom, M., & Kokko, A. (1998). Multinational Corporations and Spillovers. Journal of Economic Surveys, 12(3), 247-77. <http://dx.doi.org/10.1111/1467-6419.00056>

²⁹ Id. 9.

³⁰ Luppacini, R. (2005). A Systems Definition of Educational Technology in Society. Educational Technology & Society, 8 (3), 103-109.

³¹ Solomon, D. L. (2000). Toward a post-modern agenda in Instructional Technology. Educational Technology Research and Development, 48 (4), 5-20.

entertains another meaning as "social science scholars believe that technology is associated with social values. Organize activities designed to help human adaptation by participating in the use and exploitation of the environment."³² McGinn also views technology as "valuable human activities associated with social and cultural influences and the surrounding environment."³³ In addition, in five ways, the values of technology are brought up by McGinn as:

- 1) The value of a technique reflects the values of who makes it and uses it.
- 2) Technology is optimistic in assigning value to "technological progress."
- 3) Technology is value laded insofar as the use of resources for advance may preclude their use in other work that may improve life.
- 4) The institutionalization of modern technology allows the direction of technology to be influenced externally by companies rather than by practitioners.
- 5) Products of technology are expressions of individual and cultural values of designers.³⁴

"In the narrowest sense, technology consists of manufactured objects like tools (axes, arrowheads, and their modern equivalents) and containers (pots, water reservoirs, buildings). Their purpose is either to enhance human capabilities (e.g., with a hammer you can apply a stronger force to an object) or to enable humans to perform tasks they could not perform otherwise (with a pot you can transport larger amounts of water; with your hands you cannot)."³⁵

"According to Kumar et al. (1999) technology consists of two primary components: 1) a physical component which comprises of items such as products, tooling, equipment, blueprints, techniques, and processes; and 2) the informational component which consists of know-how in

³² Braham, M. (1977). The grounding of the technologist. In R. Budgett & J. Leedham, J. (Eds.), Aspects of Educational Technology VII, London: Pitman Publishing, 45-56.

³³ McGinn, R. (1978). What is technology. Research in Philosophy and Technology, 1, 179-197.

³⁴ Id. 17.

³⁵ Arnulf Grübler, "Technology: Concepts and Definitions". Cambridge University Press. (1998).

management, marketing, production, quality control, reliability, skilled labor and functional areas."³⁶ Certainly, this is one of the finest definitions for the technology word that has already been introduced. But, in order to have a broader view of the technology, we should look at the principle of the technology and the changes that this phenomenon has created in human societies.

2.2.1. The Principles of Technology

The principles of technology vary by type of activity or range that it engages with also, for a long-time technology has played a major role in all areas of human interaction. Each government or private organization uses technology to advance its goals and to optimize and expand the relevant range. Throughout human life, "technology – the application of knowledge and skills to extend human capabilities and to help satisfy human needs and wants – has had profound effects on society."³⁷ Technology encompasses a wide range of activities and issues surrounding human society, including business, computing sciences, food, textiles, craft, design, engineering, graphics and applied technologies, as well as so many other fields. The technology framework provides challenging activities that include research, problem solving, the discovery of new and unfamiliar concepts, skills and materials. These activities often bring products that are real-world applications, and this is a reward for producing and manufacturing newer technology. "It provides progression in cognitive skills. Children and young people will develop their creativity and entrepreneurial skills and be encouraged to become innovative and critical designers of the future. These attributes are essential if, in the future, our children and

³⁶ Kumar, V., Kumar, U., & Persaud, A. (1999). Building Technological Capability through Importing Technology: The Case of Indonesian Manufacturing Industry. *Journal of Technology Transfer*, 24, 81-96. <http://dx.doi.org/10.1023/A:1007728921126>

³⁷ Scotland. Curriculum for Excellence, "Curriculum for Excellence: Technologies: Principles and Practice". (2009)

young people are to play a major part in the global economy and embrace technological developments in the 21st century."³⁸

Given all these facts concerning technology, it is clear that there is no general definition for the principles of technology rather than just a few descriptions toward the exact meaning of what this phenomenon is and how this is applicable in human society. It is obviously known that this cycle of living is in possession of a major significant part in this entire planet and it is an impeccable tool that is looking forward to meeting the prosperity and a much more proper world. In fact, technology is what has made today "the modern society".

2.2.2. The Influence of Technology

Technological advancement is considered, for some time, as a key element alongside capital and labor factors as essential to economic growth. "With this widely accepted belief in mind, governments in both developed and developing countries have allocated resources to research and development with resultant innovations, which have brought both benefits, in the short term and sometimes the long term, and unforeseen disadvantages, usually in the longer term."³⁹

It is remarkable to mention that up until the end of the Second World War the human society was intimidated by the overlook toward the future of the technological progress and it had been often expressed during those periods. "Ford Motor Company executive is said to have coined the word 'automation' (by automatic out of mechanization) in the early 1950s, and there was a lengthy debate in the United States Congress in 1955 in which anxiety was expressed at the possibility of mass unemployment arising from the advent of the so-called 'automatic factory'."⁴⁰ It was told seven years later that two million out of six and a half million unemployment in the United States were the victims of 'automation'. Andrew Robertson (1981)

³⁸ Id.

³⁹ Andrew Robertson, "Technology and Cultural Values: Technological Innovations and Their Social Impacts". (1981)

⁴⁰ Id.

also declares that "[The] achievement of technological progress without sacrifice of human values requires a combination of private and government action, consonant with the principles of a free society." The more technology progresses, the more it seems to take control over human life. Today, the use of technology is widely available and is constantly being promoted throughout the human community. While technology makes life easier for people, it also creates problems for our society, such as reducing social behavior. "Yet, modern societies realized the significance of intellectual technology which is a form of new knowledge that achieves goals or solves many problems."⁴¹

Obviously, in the twenty first century, Europe is a 'technological community'. Its citizens have witnessed rapid technological progress over decades, an improvement that has occurred at almost every level of society and across the economy. Whether individually or in groups, a large number of devices are used every day. This enables people to explore locations that were not previously exposed, harmonize our plans and activities in most social settings, including home and workplace, and communicate immediately with each other. But there is a question that, why should there be such technologies in society and in human life? "The answer is straightforward: technological advancement carries with it the promise of saving time, or doing more in the same amount of time. In short, innovation offers us the opportunity to 'do things more efficiently'."⁴²

Numerous technologies in human society have had a significant impact on every single member of the community and a variety of activities of life and interpersonal relationships. From access to cool water at home to the discovery of other planets outside the atmosphere of the globe, all have been deeply influential on human life to various titles. "Today even a "Fordist" assembly plant is run to provide substantial varieties of car models, colors, additional equipment, engines,

⁴¹ Mohammad Bani Younes and Samer Al-Zoubi, "The Impact of Technologies on Society: A Review". IOSR Journal Of Humanities And Social Science (IOSR-JHSS), Volume 20, Issue 2, Ver. V (Feb. 2015), PP 82-86

⁴² Lieve Van Woensel and Geoff Archer, "Ten Technologies Which Could Change Our Lives: Potential Impacts and Policy Implications ". (January 2015)

and the like. New forms of production organization have also increased output, variety, and quality further. Volvo in Sweden, for example, pioneered a system combining assembly line operation with small assembly work teams. The result combines high output and productivity with more diverse and varied job responsibilities, thereby raising work satisfaction, lowering absenteeism, and raising productivity."⁴³ Referring to all aspects of technology influenced by its advantages and disadvantages in the life cycle as well as the emergence of modern society, the great impact that this phenomenon has on the advancement of human life is absolutely indisputable. "The word technology consists of two parts (Techno) means application, art or skill, and (Logy) means science and learning. Thus, the linguistic meaning of the word technology is the methods and tools that a society has developed in order to facilitate the solution of its practical problems and to provide the necessary needs for the community."⁴⁴

2.2.2.1. Technology and Marketing

Technology can have both negative and positive impacts on societies. Regardless of any type of adverse influence that this phenomenon has had on the life of people, it is one of the best categories to improve the economy of any country and it has been an influential importance of the life cycle. Of course, technology has been quite helpful in productivity and it has been best useful in all the economic aspects of life. "The classical theory of production is formulated under essentially static assumptions which freeze -or permit only once over change-in the variables most relevant to the process of economic growth. As modern economists have sought to merge classical production theory with Keynesian income analysis, they have introduced the dynamic variables: population, technology, entrepreneurship, etc."⁴⁵

⁴³ Id. 22.

⁴⁴ Id. 27.

⁴⁵ W. W. Rostow, "The Economic History Review". Blackwell Publishing on behalf of the Economic History Society. Vol. 12, No. 1 (1959), pp. 1-16

Scientific advances and technological changes are one of the most important factors in recent economic success. The ability to create, distribute and exploit knowledge has become the main source of competitive advantage, wealth creation and quality of life. "Some of the main features of this transformation are the growing impact of information and communications technologies (ICT) on the economy and society; the rapid application of recent scientific advances in new products and processes; a high rate of innovation across OECD countries (the Organization for Economic Cooperation and Development); a shift to more knowledge intensive industries and services; and rising skill requirements."⁴⁶

"Some special banking data sets also allow for observation of specific technological changes and measurement of some of their effects. In addition, detailed information on the scale, geographic spread, and merger and acquisition (M&A) activity of individual banks aid in evaluating the effects of technological progress on the structure of the industry, i.e., the extent to which technological progress facilitates industry consolidation."⁴⁷

Technology has always been accompanied by innovation and creation. Some scholars believe that they vary in meaning and application. However, it is generally known that technology is the vintage of the consumed innovative movement that through concentration, motivation and basic up to the advanced level knowledge and science, has been yield with its most proper statue. Sometimes, a technology is not perfect, and there are so many deficiencies and miscalculations that after some periods the whole advantages of that technology get more evolved until they become fully complete.

Marketing is also one of the most influential criterions of societies. "According to Brady, technology has encouraged the development of relationship marketing, which improves the relationship between the consumer and company compared to the traditional transactional

⁴⁶ "Science, Technology and Innovation in the New Economy". (September 2000)

⁴⁷ Allen N. Berger, "The Economic Effects of Technological Progress: Evidence from the Banking Industry". Forthcoming, Journal of Money, Credit, and Banking, Volume 35, 2003

marketing mix entailing the 4P's which are product, price, place, and promotion."^{48,49} The world of industry has been through so many changes from work and capitalism to knowledge and information that has been based on economy.^{50,51} "Because the most recent wave of technological change is as dramatic as any in history (including fundamental transitions in worldwide communications and information processing), the implications for firm decision making are perhaps more pervasive now than at any other time and involve numerous key areas of corporate strategy and structure: changing product life cycles, changing definition of market segments, changing definitions of industries, new sources of competition, changing employee relations, and increased globalization of markets."⁵² The general effect that single outcomes have on technology change which is coupled with the technology interaction with political and socio-economic strains is that corporate growth is now much more dependent on new opportunities and closed to the traditional ones.⁵³

It should be noted that for the technology and its strategy, a framework can be defined. According to Larreche and Srinivasan, for a dataset of financial and managerial resources, the company -with planning- applies a number of technology variables, (e.g., internal development projects, external acquisition options, independent manufacture, and marketing joint venture), to the set of available technologies, the technology that is currently under use plus external options, so that it can magnify some objective function like profits which are discounted.⁵⁴ As

⁴⁸ Sultan Alghamdi and Christian Bach, "Technological Factors to Improve Performance of Marketing Strategy". University of Bridgeport, Bridgeport, CT, USA. (April 3-5, 2014)

⁴⁹ Brady, M., M.R. Fellenz, and R. Brookes, Researching the role of information and communications technology (ICT) in contemporary marketing practices. *Journal of Business & Industrial Marketing*, 2008. 23(2): p. 108-114.

⁵⁰ Machlup, F. (1962), "The Production and Distribution of Knowledge in the United States", Princeton, NJ: Princeton University Press.

⁵¹ Porat, Marc, U. (1974) "Defining an Information Sector in the U.S. Economy," Institute for Communication Research, Stanford University.

⁵² Noel Capon and Rashi Glazer, "Marketing and Technology: A Strategic Coalignment." *Journal of Marketing*. Vol. 51. (July 1987).

⁵³ Edward B. Roberts, "New Ventures for Corporate Growth," *Harvard Business Review*, 80 (July/August 1980).

⁵⁴ Jean-Claude Larréché and V. 'Seenu' Srinivasan, "Start-Port: A Decision Support System for Strategic Planning", *Journal of Marketing*. (1981)

a result, conceiving and devising the strategy of marketing is considered as an interactive and repetitive process that execute series which include the taste of customers, market segmentation, pick out the target sectors, and in order to provide suitable target market needs they design the offer, and they also put varieties over the offer.⁵⁵ Technology offers a variety of ways to cope with the core competencies and business functions. This is considered as the characteristic and the nature of the technology that gives it the permission to take the advantage of these functions, also causes to find a serious application in marketing. For instance, we can refer to search engines that "are important ways to get people to your (Web) site initially once they want to ensure they return. An excellent way to do this is via a newsletter."⁵⁶ Another example of new technology that has affected the market, as it was paid at the former statement, is the web and web-based tool. "The e-newsletters and e-bulletins add to the pull strategy of technology for they offer the consumer useful information as well as promotional materials. A consumer convinced of the information, then contacts the company through their e-mail list, makes a purchase online, and requests for delivery online. These web-based tools are the main technologies that improve the pull strategy of marketing."⁵⁷

Crucially, technology affects the market and marketing strategy owing to the fact that marketing is not a well-self-dependent venture, and in today's modern world, marketing overshadows everything that is beneficial and applicable in human life.⁵⁸

2.3. The Technology Licensing and Intellectual Property

Today, in order to facilitate the use of technology and marketing, to maintain the interests and credibility of the manufacturer of the desired technology, as well as to establish a secure

⁵⁵ El-Ansary, A.I., Marketing strategy: taxonomy and frameworks. *European Business Review*, 2006. 18(4): p. 266-293.

⁵⁶ Sherman, C., Eight streetwise clues for publishing a successful e-newsletter. *EContent*, 2001. 24(9): p. 34-39.

⁵⁷ Id. 35.

⁵⁸ Holm, O., Integrated marketing communication: from tactics to strategy. *Corporate Communications: An International Journal*, 2006. 11(1): p. 23-33

relationship between countries and companies, for the technologies that are traded in the international relations, the licensing plays a great role. "The close relationship between law and economics has been recognized for more than four decades. Starting with the work of the British economist and 1991 Nobel prize winner Ronald Harry Coase, in his article 'The Problem of Social Cost,'⁵⁹ and current Judge Guido Calabresi of the United States Court of Appeals for the Second Circuit, in Some Thoughts on Risk Distribution and the 'Law of Torts'⁶⁰ This relationship became formalized into the field of Law and Economics.⁶¹ Today, there are centers of Law and Economics⁶² throughout the legal academy both in the United States and throughout the world, and at least ten journals are dedicated to the subject."⁶³ "The subject of licensing of intellectual property rights involves the full gamut of legal and business considerations ranging from the creation, recognition, and evaluation of legal rights to intellectual property, through the determination of the value of the licensable rights and negotiation of such rights, to the task consequences on both parties of the transfer of the intellectual property rights."^{64,65} "As firms shift to more open models of innovation based on collaboration and external sourcing of knowledge, they are exploiting their intellectual property, notably patents, not only by incorporating protected inventions into new products, processes and services, but also by licensing them to other firms or public research organizations (PROs), using them as bargaining chips in negotiations with other firms, and as

⁵⁹ R. H. Coase, The Problem of Social Cost, 3 J.L. & ECON. 1 (1960).

⁶⁰ Guido Calabresi, Some Thoughts on Risk Distribution and the Law of Torts, 70 YALE L.J. 499 (1961). See also GUIDO CALABRESI, THE COSTS OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS (1970), which is a very important work in the law and economics tradition because it provides an economic efficiency analysis of the rules of tort law.

⁶¹ Historically, it has been associated with the University of Chicago and Professor, and now Judge Richard A. Posner of the United States Court of Appeals for the Seventh Circuit. See RICHARD A. POSNER, ECONOMICS OF JUSTICE 4 (1983); Richard A. Posner, Foreword to 1 ENCYCLOPEDIA OF LAW AND ECONOMICS, at xii (Boudewijn Bouckaert & Gerrit De Geest eds., 2000).

⁶² The University of Chicago Law School remains prominent for its Law and Economic center among others.

⁶³ Dorit Samuel, "Intellectual Property Valuation: A Finance Perspective" The Ohio State University (1997).

⁶⁴ L. Eckstrom, Licensing In Foreign And Domestic Operations (1984).

⁶⁵ D. M. Epstein, Eckstrom's Licensing In Foreign And Domestic Operations (2002).

a means of attracting external financing from banks, venture capitalists and other sources."⁶⁶ These improvements increase the importance of effective technology markets and valuable IP designs. Systematic technology markets can foster the processes of innovation by facilitating the exchange of inventions (through licensing or sales) among public and private actors of the sections who can make inventions available to those who can commercialize them. Improved evaluation can facilitate not only the transfer of technology, but also a wide range of channels for IP operations, such as the decision to patent and invest in companies that own the patent.⁶⁷ Stating all the aspects of the technology licensing, there is a need to resemble the facts that have been quoted toward the effects of such a phenomenon on the marketing, it is declared that "IP licensing, cross-licensing, or otherwise transferring intellectual property can have many procompetitive effects. IP transactions in general can lead to more efficient exploitation of the intellectual property, benefiting consumers through the reduction of costs and the introduction of new products. Such transactions can increase the value of intellectual property to consumers and to the developers of the technology. Furthermore, the increased exploitation of IP rights through licensing can lead to increased incentives for research and development."⁶⁸

2.3.1. Intellectual Property Assets

"Intangible assets are all the elements of a business enterprise that exist in addition to working capital and tangible assets. They are the elements, after working capital and tangible assets, that make the business work and are often the primary contributors to the earning power of the enterprise. Their existence is dependent on the presence, or expectation, of earnings."⁶⁹ The legal framework around the world supports certain types of intellectual property (patents,

⁶⁶ Shigeki Kamiyama, Jerry Sheehan and Catalina Martinez, "Valuation and Exploitation of Intellectual Property". Organization for Economic Co-operation and Development (30-Jun-2006)

⁶⁷ Id.

⁶⁸ Donika P. Pentcheva, Dr. Roy P. Issac, and Alden F. Abbott, "Antitrust Treatment of Intellectual Property Transactions: Economic Analysis and Recent Developments."

⁶⁹ Gordon V. Smith and Russell L. Parr, "Valuation of Intellectual Property and Intangible Assets". (1994).

copyrights, trademarks, etc.). For the last fifty years, a shift in a paradigm has been seen in which intellectual property (IP), human capital, and organizational capabilities are considered crucial for performance in the business interactions and growth in the entire economic procedures. It seems that the share of increasing the market value of companies is derived from their intellectual property.⁷⁰ Moreover, Companies actively manage these assets to identify more ways to extract value from them.⁷¹ "Firm managers value patents when deciding whether or not to file a patent application or renew a patent, when calculating royalties for patent licensing contracts, when estimating the value of a possible merger or acquisition, and when estimating their own corporate value."⁷²

2.3.2. Valuation of Intellectual Property and Copyright

"Valuation of intellectual property rights is part of the good management of intellectual property within an organization. Indeed, knowing the economic value and importance of the intellectual property rights you create and develop assists in the strategic decisions to be taken on the assets, but also facilitates the commercialization and transactions concerning intellectual property rights."⁷³ Valuation is required in many business situations:⁷⁴

- a) In case of merger, purchase, joint venture or bankruptcy, valuation is needed.

⁷⁰ Ted Hagelin, "Valuation of Patent Licenses", 12 Tex. Intell. Prop. L.J. 423 (2004) ("The value of intangible assets relative to the value of physical and financial assets has continuously increased since the early 1980s. One measure of this increase is the market-to-book (M/B) value for the S&P 500 companies. During the 1970s, the M/B ratio for the S&P 500 companies hovered around one; by 2000, the M/B ratio was over six. For many companies, the ratio of intangible assets to physical and financial assets is considerably higher. Smith and Parr have calculated the following percentages of intangible assets for the following companies: Johnson & Johnson (87.9%); Proctor & Gamble (88.5%); Merck (93.5%); Microsoft (97.8%); and Yahoo! (98.9%).")

⁷¹ "Intellectual Property as an Economic Asset: Key Issues in Valuation and Exploitation - Background and Issues", Organisation for Economic Co-operation and Development (2005), available on www.oecd.org (visited on 10th Nov. 2005).

⁷² Ankur Singla, "Valuation of Intellectual Property," National Law School of India University, Bangalore. (2010).

⁷³ IP4inno Study, Valuation of Intellectual Property

⁷⁴ Fact Sheet, "Intellectual Property Valuation," European IPR Helpdesk. (June 2015)

- b) Before sale or licensing intellectual property negotiations take place. Just like an agreement on the deal and licensing, companies and organizations must agree on the price.
- c) Support for conflict situations, such as a hearing or a dispute resolution mechanism (e.g., arbitration).
- d) One of the necessary steps is the quantification of damages the companies experience in so many conflicts. Therefore, the proper assessment of intellectual property rights at risk is necessary to ensure that fair compensation is provided for damages.
- e) Fundraising by loaning from banks or by venture capital. Assessing intellectual property as a security of bank loans or attracting venture capital and investors is essential. In fact, numerous studies have shown that, particularly, possession of patent assets and IP proper management is critical to the decision of venture capitalists.⁷⁵

"Defining the objectives and context of the valuation is essential since it determines the strategy as well as the type of valuation method(s) that should be used. This is, therefore, the first step to take when performing a valuation."⁷⁶

IPscore is a European Patent Office unique assessment tool (EPO), which is provided for a comprehensive assessment of inventions and technology development projects. It is a simple and user-friendly tool that can be used by all companies that have patents and development projects.⁷⁷ "Although there has been a general increase in awareness and use of finance models by lawyers and judges in dealing with problems of asset valuation, issues of valuation of copyrighted works are particularly troublesome because of the array of circumstances in which

⁷⁵ Kamiyama, S., J. Sheehan and C. Martinez (2006), "Valuation and Exploitation of Intellectual Property", OECD Science, Technology and Industry Working Papers, 2006/085, OECD Publishing.

⁷⁶ Id. 60.

⁷⁷ This tool applies a qualitative approach. Further information on this valuation method is provided in part 3 of this fact sheet. To know more about IPscore, we suggest you to check our Bulletin number 8, January to March 2013, which is available in our online library.

valuation questions can arise, the different, separable components of a copyright interest, and the unique nature of individual works."^{78,79} If the damage caused by copyright infringement, section 504(a) of the Copyright Act⁸⁰ generates a substituted damages plan. Due to legal constraints, one of the copyright infringement complaints may be selected to recover substantiated damages, including a breach of good faith, or to establish legal redress without real harm.⁸¹ With regard to verifiable damages, the copyright law allows for verifiable punitive damages, which relate to the behavior of the accused, for the damages incurred by copyrighted work. Of course, such damages include the credible loss of credibility of the lost claimant and the unlawful gain received by the accused.⁸² It also needs to be mentioned that "Section 504(b) permits a copyright owner to recover actual damages, in appropriate circumstances, for the fair market value of a license covering the defendant's infringing use."⁸³ "Motion pictures, songs, photographs, unique individual paintings and sculptures, computer programs, choreography, and television commercials all may be protected by copyright,"^{84,85} but still, no general valuation plan is found to be universally applicable.

2.4. Types of Licenses

The generation of a license is the necessary constituent, and in a proper view toward this term, it can be defined as the permission that the licensor (the company or organization that

⁷⁸ See, e.g., Gordon V. Smith & Russell L. Parr, *Intellectual Property: Valuation, Exploitation, and Infringement Damages* 259 (2005).

⁷⁹ *Id.* 50.

⁸⁰ 17 U.S.C. § 504(a) (2000).

⁸¹ *Id.* (“[A]n infringer of copyright is liable for either— (1) the copyright owner’s actual damages and any additional profits of the infringer . . . or (2) statutory damages”)

⁸² 17 U.S.C. § 504(b) provides: The copyright owner is entitled to recover the actual damages suffered by him or her as a result of the infringement, and any profits of the infringer that are attributable to the infringement and are not taken into account in computing the actual damages.

⁸³ On *Davis v. Gap, Inc.*, 246 F.3d 152, 172 (2d Cir. 2001).

⁸⁴ See, for example, 17 U.S.C. § 102(a) (2000), which contains an exemplary listing of “works of authorship” that include the following categories: (1) literary works; (2) musical works, including any accompanying words; (3) dramatic works, including any accompanying music; (4) pantomimes and choreographic works; (5) pictorial, graphic, and sculptural works; (6) motion pictures and other audiovisual works; (7) sound recordings; and (8) architectural works.

⁸⁵ *Id.* 50.

originated the new technology) submits to the licensee (other company or country) which demands the usage of the new invention. The license is either verbal or in written stuff, and it can be presented both monetary or with other types of vouchers. On the basis of the constitution of both sides of a contract the consent can be regarded in either expressed or implied manner. The intellectual property rights include many types, such as trademarks, copyrights which is bearing secrets of trades, patent, and technical data, all of these rights can be included by any types of licenses. Whether single or in a compound form (combination of two or more rights) these aspects can be involved in the contract. According to the agreement of both sides, the consent can be carried out both exclusive or non-exclusive; besides, it can overshadow all or just some specific property rights that are about to be licensed. So, it needs to be mentioned that commercial licensing concerns the vast gamut of specifications toward the license generation; in this section, the two following licenses will be taken into consideration:⁸⁶

- 1) Express licenses
- 2) Implied licenses

2.4.1. Express licenses

Obviously, through taking the meaning of the term express, it can be referred that this type of license is a verbal or a documented agreement between both sides of the contract. There is a huge disadvantageous possibility in this type for any sides to make a move contrary to this stated permission, because, unlike the other type (implied license) it does not have any validation operated by law, and so it is to some extent or even totally unenforceable and invalid. This can be clearly inferred that these two issues may lead to multitudinous situations including, antitrust laws, contract laws, state restraint of trade laws, and patent laws.

⁸⁶ Id. 51.

2.4.2. Implied licenses

Documents are what hold a contract together more formally and well-dependent. A license may either be implied by the language or the intellectual property rights owner conduct. The supreme court in *De Forest Radio Telephone & Telegraph Co. V. United States*⁸⁷ stated this principle in this way, "no formal granting of a license is necessary in order to give it effect. Any language used by the owner of the patent or any conduct of his part exhibited to another form which the other party may probably infer that the owner consents to his use of the patent in making or using it or selling it, upon which the other acts, constitutes a license and a defense to an action for a tort. Whether this constitutes a gratuitous license, or one for a reasonable compensation, must, of course, depend upon circumstances; but the relation between the parties thereafter, in respect of any suit brought, must be held to be contractual and not based on unlawful invasion of the rights of the owner."⁸⁸

It is also remarkable to know that an express license that is claimed by a patent is regarded to have an implication concerning the effective claims of the mentioned patent according to which the express license can be applicable.⁸⁹ Definitely, when an express license for a patent is set out, it will be led into an implied one to sustain and strengthen the enjoyment of the patent of the licensor.⁹⁰

2.5. Antitrust

"Antitrust issues are an important consideration for intellectual property owners in domestic and international transactions. Antitrust issues can arise in numerous transactions involving

⁸⁷ *De Forest Radio Telephone & Telegraph Co. V. United States*,

⁸⁸ *Id.* 51.

⁸⁹ *Met-Coil Sys. Corp. v. Korners Unlimited, Inc.*, 803 F.2d 684, 687, 231 USPQ 474, 476 (Fed.Cir.1986).

⁹⁰ *Wilson. V. Simpson.* 50 U.S. 109 (9 Howard) (1850); *Aro Mfg. Co. V. Convertible Top Replacement Co.*, 365 U.S. 336 (1961).

intellectual property (IP) rights, from refusals to license, exclusive licenses, royalty provisions, field of use restrictions, territorial and customer limitations, exclusive dealing, tying arrangements, restrictions affecting research and development, non-challenge provisions, cross licenses, and patent pools, among other arrangements. Over the past three decades, antitrust jurisprudence has undergone significant changes in the United States, Europe, and the rest of the world."⁹¹ For innovation and the circulation of such breakthrough, there are incentives provided by the laws of intellectual property. Also, some enforceable rights are established for the creators of useful and modern products, processes that are more efficient, and main expressive works. On the other hand, the antitrust laws, regarding the existing or the new services to the consumers, promote the welfare of consumers and the innovation by introducing some prohibition of certain actions that might be harmful to the commercial competition.⁹²

⁹¹ Id. 55.

⁹² U.S. Department of Justice & Federal Trade Commission, Antitrust Guidelines for the Licensing of Intellectual Property (1995).

CHAPTER THREE

Antitrust

3.1. Japan

Japan is an independent tidal country in East Asia, a member of the United Nations, the OECD, the G7, the G8 and the G20, and is considered a great power in the modern world; it is also one of the five most developed countries.^{93,94,95} Nowadays, Japan has come to fierce competition and has become one of the economic free zones. In Global Competitiveness Report, this country is ranked sixth from 2015 to 2016.^{96,97} In scientific researches, Japan is considered a leading pioneer nation, especially in the engineering and natural sciences. Among the most and the best innovative countries, regarding the Bloomberg Innovation Index, the country is ranked second.^{98,99} In Japan, the advancement of agricultural sciences, electronics, industrial robotics, optics, chemicals, semiconductors, life sciences and various fields of engineering are highly significant for the scientists and engineers who have contributed to all these fields. Japan will lead the world in the production and use of robotics; "according to World Robotics - Industrial Robot Report 2018, recently published by the International Federation of Robotics, Japan is the world's leading supplier of industrial robots. Japanese industrial robot manufacturers delivered just over half (almost 55%) of industrial robots supplied in 2017 – 39% more than in 2016.

⁹³ "The Seven Great Powers". American-Interest. Retrieved July 1, 2015.

⁹⁴ T. V. Paul; James J. Wirtz; Michel Fortmann (2005). "Great+Power" Balance Of Power. United States Of America: State University Of New York Press, 2005. Pp. 59, 282. Isbn 0-7914-6401-6. Accordingly, The Great Powers After The Cold War Are Britain, China, France, Germany, Japan, Russia, And The United States P.59

⁹⁵ Baron, Joshua (January 22, 2014). Great Power Peace And American Primacy: The Origins And Future Of A New International Order. United States: Palgrave Macmillan. Isbn 1-137-29948-7.

⁹⁶ "Country/Economy Profiles: Japan". World Economic Forum. Retrieved February 24, 2016.

⁹⁷ "Competitiveness Rankings". World Economic Forum. Retrieved February 24, 2016.

⁹⁸ "The Bloomberg Innovation Index". Bloomberg.

⁹⁹ David Shamah (February 4, 2015). "Bloomberg: Israel Is World's 5th Most Innovative Country, Ahead Of Us, UK", No Camels. Retrieved October 29, 2016.

Japan is not only a leading manufacturer and exporter of robots; it is also a leading robot adopter. With 297,200 industrial robots at work in Japan in 2017, Japan had the second highest installed base of industrial robots in 2017".¹⁰⁰ Japan has the largest number of scientists, technicians and engineers around the world with 83 scientists, technicians and engineers per 10,000 employees.^{101,102,103}

3.1.2. Japanese Fair Trade Commission Guidelines

"On February 15, 1989, the Japanese Fair Trade Commission ("JFTC") released new Guidelines for the Regulation of Unfair Trade Practices with Respect to Patent and Know-how Licensing Agreements ("Guidelines"). United States licensors doing business in Japan must pay close attention to the Guidelines, for the Guidelines are not mere suggestions, but have the de facto force of law."¹⁰⁴ According to the laws of Japan, such international agreements should be submitted to the JFTC for approval. So, there is no way to avoid JFTC review. The guidelines generally reflect antitrust concerns, and to some extent, the antitrust law of Japan is based on American antitrust law; however, there are so many distinctive features between the antitrust law of both countries which the U.S. executives and lawyers do not rationally predict. The guidelines that were issued on 15 February 1989 are exactly a revised version of the guidelines that were first issued by the JFTC in 1968.¹⁰⁵ The function of these guidelines is to clarify the enforcement of the rules of the prohibition of unfair trading practices, including

¹⁰⁰ "Statistics – IFR International Federation of Robotics". "Why Japan leads industrial robot production, The Japanese robot industry – the past and the future". <https://web.archive.org/web/20190728042350/https://ifr.org/post/why-japan-leads-industrial-robot-production>. Visited March 5, 2020.

¹⁰¹ Shteinbuk, Eduard (July 22, 2011). "R&D and Innovation as a Growth Engine" (PDF). National Research University – Higher School of Economics. Retrieved May 11, 2013.

¹⁰² "InvestinIsrael" (PDF).

¹⁰³ "Archived copy". Archived from the original on May 9, 2013. Retrieved March 18, 2013.

¹⁰⁴ Bradley J. Nicholson, "Japanese Fair Trade Commission Guidelines For Licensing Agreements: An Overview And A Critique." Georgia Journal of International And Comparative Law, 1991.

¹⁰⁵ Guidelines for the Regulation of Unfair Trade Practices with Respect to Patent and Know-How Licensing Agreements, February 15, 1989, Executive Bureau, Fair Trade Commission, reprinted in BENDER, PATENT ANTIRUST 645-691 (1989) [hereinafter Guidelines]

inventions (patent) and issuance of technical know-how licensing. The Guidelines issued in 1968¹⁰⁶, included two lists, list one consists of five acceptable practices and the other one contains seven unacceptable ones. The Guidelines have been expanded to treat patent and know-how violations separately and have grown from two categories of practices to three. These three categories are (1) not unfair trade practices, (2) may be unfair trade practices, and (3) highly likely to be unfair trade practices.^{107,108}

3.1.2.1. The Antitrust Regulation in Japan (JFTC)

As it has been mentioned before, Japanese antitrust law to some extent, plays by some of U.S. antitrust law rules.¹⁰⁹ "This should not be surprising, for the United States conquered Japan and modified certain aspects of the Japanese legal system and its industrial structure after World War II."^{110,111} Before World War II, the largest conifer ("zaibatsu") overcame the Japanese economy. The pre-war economic policy even focused on the most important industries.¹¹² "The

¹⁰⁶ Antimonopoly Act Guidelines for International Licensing Agreements, May 24, 1968, reprinted in H. Iyori, *An Monopoly Legislation In Japan 199-202* (1969).

¹⁰⁷ A word should be said about the organization of the Guidelines. The organization of the Guidelines is terribly illogical. Each category is repeated twice, because the Guidelines treat patents and know-how separately. Such a division, while conceptually oriented, is not generally necessary. A second reason why the number of items within each category has grown is because certain practices occur in all three categories, in both the patent and know-how sections, with a discussion each time of what surrounding circumstances would require a certain result. Each category is supposed to represent a certain kind of analysis, based on the circumstances, rather than the result. This conceptual confusion tends to support the suspicion that labeling generally prevails over analysis.

¹⁰⁸ *Id.* 13.

¹⁰⁹ Uesugi, *Japanese Antimonopoly Policy-Its Past and Future*, 50 *ANTITRUST L.J.* 709, 718 (1981).

¹¹⁰ "The Act was originally drafted by the Supreme Commander Allied Powers (SCAP) . . . to introduce American free market principles, including those embodied in its antitrust laws, into the Japanese economy." See also HADLEY, *ANTITRUST IN JAPAN* 4 (1970).

¹¹¹ *Id.* 13.

¹¹² For example, see the Key Industries Control Law of 1931, discussed in HADLEY, *supra* note 5, at 1-4.

Antimonopoly Act of 1947¹¹³ is the fountainhead of Japanese antitrust law."¹¹⁴ It seems like a large number of prohibitions are common to both systems. The Antimonopoly Act prohibits inappropriate and unreasonable trade restrictions.¹¹⁵ The Japanese antitrust law enforcement agency is Japan Fair Trade Commission (JFTC). This law has been created by the Antimonopoly Act and its main responsibility is law enforcement of the Act.¹¹⁶ "The JFTC is an administrative agency with both quasi-judicial and quasi-legislative powers." The JFTC is linked to the office of the prime minister, however, in order to carry out their duty, the four commissars and the chairman enjoy the independence functionally.¹¹⁷ These duties that have just been mentioned concern the power of treating the so called violations proclaimed by the Act, from research to action proposal, by using the arbitration procedure or neglecting it. The Anti-Monopoly Act enables the JFTC to regulate its internal rules and procedures and outlines procedures for handling files, reports, and applications for verification.¹¹⁸

3.1.2.2. Practices of Unfair Trade

Regarding the prohibition of unfair trade practices, the Antimonopoly Act Section 2(9) and Section 19 are seen as similar to Section 5 of the Federal Trade Commission Act in the United States, however, concerning the JFTC, the power of reserving content to these prohibitions,

¹¹³ Act Concerning Prohibition of Private Monopoly and Maintenance of Fair Trade, Act No. 54 of 1947 (amended 1982), reprinted in H. Iyosu A. A. Uesugi, THE AN MONOPOLY LAWS OF JAPAN 213-264 (1983) [hereinafter Antimonopoly Act].

¹¹⁴ The purpose, wide scope, and importance of the Antimonopoly Act is demonstrated in Article 1: This Act, by prohibiting private monopolization, unreasonable restraint of trade and unfair business practices, by preventing the excessive concentration of economic power and by eliminating unreasonable restraint of production, sale, price, technology, and the like, and all other undue restriction of business activities through combinations, agreements, and otherwise, aims to promote free and fair competition, to stimulate the initiative of entrepreneurs, to encourage business activities of enterprises, to heighten the level of employment and people's real income, and thereby to promote the democratic and wholesome development of national economy as well as to assure the interests of consumers in general. An important Japanese antitrust analyst comments: "As amended in 1977, the Japanese Antimonopoly Act is one of the most sophisticated pieces of antitrust legislation among the developed nations." Uesugi, *supra* note 4, at 718.

¹¹⁵ Antimonopoly Act, *supra* note 9, at § 1, § 2(6), and § 3.

¹¹⁶ *Id.* at § 27(1).

¹¹⁷ See *id.*, §§ 27(2), 28 and 31.

¹¹⁸ *Id.* at § 76.

plus the power of making them applicable to specific areas such as international licensing should be taken into consideration. Section 19 merely states that "[N]o entrepreneur shall employ unfair business practices."¹¹⁹ Section 2(9) describes the six categories of widely unfair trading practices. These six categories are known as the following:

1. Relatively distinct from other entrepreneurs¹²⁰
2. Bargain at unfair prices
3. By motivating or imposing rival customers to confront themselves
4. The collision with one another is in the sense that restricts the activities of the party illegally
5. The collision with one another through the excessive use of their bargaining position
6. Unjustly interfering with a transaction between [on one hand] an entrepreneur who competes in Japan with oneself or the company of which one is a stockholder or an officer and [on the other hand] the customers of such entrepreneur; or, where such entrepreneur is a company, unjustly inducing, instigating, or coercing a stockholder or an officer of such company to act against the interest of such company¹²¹

The Act causes any of the above items to come over any business practices (the intention of which is to bane the fair trade and competition) and fair trade commission allotted it as an unfair business practice. Therefore, for a business practice there must be mutual elements to make it unfair. "First, it must fall within the scope of the activities set forth in items 1-6 of Article 2(9). Second, it must tend to impede fair competition. As applied, this requirement has been interpreted by the JFTC to mean that the practice must constitute an impediment to competition either at the level of the party benefiting from the practice or at the level of the

¹¹⁹ Antimonopoly Act, supra note 9, at § 19.

¹²⁰ "Entrepreneur" is defined in § 2(1) of the Antimonopoly Act as "a person, who carries on a commercial, industrial, financial, or any other business." Id. at § 2(1).

¹²¹ Id. at § 2(9).

party injured by the practice.^{122,123} Third, The JFTC must have designated the activity as an unfair business practice." The JFTC has got the power to allocate (designate) the business practices that are unfair; this power is derived from the Anti-monopoly Act. The Act utters that the specific business practices should be designated by JFTC in some distinct trade areas which are according to the provisions of Section 2(9).¹²⁴ In order to do so, the JFTC needs to take an overview toward "entrepreneurs operating in the same line of business as that of the entrepreneurs who employ the specific business practices concerned, hold a public hearing to obtain the views of the public and thereupon shall make the designation after due consideration of the views disclosed."¹²⁵ It is further charged by the Act that the unfair business practices should be designated by "notification."¹²⁶ Owing to the fact that few judicial decisions have defined the authority boundaries of the JFTC in the field in which unfair business practices are regarded, the amount of its legal authority is not comprehensible.¹²⁷

In accordance with the third prong of the elements of Section 2(9), The JFTC has established regulations that create "a general designation" of unfair trading practices.¹²⁸ On the basis of the Anti-monopoly articles, these practices can be explained according to act; they include

¹²² Id. 13.

¹²³ Uesugi, Unfair Business Practices, in 5 DoiNG Busn, ss iN JAPAN § 6.02(1), n.2 (Z. Kitagawa, ed. 1989) [hereinafter UEsuGi].

¹²⁴ Antimonopoly Act, supra note 9, at § 71.

¹²⁵ Id.

¹²⁶ Id., at § 72.

¹²⁷ See Uesugi, supra note 22, at § 6.02(4).

¹²⁸ FTC Notification No. 15, June 18, 1982 [hereinafter General Designation). Notification No. 15 replaced the older set of prohibitions issued under FTC Notification No. 11 of 1953. New Designations were seen as desirable due to the allegedly vague content of the Old Designation. See Uesugi, supra note 22, at § 6.03. There is also a set of Specific Designations that cover certain industries in Japan. See id. at § 6.04.

concerted refusals to deal and other concerted action¹²⁹, discriminatory pricing¹³⁰, or other discriminatory treatment¹³¹, predatory pricing¹³², predatory costing¹³³, deceptive consumer practices¹³⁴, tying¹³⁵, exclusive dealing¹³⁶, resale price maintenance¹³⁷, dealing on restrictive

¹²⁹ General Designation, supra note 27, at 685.

Art. 1-Concerted Refusal to Deal: 1. Without proper justification, taking an act specified in one of the following paragraphs concertedly with another entrepreneur who is in a competitive relationship with oneself (hereinafter a "competitor"):

(a) Refusing to deal with a certain entrepreneur or restricting the quantity or substance of a commodity or service involved in transactions with a certain entrepreneur, or

(b) Causing another entrepreneur to take an act which comes under the preceding paragraph.

Art. 2. Other refusals to deal:

2. Unjustly refusing to deal or restricting the quantity or substance of a commodity or service involved in transactions with a certain entrepreneur or causing another entrepreneur to take any act which comes under one of these categories.

Id.

¹³⁰ Id. Art. 3. Discriminatory Pricing:

Unjustly supplying or accepting a commodity or service at prices that discriminate between regions or between other parties.

¹³¹ Id. Art. 4. Discriminatory Treatment on Transaction Terms: Unjustly affording favorable or unfavorable treatment to a certain entrepreneur in regard to the terms or execution of a transaction.

Art. 5. Discriminatory Treatment in a Trade Association, etc.: Unjustly excluding a specific entrepreneur from a trade association or from a concerted activity, or unjustly discriminating against a specific entrepreneur in a trade association or a concerted activity, thereby causing difficulties in the business activities of the said entrepreneur.

Id. at 685-86.

¹³² Id. Art. 6. Unjustly Low Price Sales: Without proper justification, supplying a commodity or service continuously at a price which is excessively below cost incurred in the said supply, or otherwise unjustly supplying a commodity or service at a low price, thereby tending to cause difficulties to the business activities of other entrepreneurs.

Id. at 686.

¹³³ Id. Art. 7. Unjustly High Price Purchasing: Unjustly purchasing a commodity or service at a high price, thereby tending to cause difficulties in the business activities of other entrepreneurs.

Id.

¹³⁴ Id. Art. 8. Deceptive Customer Inducements: Unjustly inducing customers of a competitor to deal with oneself by causing them to misunderstand that the substance of a commodity or service supplied by oneself, or the terms of the transaction, or other matters relating to such transactions are much better or much more favorable than the actual ones or than those relating to the competitor.

Art. 9. Undue Customer Inducement by Unjust Benefits: Inducing customers of a competitor to deal with oneself by offering benefits unjust in the light of normal business practices.

Id.

¹³⁵ Id. Art. 10. Tie-in Sales: Unjustly causing the other party to purchase a commodity or service from oneself or from an entrepreneur designated by oneself by tying it to the supply of another commodity or service, or otherwise coercing the said party to deal with oneself or with an entrepreneur designated by oneself.

Id.

¹³⁶ Id. Art. 11. Dealing on Exclusive Terms: Unjustly dealing with the other party on condition that the said party shall not deal with one's competitor, thereby tending to reduce transaction opportunities for the said competitor.

Id.

¹³⁷ Id. Art. 12. Resale Price Restrictions: Supplying a commodity to a party who purchases the said commodity from oneself while imposing, without proper justification, one of the restrictive terms specified below: (a) Causing said party to maintain the sales price of the commodity that one has determined, or otherwise restricting the said party's free decision on sales price of the commodity, or (b) Having the said party cause an entrepreneur who purchases the commodity from the said party to maintain the sales price of the commodity that one has determined, or otherwise causing the said party to restrict the said entrepreneur's free decision on sales price of the commodity.

terms¹³⁸, abuse of market power¹³⁹ and interference with competitors' dealings¹⁴⁰, or internal operations.¹⁴¹

3.1.2.3. The Application Guidelines to the Licensing Contrasts

Between the foreign entrepreneurs and those of Japan, the Guidelines are applicable to all agreements which concern patent and know-how licensing the duration of which is longer than a year.¹⁴² Not only does the Guideline apply to agreements between Japanese and foreign companies, but also they get to be applied between Japanese companies.¹⁴³ "But while all international agreements must be submitted, agreements between domestic firms do not need to be submitted to the agency. The Guidelines also apply to reciprocal licensing agreements or

Id. at 686-87.

¹³⁸ Id. Art. 13. Dealing on Restrictive Terms: Other than any act coming under the preceding two paragraphs, dealing with the other party on conditions which unjustly restrict any transaction between the said party and his other transacting party or other business activities of the said party.

Id. at 687.

¹³⁹ Id. Art. 14. Abuse of Dominant Bargaining Position: Taking any act specified in one of the following paragraphs, unjustly in the light of the normal business practices, by making use of one's dominant bargaining position over the transacting party:

(a) Causing the said party in a continuous transaction to purchase a commodity or service other than the one involved in the said transaction;

(b) Causing the said party in a continuous transaction to provide for oneself money, service or other economic benefits;

(c) Setting or changing transaction terms in a way disadvantageous to the said party;

(d) In addition to any act coming under the preceding three paragraphs, imposing a disadvantage on the said party regarding terms or execution of the transaction; or

(e) Causing a company which is one's other transacting party to follow one's direction in advance, or to get one's approval regarding the appointment of officers of the said company (meaning those as defined by subsection 3 of section 2 of the [Antimonopoly Act]).

Id.

¹⁴⁰ Id. Art. 15. Interference with a Competitor's Transaction: Unjustly interfering with a transaction between another entrepreneur who is in a domestic competitive relationship with oneself or with the company of which one is a stockholder or an officer and the other party to such transaction, by preventing the formation of a contract, inducing the breach of a contract, or by any other means whatsoever.

Id.

¹⁴¹ Id. Art. 16. Interference with Internal Operation of a Competing Company: Unjustly inducing, abetting, or coercing a stockholder or an officer of a company which is in a domestic competitive relationship with oneself or with a company of which one is a stockholder or an officer to take an act disadvantageous to such company by the exercise of voting rights, transfer of stock, divulgence of secrets, or any other means whatsoever.

Id.

¹⁴² In view of the nature of such [anticompetitive] restrictions, impacts on competition should as a matter of course be evaluated individually in each case when it is examined to determine whether restrictions contained in technology licensing agreements constitute unfair trade practices. However, impacts on competition may vary depending on the types of restrictive conditions.

Guidelines, supra note 1, preamble § 3 at 646.

¹⁴³ Guidelines, supra note 1, preamble, § 2, at 646.

licensing agreements between more than two parties, such as cross-licensing agreements, patent pools, multiple licensing agreements, and other complex licensing arrangements."^{144,145} Besides the Guidelines, in these cases, Section 3 of the Antimonopoly Act (Prohibition of Private Monopolization or Unreasonable Restraints of Trade), plus other sections could be applicable.¹⁴⁶

3.1.2.4. The Substance of the Guidelines

In licensing agreements, there are some kinds of business practices that have been approved unqualifiedly by JFTC.¹⁴⁷ Due to the fact that these practices are quite self-explanatory, they are merely listed as below:

1. The provisions of the best law that promised the license to exploit the patent¹⁴⁸
2. Contractual obligations that designate the minimum level of production, volume of sales or use¹⁴⁹
3. The minimum production or the minimum volume of sales of registered goods or a commercial secret, or at least the use of the patent process¹⁵⁰
4. Licensing for a limited period within the life of a patent right or as long as the know-how remains secret¹⁵¹
5. A clause in a know-how agreement which obligates the licensee from disclosing the subjects of the trade secrets to the third parties¹⁵²

¹⁴⁴ Id., preamble, § 6, at 648.

¹⁴⁵ Id. 13.

¹⁴⁶ Id.

¹⁴⁷ Guidelines, supra note 1, pt. 1, § 1, at 648-50.

¹⁴⁸ Id. pt. 1, § 1(13), at 650, pt. 2, § 1(15), at 658.

¹⁴⁹ Id. pt. 2, § 1(3), at 657.

¹⁵⁰ Id. pt. 1, § 1(15), at 649.

¹⁵¹ Id. pt. 1, § 1(2), at 648, pt. 2, § 1(1), at 656.

¹⁵² Id. pt. 2, § 1(14), at 658.

6. A clause in a know-how agreement which obligates the licensee from handling competing products or technology for a short time after the exposure of the know-how secrets¹⁵³
7. In a patent licensing agreement, it is the right of a licensor to grant separate licenses to sell, use or manufacture.¹⁵⁴

Depending on the business context, the Guidelines define a category of business practices which may be either justified or prohibited. If the antitrust standards are considered as a set of more intense evidentiary suppositions against certain practice,¹⁵⁵ the illegality presupposition in this category is not great the same as the per se category (possible to be found as a violation, in the parlance of Guidelines).¹⁵⁶

A dubious practice that has always been subject to all business areas and is 'restricting', which is the exporting patented product's ability of the licensee. The restricting also can concern those products produced in accordance with a licensed know-how process. This contains restricting the export of the product in general, to specific countries or regions, or restricting the export price or volume, or the need for a licensing exporter through a licensor or an export licensing representative. "This last restriction could be an unfair trade practice in cases where the freedom of the licensee to export patented products to an area not covered by patent or trade secret rights is restricted, thus reducing competition in an export market."^{157,158}

To this provision, there are three exceptions leveled:

1. If the licensor has registered his patent in patents or licenses in this geographic area

¹⁵³ Id. pt. 2, § 1(14), at 657.

¹⁵⁴ Id. pt. 1, § 1(1), at 648. United States law is in accord. See *Brulotte v. Thys Co.*, 379 U.S. 29, 31 (1964).

¹⁵⁵ See L. SCHWARTZ, J. FLYNN & H. FIRST, *FREE ENTERPRISE AND ECONOMIC ORGANIZATION: ANTITRUST* 338 (1983); Flynn, *Rethinking Sherman Act Section 1 Analysis: Three Proposals for Reducing the Chaos*, 49 *ANTITRUST L. J.* 1593 (1964).

¹⁵⁶ See *infra*, Section III. C.

¹⁵⁷ Id., pt. 1, § 2(7), at 652-53.

¹⁵⁸ Id. 13.

2. In the event that the licensor exports the marketing of registered products or technical know-how to the region continuously
3. In the event that the licensor assigns the license to a third party as a sales territory exclusive to the third party¹⁵⁹

It is remarkable to mention that there is no such counterpart restrictions designated in the United States.

3.1.2.5. Restrictions of Sale or Resale Prices in Japan

The prices that are set between the manufacturer and the wholesaler are called sales prices. Before the distribution, the prices of all products that are ready to enter the market, must be fixed in the first place. The sales price constitutes the initial prices given to the products.¹⁶⁰ Resale prices are known as the secondary prices that are set between the wholesaler and the retailer, and after that, on the basis of conventions, these prices will be set between the retailer and the consumer.¹⁶¹ According to the Guidelines, because the restriction determined by

¹⁵⁹ Guidelines, supra note 1, pt. 1, § 2(7), at 652.

¹⁶⁰ Price fixing under a patent grant has an unclear status in the United States. The main case in this area is *United States v. General Elec. Co.*, 272 U.S. 476 (1926), which held that under General Electric's three patents, which "cover[ed] completely the making of ... modern electric lights," General Electric had the right to limit the method of sale and price. 272 U.S. at 481. But subsequent law and commentary have put into doubt the general proposition that price fixing under patents is off-limits to antitrust regulation. Sullivan notes that the decision is [a]nalytically deficient [and] clouded by the criticism which it has evoked and the stinginess with which it has been construed... One cannot rely on it in counseling... The alacrity with which courts have distinguished *General Electric* and the fact that since 1926 no majority of the Supreme Court has been ready to affirm it serves warning that even narrowly read, the case provides no basis for planning a licensing program. Sullivan, supra note 71, at 543. The modern view is probably closer to *United States v. Line Material*, 333 U.S. 287 (1948) (holding that "when patentees join in an agreement... to maintain prices on their several products, that agreement, however advantageous it may be to stimulate the broader use of patents, is unlawful per se under the Sherman Act" 333 U.S. at 314). Another view is that *Line Material* is merely a qualification of the overbroad approach of *General Electric*. Schwartz, Flynn & First, supra note 83, at 987. In terms of enforcement, the United States Antitrust Division considers this to be a vertical arrangement which calls for the rule of reason and would "rely upon the same analysis employed with respect to distributional practices, at least where the relationship between the patentee and the licensee is vertical. But where the relationship is horizontal, the opportunity to establish a cartel exists." Remarks of Lipsky, supra note 97, at 155; see also Remarks of Andewelt, supra note 85, at 322 (suggesting that any such vertical relationship calls for the rule of reason according to *Continental T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36 (1977)).

¹⁶¹ Under United States law, patent restrictions, including the right to set prices (assuming the validity of *General Electric*-a problematic assumption), are exhausted with the first sale of the patented article. Therefore, price restriction after resale is illegal in the United States. Compare *Adams v. Burke*, 84 U.S. (17 Wall.) 453 (1873); *United States v. Univis Lens Co.*, 316 U.S. 241 (1942).

licensor on sales prices restraints the pricing freedom of licensee, consequently the licensor disrupts the pricing competition, thus violating Article 13 of the General Designation.¹⁶² The Guidelines add further that such a restriction cannot be justified on the basis of securing a royalty.

3.1.2.6. Comparisons of Japanese and United States Intellectual Property Antitrust Law

After dividing the summary of antitrust laws or licensing laws of Japan and the United States through notes and texts, there is time to spend on some general comparisons between Japanese and United States intellectual property antitrust law. The United States is a huge and developed country; indeed, everything has been through a new generation of changes. The prospect of US antitrust laws over the past 20 years has changed greatly in its assumptions and implementation. At present, the economic approach of this country is strong. The Guidelines have also changed; they are now more flexible and ruling more than in 1968.¹⁶³

"The structure of enforcement regulations shows that Japan is concerned with enforcement values and avoiding exploitation of domestic licensees by foreign licensors. The Guidelines and the reporting system serve as an effective method of regulation, and the substance of the Guidelines is sympathetic to the weaker party. On the other hand, current United States law enforcement values, are most concerned with providing effective incentives for inventors and entrepreneurs and allowing them to glean as much as they can from the market for their inventions. United States law is more complex and detail-oriented."¹⁶⁴ In the following, the Japanese and the U.S. Law will be taken into consideration.

3.1.2.7. The Perspective of Foreign Licensor

¹⁶² Guidelines, supra note 1, pt. 1, § 3(1), (2), at 654-55, pt. 2, § 3(1), (2), at 663. For Article 13, see supra note 36.

¹⁶³ See infra, section IV.

¹⁶⁴ Id. 13.

The foreign licensor doesn't consider the Guidelines as an antitrust regulation representative, as a matter of fact, they are a method via which the government intervenes to ensure that technology contracts favor Japanese licensees. In fact, the instructions appear to be deliberately designed to create favorable conditions for the proper transfer of technology to Japanese exporters, and consequently to the Japanese economy, rather than merely the implementation of domestic antitrust standards. Therefore, external licensing permits the instructions as an instinctive way of promoting local business interests against importers and promoting the transfer of technology in the appropriate conditions for Japanese companies with contractual regulations under government authorization through guidelines, rather than relying on agreements freely negotiated between parties.

The JFTC seems to be more interested in foreign deals than domestic ones. While US antitrust cases cover more than half the time of national licensing, the JFTC's requests for reform are almost encompassing foreign licensing.¹⁶⁵ It is commented that the JFTC enforcement is "almost for the ostensible benefit of the Japanese licensee."¹⁶⁶ It is stated as the following:

"[A]lthough the Guidelines could conceivably be applied to Japanese companies licensing abroad, virtually all of the requested modifications of licenses have been used to cause a foreign licensor to impose fewer restrictions on a Japanese licensee."¹⁶⁷

Therefore, in the view of foreign licensors, JFTC is a one-way street: help for the licensee, but none for the licensor.

¹⁶⁵ Davidow, The New Japanese Guidelines on Unfair Practices in Patent and Know-How Licenses: An American View, in PATENT ANTITRUST 1989, at 600 (1989); Shibuya, The Administrative Regulation of Transfer of Technology in Japan, 1 Eur. INTELL. PROP. REv. 18, 22, (1982).

¹⁶⁶ Davidow, supra note 143, at 600; see also Note, The Administrative Regulation of Technology Induction Contracts in Japan, 8 N.W.J. OF INT'L L. & Bus. 197, 232 & n.216 (1987).

¹⁶⁷ Davidow, supra note 143, at 600.

"The process is also open to manipulation. A Japanese licensee can convince a foreign licensor to strike a term because it violates Japanese antitrust law and/or the Guidelines."^{168,169} It is remarkable to explain that:

"This appears to be another case in which the lack of knowledge of foreign firms regarding Japan may cause a detriment to their bargaining position. The author questioned numerous engineers and legal personnel involved in licensing negotiations if they ever try to "buffalo" the foreign party on aspects of Japanese law. They predictably claimed that they would not do such a thing but noted that it would be quite possible because of the ignorance of the foreign parties."¹⁷⁰

3.1.2.8. The Japanese Perspective

First of all, it should be noted that Japan is an independent state with full control over its policy choices. The matter and the approach of these Guidelines reflect the choice of Japanese methods for doing business and resolving disputes. Criticism of a legal system or business abroad, the choice of policies of the country, reflecting the traditions, norms of behavior and development outlook, should be respected.¹⁷¹

From Japan's point of view, what criticizes foreign permissions as an unfair review process is merely a mechanism by which the Japanese government impedes the issuance of foreign

¹⁶⁸ Id. 13.

¹⁶⁹ Note, supra note 144, at 232.

¹⁷⁰ Id. at 233, n.219.

¹⁷¹ To his credit, even the harshest critic of the new Guidelines prefaces his remarks respectfully: There are a number of reasons why an American lawyer must be hesitant to offer a critique of the new draft guidelines. First of all, the present translation is tentative and unofficial. Some drafting problems may be solved in a later version or may not exist in the Japanese version. Second, it is not clear that the JFTC is much concerned with whether the rules are appealing to Americans or consistent with methods of antitrust analysis now in favor in the U.S. The JFTC may well believe that it has done a very good job so far in protecting the Japanese national interest. It also relies on the fact that achieving fairness between the parties is an explicit consideration in Japanese antitrust law, even if it is not an essential element of the Sherman Act analysis. All this being said, the Japanese have undertaken to rewrite the rules, do intend to liberalize them somewhat, and have obviously been influenced by the U.S. and common market approaches. Therefore, it seems best to assume that careful critical analysis by interested U.S. parties is worth the effort. Id. at 606-07.

licenses from domestic licenses. Basically, the JFTC inspection protocols prohibit the adherence contract to sell technology to Japanese licenses.

While Japan and the United States have attitudes that protect the law of liberty and equality, the legal system of Japan is also a well-known tool and even welcomes the government's control of the economy.¹⁷² "In addition, Japanese antitrust laws are generally ambiguous, and enforcement depends on administrative policy. In fact, the ambiguity of the law helps ensure that administrative policy will not be hindered by laws which define the agency's powers and responsibilities too clearly."¹⁷³ This process is called "administrative guidance" and forms a part of the close government-business relationship which dominates the Japanese economy.¹⁷⁴ Japan is interested in continuing to import technology in fair conditions. The industrial success of Japan since 1945 has depended on the massive technology importation from overseas.¹⁷⁵ "Despite the rapid technological advance of Japanese companies, there is still a great trade imbalance in favor of the United States in intellectual property transactions. Certainly, Japan is one of the biggest overseas markets for American intellectual products."¹⁷⁶

Based on interviews with the United States and Japanese attorneys in Tokyo, it was commented that the JFTC is no more a great factor than it once was. It is stated as follow:

"In the past, [J]FTC guidance had a greater effect on bargaining power than it now does. Previously, the [J]FTC often worked closely with the Japanese licensees in effecting beneficial TIC [technology induction contract] terms. The Japanese party may have met with [J]FTC officials and determined which TIC terms should be modified or stricken in order to benefit optimally the Japanese party. Then, pressure could be applied to the foreign party either by the

¹⁷² Hiroshi, supra note 151, at 62.

¹⁷³ Id. 13.

¹⁷⁴ See Edelman, Japanese Product Standards as Non-tariff Trade Barriers: When Regulatory Policy Becomes a Trade Issue, 24 STAN. J. INTL L. 389, 435-37 (1988); HAXY, Administrative Guidance versus Formal Regulation: Resolving the Paradox of Industrial Policy, in LAW AND TRADE ISSUES OF THE JAPANESE ECONOMY 107 (G. Saxonhouse & K. Yamamura, eds. 1986).

¹⁷⁵ CAVES & UEKUSA, Industrial Organization, in ASIA'S NEW GIANT: HOW THE JAPANESE ECONOMY WORKS 518 (H. Patrick & H. Rosovsky, eds. 1976).

¹⁷⁶ Doi, supra note 139, at 158.

[J]FTC or by the Japanese party threatened with [J]FTC intervention. Today, it appears that [J]FTC guidance is quite transparent. The [J]FTC mechanically reviews the post-execution report by the Japanese party to determine whether violative clauses exist. The determinations are said to be very predictable and quite fair. It is also certain that the [J]FTC continues to enforce vigorously its laws and regulations and that this enforcement is almost always for the ostensible benefit of the Japanese licensee."¹⁷⁷

Finally, it is argued that "while the Guidelines purport to be concerned with domestic antitrust, its international impact is, in reality, closer to that of a trade barrier. Such a trade barrier functions not to keep technology out, but rather to make sure that technology enters the country on terms most favorable to Japanese licensees."¹⁷⁸

3.1.3. The Application of the Antimonopoly Act to Licensing Agreements

It is thought that intellectual property rights are in possession of precompetitive effects owing to the fact that they can get manufacturers and companies to research and develop modern production. It has to be mentioned that the transfer of the products has the ability of precompetitive effects that can cause establishing new markets or the invention of new technology, or merging new products field together, and promoting new productions and competitive entities. Therefore, "the IPR system allows firms to realize their creative efforts in a free economy and can fulfill its basic purpose of contributing to the development of the national economy. As a result, it is important to respect the basic purposes of the IPR system and to ensure that technology transactions can be conducted smoothly."^{179,180}

There are three types of restrictive conditions under the anti-monopoly law:

¹⁷⁷ Note, supra note 144, at 233 [footnotes omitted].

¹⁷⁸ Id. 13.

¹⁷⁹ Licensing Operations in Japan

¹⁸⁰ Guidelines for Patent and Know-how Licensing Agreements under the Antimonopoly Act, PL 1.

1. Limiting conditions that create unfair experiences when imposed in competition with the market due to their serious consequences.
2. Restrictive conditions that in certain circumstances are unfair in commercial categories. These limits are evaluated depending on the environmental conditions. According to the effects of such restraints on competition inside the radius of the relevant market, the length of these restrictions which disrupt fair competition is designated. The impact on competition in a relevant market depends on the content of the constraint as well as the factors such as the license and licensing status of the products and technology market, the general market conditions, and the time limit.
3. Restrictions that are not generally considered unfair trade practices. These are restrictions that are thought to have a negligible effect on competition.¹⁸¹

Besides the competition in technology conducts and settlements, in the field of technology development, the competition exists as well. In this case, there might be problems that can both happen by the transactions of technologies, which are either the results of R & D productions or have been overshadowed by the impacts they have had in market competitions. Accordingly, the impact of patent or know-how licensing agreements will be evaluated by measuring well-established market effects that reflect these products or technology.¹⁸²

3.1.3.1. Unreasonable Restraints Concerning Patent and Know-How Agreements

"Know-how" is a collection of useful technical information in an industry which is confidential in nature and described or recorded by an appropriate method, like other property rights or goods with value as property, knowhow is subject to the Antimonopoly Act. However, the fact that know-how is the intellectual property of a confidential nature must be taken into account

¹⁸¹ Id. 88.

¹⁸² Id.

when problems are considered under the Antimonopoly Act concerning the use, profit and sale of know-how itself or particular conduct based on know-how."¹⁸³

If a patent licensing agreement is utilized so that it results in some business activities restrictions, it might encompass the unreasonable restraint of trade. For instance, a patent licensing agreement will be regarded illegal if, in some event, it imposes reciprocal restraints concerning the sales price, manufacturing volume, sales volume, sales outlets, sales territories, and so forth, of the patented products and substantially restricts competition in a market for particular products. Moreover, if restrictions are reciprocally imposed according to the areas of research and development and these restraints basically limit competition in a market for particular products or particular technologies, also under the Antimonopoly Act, they will be considered illegal as an unreasonable trade restriction, afterward.¹⁸⁴

The unreasonable restraints of trade diverge into three basic contents, Cross-Licensing, Multiple Licensing, and Patent Pools. Suffice it to mention a brief reference to any of these.

The mutual licensing of patented technologies that are possessed by multifarious possessors or owners of patent rights is 'Cross-Licensing'. Through allowing the reciprocal use of patents held separately by multiple patent right holders, cross-licensing can have a precompetitive impact via increasing the effectiveness of the considered patents as well as introducing technological exchange among the patent holders.

Therefore, cross-licensing does not form an unreasonable trade restraint, per se. However, a patent cross-licensing agreement will be regarded illegal if in some event it imposes reciprocal restraints concerning the sales price, manufacturing volume, sales volume, sales outlets, sales territories, and so forth, of the patented products and substantially restricts competition in a market for particular products.¹⁸⁵ Besides, "when restrictions are mutually imposed regarding

¹⁸³ Id.

¹⁸⁴ Id at Pt 3(2).

¹⁸⁵ Id.

the fields of research and development, and as a result competition in a market for particular products or particular technologies is substantially restricted, such restrictions will also be illegal under the Antimonopoly Act as an unreasonable restraint of trade."¹⁸⁶

Those licenses which are licensed by one holder of patent rights to multiple firms are 'Multiple licenses'. "When multiple licensing is conducted by granting non-exclusive licenses to multiple licensees on common conditions that are set forth by the licensor, this does not usually pose a problem under the Antimonopoly Act."¹⁸⁷ "However, it is illegal under the Antimonopoly Act as an unreasonable restraint of trade, where the multiple licenses impose mutual restrictions on the licensor and multiple licensees regarding the sales price, manufacturing volume, sales volume, sales outlets, sales territories, and so forth, of the patented products, thereby substantially restricting competition in a market for particular products."¹⁸⁸

In a 'Patent Pool', patent right holders authorize to license products or technology in a particular corporate entity or an organization, and obligatory licenses are afforded through the corporate entity or the organization to its members or others. "These organizations may take various forms. They may be newly established or existing organizations."¹⁸⁹

3.1.3.2. Restrictions in Licensing Agreements

The licensing restrictions that are being enforced by the licensor for a licensee are largely examined from the point of view of unfair trading practices. However, when a dominant company in other business activities of the company, including licensees, by imposing licensing restraints, the company may be charged with a private monopoly in violation of antitrust law if competition in a particular market is restricted. "For example, there may be situations where, because a patent has become the de facto standard for a particular product

¹⁸⁶ Id.

¹⁸⁷ Id.

¹⁸⁸ Id.

¹⁸⁹ Id.

and therefore has become essential to business activities in the field, it becomes difficult to conduct business activities in a particular product field without obtaining a license to use the patent. In this case, it will be illegal under the Antimonopoly Act to exclude or control the business activities of other firms, including licensees, by imposing restrictions, such as making it obligatory for the licensee to procure products and technology designated by the licensor and excluding the business activities of firms which manufacture products competing with the product in question."^{190,191}

In such cases, it is said that a licensor is dominant over the interlocutor licensee, so the licensee is under the obligation to take up with any requests from licensor even if they are extremely disadvantageous owing to the fact that any suspension or denial from the licensor toward the technology transactions would present serious obstacles to the business of the licensee. Various factors will be taken into account in order to determine whether this is the case. These factors are including:

1. The degree of dependence on the patent by the licensee
2. The positions held by the licensor and licensee in the product or technology market
3. The possibility that the licensee could change licensors
4. The circumstances in the product or technology market
5. The disparity between the licensor and licensee in their scale of business¹⁹²

In short, as a matter of course, the bargaining position of the licensor with respect to the licensee is not counted to be dominant solely due to the high value of the patent license solicited by the licensee. The Licensing Agreement Guidelines of the Japanese Federal Trade Commission offer the subsequent instances of this sort of restraints:

¹⁹⁰ Id.

¹⁹¹ Guidelines for Patent and Know-how licensing Agreements under the Antimonopoly Act, Pt. 3.

¹⁹² Id. at Pt. 4

1. The patent held by Company 1, the dominant manufacturer and distributor of Product A, has become a de facto standard in the industry and it has become difficult to manufacture Product A without a patent license from Company 1
2. Company 1 makes it a condition for granting the patent license that the licensee also procure Product B from Company 1
3. As a result. Company 2 is excluded from selling Product B¹⁹³

3.1.4. Unfair trade practices

Unfair trade practices are other issues that are experienced inside the trade field. The territory covered, duration, restrictions on research and development, and restrictions on the manufacture of the patented products will similarly be studied to verify whether they are considered the category of unfair trade practices.¹⁹⁴

However, the FTC Guidelines overshadow a license which is granted by a licensor to a single licensee; multiple licensing is fundamentally examined in the same way as well. But it needs to be regarded that in multiple licensing, since there are frequent restrictions set on more than one licensee, the impact of multiple licensing on competition in a market can be higher than the case of licensing to a single licensee. As a result, assessing the amount of restrictions that prevent fair competition is different in issuing multiple licenses compared to single licensing cases.¹⁹⁵

There are cases where a licensor grants the right of sub-license to a licensee in order to be given to a third party. "In these cases, the restrictions that the licensee has imposed on the third party (sub-licensee) in the sub-licensing agreement are handled in basically the same manner as if the restrictions were imposed by a licensor on a licensee."¹⁹⁶

¹⁹³ Id. at Pt 3.

¹⁹⁴ Id al Pt 4(1).

¹⁹⁵ Id.

¹⁹⁶ Id.

in some instances, in patent licensing agreements, the licensor press restraints on the licensee in order to limit the scope of the license or for restricting the ability of the licensee to exploit the licensed technology. Providing separate licenses to manufacture, trade, use, sell, etc., restraining the amount of time that the license has to spend a period within the life of the patent rights, granting licenses restricted to an area inside Japan, or limiting the utilization of the patent to a defined ground of technology, are general restrictions regarding the scope of licensing.

"Those kinds of licensing activities that can be classified as "exploitation" activities controlled by the Patent Act are considered to be an exercise of the rights provided for under that Act. Since such acts are seen to have a negligible effect on competition in a market, they are not considered to cause problems under the Antimonopoly Act."¹⁹⁷

The Anti-monopoly Act administers to restraints on those licenses scope which are not regarded as a practice of rights under the Patent Act or those which are elements of know-how licensing agreements. The size of these restrictions prevents fair competition based on a case, given its impact on the competition in the market.¹⁹⁸

In licensing agreements (patent), when a license is granted for the exploitation of a patent, plus divided for the production, use, sale, etc., and receives separate licenses for each license, it is not primarily traded in unfair terms. The same applies to know-how licensing agreements, when a license for exploiting technical knowledge is separated into production, use, sales, etc., and assigns separate licenses for each license. In this way, the use of the license for technical knowledge is limited.¹⁹⁹

Know-how and patent licensing agreements that provide licenses for a limited period during the term of patent rights are essentially trademark experiences.²⁰⁰

¹⁹⁷ Id.

¹⁹⁸ Id. at Pt -J(1)(2).

¹⁹⁹ Id. at Pt. -1(2)(2).

²⁰⁰ Id. at Pt -l(2){3}

Patent license agreements that provide licenses for a limited area in Japan are not, in principle, unfair trading practices. However, the license is not considered to be a right of use in the patent law, provided that there are limitations to a sale limitation permit for the products invented in the circumstances recognized that the patent rights of the license in Japan are applied. It seems that constraints impede fair competition based on a case based on its impact on market competition. The same approach has been taken with technical knowledge licenses.²⁰¹

A patent license agreement that does not grant a license to restrict patent use to a specific area of technology is not essentially unjust in commercial categories. However, the restrictions on the sale of licenses or customers for registered products are not considered legal acts under the patent law and may be considered unfair experiences. Such restrictions include, for example, allowing only wholesale sales and the prohibition of retail sales, or sales commitments only to parties using specific sales methods, such as door-to-door sales.²⁰²

Restrictions and obligations accompanying license, are generally including in patent or know-how licensing agreements in which a licensor will, in some instances, impose various restrictions on a licensee regarding the business activities of the licensee, which are requiring the licensee to pay a royalty based on the production volume of specified products, restricting the use of the technology of the licensee after expiration of the patent rights specific duration, requiring the licensee to accept the reciprocal licensing patents or technologies as a package, prohibiting the licensee from challenging the validity of the patent, restricting the research of the licensee and development activities or tasks, and requiring the licensee to license or assign improvements to the licensor just in case.²⁰³

²⁰¹ Id at Pt 4(2)(4).

²⁰² Id at Pt. 4(2)(5).

²⁰³ Id at Pt 4(3)(1).

Restrictions on the use of technology and obligations to pay a royalty after the expiration of patent rights are other obligatory issues concerning the patent licensing agreements in the field of technology trades.

Patent License Agreements that restrict the use of licensed technology after patent rights have expired or require authorization to pay a royalty after the termination of patent rights has a negative impact on competition.

Any potential user should be allowed to use the technology after the expiration of the patent since it does not have exclusive licenses to restrict the use of the technology or to compel a royalty to use after the expiration of its patent rights. Consequently, these restrictions are likely to be subject to unfair trading practices and violations of the Antimonopoly Law. However, there is a requirement that the license to continue paying royalties after the expiration of patent rights will be allowed in the case of payment of installments or deferred payment.²⁰⁴

3.1.4.1. Copyright Licensing

It is remarkable to mention here regarding the Japanese Licensing Guidelines, stating the fact that they "apply only to patents and know-how. However, it is likely that antitrust concerns arising out of copyright license agreements will be treated in a manner similar to that of antitrust concerns arising out of patent license agreements."²⁰⁵

3.1.5. Administrative Controls Related To Licensing

In this area, it needs to be marked that the administrative controls which are corresponded to the act of licensing overshadow several significant basics into the field of trade and transaction.²⁰⁶

²⁰⁴ Id.

²⁰⁵ Id. 88.

²⁰⁶ Id.

Exchange Controls play the first rule among these factors. "The Foreign Exchange And Trade Control Law was revised in 1980 to make all foreign transactions permitted in principle unless expressly forbidden." All foreign transactions related to capital, goods and services are currently free of state control. The only exception to the above is that the Ministry of Finance can apply different controls if it determines a state of emergency. Some special arrangements, such as deferred payments, import and export transactions, still require government approval. Of course, the transfer of profits and dividends sometimes chugs the whole bottle of trade in a huge gulp; it has to be noted that there are no restraints on the transfer of profits and dividends from government-approved investments. Branches must obtain a license to compensate for the current profit.²⁰⁷

Likewise, in Japan, there is no restriction over the transfer of interest on loans to entities which have been upheld by the suitable authorities.

Again, toward the transfer of royalties and fees there is no restriction leveled Under agreements approved by appropriate authorities.

The repatriation of capital, which is another factor of administrative controls corresponded to licensing, from investments which have been approved by the appropriate government authorities, is unrestricted.

For the repayment of loans, the approval of which has been regarded by the Ministry of Finance remains unrestricted.²⁰⁸

As long as an investment or a licensing agreement has received appropriate government approvals, there is an implied reciprocal guarantee in relation to the proceeds from the licensing or investment agreement as well as the initial capital.²⁰⁹

²⁰⁷ Id.

²⁰⁸ Id.

²⁰⁹ Id.

3.2. Europe

The birthplace of Western civilization and especially ancient Greece was in Europe.^{210,211,212}

Europe currently has the largest economy in the world and the richest region with assets of more than \$ 32.7 trillion compared with \$ 27.1 trillion of North America in 2008.²¹³

Europe became the richest region in 2009, showing \$ 37.1 trillion or one-third of the world's wealth. The continent was one of the many areas of the world that surpassed its wealth last year.²¹⁴

A political entity composed of 28 European countries is the European Union, the largest single economic region in the world. The common currency in Europe has been recognized and shared as euro by 19 European countries. The five European countries are in the tenth largest national economies in gross domestic product (PPP). According to the CIA ranks given to these countries this includes Germany (6), the UK (10), Russia (7), France (11), and Italy (13).²¹⁵

3.2.1. The Treaty of Rome and The Single European Act

The basic constitutional document of the European Economic Community, the ancestry of the Treaty of Rome, leads the way back to one of the Second World War leftovers which is called: "What to do about the Saar?" It has to be reminded that at the end of the war, this territory, which is rich in coal and iron, was one of the French zone occupations. Western Allies agreed toward the separated zones reunion in order to create the Federal Republic of Germany in 1949,

²¹⁰ Lewis & Wigen 1997, p. 226

²¹¹ Kim Covert (1 July 2011). Ancient Greece: Birthplace of Democracy. Capstone. p. 5. ISBN 978-1-4296-6831-6. Ancient Greece is often called the cradle of western civilization. ... Ideas from literature and science also have their roots in ancient Greece.

²¹² Ricardo Duchesne (7 February 2011). The Uniqueness of Western Civilization. BRILL. p. 297. ISBN 90-04-19248-4. The list of books which have celebrated Greece as the "cradle" of the West is endless; two more examples are Charles Freeman's The Greek Achievement: The Foundation of the Western World (1999) and Bruce Thornton's Greek Ways: How the Greeks Created Western Civilization (2000).

²¹³ Market Research Reports, Pest Analysis of Europe, <https://www.marketresearchreports.com/countries/europe>, Retrieved August 2019.

²¹⁴ Id.

²¹⁵ "The CIA World Factbook – GDP (PPP)". CIA. Retrieved March 2020.

France was willing to return it to Germany (this actually resulted in the expansion of Nazi following the First World War). The majority of the Saar territory population was German and indeed, in 1957, after a period of quasi-independence and the long-term retention by France, the Saar was reunited with Germany again. However, in the meantime, Western Europe six principal countries had espoused a treaty to take control over the European coal and steel industries by "Europeanizing" the organization. This was the Treaty of Paris of 1952, which resulted in the European Coal and Steel Community establishment, the predecessor of the Treaty of Rome. France, Germany, Italy, Belgium, Netherlands, and Luxembourg were the parties to this Treaty.

3.2.1.1. The Treaty of Rome

It has to be mentioned that "the Treaty of Rome was the founding treaty of the European Economic Community (EEC), which later became the EU. Also known as the Treaty of the European Community (TEC), all the subsequent European treaties have built upon or amended the Treaty of Rome and its provisions still form the majority of EU treaty law. The treaty focused overwhelmingly on economic co-operation, but it also set out a broader political vision for 'an ever closer union' to 'eliminate the barriers which divide Europe'."²¹⁶

The first Article of the Roman Treaty constitutes a European economic community.²¹⁷

First of all, there is a vital need to explain the most important article in the Treaty, which is the grandiloquent Article 2. It is described as follow, " The Community shall have as its task, by establishing a Common Market and progressively approximating the economic policies of the Member States, to promote throughout the Community a harmonious development of economic activities, a continuous and balanced expansion, an increase in stability, an

²¹⁶ Wil James, "Treaty of Rome", CIVITAS Institute for the Study of Civil Society (11/2005)

²¹⁷ ARTICLE 1: "By this Treaty, the HIGH CONTRACTING PARTIES establish among themselves a EUROPEAN ECONOMIC COMMUNITY."

accelerated raising of the standard of living and closer relations between the States belonging to it."²¹⁸

However, this might appear to be a little precatory to American views; it has got real strength. To be sure, the European Court of Justice even insisted on concluding that the same term for the free flow of commodities comprised in the Treaty of Rome and in the Treaty between the Community and the European Free Trade Association has distinct meanings in the two treaties.²¹⁹

The Article 7²²⁰ non-discriminatory provisions are also momentous because when it is considered in relation to Article 58²²¹ gives the meaning that European subordinate companies of American organizations can generally benefit from community provisions provided for freedom of movement of goods services, etc.

Article 30²²² which comes up with the foundations for the free flow of commodities principles in community law is of another importance. The public morality, industrial and commercial property rights protection are definite special cases that are permitted in the range of Article 36²²³. "However, such exceptions are permitted only if they do not constitute a means of arbitrary discrimination or a disguised restriction on trade between members of the community. Since at least the mid 1970s the Court of Justice has done its best to ensure that these provisions

²¹⁸ "Licensing and Antitrust in the European Communities", "THE TREATY OF ROME", Article 2- 25 March 1957.

²¹⁹ Polydor Ltd. A RSO Records v. Harlequin Record Shops Ltd (1982) 1 Comm Mkt. LR 664 (E.C.J.).

²²⁰ Article 7: "Within the scope of application of this Treaty, and without prejudice to any special provisions contained therein, any discrimination on the grounds of nationality shall be prohibited. The Council may, on a proposal from the Commission and after consulting the Assembly [European Parliament], adopt, by a qualified majority, rules designed to prohibit such discrimination."

²²¹ Article 58: "It provides that corporations or Arms that are organized under the laws of a member state and have their registered office or principal place of business within the community are to be treated as community nationals"

²²² Article 30: "Quantitative restrictions on imports and all measures having equivalent effect shall, without prejudice to the following provisions, be prohibited between Member States."

²²³ Article 36: "The provisions of Articles 30 to 34 shall not preclude prohibitions or restrictions on imports, exports or goods in transit justified on grounds of public morality, public policy or public security; the protection of health and life of humans, animals or plants; the protection of national treasures possessing artistic historical or archaeological value; or the protection of industrial and commercial property. Such prohibitions or restrictions shall not, however, constitute a means of arbitrary discrimination or a disguised restriction on trade between Member States."

are applied and complied with."²²⁴ Therefore, it was designated that to avert import of products from the member states where the products were distributed to the market by the consent of the intellectual property right owner, the intellectual property rights cannot be utilized.²²⁵

"On the other hand, in 1979 in the leading *Cassis de Dijon*²²⁶ case the court accepted the proposition that until such time as there was harmonization of national laws or some other community-wide regime governing trade in a particular sector, member states retained some legitimate rights in excluding goods from other EEC countries as long as the rules they applied did not discriminate between domestic and imported products."²²⁷

Therefore, just due to a simple act, like one state decides to give permission to the market of some certain product (like pornographic stuff that are nowadays part of the recent markets in some certain countries) it wasn't meant to be utilized in other countries as well and they did not have to sell or trade with such goods in their own market.²²⁸ However, it's remarkable to be noticed that, in this case, the "*Cassis de Dijon*" case, the court brought up this point that Germany had no tangible cause for leaving the France-made-liquors off the table of their market just due to the fact that liquors made in France did not comprise the amount of alcohol German people were familiar with. It was conceived by the court that in order to prevent German consumers from being deceived, some measurements must be foreseen like the utilization of suitable labeling. As a result, the court certainly approved the approach to these regulations. Bavarian pure beer law that was used to prevent importing the alcohol comprising preservatives has been one of the recent victims of this law. It was felt necessary by the court that the right to make a choice should be given to the Bavarians to decide what drink they might find better by paying attention to the labels of the beers.

²²⁴ Id. 14.

²²⁵ *CentraFann BV v. Winthrop BV* [1974] 2 Comm. Mkt. UR. 480 (E.C.J.).

²²⁶ Id.

²²⁷ Id. 14.

²²⁸ Id.

Following a simple framework provided by Article 59²²⁹ to establish freedom to contribute services legislation may be enacted and also it does not affect directly as Article 30 does. "However, in its 1974 decisions in the *Reyners*²³⁰ and *Van Binsbergei*²³¹ cases, the European Court of Justice held that to some extent at least the general prohibition on discrimination in the Treaty allowed cross-border supply of services even before the expected secondary legislation (directives) had laid down the provisions that were to apply."²³² Ever since, a number of guidelines have been issued on this point and more arrives to be part of the 1992 package.

Articles 85²³³ and 86²³⁴ of the treaty may be considered free compared to United States parts

²²⁹ ARTICLE 59: "Within the framework of the provisions set out below, restrictions on freedom to provide services within the Community shall be progressively abolished during the transitional period in respect of nationals of Member States who are established in a State of the Community other than that of the person for whom the services are intended."

²³⁰ *Reyners V. The Belgian State* [1974] 2 Comm. Mkt. UR. 305 (E.C.).

²³¹ *JHM van Binsberger v. Beshrir van de Bedryfsverenigurg Voor de Metaalry- verheid* [1974] 1 Comm. Mkt. UR. 298. [1974] E.CR 1299.

²³² *Id.* 14.

²³³ ARTICLE 85: "1. The following shall be prohibited as incompatible with the common market: all agreements between undertakings, decision by associations of undertakings and concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the common market, and in particular those which:

- (a) directly or indirectly fix purchase or selling prices or any other trading conditions;
 - (b) limit or control production, markets, technical development, or investment;
 - (c) share markets or sources of supply;
 - (d) apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;
 - (e) make the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.
2. Any agreements or decisions prohibited pursuant to this Article shall be automatically void. 3. The provisions of paragraph 1 may, however, be declared inapplicable in the case of: - any agreement or category of agreements between undertakings; - any decision or category of decisions by associations of undertakings; - any concerted practice or category of concerted practices; which contributes to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefit, and which does not:

- (a) impose on the undertakings concerned restrictions which are not indispensable to the attainment of these objectives;
- (b) afford such undertakings the possibility of eliminating competition in respect of a substantial part of the products in question.

²³⁴ ARTICLE 86: "Any abuse by one or more undertakings of a dominant position within the common market or in a substantial part of it shall be prohibited as incompatible with the common market in so far as it may affect trade between Member States. Such abuse may, in particular, consist in:

- (a) directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions;
- (b) limiting production, markets or technical development to the prejudice of consumers;

of sections 1 and 2 of Sherman's Antitrust Act. Their presence holds the antitrust laws as an essential part of the European community constitution.²³⁵

3.2.1.2. The Single European Act

The Single European Act devised so many changes to the Treaty of Rome, besides, it created the new legislative procedures which will be discussed.

"Institutional Provisions" are the first group of provisions which besides the changes they suggest to the community legislative mechanism, they furnish a "first instance" court so that in particular cases it aids the Court of Justice including those corresponding to antitrust matters and competitive markets. "Internal Market" is the second group. In Article 13²³⁶ of the Single European Act this is the most significant amendment to the Treaty of Rome and adds Article 8a to it. This Article explains "the Community shall adopt measures with the aim of progressively establishing the internal market over a period expiring on December 31,1992.... The internal market shall comprise an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured."²³⁷

In Article 18²³⁸ of the Single European Act there's Article 100a which provides the Council with the power (Under the cooperative procedure after consulting the Economic and Social

(c) applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;

(d) making the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.

²³⁵ Susan S. Nathan, Antitrust Law of the European Economic Community - An Interpretation of Articles 85 and 86 of the Treaty of Rome, 4 Md. J. Int'l L. 251 (1979). Available at:

<http://digitalcommons.law.umaryland.edu/mjil/vol4/iss2/7>

²³⁶ Article 13: "The EEC Treaty shall be supplemented by the following provisions:

'Article 8a: The Community shall adopt measures with the aim of progressively establishing the internal market over a period expiring on 31 December 1992, in accordance with the provisions of this Article and of Articles 8b, 8c, 28, 57 (2), 59, 70 (1), 84, 99, 100a and 100b and without prejudice to the other provisions of this Treaty.

The internal market shall comprise an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured in accordance with the provisions of this Treaty .!."

²³⁷ Id. 14.

²³⁸ Article 18: "The EEC Treaty shall be supplemented by the following provisions:

Committee as well as the Parliament) to issue guidelines that need to harmonize the rules of member states for the implementation of the domestic market. According to the next amendment, Article 102a, the member states are committed to upgrade collaboration in economic and monetary policy.²³⁹

Further provisions are added to the social policy section of the Treaty of Rome regarding the Article 21²⁴⁰ of the Single European Act. Article 118a(l) is the most magnificent provision of this Treaty that harmonizes the laws corresponded to health and safety of workers.

In order to seek the improvement of conditions in its reverse domain, the Article 23 of the Single European Act commits the Community.²⁴¹

'Article 100a: 1. By way of derogation from Article 100 and save where otherwise provided in this Treaty, the following provisions shall apply for the achievement of the objectives set out in Article 8a . The Council shall, acting by a qualified majority on a proposal from the Commission in co-operation with the European Parliament and after consulting the Economic and Social Committee, adopt the measures for the approximation of the provisions laid down by law, regulation or administrative action in Member States which have as their object the establishment and functioning of the internal market.

2. Paragraph 1 shall not apply to fiscal provisions, to those relating to the free movement of persons nor to those relating to the rights and interests of employed persons.

3. The Commission, in its proposals envisaged in paragraph 1 concerning health, safety, environmental protection and consumer protection, will take as a base a high level of protection.

4. If, after the adoption of a harmonization measure by the Council acting by a qualified majority, a Member State deems it necessary to apply national provisions on the grounds of major needs referred to in Article 36, or relating to protection of the environment or the working environment, it shall notify the Commission of these provisions. The Commission shall confirm the provisions involved after having verified that they are not a means of arbitrary discrimination or a disguised restriction on trade between Member States. By way of derogation from the procedure laid down in Articles 169 and J 70 , the Commission or any Member State may bring the matter directly before the Court of Justice if it considers that another Member State is making improper use of the powers provided for in this Article.

5. The harmonization measures referred to above shall, in appropriate cases, include a safeguard clause authorizing the Member States to take, for one or more of the non-economic reasons referred to in Article 36, provisional measures subject to a Community control procedure.'"

²³⁹ Id. 14.

²⁴⁰ Article 21: "The EEC Treaty shall be supplemented by the following provisions:

'Article 118a: 1. Member States shall pay particular attention to encouraging improvements, especially in the working environment, as regards the health and safety of workers, and shall set as their objective the harmonization of the condition in this area while maintaining the improvements made.

2. In order to help achieve the objective laid down in the first paragraph, the Council, acting by a qualified majority on a proposal from the Commission, in co-operation with the European Parliament and after consulting the Economic and Social Committee, shall adopt, by means of directives, minimum requirements for gradual implementation, having regard to the conditions and technical rules obtaining in each of the Member States. Such directives shall avoid imposing administrative, financial and legal constraints in a way which would hold back the creation and development of small and medium-sized undertakings.

3. The provisions adopted pursuant to this Article shall not prevent any Member State from maintaining or introducing more stringent measures for the protection of working conditions compatible with this Treaty.'"

²⁴¹ Article 23:

"A Title V shall be added to Part Three of the EEC Treaty reading as follows:

'TITLE V

There are more provisions that are related to acquiring those policies which are outlined to boost up the environment and also to enhance the research and development in the Community. On the basis of Article 130r, the principle of the environment improvements is based on this line that says, “the polluter should pay.”

3.2.2. Article 81 & 82 of European Community Treaty

One of the most important Community rules is formed by competition. It's under the obligation to wipe out any obstacles inside the common markets so that the market runs fully effective.

ECONOMIC AND SOCIAL COHESION

Article 130a In order to promote its overall harmonious development, the Community shall develop and pursue its actions leading to the strengthening of its economic and social cohesion.

In particular, the Community shall aim at reducing disparities between the various regions and the backwardness of the least-favored regions.

Article 130b Member States shall conduct their economic policies and shall coordinate them in such a way as, in addition, to attain the objectives set out in Article 130a. The implementation of the common policies and of the internal market shall take into account the objectives set out in Article 130a and in Article 130c and shall contribute to their achievement. The Community shall support the achievement of these objectives by the action it takes through the Structural Funds (European Agricultural Guidance and Guarantee Fund, Guidance Section, European Social Fund, European Regional Development Fund), the European Investment Bank and the other existing financial instruments.

Article 130c The European Regional Development Fund is intended to help redress the principal regional imbalances in the Community through participating in the development and structural adjustment of regions whose development is lagging behind and in the conversion of declining industrial regions.

Article 130a Once the Single European Act enters into force the Commission shall submit a comprehensive proposal to the Council, the purpose of which will be to make such amendments to the structure and operational rules of the existing structural Funds (European Agricultural Guidance and Guarantee Fund, Guidance Section, European Social Fund, European Regional Development Fund) as are necessary to clarify and rationalize their tasks in order to contribute to the achievement of the objectives set out in Article 130a and Article 130c, to increase their efficiency and to coordinate their activities between themselves and with the operations of the existing financial instruments. The Council shall act unanimously on this proposal within a period of one year, after consulting the European Parliament and the Economic and Social Committee.

Article 130e After adoption of the decision referred to in Article 130d, implementing decisions relating to the European Regional Development Fund shall be taken by the Council, acting by a qualified majority on a proposal from the Commission and in co-operation with the European Parliament. With regard to the European Agricultural Guidance and Guarantee Fund, Guidance Section and the European Social Fund, Articles 43, 126 and 127 remain applicable respectively. Sub-section V — Research and technological development."

The key provisions on behalf of EC Treaty are Article 81²⁴² and Article 82²⁴³ which prohibits the abuse of a dominant position and those actions which limit the market down. Just like regulations and directives, these rules are elaborated in delegated legislation.²⁴⁴

The old competition rules, which are laid down in delegated legislation, held the European Commission that would merely escalate by the introduction of new Member States²⁴⁵, with a great deal of work. The European Commission proposed new competition rules in a white paper²⁴⁶ in 1999 and put forward a new regulation to the council of the European Union in

²⁴² Article 81:

1. The following shall be prohibited as incompatible with the common market: all agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the common market, and in particular those which:

- (a) directly or indirectly fix purchase or selling prices or any other trading conditions;
- (b) limit or control production, markets, technical development, or investment;
- (c) share markets or sources of supply;
- (d) apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;
- (e) make the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.

2. Any agreements or decisions prohibited pursuant to this Article shall be automatically void. 3. The provisions of paragraph 1 may, however, be declared inapplicable in the case of:

— any agreement or category of agreements between undertakings, C 325/64 Official Journal of the European Communities 24.12.2002 EN

— any decision or category of decisions by associations of undertakings,

— any concerted practice or category of concerted practices, which contributes to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefit, and which does not:

- (a) impose on the undertakings concerned restrictions which are not indispensable to the attainment of these objectives;
- (b) afford such undertakings the possibility of eliminating competition in respect of a substantial part of the products in question."

²⁴³ Article 82: "Any abuse by one or more undertakings of a dominant position within the common market or in a substantial part of it shall be prohibited as incompatible with the common market in so far as it may affect trade between Member States. Such abuse may, in particular, consist in:

- (a) directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions;
- (b) limiting production, markets or technical development to the prejudice of consumers;
- (c) applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;
- (d) making the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts."

²⁴⁴ Marc Ter Heide, "EC Competition Law: A Revolution?" International and European Law, University of Tilburg. (2005).

²⁴⁵ WT Eijssbouts and other Europees Recht; Algemeen Deel (European Law Publishing Groningen) 141.

²⁴⁶ White Paper on Modernization of Rules Implementing Articles 81 and 82 of the EC Treaty 1999 OJ C-132/1.

2000.²⁴⁷ Council regulation 1/2003²⁴⁸ which got into force on 1 May 2004 was final piece of the decisive modernization package. This resulted in the creation of a new system of Article 81 and 82 implementations of EC Treaty. And this caused the Council Regulation 17/1962²⁴⁹ to be revoked.²⁵⁰

3.2.3. Technology Transfer Block Exemption Regulation (TTBER) and Court Decisions

Innovative actions are like fuel to companies around the world and they move forward the cycle of companies in the global markets. Research and Development unit is founded on the basis of innovative moves. Innovation is what led to technology and new technology is what each R & D team seeks out to provide better vintage for the organizations investing in technologies. Intellectual Property Rights (IPR) are allocated to technologies in order to be protected and how to be protected. After developing an invention into production there it's the time to start commercialization.

The commercialization period means to identify the suitable market for certain products. The company that introduces the new technology should both have a perspective of its own product and its competitors'.

"A technology transfer agreement is an agreement pursuant to which one party (the licensor) grants another party (the licensee) the right to use its intellectual property to produce goods and/or provide services."²⁵¹

²⁴⁷ Commission Proposal for a Council Regulation on the Implementation of the rules on Competition laid down in Articles 81 and 82 of the EC Treaty COM(2000)582 final (27 September 2000) (Proposal).

²⁴⁸ Council Regulation 1/2003 of 16 December 2002 on the Implementation of the Rules on Competition Laid Down in Article 81 and 82 of the EC Treaty (2003) OJ L148/5, 6.

²⁴⁹ Council Regulation (EEC) No. 17/1962 of 6 February 1962 First Regulation Implementing Article 81 and 82 of the EC Treaty (1962) OJ 13/204, as amended (1999) OJ L148/5, 6.

²⁵⁰ Id. 39.

²⁵¹ Stevens & Bolton LLP, "Technology Transfer Block Exemption and Guidelines", 2016.

Pursuant to 'International technology transfer' by Denysyuk²⁵², "the transfer of technology is the transfer of substantial systematic knowledge about the production, about the process application or the provision of services, and there is a displacement technology (system of knowledge) with the use of information resources. But the international transfer of technology should be considered in a broad sense, namely: it is a set of economic relations in sphere of use of new system of knowledge production about the application process or the provision of services between the owner (developer) and a consumer resident in one country, and in the case of international technology transfer of residents with nonresidents of the country."²⁵³

3.2.3.1. Features on Technology Transfer Agreements

The contract under which the IPR owner (the licensor) provides the third party (the licensee) with the permission of exploiting the IPRs in manufacturing, marketing and apparently selling certain products or services is called technology transfer. But technology rights, including software copyright, design right, utility model, patents and know-how, are applied by TTBER. Unless this agreement is directly corresponded to the utilizing or marketing the products mentioned in the contract, it does not cover licensing of trademark or copyright or other IPRs.²⁵⁴

3.2.3.2. The effects of the Block Exemption Regulation

"Technology transfer agreements that fulfill the conditions set out in the TTBER are block exempted from the prohibition rule contained in Article 81(1). Block exempted agreements are

²⁵² Denysyuk V. International technology transfer: a modern content, analysis of foreign and national statistics / V. Denysyuk // The Economist: magazine. - № 2. - February 2011 - P. 43

²⁵³ Alla Dunska, "INTERNATIONAL TECHNOLOGY TRANSFER AS A FORM OF INNOVATIVE DEVELOPMENT OF ENTERPRISE" International Marketing and Management of Innovations: International Scientific E-Journal. 2017. № 2. P. 47.

²⁵⁴ Slaughter & May, "the EU Competition Rules on Intellectual property licensing", A guide to the European Commission's Technology Transfer Block Exemption Regulation and competition issues relating to IP licensing and enforcement, June 2016.

legally valid and enforceable. Such agreements can only be prohibited for the future and only upon withdrawal of the block exemption by the Commission or a Member State competition authority. Block exempted agreements cannot be prohibited under Article 81 by national courts in the context of private litigation."²⁵⁵

Technology transfer agreements categories block exemption presumes that such agreements carry out the four conditions regarded in Article 81(3). Of course, it has to be mentioned that it only takes place if those agreements are caught by Article 81(1). Therefore, it is assumed that the economic efficiencies are risen by these agreements. Also, the constraints comprised in the agreements are indispensable to the attainment of these efficiencies, that consumers receive a fair share of the efficiency gains within the affected markets and that the agreements do not afford the undertakings relating to the possibility of abolishing competition in respect of a substantial part of the products in question. "The market share gateway (Article 3), the hardcore list (Article 4) and the excluded restrictions (Article 5) set out in the TTBER aim at ensuring that only restrictive agreements that can reasonably be presumed to fulfill the four conditions of Article 81(3) are block exempted."^{256, 257}

It is remarkable to be considered that number of license agreements go off the table of Article 81(1), either due to the fact that they do not constraint competition to any extent or for the

²⁵⁵ COMMISSION NOTICE, Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements, 2004 - P. 6.

²⁵⁶ Id.

²⁵⁷ The application of the exception rule of Article 81(3) is subject to four cumulative conditions:

- (a) The agreement must contribute to improving the production or distribution of goods or contribute to promoting technical or economic progress,
- (b) Consumers must receive a fair share of the resulting benefits,
- (c) The restrictions must be indispensable to the attainment of these objectives, and finally
- (d) The agreement must not afford the parties the possibility of eliminating competition in respect of a substantial part of the products in question.

See, Communication from the Commission — Notice — Guidelines on the application of Article 81(3) of the Treaty (Text with EEA relevance), at 34, [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52004XC0427\(07\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52004XC0427(07))

reason that the restraint of competition is not appreciable²⁵⁸. On the condition that such agreements would drop inside the scope of the TTBER in any case, there is no need to determine whether they are overshadowed by Article 81(1)²⁵⁹.

"Outside the scope of the block exemption, it is relevant to examine whether in the individual case the agreement is caught by Article 81(1) and if so whether the conditions of Article 81(3) are satisfied. There is no presumption that technology transfer agreements falling outside the block exemption are caught by Article 81(1) or fail to satisfy the conditions of Article 81(3). In particular, the mere fact that the market shares of the parties exceed the market share thresholds set out in Article 3 of the TTBER is not a sufficient basis for finding that the agreement is caught by Article 81(1). Individual assessment of the likely effects of the agreement is required. It is only when agreements contain hardcore restrictions of competition that it can normally be presumed that they are prohibited by Article 81."²⁶⁰

3.2.4. Introduction to EEC Competition (Antitrust) Law

Articles 85 and 86 are two provisions regarded in the Treaty Establishing the European Economic Community (the "EEC Treaty" or "Treaty")²⁶¹.

3.2.4.1. The Basic Prohibition of the Article, Article 85

The prohibition on "agreements between undertakings which may affect trade between Member States ... and have as their object or effect the prevention, restriction or distortion of

²⁵⁸ Guidance on the issue of appreciably can be found in Commission notice on agreements of minor importance which do not appreciably restrict competition under Article 81(1) of the Treaty (OJ C 368, 22.12.2001, p. 13). The notice defines appreciably in a negative way. Agreements, which fall outside the scope of the de minimis notice, do not necessarily have appreciable restrictive effects. An individual assessment is required.

²⁵⁹ According to Article 3(2) of Regulation 1/2003, agreements which may affect trade between Member States but which are not prohibited by Article 81 cannot be prohibited by national competition law.

²⁶⁰ Id. 50.

²⁶¹ Treaty Establishing the European Economic Community, Mar. 25, 1957, arts. 85, 86, 1973 Gr. Brit. T.S. No. 1 (Cmd. 5179-I), 298 U.N.T.S. 3 (1958) [hereinafter EEC Treaty].

competition within the Common Market,"²⁶² are considered by Article 85. This Article is the provision of the Treaty that most closely approximates Section 1 of the U.S. Sherman Act, which prohibits anticompetitive agreements and conspiracies.²⁶³

"The application of anti-cartel provisions to distribution agreements constitutes a problem of acute interest for lawyers and businessmen on both sides of the Atlantic. In the United States, the Supreme Court's decision in *Continental T. V, Inc. v. GTE 'Sylvania Inc.'*²⁶⁴ has put an end to the 'Schwinn doctrine'²⁶⁵, which was in force until 1977."²⁶⁶ Pursuant to this doctrine, most of the vertical constraints forces traders (especially territorial, customer, and price restraints), were deemed to be intrinsically illegal under the antitrust laws.²⁶⁷ Sylvania has established a resilient rule of reason approach for all nonprice vertical restraints but has not supplied rigid guidelines for the implementation of the new doctrine.²⁶⁸ It has raised an extensive and still being performed discourse on the economic benefits and drawbacks of vertical restraints.²⁶⁹ Several writers, vigorously inspired by the "Chicago school,"²⁷⁰ have preceded so far as to let

²⁶² Id. art. 85.

²⁶³ 15 U.S.C. § 1 (1988).

²⁶⁴ 433 U.S. 36 (1977).

²⁶⁵ *United States v. Arnold, Schwinn & Co.*, 388 U.S. 365 (1967).

²⁶⁶ Helmuth R.B. Schroter, *THE APPLICATION OF ARTICLE 85 OF THE EEC TREATY TO EXCLUSIVE DISTRIBUTION AGREEMENTS*, *Fordham International Law Journal*, 1984 - P. 1.

²⁶⁷ Id. at 381.

²⁶⁸ 433 U.S. at 49-50 n.15.

²⁶⁹ See, e.g., Altschuler, *Sylvania, vertical restraints and dual distribution*, 25 *ANTITRUST BULL.* 1 (1980); Bohling, *A Simplified Rule of Reason for Vertical Restraints: Integrating Social Goals, Economic Analysis and Sylvania*, 64 *IOWA L. REV.* 461 (1979); Bork, *Vertical Restraints: Schwinn Overruled*, 1977 *SuP. CT. REV.* 171; Handler, *Changing Trends in Antitrust Doctrines: An Unprecedented Supreme Court Term-1977*, 77 *COLUM. L. REV.* 979 (1977); Louis, *Vertical Distribution Restraints after Sylvania: A Postscript and Comment*, 76 *MICH. L. REV.* 265 (1977); Pitofsky, *The Sylvania Case: Antitrust Law Analysis of Von-Price Vertical Restrictions*, 78 *COLUM. L. REV.* 1 (1978); Posner, *The Rule of Reason and the Economic Approach: Reflections on the Sylvania Decision*, 45 *U. CHI. L. REV.* 1 (1977); Redlich, *The Burger Court and the Per Se Rule*, 44 *ALB. L. REV.* 1 (1979); Steuner, *Beyond Sylvania. Reason Returns to Vertical Restraints*, 47 *ANTITRUST L.J.* 1007 (1978); Note, *Advent of the New Industrial State: Continental T. V v. GTE Sylvania*, 14 *CAL. W.L. REV.* 632 (1979); Comment, *A Proposed Rule of Reason, Analysis for Restrictions on Distribution*, 47 *FORDHAM L. REV.* 527 (1979); Comment, *Franchising and Vertical Customer-Territorial Restrictions: GTE, Sylvania and the Demise of the Social Goals of the Sherman Act*, 9 *TEX. TECH. L. REV.* 267 (1977).

²⁷⁰ See Posner, *The Chicago School of Antitrust Analysis*, 127 *U. PA. L. REV.* 925 (1979).

all sorts of dealer limitations initiated by the manufacturer off the hook, and even to propose the ending of the intrinsic rule for vertical price restrictions.²⁷¹

In the European Economic Community²⁷² (EEC or Community), one of the principal themes of competition policy is constituted by the distribution agreements treatment considered in paragraphs 1 and 3 of the Article 85 of the Treaty establishing the European Economic Community (EEC Treaty or Treaty).²⁷³ Exclusive distributorships and selective distribution, or a combination of both is dealt with a variety of individual determination on cartels and dominant positions abuses that the Commission of the European Communities²⁷⁴

²⁷¹ Cf. R. BORK, THE ANTITRUST PARADOX 288 (1978); Posner, supra note 5, at 17; Bork, supra note 5, at 187; Donald F. Turner, Les Restrictions Verticales dans la Distribution aux Etats-Unis, Speech delivered at an international seminar on distribution problems, jointly organized by the French Government and the Commission, in Strasbourg (December 5-6, 1983), reprinted in REVUE DE LA CONCURRENCE ET DE LA CONSOMMATION, 21, 25-27, Numero Special (Supp. No. 25 1984).

²⁷² Italy, France, West Germany, Belgium, Luxembourg, and the Netherlands formed the EEC by signing the Treaty establishing the European Economic Community, Mar. 25, 1957, 1973 Gr. Brit. T.S. No. I (Cd. 5179-1) (official English Translation), 298 U.N.T.S. 3 (unofficial English Translation) [hereinafter cited as EEC Treaty]. Its principal goal is to promote the free movement of goods within the Common Market. Id. arts. 2-3.

²⁷³ EEC Treaty, supra note 8, art. 85. Article 85 states: 1. The following shall be prohibited as incompatible with the common market: all agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the common market and in particular which: (a) directly or indirectly fix purchase or selling prices or any other trading conditions; (b) limit or control production, markets, technical development, or investment development; (c) share markets or sources of supply; (d) apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage; (e) make the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts. 2. Any agreements or decisions prohibited pursuant to this Article shall be automatically void. 3. The provisions of paragraph 1 may, however, be declared inapplicable in the case of: -any agreement or category of agreements between undertakings; -any decision or category of decisions by associations of undertakings; -any concerted practice or category of concerted practices; which contributes to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefit, and which does not: (a) impose on the undertakings concerned restrictions which are not indispensable to the attainment of these objectives; (b) afford such undertakings the possibility of eliminating competition in respect of a substantial part of the products.

Id

²⁷⁴ The Commission is established under article 155 of the EEC Treaty. Id. art. 155. The Commission is "the administrative or the executive arm" of the EEC. B. HAWK, UNITED STATES, COMMON MARKET AND INTERNATIONAL ANTITRUST: A COMPARATIVE GUIDE 412 (1979 & Supp. 1983).

(Commission) has taken throughout the last five years.²⁷⁵ Besides, the Commission²⁷⁶ has newly announced Regulations 1983/83²⁷⁷ and 1984/83²⁷⁸ on the implementation of Article 85(3) of the Treaty to groups of exclusive distribution agreements and exclusive supplying agreements and has also announced an inclusive Notice²⁷⁹ aimed at clarifying these Regulations in detail by commitments and law courts of the member states.²⁸⁰ Regarding the distribution of automobiles and their spare parts another block exemption regulation²⁸¹ is likely to be picked out in the near future.²⁸² The Court of Justice of the European Communities²⁸³

²⁷⁵ See *Polistil/Arbois*, 27 O.J. EUR. COMM. (No. L 136) 9 (1984), 3 COMMON MKT. REP. (CCH) 10,587; *IBM personal computer*, 27 O.J. EUR. COMM. (No. L 118) 24 (1984), 3 COMMON MKT. REP. (CCH) 10,585; *Saba II*, 26 O.J. EUR. COMM. (No. L 376) 41 (1983), 3 COMMON MET. REP. (CCH) 10,568; *Murat*, 26 O.J. EUR. COMM. (No. L 348) 20 (1983), 3 COMMON MET. REP. (CCH) 10,544; *Ford Werke*, 26, O.J. EUR. COMM. (No. L 327) 31 (1983), 3 COMMON MKT. REP. (CCH) 10,539 (final decision); *Cafeteros de Colombia*, 25 O.J. EUR. COMM. (No. L 360) 31 (1982), 3 COMMON MKT. REP. (CCH) 10,448; *National Panasonic*, 25 O.J. EUR. COMM. (No. L 354) 28 (1982), 3 COMMON MKT. REP. (CCH) 10,441; *Ford Werke*, 25 O.J. EUR. COMM. (No. L 256) 20 (1982), 3 COMMON MKT. REP. (CCH) 10,480 (interim measures); *AEG-Telefunken*, 25 O.J. EUR. COMM. (No. L 117) 15 (1982), 3 COMMON MKT. REP. (CCH) 10,366; *Hasselblad*, 25 O.J. EUR. COMM. (No. L 161) 18 (1982), 3 COMMON MKT. REP. (CCH) 10,401; *Moët & Chandon*, 25 O.J. EUR. COMM. (No. L 94) 7 (1982), [1978-1981 Transfer Binder] COMMON MKT. REP. (CCH) 10,352; *Sopelam/Vickers I*, 24 O.J. EUR. COMM. (No. L 391) 1 (1981), 3 COMMON MKT. REP. (CCH) 10,393; *Hennessy-Henkell*, 23 O.J. EUR. COMM. (No. L 383) 11 (1980), [1978-1981 Transfer Binder] COMMON MKT. REP. (CCH) 10,283; *Johnson & Johnson*, 23 O.J. EUR. COMM. (No. L 377) 16 (1980), [1978-1981 Transfer Binder] COMMON MKT. REP. (CCH) 10,277; *Distillers Co. Ltd.-Victuallers*, 23 O.J. EUR. COMM. (No. L 233) 43 (1980), [1978-1981 Transfer Binder] COMMON MKT. REP. (CCH) 10,253; *Krupps*, 23 O.J. EUR. COMM. (No. L 120) 26 (1980), [1978-1981 Transfer Binder] COMMON MKT. REP. (CCH) 10,223; *Pioneer Hi-Fi Equipment*, 23 O.J. EUR. COMM. (No. L 60) 21 (1980), [1978-1981 Transfer Binder] COMMON MKT. REP. (CCH) 10,185; *BP Kemi/DDSf*, 22 O.J. EUR. COMM. (No. L 286) 32 (1979), [1978-1981 Transfer Binder] COMMON MKT. REP. (CCH) 10,165; *Kawasaki*, 22 O.J. EUR. COMM. (No. L 16) 9 (1979), [1978-1981 Transfer Binder] COMMON MKT. REP. (CCH) 10,097.

²⁷⁶ The Commission has the authority to promulgate regulations. EEC Treaty, *supra* note 8, art. 169.

²⁷⁷ 26 O.J. EUR. COMM. (No. L 173) 1 (1983), 1 COMMON MKT. REP. (CCH) 1 2730 (corrigenda at 26 O.J. EUR. COMM. (No. L 281) 24 (1983))

²⁷⁸ 26 O.J. EUR. COMM. (No. L 173) 5 (1983), 1 COMMON MKT. REP. (CCH) 2733 (corrigenda at 26 O.J. EUR. COMM. (No. L 281) 24-25 (1983)).

²⁷⁹ The Commission from time to time may issue Notices giving guidance as to its view of the law in the Community. C.S. KERSE, EEC ANTITRUST PROCEDURE 3 (1981).

²⁸⁰ Commission Notice Concerning Commission Regulations (EEC) No. 1983/83 and No. (EEC) 1984/83 of 22 June 1983 on the Application of Article 85(3) of the Treaty to categories of exclusive distribution agreements and exclusive purchasing agreements, 26 O.J. EUR. COMM. (No. C 355) 7 (1983), 3 COMMON MKT. REP. (CCH) 10,548, amended by 27 O.J. EUR. COMM. (No. C 101) 2 (1984), 3 COMMON MET. REP. (CCH) 10,583 [hereinafter cited as 1983 Notice].

²⁸¹ A block exemption automatically exempts the otherwise unlawful practices listed in the regulation from the prohibition of article 85 of the EEC Treaty. See D. LASOK & J.W. BRIDGE, AN INTRODUCTION TO THE LAW AND INSTITUTIONS OF THE EUROPEAN COMMUNITIES, 392-93 (3rd ed. 1982).

²⁸² See Draft Commission Regulation on the application of Article 85(3) of the Treaty to certain categories of motor vehicle distribution and servicing agreements, 26 O.J. EUR. COMM. (No. C 165) 2 (1983), 3 COMMON MKT. REP. (CCH) 10,493. For a critical comment, see Davidow, EEC Proposed Competition Rules for Motor Vehicle Distribution: An American Perspective, 28 ANTITRUST BULL. 863 (1983).

²⁸³ The judicial power of the EEC resides in the Court of Justice. Its main function is to ensure that the law is obeyed in the interpretation and application of the Treaty. EEC Treaty, *supra* note 8, art. 164.

(Court) for its part, has bequeathed roughly thirty rulings on various lawful features of the distribution problem.²⁸⁴

3.2.4.2. Application to Intellectual Property Matters, Article 86

It is said that Article 86 is a way larger than its U.S. equivalent owing to the fact that Article 86 also prohibits conduct that harms or influence the existing competition shape or design.

Consequently, dominance and supremacy in the EEC is greater than the economists' concept

²⁸⁴ Hydrotherm v. Compact, 1984 E. Comm. Ct.J. Rep.-, 3 COMMON MKT. REP. (CCH) - ; Hasselblad v. Comm'n, 1984 E. Comm. Ct.J. Rep. -, 3 COMMON MKT. REP. (CCH) 14,014; Ford Werke v. Comm'n, 1984 E. Comm. Ct.J. Rep. -, 3 COMMON MKT. REP. (CCH) 14,025 (interim measures); Ciment et Betons v. Kerpen & Kerpen, 1983 E. Comm. Ct.J. Rep.-, 3 COMMON MKT. REP. (CCH) 14,043; AEG-Telefunken v. Comm'n, 1983 E. Comm. Ct.J. Rep. 3151, 3 COMMON MKT. REP. (CCH) 14,018; Demo Studio Schmidt v. Comm'n, 1983 E. Comm. Ct.J. Rep. 3045, 3 COMMON MKT. REP. (CCH) 14,009; Musique Diffusion Francaise v. Comm'n S.A., 1983 E. Comm. Ct.J. Rep. 1825, [1981-1983 Transfer Binder] COMMON MKT. REP. (CCH) 8880; Coditel S.A. v. Cin6-Vog Films S.A., 1982 E. Comm. Ct. J. Rep. 3381, [1981-1983 Transfer Binder] COMMON MKT. REP. (CCH) 8865; Salonia v. Poidomani, 1981 E. Comm. Ct.J. Rep. 1563, [1979-1981 Transfer Binder] COMMON MKT. REP. (CCH) 8758; L'Oreal N.V. v. De Nieuwe A.M.C.K., 1980 E. Comm. Ct.J. Rep. 3775, [1979-1981 Transfer Binder] COMMON MKT. REP. (CCH) 8715; S.A. Lancôme v. Etos B.V., 1980 E. Comm. Ct. J. Rep. 2511, [1979-1981 Transfer Binder] COMMON MKT. REP. (CCH) 8714; Anne Marty S.A. v. Estée Lauder S.A., 1980 E. Comm. Ct.J. Rep. 2481, [1979-1981 Transfer Binder] COMMON MKT. REP. (CCH) 8713; Procureur de la Republique v. Giry and Guerlain, 1980 E. Comm. Ct.J. Rep. 2327, [1979-1981 Transfer Binder] COMMON MKT. REP. (CCH) 8712; Distillers Co. Ltd. v. Comm'n, 1980 E. Comm. Ct. J. Rep. 2229, [1979-1981 Transfer Binder] COMMON MKT. REP. (CCH) 8613; BMW Belgium S.A. v. Comm'n, 1979 E. Comm. Ct. J. Rep. 2435, [1978-1979 Transfer Binder] COMMON MKT. REP. (CCH) 8548; Tepea B.V. v. Comm'n, 1978 E. Comm. Ct.J. Rep. 1391, [1977-1978 Transfer Binder] COMMON MKT. REP. (CCH) \$ 8467; Miller Int'l Schallplatten GmbH v. Comm'n, 1978 E. Comm. Ct. J. Rep. 131, [1977-1978 Transfer Binder] COMMON MKT. REP. (CCH) 1 8439; De Bloos v. Bouyer, 1977 E. Comm. Ct. J. Rep. 2359, [1977-1978 Transfer Binder] COMMON MKT. REP. (CCH) 8444; Metro SB-Grossmirkte GmbH v. Comm'n, 1977 E. Comm. Ct. J. Rep. 1875, [1977-1978 Transfer Binder] COMMON MKT. REP. (CCH) 8435; De Norre v. N.V. Brouwerij Concordia, 1977 E. Comm. Ct.J. Rep. 65, [1976 Transfer Binder] COMMON MKT. REP. (CCH) \$ 8386; S.A. Fonderies Roubaix v. Fonderies Roux, 1976 E. Comm. Ct. J. Rep. 111, [1976 Transfer Binder] COMMON MKT. REP. (CCH) 8341; Suiker Unie v. Comm'n, 1975 E. Comm. Ct.J. Rep. 1663, [1975 Transfer Binder] COMMON MKT. REP. (CCH) \$ 8334; Van Vliet Kwasten-en Ladderfabriek N.V. v. Fratelli Dalle Crode, 1975 E. Comm. Ct.J. Rep. 1103, [1975 Transfer Binder] COMMON MKT. REP. (CCH) 8314; S.A. Brasserie de Haecht v. Consorts Wilkin-Janssen II, 1973 E. Comm. Ct. J. Rep. 77, [1971-1973 Transfer Binder] COMMON MKT. REP. (CCH) \$ 8170; Beguëlin Import Co. v. G.L. Import Export S.A., 1971 E. Comm. Ct.J. Rep. 949, [1971-1973 Transfer Binder] COMMON MKT. REP. (CCH) \$ 8149; S.A. Cadillon v. Firma H6ss, 1971 E. Comm. Ct. J. Rep. 351, [1971-1973 Transfer Binder] COMMON MKT. REP. (CCH) \$ 8135; Brauerei A. Bilger Söhne GmbH v. Jehle, 1970 E. Comm. Ct.J. Rep. 127, [1967-1970 Transfer Binder] COMMON MKT. REP. (CCH) T 8076; V6lk v. Vervaecke, 1969 E. Comm. Ct. J. Rep. 295, [1967-1970 Transfer Binder] COMMON MKT. REP. (CCH) \$ 8074; S.A. Brasserie de Haecht v. Wilkin I, 1967 E. Comm. Ct.J. Rep. 407, [1967-1970 Transfer Binder] COMMON MKT. REP. (CCH) \$ 8053; Italy v. Council and Comm'n, 1966 E. Comm. Ct.J. Rep. 389, [1961-1966 Transfer Binder] COMMON MKT. REP. (CCH) \$ 8048; Consten and Grundig v. Comm'n, 1966 E. Comm. Ct. J. Rep. 299, [1961-1966 Transfer Binder] COMMON MET. REP. (CCH) \$ 8046; Soci-t6 Technique Minibre v. Maschinenbau Ulm GmbH, 1966 E. Comm. Ct.J. Rep. 235, [1961-1966 Transfer Binder] COMMON MKT. REP. (CCH) \$ 8047.

of power over price; the trivial fact of dominance might be perceived as abusive.²⁸⁵ In recognizing competition on the grades from inadmissible exclusionary practices, the European institutions have been failed. Protecting competitors have been more significant for them than the competition. On the other hand, in the United States, the enforcement authorities and "Chicago school" economists are mainly involved in "protecting those dealing with a dominant firm from exploitation, an objective that only requires controlling firms which are protected from the competition of equally efficient firms."²⁸⁶ Professor Korah precedes a way beyond the spine of the law, and encompasses a simplification of the theory behind the Court's interpretation in her discourse of "abuse". Therefore, practitioners and students are more capable to fathom the reason behind the decisions of the Commission and Court, as a result of that diminishing the superficial inconspicuousness of many individual Commission decisions and Court judgments. In concluding this section, the practical consequences of Article 86 is discussed by Professor Korah from the perspective of both the entrepreneur and the consumer. It is remarkable to state that if some firms, which meet substantial competition, have over forty-five percent of the market and if they are larger than their competitors, may be treated as dominant pursuant to the Court's judgment in *United Brands Co. and United Brands Continental B.V. v. Commission* ("United Brands").²⁸⁷ Thereby, dominance seems to be decided in point of status, autonomous from any specific abuse being professed, and enterprises possess little or no power over price may find themselves in a dominant position. "Moreover, the prohibition on overcharging by firms with only slight market power is also worrisome because it prohibits unfair prices without establishing a predictable method of determining fair

²⁸⁵ Professor Korah observes, however, that recently the Court of Justice has expanded its definitions of relevant geographic and product markets and has been less willing to confirm a finding of dominance. See, e.g., *Ahmed Saeed Flugreisen and Silver Line Reisebüro GmbH v. Centrale zur BeUmpfung unlauteren Wettbewerbs e.V.*, Case 66/86, [1989] E.C.R. 803, [1990] 4 C.M.L.R. 102; *Société Alsacienne et Lorraine de Télécommunications et d'Electronique (Alsatel) v. Novasam SA*, Case 247/86, [1988] E.C.R. 5987, [1990] 4 C.M.L.R. 434.

²⁸⁶ Joseph P. Griffin, Valentine Korah, *An Introductory Guide to EEC Competition Law and Practice*, *Fordham International Law Journal*, 1991 - P. 6.

²⁸⁷ *Case 27/76*, [1978] E.C.R. 207, [1978] 1 C.M.L.R. 429.

prices. Ultimately, Professor Korah considers the somewhat circular interpretation of Article 86 detrimental to consumers and the economy as a whole because it subordinates their interests in encouraging efficiency to the interests of smaller traders in preserving their place in the market."²⁸⁸

3.2.5. Enforcement Principles, Interface of Competition Law and Patent Law

Both Intellectual Property Rights (IPR) and Competition Law are based on economic development and achievement, advancement in technological progress and welfare of consumers. The legal rights governing the utilization of such creations are IPR. A bundle of rights are covered by this term, including patents, trademarks, or copyrights, and each of these rights is different in scope and duration with a distinct purpose and impact.²⁸⁹ "Competition law seeks to prevent certain behavior that may restrict competition to detriment consumer welfare. In short run, IPR encourages innovation and new products in the market, whereas in long run- Competition Law promotes consumer welfare by introducing new products to the market and maintaining the qualities of the goods in the market. Thus, both are complementary means of promoting innovation, technical progress and economic growth to the benefit of consumers and the whole economy."²⁹⁰

"Most contemporary accounts of European integration began with the implementation of the ECSC (European Coal and Steel Community) which desired the creation of a united Europe."²⁹¹ In order to constitute intimate connections between Member States (MS), a common market was designed 'promoting harmonious development of economic activities

²⁸⁸ Id. 80.

²⁸⁹ Jayashree Watal, Intellectual Property Rights in WTO and Developing Countries, 2001 (Oxford University Press), at 1-5.

²⁹⁰ Atul Patel, Aurobinda Panda, Akshay Deo, Siddhartha Khettry and Sujith Philip Mathew, Intellectual Property Law & Competition Law, Journal of International Commercial Law and Technology Vol. 6, Issue 2 (2011). P. 120.

²⁹¹ Cara O'Donoghue, THE EVOLVING INTERFACE BETWEEN EUROPEAN COMPETITION LAW AND INTELLECTUAL PROPERTY RIGHTS: IS THERE A BALANCE TO BE ACHIEVED? Plymouth Law and Criminal Justice Review (2016) P. 156.

throughout the Community'.²⁹² "The Treaty of Lisbon (ToL) represents the culmination of 50 years Treaty reform with the purpose of conceiving a Single Market 'which...would ultimately yield the much vaunted ever closer union of the peoples of Europe'."^{293,294} However, it needs to be taken into consideration that the economic and political implications of organizing a Single Market have issued this matter that whether not such a market construction will keep consumer interests safe.

Through the Cassis de Dijon principle²⁹⁵ a New Approach was designed. This principle requested the permission of the free circulation of legitimate marketed goods of one MS in another one that actually smoothens the route of the Single Market. McGee and Weatherill proposed that this New Approach will aid European consumers ill structurally.²⁹⁶ "They proposed that when lobbying European institutions, business groups are better organized and funded than consumer groups and hence are more likely to procure changes that favor their interests, whilst consumer interests are ignored. This should not be a surprise. However, it does raise the question of what sort of Single Market has been formed and more pertinently, what affect this market structure had on the development of European competition law."²⁹⁷

The competition policy in the economy of a country aims at ensuring that fair competition in the market through the way of regulatory mechanisms is kept ongoing. The creation of restrictions or constraints which may harm the growth of the society is not what is intended in by this policy. It focuses on keeping the market away from domination through different functions such as price fixing or market sharing cartels and undue concentration. Also, it promotes competition to reflect the market response and consumer desire to get this ensured

²⁹² Burca G., Craig P., EU Law: Text, Cases and Materials (2011) 5th ed. Oxford University Press p.6.

²⁹³ Weiler. J, 'The Transformation of Europe', (1991), 100 Yale LJ 2458.

²⁹⁴ Id. 83.

²⁹⁵ Established in Rewe-Zentral AG v Bundesmonopolverwaltung fuer Branntwein (Cassis de Dijon) [1979] ECR 649, which is laid out more thoroughly in The implementation of the New Approach Directives, COM (2003) 240.

²⁹⁶ McGee A., Weatherill S., 'The Evolution of the Single Market – Harmonisation or Liberalisation' (1990), 53 MLR 585, p. 595.

²⁹⁷ Id. 88.

that the allocation of resources is effective and efficient and to motivate the economy for innovation.²⁹⁸ "Companies can monopolize their technologies for a limited period of time, but they cannot maintain a monopoly over the market. Intellectual property protection per se is not abusive but ironically, if it dominates over the market, it is only doing a legitimate job of its purpose, namely, to create an incentive for further innovation. However, when companies refrain from licensing their intellectual property to competitors, they undermine the basic tenets of competition law as well as the spirit of intellectual property protection."²⁹⁹

At the beginning, it appears that both concepts are against each other in their region of operation. However, it's remarkable to notice that anti-trust laws and patent laws co-exist, and it has been truly stated by a US Supreme Court back in 1948 describing the boundaries of the immunity in this impression that 'the possession of a valid patent or patents does not give the patentee any exemption from the provisions of the Sherman Act beyond the limits of the patent monopoly.'³⁰⁰ "Hence, strong competition law can provide a solution by preventing anti-competitive agreements and improving economic efficiency and consumer welfare. It can be concluded that the twin objective of competition law is to protect consumer welfare as well as the economic freedom of market players. A study of competition policy reveals the requirement of various kinds of state interventions that affect acquisition and the use of IPRs."³⁰¹ Governments can acquire statutes like the compulsory licensing of such technologies under the provisions of the WTO Trade Related Aspects of Intellectual Property Law (TRIPs) Agreement, if a patent holder adopts any kind of anti-competitive practices.³⁰² Refusing to

²⁹⁸ 1 UNCTAD Secretariat, Objectives of Competition Law and Policy: Towards a Coherent Strategy for Promoting Competition and Development.

²⁹⁹ Raju KD, Interface between Competition Law and Intellectual Property Rights: A Comparative Study of the US, EU and India, International Law at Rajiv Gandhi School of IP Law, IIT Kharagpur and Life Member, Indian Society of International Law, New Delhi, India, 2014. P. 1.

³⁰⁰ United States v. Line Material Co., 333 U.S. 287, 308, 76 U.S.P.Q. (BNA) 399, 408 (1948) (patent pool struck down on price fixing grounds apparently without examination of pro-competitive effects of the pool on innovation and consumer welfare).

³⁰¹ Id. 91.

³⁰² Article 31(b) of the TRIPs Agreement.

license a patent (refusal to deal) that is unilateral and one-sided can be taken into consideration as a compulsory license ground. Refusing to share a technology can be a compulsory licensing ground to a third party under the 'essential facilities' doctrine, especially if the facility is not obtainable to the competitor at sensible rates in order to compete with others in the market. One of the disadvantageous matters to the competition is 'Patent thickets',³⁰³ that is just because they lengthen the period of the patent indefinitely. "Copyright law is also involved in important competition law cases such as the Microsoft case. The tension between trademarks and competition law also can be seen in some of the cases."³⁰⁴

The Protection and Competition law of Intellectual Property Rights (IPRs) have set foot in evolution throughout history as a pair of substantial systems of law. Supporting and actively encouraging efficiency in the market and also preventing the market from distortive consequences have been the traditional role of competition law.

The protection of innovative ideas in the body of inventions is one of the objectives of intellectual property law. In fact, private monopoly rights for a restricted duration of time (20 years) managed by the TRIPs Agreement, is created pursuant to this objective. "The general perception is that there are inherent tensions between IPRs and competition because IPRs protection gives monopoly rights and competition law fights against monopoly in the market. But monopoly per se in the market is not anti-competitive in nature, but abuse of monopoly is considered as anti-competitive."³⁰⁵

More cases of monopoly rights abuse are triggered out through technological advances and patent protection laws. This phenomenon takes place particularly in the areas where technology is so high and more fundamental research on the interplay between intellectual property and competition law is required. The number of competitions related to Intellectual Property Rights

³⁰³ A dense web of overlapping intellectual property rights claims is known as a patent thicket.

³⁰⁴ Id. 91.

³⁰⁵ Id. 91.

(IPRs) has been escalating in recent decades, specifically in developed countries like the US and EU.

A patent right may be exercised against a product coming from another Member State where it has been produced in connection with a patent, by a person who is legally and economically independent and is seeking to enforce a patent in the country of importation.

Or it was unable to be patented in the original country and was produced by third parties without the consent of the patent holder in the importing country, or it was produced under a compulsory patent license accorded to a third party in the original country, "the patent being either held by the patentee in the importing state or having a common origin with his patent. In this case, the grant of the compulsory license in the exporting state effectively deprives the patent holder of his exclusive right to prohibit the manufacturing and marketing of the product without his consent. It is therefore considered permissible to allow the patent holder to oppose the importation and marketing of products manufactured under the compulsory license in order to protect the patent granted in the importing state. Any conditions subject to which the compulsory license was granted (such as an export prohibition or a fixed royalty) are irrelevant to the question of the enforceability of the patent right granted or recognized in the importing state."³⁰⁶

3.2.6. Patent, Know-How and Copyright License Agreements at the European Community Level

The national laws ruling over the intellectual property (otherwise known as patents, industrial designs, trademarks and copyrights) which are somewhat derogation from the free market operation, are exerted so that they encourage innovation. By means of such laws, firms, by having the right, can regain their investment in technical or design improvements, for a short

³⁰⁶ Id. 14.

period of time, so that they can prevent others imitation, who actually haven't made such investment. Besides, firms, by registering their trade or service marks, can protect the reputation and goodwill they have built up, as a result, they acquire the right to seize others from using them.³⁰⁷

3.2.6.1. Patent

"Each Member State has its own national patent system. One option for an inventor who wishes to obtain patent protection across the whole Community is to apply for a patent in each country individually. This used to be a formidable undertaking as the procedures involved and the tests to establish what was patentable differed considerably between Member States. It is now becoming much easier because of the progress that is being made in aligning the various national systems."³⁰⁸

Another option is provided by the European Patent Convention (the "Munich Convention"). Not all Member States get to be covered by this Convention since it is not a Community convention. The non-EC countries Austria, Liechtenstein, Switzerland and Sweden are its membership, but EC members Ireland and Portugal are not considered. With effect from January 1, 1990 Denmark joined this Convention. It is made possible by the Munich Convention to introduce the protection of patent in some or all of the states to which it applies via a distinct application. "Once granted, this application effectively becomes a collection of individual national patents subject to the individual national laws. Any infringement litigation must, therefore, be carried out separately in each country."³⁰⁹

³⁰⁷ Id. 14.

³⁰⁸ Id.

³⁰⁹ Id.

"These two options will remain available to inventors after 1992. However, EC Member States have drawn up a Community Patent Convention (CPC or "Luxembourg Convention")³¹⁰ under which a Community Patent would be granted, thus providing a third option." The Luxembourg Convention will go one step further than the Munich Convention, when it empowers, owing to the fact that any lawsuits after subvention will occur under the Convention, not under individual national laws. In each Member State, there will be Community Patent Courts, whose judgments will have effect throughout the EC, and a Common Appeal Court.

3.2.6.2. Copyright

"At present, there is little harmonization at the Community level of copyright law. However, there is a basic level of copyright protection common to all Community countries because all Member States belong to the Berne Copyright Convention. The Commission published a Green Paper in June 1988 entitled "Copyright and the Challenge of Technology," which addresses several major issues in the field of copyright. These include piracy, home taping, computer programs and databases. The Council has now adopted a Directive on the Legal Protection of

³¹⁰ The high contracting parties to the Treaty establishing the European Economic Community, Desiring to give unitary and autonomous effect to European patents granted in respect of their territories under the Convention on the grant of European patents of 5 October 1973, anxious to establish a Community patent system which contributes to the attainment of the objectives of the Treaty establishing the European Economic Community, and in particular to the elimination within the Community of the distortion of competition which may result from the territorial aspect of national protection rights, considering that one of the fundamental objectives of the Treaty establishing the European Economic Community is the abolition of obstacles to the free movement of goods, considering that one of the most suitable means of ensuring that this objective will be achieved, as regards the free movement of goods protected by patents, is the creation of a Community patent system, considering that the creation of such a Community patent system is therefore inseparable from the attainment of the objectives of the Treaty and thus linked with the Community legal order, considering that it is necessary for these purposes for the High Contracting Parties to conclude a Convention which constitutes a special agreement within the meaning of Article 142 of the Convention on the grant of European patents, a Regional Patent Treaty within the meaning of Article 45 (1) of the Patent Cooperation Treaty of 19 June 1970, and a special agreement within the meaning of Article 19 of the Convention for the protection of industrial property, signed in Paris on 20 March 1883 and last revised on 14 July 1967, considering that it is essential that this Convention be interpreted in a uniform manner so that the rights and obligations flowing from a Community patent be identical throughout the Community and that therefore jurisdiction be conferred on the Court of Justice of the European Communities, convinced therefore that the conclusion of this Convention is necessary to facilitate the achievement of the tasks of the European Economic Community and that therefore it is an appropriate measure to be taken by the Member States, subject to national ratification procedures, to ensure fulfillment of Community obligations,

Computer Programs (91/250/EEC, OJ 1991 L122) requiring Member States to protect computer programs as literary works under copyright law."³¹¹

"As of 2007 there are 27 member states in the European Union (EU). Copyright is within the legislative power of the respective state. But, being members of a union of European nations, the states' national legislative power depends increasingly on statutory provisions of the EU. Unlike the United States, the EU is not a federal state. It is not officially a federation, but in reality, a system of intergovernmentalism, in addition to and above national governance. The EU is in many respects something like a European super- or meta-state."³¹²

The strategic copyright power is comprised in the EU, or in fact in the European Parliament (whose President is currently, 2020, David Maria Sassoli),³¹³ the European Council (President Donald Franciszek Tusk)³¹⁴ and also the European Commission (President Ursula Gertrud von der Leyen).³¹⁵ While the European Council (including the State Heads or the Member States Government) does not exert law-making purposes but expound general political directions and priorities, the institutional balance is kept by maintaining the so-called monopoly of the initiative of the Commission.

3.3. United States

"It is well recognized today that patent licensing is an efficient way of disseminating technology, thus sparking innovation (often enabling follow-on patents and technological improvements), while also allowing for specialization in manufacture (mass production) and distribution. Thus, the more enlightened modern antitrust assessment of patent licensing restrictions generally takes into account these precompetitive efficiency-enhancing features

³¹¹ Id. 14.

³¹² Rainer Kuhlen, Copyright Issues in the European Union – Towards a science- and education-friendly copyright, submitted for publication to an OA-journal – in reviewing status (05/03/2013)

³¹³ European Parliament - <http://www.europarl.europa.eu/>

³¹⁴ European Council - <http://www.european-council.europa.eu/home-page?lang=en>

³¹⁵ European Commission - http://ec.europa.eu/index_en.htm

when assessing particular restrictions, weighing them on a case-by-case basis against their anticompetitive potential. This was not always the case."³¹⁶ In fact, before the 1980s, US anti-proliferation forces saw restrictions on licensing agreements that were inherently dubious in antitrust law. The decision by the Department of Justice in the early 1980s to abrogate the statement on "Nine No-Nos of licensing" reflects a new economic thrill (especially the Chicago School and cost of economic costs) to US law enforcement.³¹⁷

Though in other jurisdictions, the initiative was not followed, strict rigorous formalism that restricted IP permits eventually led to the first enlightened view in the United States and then around the world.

3.3.1. The Principles of Antitrust-IP in the United States

Ever since in 1890 when the enactment of the Sherman Antitrust Act³¹⁸ took place, the legitimate administration of the practices of licensing which are based on the patent rights has fluctuated in some general or specific buffers between freedom or important restrictions in licensing.³¹⁹ It was considered for the patent laws, in the early 1900s, to give "absolute freedom in the use or sale of rights."³²⁰ But, in the following years, limitations on the patent of the owner were taken into consideration by court. "In United States v. Arnold Schwinn & Co. the Court held that vertical territorial restrictions were per se unlawful. 388 U.S. 365, 379 (1967). The Antitrust Division of the Department of Justice distilled the per se unlawful forms of conduct into what later came to be known as the "Nine No-Nos" of licensing."³²¹

³¹⁶ Id. 55.

³¹⁷ See generally Remarks by Timothy J. Muris, Chairman, Fed. Trade Comm'n, Improving the Economic Foundations of Competition Policy (Jan. 15, 2013), available at <https://www.ftc.gov/public-statements/2003/01/improving-economic-foundations-competition-policy>.

³¹⁸ 15 U.S.C §§ 1-7.

³¹⁹ Chapter 12, Antitrust Issues Involving Intellectual Property, Antitrust Law Developments (Sixth), Volume II, ABA Books, 1077-1168, 2007.

³²⁰ E. Bement & Sons v. National Harrow Co., 186 U.S. 70, 92 (1902).

³²¹ Id. 55.

One of the licensing practices lists was "Nine No-Nos" which were recognized as anticompetitive by the Antitrust Division of the Department of Justice. Deputy Assistant Attorney General Bruce Wilson, the main proponent of the list of nine listings without protest, stated that they have limitations that, in almost all cases, lead to controversy over anti-control that is due to their adverse effect on competition.³²²

3.3.2. U.S. The Sherman Antitrust Act (1890)

Throughout the past several decades, intellectual property laws and antitrust laws have been recognized, by antitrust enforcers and the courts, that they share the same substantial purposes of elevating consumer welfare and promoting innovation. "This recognition signaled a significant shift from the view that prevailed earlier in the twentieth century when the goals of antitrust and intellectual property law were viewed as incompatible: intellectual property law's grant of exclusivity was seen as creating monopolies that were in tension with antitrust law's attack on monopoly power."³²³ These generalizations are no longer meaningful toward modern understanding. Nowadays, it is believed that these two disciplines work in tandem to provide consumers with new and superior technologies, products, and services at lower prices.

Plenty of exclusive rights are generated, by Intellectual property laws, that bestow incentives for innovation by "establishing enforceable property rights for the creators of new and useful products, more efficient processes, and original works of expression."³²⁴

By allowing intellectual property owners these property rights upgrade innovations to hold others back from seizing the value obtained from their inventions. Also, the commercialization

³²² Gilbert, R. and Shapiro C., Antitrust Issues in the Licensing of Intellectual Property: The Nine No-No's Meet the Nineties, Brookings Papers: Microeconomics, 1997, 283-336.

³²³ ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: Promoting Innovation and Competition. ISSUED BY THE U.S. DEPARTMENT OF JUSTICE AND THE FEDERAL TRADE COMMISSION APRIL (2007), p. 1.

³²⁴ U.S. DEPT OF JUSTICE & FEDERAL TRADE COMM'N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY § 1 (1995), reprinted in 4 Trade Reg. Rep. (C.C.H.) ¶ 13,132, available at <http://www.usdoj.gov/atr/public/guidelines/0558.pdf> [hereinafter ANTITRUST-IP GUIDELINES].

of these inventions or expressions can be facilitated through these rights, and besides, they encourage public revelation, as a result of that, they enable others to learn the protected properties.

It has to be mentioned that, by prohibiting anticompetitive mergers, collusion, and exclusionary uses of monopoly power, antitrust laws stimulate competition. But still, it is fully accepted that the monopoly power utilization, comprising the charging of monopoly prices, via the utilizing a lawfully achieved monopoly position will not function contravened antitrust laws.³²⁵

It could be denoted that, the monopoly power that is on the basis of intellectual property rights, the same principle is applied. It has been explained by Judge Posner that, "It is not a violation of [the antitrust] laws to acquire a monopoly by lawful means, and those means include innovations protected from competition by the intellectual property laws."³²⁶

"Consequently, antitrust and intellectual property are properly perceived as complementary bodies of law that work together to bring innovation to consumers: antitrust laws protect robust competition in the marketplace, while intellectual property laws protect the ability to earn a return on the investments necessary to innovate. Both spur competition among rivals to be the first to enter the marketplace with a desirable technology, product, or service."³²⁷

In order to boost up a better comprehension toward the questions that strike the mind of individuals when antitrust law comes to conduct the intended intellectual property rights and to appraise the Agencies' approach toward analyzing such conduct, the Agencies performed a series of Hearings, beginning in February 2002, out of recognizing the fact that both vigorous competition and intellectual property rights are vital to an effective market economy. "The Hearings, entitled 'Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy,' assembled business people from large and small firms, academics, and legal

³²⁵ Verizon Comm'ns Inc. v. Law Offices of Curtis V. Trinko, L.L.P., 540 U.S. 398, 407 (2004).

³²⁶Richard A. Posner, Antitrust in the New Economy, 68 ANTITRUST L.J. 925, 930-31 (2001).

³²⁷ Id. 1.

practitioners. During the Hearings, the Agencies heard a wide range of views from more than 300 panelists and received more than 100 written comments."^{328,329} In relation to the Hearings, the Agencies also assessed those scholarly literature which addressed issues on the sharp edge of legal doctrine and economic theory, regarding the best way to reward innovation as supporting and uplifting competition.³³⁰

"This Report synthesizes many of the views expressed during the Hearings, in the written submissions, and in the literature, and draws conclusions where appropriate on the proper analysis for evaluating certain activities involving intellectual property rights, as well as the key considerations that should inform the Agencies' analysis."^{331,332}

The subject of much debate is to apply the antitrust laws appropriately to unilateral turn-downs of license patents. That debate dissimilar intentions at this antitrust and patent law certain intersection may explain the courts of appeals divergent resolution. "In *Image Technical Services, Inc. v. Eastman Kodak Co.* ("Kodak"),^{333,334} the U.S. Court of Appeals for the Ninth Circuit affirmed Sherman Act³³⁵ liability relating to a unilateral refusal to license intellectual

³²⁸ Id.

³²⁹ Hearings information and materials can be accessed on the Agencies' websites. D.O.J./Antitrust, Competition and Intellectual Property Law in the Knowledge-Based Economy, <http://www.usdoj.gov/atr/hearing.htm>; Federal Trade Commission, Competition and Intellectual Property Law in the Knowledge-Based Economy, <http://www.ftc.gov/opp/intellect>.

³³⁰ For a complete list of the scholarly literature cited by the Agencies, see Appendix G.

³³¹ Id. 1.

³³² In October 2003, the F.T.C. issued a report based on a portion of the Hearings record, which made a series of recommendations for reform of the patent system designed to maintain a proper balance between competition and intellectual property policies. FEDERAL TRADE COMM'N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY Executive Summary, at I-V (2003), available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>.

³³³ 125 F.3d 1195 (9th Cir. 1997).

³³⁴ The Eastman Kodak Company (referred to simply as Kodak) is an American technology company that produces imaging products with its historic basis on photography. The company is headquartered in Rochester, New York, and is incorporated in New Jersey. Kodak provides packaging, functional printing, graphic communications and professional services for businesses around the world. Its main business segments are Print Systems, Enterprise Inkjet Systems, Micro 3D Printing and Packaging, Software and Solutions, and Consumer and Film. It is best known for photographic film products.

³³⁵ Sherman Act:

Section 1, 15 U.S.C. § 1 (2000); Trusts, etc., in restraint of trade illegal; penalty

property. Yet in 'In re Independent Service Organizations Antitrust Litigation (C.S.U.),³³⁶ the United States Court of Appeals for the Federal Circuit affirmed summary judgment for a defendant under similar circumstances."³³⁷

Courts should charge antitrust liability, pursuant with circumstances attorneys and economists explored as a part of the Hearings, for a refusal to license patents.³³⁸

3.3.4. The Basic Facts and Holdings of the Cases

The debate was framed by the panelists about charging antitrust accountability to turn down unilateral affairs of license patents around the Kodak and C.S.U. opinions, which enhanced numerous key issues. "Plaintiffs in both cases were independent service organizations ("ISOs") that sued original equipment manufacturers ("O.E.M.s"), alleging the O.E.M.s violated section

Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal. Every person who shall make any contract or engage in any combination or conspiracy hereby declared to be illegal shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding \$10,000,000 if a corporation, or, if any other person, \$350,000, or by imprisonment not exceeding three years, or by both said punishments, in the discretion of the Court.

Section 2, 15 U.S.C. § 2 (2000); Monopolizing trade a felony; penalty

Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding \$10,000,000 if a corporation, or, if any other person, \$350,000, or by imprisonment not exceeding three years, or by both said punishments, in the discretion of the Court.

³³⁶203 F.3d 1322 (Fed.Cir. 2000).

³³⁷ Id. 1.

³³⁸ The May 1, 2002 Hearing panelists included:

Ashish Arora, Visiting Associate Professor of Economics, Stanford University, Associate Professor of Economics and Public Policy, Carnegie Mellon University; Jonathan I. Gleklen, Partner, Arnold & Porter; Paul F. Kirsch, Partner, Townsend and Townsend and Crew L.L.P.; Benjamin Klein, Professor of Economics, University of California, Los Angeles; Jeffrey K. Mackie-Mason, Arthur W. Burks Professor of Information and Computer Science, Professor of Economics and Public Policy, University of Michigan; A. Douglas Melamed, Partner, Wilmer, Cutler & Pickering; Carl Shapiro, Transamerica Professor of Business Strategy, Haas School of Business; Director and Professor of Economics, Institute of Business and Economic Research, University of California, Berkeley; Christopher J. Sprigman, Counsel, King & Spalding; Mark D. Whitener, Antitrust and General Counsel, General Electric; John Shepard Wiley, Jr., Professor of Law, University of California, Los Angeles. This session was moderated by then Deputy Assistant Attorney General R. Hewitt Pate, Antitrust Division, U.S. Department of Justice; Pam Cole, Attorney, Antitrust Division, U.S. Department of Justice; Suzanne Majewski, Economist, Antitrust Division, U.S. Department of Justice; Gail Levine, then-Deputy Assistant General Counsel for Policy Studies, Federal Trade Commission; and C. Edward Polk, Jr., then-Associate Solicitor, U.S. Patent and Trademark Office. May 1, 2002 Hearing., The Strategic Use of Licensing: Is There Cause for Concern About Unilateral Refusals to Deal? at 2-3, <http://www.ftc.gov/opp/intellect/020501xscript.pdf> [hereinafter May 1 Hearing.].

2 of the Sherman Act³³⁹ by refusing to sell patented parts and to license patented and copyrighted software."³⁴⁰

The United States Court of Appeals for the Ninth Circuit- in Kodak case- stated that a “reluctance to sell . . . patented or copyrighted parts was a presumptively legitimate business justification,” but the “presumption may also be rebutted by evidence of pretext.”³⁴¹ It was also held by the Court that “there was sufficient evidence of pretext because the defendant refused to sell both patented and unpatented parts and was not even thinking about its patent rights when it did so.”³⁴²

Unlikely, the consideration of the “patentee’s subjective motivation for refusing to sell or license its patented products,” was declined by the Federal Circuit in C.S.U., in actual fact, the presumption of a legitimate business justification was made conclusive.³⁴³ In much conversed pronouncement, the Court included that a “patent holder may enforce the statutory right to exclude others . . . free from liability under the antitrust laws” in the “absence of any indication of illegal tying, fraud in the Patent and Trademark Office, or sham litigation.”³⁴⁴

Panelists approximately evenly recognized controversial subjective intent of Kodak quite standard. One panelist preserved it “fundamentally flawed” due to the fact that it would allow

³³⁹ Id. 12.

³⁴⁰ In Kodak, the defendant's refusal to deal did not distinguish among parts on the basis of patent rights. The Kodak court found that the defendant had monopoly power in an "all parts" market, including many parts not protected by patent rights. Kodak, 125 F.3d at 1219-20. In C.S.U., plaintiffs likewise alleged refusals to deal extending to items not protected by patent rights. The district court initially granted summary judgment for the defendant for the refusal to license patented parts, while explicitly reserving judgment on the refusal to sell unpatented parts. In re Independent. Serv. Org. Antitrust Litig., 964 F. Supp. 1479, 1490 & n.8 (D. Kan. 1997). Before the case went to the Federal Circuit, plaintiffs conceded that they could not prove antitrust injury only from the refusal to sell unpatented parts, so the Court granted summary judgment on all antitrust claims. Order, In re Independent. Serv. Orgs. Antitrust Litig., No. MDL-1021 (D. Kan. Jan. 8, 1999). Consequently, the only issue before the Federal Circuit was whether the unilateral refusal to sell or license patented parts could violate the antitrust laws.

³⁴¹ Kodak, 125 F.3d at 1219.

³⁴² Id. at 1219-20.

³⁴³ CSU, 203 F.3d at 1327; May 1 Tr. at 19-26 (Gleklen); Jonathan I. Gleklen, Antitrust Liability for Unilateral Refusals to License Intellectual Property: Xerox and Its Critics (May 1, 2002 Hr'g R.) at 2-4, <http://www.ftc.gov/opp/intellect/020501gleklen.pdf> [hereinafter Gleklen Submission].

³⁴⁴ 203 F.3d at 1327.

a downturn to deal stimulated by an aspiration to protect return on research and development (“R&D”) investment but prohibit a refusal to deal motivated by the practically indistinguishable desire to maximize profit by excluding competition.³⁴⁵ This panelist also argued, and others agreed, that there is no limiting principle to the subjective motivation inquiry.³⁴⁶ Another panelist argued that Kodak’s focus on subjective motivation is out of step with modern antitrust analysis’s focus on objective economic aspects of conduct, rather than on motive.³⁴⁷

"Yet another, noted the practical problems associated with an intent-based test: “From a counseling standpoint, the Ninth Circuit’s distinction between legitimate and ‘pretextual’ assertions of patent rights is both unworkable in practice and very difficult to explain to business people who want to know how to ensure that their activities are lawful.”³⁴⁸ And one panelist asserted that the subjective motivation standard would dramatically increase the costs of enforcing intellectual property rights because intellectual property holders facing refusal to license claims would not be able to win motions to dismiss.”³⁴⁹

One panelist proposed perusal the Kodak decision to decline Kodak's offered business justification as ineffective and overdue.³⁵⁰ The devoted defender of Kodak on the panel referred that other predacious conduct is often corresponded with a downturn to license.³⁵¹ "He argued that the Kodak rule, augmented by a detailed analysis of the market, is better than that in C.S.U., because the Kodak rule does not immunize patentees from antitrust liability when they act anti-

³⁴⁵ May 1 Tr. at 152-53 (Shapiro).

³⁴⁶ Id. at 152-54 (Shapiro); see also id. at 181-82 (MacKie-Mason); id. at 223-24, 228-31 (Whitener).

³⁴⁷ A. Douglas Melamed & Ali M. Stoepelwerth, *The C.S.U. Case: Facts, Formalism and the Intersection of Antitrust and Intellectual Property Law*, 10 *GEO. MASON L. R.E.V.* 407, 426-27 (2002); see also May 1 Tr. at 246-47 (Melamed) (proposing objective test for analyzing refusals to deal that examines whether conduct made "economic sense" but for its tendency to exclude a rival).

³⁴⁸ Mark D. Whitener, Statement (May 1, 2002 Hr’g R.) at 6, <http://www.ftc.gov/opp/intellect/020501whitener.pdf> [hereinafter Whitener Submission].

³⁴⁹ See May 1 Tr. at 38 (Gleklen).

³⁵⁰ Id. at 201-02 (Sprigman).

³⁵¹ Paul F. Kirsch, *Refusals to License I.P. – The Perspective of the Private Plaintiff* (May 1, 2002 Hr’g R.) (slides) at 3, <http://www.ftc.gov/opp/intellect/020501kirsch.pdf> [hereinafter Kirsch Presentation].

competitively; rather, it balances the patent owner's interests in getting a return on innovation and the public interest in competition. Moreover, he asserted, refusal to license claims would not wreak havoc in the business world because it is difficult to prove market power and anticompetitive intent."³⁵²

As it has been mentioned, some recognize Kodak as presenting inordinate weight to defendant-patentees' subjective intent. In order to be certain about it, dependence on the subjective of the defendant intent to find out if a downturn to license cause violation on antitrust law set up a framework that is complicated to administer.³⁵³ It was asserted by some commentators that locating the motive or intent of a firm via statements of employees, is "both impossible and meaningless, for the documentary evidence of every large firm will almost always provide ample examples suggesting both kinds of intent," i.e., the purpose of protecting intellectual property rights and the purpose of creating or maintaining a monopoly.³⁵⁴

Such a situation would be indefensible, and, to have reached this result, the Agencies do not believe the Ninth Circuit should be perused. Correspondingly, "[the] focus [of the Agencies] is upon the effect of [the] conduct, not upon the intent behind it."³⁵⁵

"[K]nowledge of intent may help [courts] to interpret facts and to predict consequences."³⁵⁶

It has been recognized by the courts that patents, those which are close to other property rights, have restraints which are "narrowly and strictly confined to the precise terms of the grant."³⁵⁷

³⁵² May 1 Tr. at 134-35, 137, 200-01 (Kirsch); see also Kirsch Presentation at 7.

³⁵³ See, e.g., May 1 Tr. at 152 (Shapiro); id. at 181 (Mackie-Mason); id. at 229-30 (Whitener); R. Hewitt Pate, Acting Assistant Attorney Gen., U.S. Dep't of Justice, Antitrust and Intellectual Property, Remarks at the American Intellectual Property Law Association 2003 Mid-Winter Institute 14 (Jan. 24, 2003) (criticizing the Ninth Circuit's decision to permit subjective inquiry into the intellectual property holder's motivations for refusing to deal), available at <http://www.usdoj.gov/atr/public/speeches/200701.pdf>. But see May 1 Tr. at 133-35 (Kirsch) (endorsing Ninth Circuit's intent test).

³⁵⁴ 3 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION ¶ 709b2, at 222 (2d ed. 2002).

³⁵⁵ United States v. Microsoft Corp., 253 F.3d 34, 59 (D.C. Cir. 2001) (en banc); see also R. Hewitt Pate, Refusals to Deal and Intellectual Property Rights, 10 GEO. MASON L. R.E.V. 429, 440 (2002); Michelle M. Burtis & Bruce H. Kobayashi, Why an Original Can Be Better than a Copy: Intellectual Property, the Antitrust Refusal to Deal, and ISO Antitrust Litigation, 9 SUPREME CT. ECON. R.E.V. 143, 166 (2001) (noting the relevance of a patent holder's intent in certain refusal to deal cases involving patented and unpatented parts).

³⁵⁶ Chi. Bd. of Trade v. United States, 246 U.S. 231, 238 (1918).

³⁵⁷ Mercoid Corp. v. Mid-Continent Inv. Co., 320 U.S. 661, 665 (1944).

It has also been held that definite types of conduct, including patent rights, can lead to antitrust liability. “For example, attempting to enforce a patent obtained through fraud on the Patent and Trademark Office may constitute monopolization in violation of section 2 of the Sherman Act,³⁵⁸ and the demonstration of an objectively baseless assertion of infringement can overcome a Noerr defense.³⁵⁹ Patent licensing terms may constitute tying or price fixing in violation of section 1 of the Sherman Act.”³⁶⁰

“Panelists extensively discussed the import of section 271(d)(4) of Title 35 of the U.S. Code, added by a 1988 amendment to the Patent Act, which provides that “[n]o patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having . . . refused to license or use any rights to the patent”³⁶¹ One panelist argued that the 1988 amendment granted antitrust immunity for refusals to license patents.³⁶² It was concluded by other panelists that the revision on its face does not exert on antitrust asserts.³⁶³ In *Illinois Tool Works Inc. v. Independent Ink, Inc.*, for instance, it was stated by the Supreme Court that “the 1988 amendment does not expressly refer to the antitrust laws.”³⁶⁴ Regarding

³⁵⁸ See *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 177-80 (1965).

³⁵⁹ See *Profl Real Estate Investors, Inc. v. Columbia Pictures Indus., Inc.*, 508 U.S. 49 (1993) (construing *E.R.R. Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127 (1961))

³⁶⁰ See *United States v. Line Material Co.*, 333 U.S. 287, 308-15 (1948) (price fixing); *Int’l Salt Co. v. United States*, 332 U.S. 392, 395-96 (1947) (tying); *United States v. Masonite Corp.*, 316 U.S. 265, 274-80 (1942) (pricefixing); *United States v. Univis Lens Co.*, 316 U.S. 241, 250-54 (1942) (price fixing); *Ethyl Gasoline Corp. v. United States*, 309 U.S. 436, 452-59 (1940) (price fixing).

³⁶¹ 35 U.S.C. § 271(d) (2000).

³⁶² May 1 Tr. at 33-35 (Gleklen); Jonathan I. Gleklen, *Unilateral Refusals to License I.P.* (May 1, 2002 Hr’g R.) (slides) at 11, <http://www.ftc.gov/opp/intellect/020501gleklenppt.pdf>.

³⁶³ May 1 Tr. at 51-52 (Sprigman); Melamed & Stoepelwerth, 10 *GEO. MASON L. R.E.V.* at 410-12.

³⁶⁴ 126 S. Ct. at 1290-91; *Scheiber v. Dolby Labs., Inc.*, 293 F.3d 1014, 1019 (7th Cir. 2002) (Posner, C.J.) (construing language of section 271(d) to govern only actions based on infringement); *Kodak*, 125 F.3d at 1214 n.7 (“[The provision at best] indicate[s] congressional intent to protect the core patent right of exclusion.”); see also Brief for the United States as Amicus Curiae at 12 n.6, *C.S.U.*, 531 U.S. 1143 (2001) (No. 00-62) (“On its face [section 271(d)] does not address antitrust liability for monopolization or attempted monopolization by refusal to deal.”), denying cert. to 203 F.3d 1322, available at <http://www.usdoj.gov/osg/briefs/2000/2pet/6invt/2000-0062.pet.ami.inv.pdf>. But cf. *CSU*, 203 F.3d at 1326 (citing section 271(d) as support for a “patentee’s right to exclude”); *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1362 (Fed. Cir. 1999) (citing section 271(d)(4)).

this perspective, the provision does not govern whether antitrust claims challenging the downturn of the patentee to license are viable.”³⁶⁵

Sometimes it is noted by the supporters of a broader reading of section 271(d)(4) that the provision implies to both “misuse” and “illegal extension of the patent right.” They spell that language to “refer to unlawfulness other than misuse, and the obvious extension is to antitrust violations,” so that they save the hindmost phrase from being “surplusage.”³⁶⁶ But, the phrases “illegal extension of the patent right” and “misuse” might have been applied by the congress to set out different aspects of the doctrine of patent misuse.³⁶⁷ “This would be consistent with the notion that it had been the Congress intention to refer to antitrust violations or claims, it could have done so explicitly.”³⁶⁸ Moreover, courts have held that companion provision of section 271(d)(4), section 271(d)(5), does not immunize patentees from antitrust liability for the conduct it governs—conditioning a license, or sale of a patented product, on the purchase of some other product or the taking of some other license³⁶⁹—and it would seem anomalous to read the phrase “illegal extension of the patent right” to immunize patentees from antitrust liability for their refusals to license, but not for such conditioning of licenses.”³⁷⁰

³⁶⁵ Id. 1.

³⁶⁶3 AREEDA & HOVENKAMP, ANTITRUST LAW ¶ 709c, at 234 n.71; see also May 1 Tr. at 34-35 (Gleklen); C.S.U., 203 F.3d at 1326 (emphasizing the phrase “illegal extension of the patent right” in section 271(d) in arguing that the provision supports “patentee’s right to exclude”); Sharon Brawner Mc Cullen, The Federal Circuit and Ninth Circuit Face-Off: Does a Patent Holder Violate the Sherman Act by Unilaterally Excluding Others from a Patented Invention in More than One Relevant Market?, 74 TEMP. L. R.E.V. 469, 494 & n.254 (2001) (“The Supreme Court has repeatedly used the language of whether the patent holder’s actions have ‘expanded’ or ‘enlarge[d]’ the patent grant to analyze allegations of antitrust violations.”).

³⁶⁷“The reference to ‘illegal extension of the patent right’ as well as ‘misuse’ recognizes the differing formulations of activity deemed to be ‘misuse’ and that misuse is often characterized as an illegal extension of the patent right.” S. R.E.P. No. 100-492, at 19 (1988). (No committee report on the 1988 amendment exists. The cited report describes an earlier bill containing the “illegal extension” language now appearing in section 271(d)(4)). See also U.S.M. Corp. v. S.P.S. Techs., Inc., 694 F.2d 505, 510-12 (7th Cir. 1982) (discussing how the patent misuse doctrine could go beyond the specific practices thought to extend the patent right).

³⁶⁸Cf. Scheiber, 293 F.3d at 1019-21 (construing another provision of section 271(d) in light of this principle).

³⁶⁹ See, e.g., id. at 1019-20 (finding section 271(d)(5) inapplicable because the provision “merely limits defenses to infringement suits”); Grid Sys. Corp. v. Tex. Instruments Inc., 771 F. Supp. 1033, 1037 n.2 (N.D. Cal. 1991) (rejecting argument that section 271(d)(5) affects antitrust claims, noting that the provision “relates only to the defense of patent misuse as a defense to an infringement claim”).

³⁷⁰ Id. 1.

The United States Court of Appeals for the First Circuit, by declining antitrust immunity for the refusals of copyright holders toward license, held that “the Sherman Act does not explicitly exempt [the protection of original works of authorship] from antitrust scrutiny and courts should be wary of creating implied exemptions.”³⁷¹ With the same circumspection, the Agencies proceed toward the interpretation of section 271(d)(4). In section 271(d)(4), nothing is explicitly indicated if a unilateral and unconditional refusal to license could give rise to antitrust liability.³⁷² Perhaps it can be said that the section might light up the viewpoint of the Congress toward the nature of the patent right. But the Agencies do not comprehend the regulation to create antitrust immunity for such downturns toward license.

“As a threshold matter, antitrust liability for refusal to assist competitors—whether by licensing patents or otherwise—is a rare exception to the ordinary rules of antitrust. As expressed in *United States v. Colgate & Co.*, the Sherman Act generally “does not restrict the long recognized right of [a] trader or manufacturer engaged in an entirely private business, freely to exercise [its] own independent discretion as to parties with whom [it] will deal.”³⁷³ Although this right to refuse to deal is not unqualified,³⁷⁴ the Supreme Court stated in *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, L.L.P.* that it has “been very cautious in recognizing such exceptions, because of the uncertain virtue of forced sharing and the difficulty of identifying and remedying anticompetitive conduct by a single firm.”³⁷⁵

3.3.5. F.T.C. and Department of Justice Guidelines on Antitrust and I.P. Report 2007

³⁷¹*Data Gen. Corp. v. Grumman Sys.Support Corp.*, 36F.3d 1147, 1185 (1st Cir. 1994).

³⁷²*Cf. Ill. Tool*, 126 S. Ct. at 1290 (recognizing that “[35U.S.C. § 271(d)(5)] does not expressly refer to the antitrust laws”).

³⁷³250 U.S. 300, 307 (1919).

³⁷⁴ *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472U.S. 585, 601 (1985).

³⁷⁵540 U.S. at 408 (concluding that Verizon’s alleged failure to provide adequate assistance to its rivals did not state an antitrust claim). The case involved a regulatory scheme that required incumbent local telephone companies to give certain forms of access to their networks to competitors. *Id.* at 401, 412-13. In reaching its decision, the Court stated that it had “never recognized [the essential facilities] doctrine” created by lower courts and had no need to decide the issue in this case. *Id.* at 411.

During the last ten years, “the F.T.C. has brought three cases challenging alleged hold-ups based on failures to disclose the existence of I.P. rights as unfair competition under section 5 of the F.T.C. Act.³⁷⁶ The first F.T.C. matter, *In re Dell*,³⁷⁷ highlighted to industry the possibility of antitrust liability for deceiving standard-setting organizations (SSOs) and their members.³⁷⁸ In that case, the F.T.C. alleged that during an SSO's deliberations about a certain standard, Dell, a member of the SSO, had twice certified that it had no intellectual property relevant to the standard and that the SSO adopted the standard based, in part, on Dell's certifications.”³⁷⁹ After the standard was adopted by the SSO, in relation to that standard, Dell reportedly demanded royalties from those using its technology. A consent agreement was accepted by the Commission, regarding that Dell approved not to question the patent against firms taking up with it as a matter of the standard.³⁸⁰

In *re Rambus* (a recent case plays a close role in connection with the subject matter), it was determined by the Commission that Rambus had acquired monopoly power via deceptive, exclusionary conduct in connection with its participation in an SSO. According to the Commission's opinion, Rambus engaged in a course of conduct "calculated to mislead [SSO]members by fostering the belief that Rambus neither had, nor was seeking, relevant

³⁷⁶A variety of other mechanisms may be available to challenge hold up in the context of an SSO. Some have used actions for fraud. See, e.g., *Rambus, Inc. v. Infineon Techs. AG*, 164 F. Supp. 2d 743, 750-58 (E.D. Va. 2001) (upholding jury verdict finding actual fraud based on firm's non-disclosure of patents related to a standard), rev'd in part, 318 F.3d 1081 (Fed. Cir. 2003) (reversing a denial of judgment for defendant as a matter of law upon determining that the record showed no breach of SSO disclosure duty). Others recommend using contract actions to enforce disclosure policies. See Mark A. Lemley, *Intellectual Property Rights and Standard Setting Organizations* (Apr. 18, 2002 Hr'g R.) at 38-42, <http://www.ftc.gov/opp/intellect/020418lemley.pdf> [hereinafter Lemley Submission]. Some have used the doctrine of equitable estoppel to enforce disclosure policies. See *Symbol Techs., Inc. v. Proxim Inc.*, No. Civ. 01-801-SLR, 2004 WL 1770290 (D. Del. July 28, 2004) (rejecting an estoppel defense when the firm had no duty to disclose its patent rights). Others have suggested the doctrines of implied license or patent misuse to enforce disclosure policies. See, e.g., Lemley Submission at 51-56; David R. Steinman & Danielle S. Fitzpatrick, *Antitrust Counterclaims in Patent Infringement Cases: A Guide to Walker Process and Sham-Litigation Claims*, 10 TEX. INTELL. PROP. L.J. 95, 96 & n.2, 106 (2001).
³⁷⁷121 F.T.C. 616.

³⁷⁸ Apr. 18 Tr. at 32-33 (Lemley); see also Feb. 28 Hr'g Tr., *Business Perspectives on Patents: Hardware and Semiconductors* (Afternoon Session) at 742 (Telecky), <http://www.ftc.gov/opp/intellect/020228ftc.pdf> [hereinafter Feb. 28 Tr.].

³⁷⁹ Id. 1.

³⁸⁰ See Decision and Order, *In re Dell*, 121 F.T.C. at 618-23.

patents that would be enforced" against products compliant with the SSO's standards.³⁸¹ The Commission found that "Rambus's course of conduct constituted deception under Section 5 of the F.T.C. Act."³⁸² The Commission further found that Rambus's course of conduct contributed significantly to the SSO's technology selections and that the SSO's choice of standard contributed significantly to Rambus's acquisition of monopoly power.³⁸³ According to the Commission, the switching costs that developed as manufacturers became increasingly committed to the standard locked the industry in and rendered Rambus's monopoly power durable.³⁸⁴ The Commission concluded that Rambus unlawfully monopolized the markets for four technologies incorporated into the SSO's standards in violation of section 5 of the F.T.C. Act.³⁸⁵

³⁸¹In re Rambus, Inc., No. 9302, slip op. at 67.

³⁸²Id.

³⁸³Id. at 74-79.

³⁸⁴Id. at 98-114.

³⁸⁵Id. at 3-5, 118-19. Private litigation has also challenged Rambus's actions before the SSO. E.g., Samsung Elecs. Co. v. Rambus, Inc., 439 F. Supp. 2d 524 (E.D. Va. 2006); Hynix Semiconductor Inc. v. Rambus Inc., 441 F. Supp. 2d 1066 (N.D. Cal. 2006); Micron Tech., Inc. v. Rambus Inc., 189 F. Supp. 2d 201 (D. Del. 2002); Infineon, 164 F. Supp. 2d 743, rev'd in part, 318 F.3d 1081 (Fed. Cir. 2003). A district judge on remand dismissed Rambus's infringement claims against Infineon in light of Rambus's failure to retain certain documents related to the case; in lieu of pursuing an appeal, Rambus settled the case and all other claims against Infineon related to the memory chip technology. Under the agreement, Infineon has agreed to pay Rambus royalties for the use of its technology and to grant Rambus a perpetual license for Infineon's memory interfaces. See Licensing Settlement Ends Patent Suit by Rambus, N.Y. TIMES, Mar. 22, 2005, at C15.

CHAPTER FOUR

Tax

4.1. Tax Law

There are regularly and typically numbers of functions that are supposed to be undertaken by the government "in the discharge of its duties," such as; defense of the country, poverty removal, education, infrastructure development, health, maintenance of law and order, etc. Obviously, a huge amount of capital is required so that these requirements would be met. Pursuant to this undeniable fact "where does the government get money for fulfilling all these activities and for the development of the nation," play the role of the most typical question one can ask for such compulsion. Through a broad range of sources i.e. fees, fines, surcharges and taxes, the intended fund is congregated by the government from the public. To the greatest extent, taxation plays the most important role in fulfilling this aspect.³⁸⁶

In general terms, "tax is the financial charge imposed by the Government on income, commodity or activity."³⁸⁷ Namely, two types of taxes are imposed by the government, "Direct taxes" and "Indirect taxes." "Under direct taxes, person who pays the tax bears the burden of it e.g. Income tax, Wealth Tax etc. while in Indirect taxes the person who pays the tax, shifts the burden on the person who consumes the goods or services e.g. Service Tax, Value Added Tax, Excise duty³⁸⁸ and etc. Here, in this part the provisions of income tax law are discussed. The first Income Tax Act in India was introduced in 1860. The present law of income tax is contained in the Income Tax Act, 1961. This act is the charging Statute of Income Tax in India.

³⁸⁶ "OPTIONAL - II Mathematics for Commerce, Economics and Business"

³⁸⁷ Study Material Executive Program, "Tax Laws and Practice" The Institute Of Company Secretaries Of India, (2014).

³⁸⁸ The tax imposed by the government on the manufacturer or producer on the production of some items is called excise duty. The liability to pay excise duty is always on the manufacturer or producer of goods. The duty being a duty on manufacture of goods, it is normally added to the cost of goods and is collected by the manufacturer from the buyer of goods. Therefore, it is called an indirect tax. This duty is now termed as "Cenvat".

It provides for levy, administration, collection and recovery of Income Tax. The Income Tax Law comprises The Income Tax Act 1961, Income Tax Rules 1962, Notifications and Circulars issued by Central Board of Direct Taxes (CBDT), Annual Finance Acts and Judicial pronouncements by Supreme Court and High Courts.”³⁸⁹

“The tax system fulfills an important task and role in the generation and subsequent use of state revenues and in the implementation of national economic policy. It follows from this that far from being marginal issues, the tax system and taxes are to a certain extent key. In the context of a national economy functioning on the basis of a market and market mechanism, the validity of this observation is doubled.”³⁹⁰ By the way, it can be stated that a “tax is a compulsory, unrequited payment to general government”³⁹¹ or a “tax is a compulsory levy made by public authorities for which nothing is received directly in return.”³⁹²

4.2. Types of Taxes

Most of the world's nations and particularly the government of the United States, hoist their revenues via a broad array of mechanisms. Taxes chiefly fit into the subsequent wide categories. The study of taxation in this study will point out two major and comprehensive taxations.

4.2.1. Direct Tax

“The terms ‘direct taxation’ and ‘indirect taxation’ are not used consistently by commentators. There is, however, a broad consensus that ‘direct taxes’ are those, such as income tax or

³⁸⁹ Id.

³⁹⁰ Ing. V. Mokrý, “TAXES, TAXATION AND THE TAX SYSTEM,” University of Economics in Bratislava, (2006).

³⁹¹ General government consists of supra-national authorities, the central administration and the agencies whose operations are under its effective control, state and local governments and their administrations, social security schemes and autonomous governmental entities, excluding public enterprises.

³⁹² James Nobes, “Definition of taxes.” Universitas varsoviensis (1998).

corporation tax in the U.K., which are levied directly on the taxpayer by means of some process of assessment.”³⁹³ Direct taxes are assessed directly on individuals like payroll, income, and wealth taxes.

In fact, in a more common language, “those taxes whose burden cannot be shifted to others and the person who pays these to the government has to bear it are called direct taxes. As a matter of fact, it can be said that direct tax is levied on a person or a group of individuals, which affects them directly which means they have to pay the government directly. There are different types of direct tax.”³⁹⁴

4.2.1.1. Income Tax

When an individual or a group of individuals have levied taxes on their annual incomes, this type of tax is known as income tax. It is compulsory for every individual whose annual income surpasses a specific identified check, to pay a part of his income in the form of income tax subjected to the Income Tax Act. Annually, the central government announces the rates of this condition at the beginning of each fiscal year.³⁹⁵

Financial Year: “The period from April 1 to March 31 is taken as a financial year i.e. every financial year begins on April 1 and ends on March 31 of the consecutive year.”³⁹⁶

Assessment Year: The next to a certain financial year there comes the assessment year which is, for instance, for the financial year 2005-06, the assessment year is the exact date on the following year which is 2006-07.

Permanent Account Number: P.A.N. is the acronym for permanent account number which is given to an individual by the income tax department. It is obligatory for that individual “to file

³⁹³ David F Williams, “Direct Taxes or Indirect Taxes?,” A consideration of the relative merits of the two approaches, A discussion paper of KPMG's Tax Business School® in the U.K., (2009).

³⁹⁴

³⁹⁵ Id. 1.

³⁹⁶ Id.

an income tax return of the financial year by a specified date of the subsequent financial year.”³⁹⁷

4.2.1.2. Corporate Tax

It is stated that this type of direct tax is "levied on companies who exist as separate entities from their shareholders. Foreign companies are taxed on income that arises or is deemed to arise. It is charged on royalties, interest, gains from the sale of capital assets, fees for technical services and dividends. It includes Minimum Alternative Tax (M.A.T.) which was introduced to bring Zero Tax companies under the income tax net, whose accounts were made in accordance with the Companies Act. Includes Dividend Distribution Tax (D.D.T.) which is a tax levied on any amount declared, distributed or paid as a dividend by any domestic company. International companies are exempt from this tax. Includes Securities Transaction Tax (S.T.T.) which is a tax levied on taxable securities transactions. There is not surcharge applicable on this.”³⁹⁸

In other words, a "corporation" is a legal entity created under a state or other statute that allows "incorporation" by persons who become the "shareholders" of the corporation. In general, the corporation's organizers complete appropriate forms and file them with the state (or other jurisdiction) in which the corporation will be incorporated. Those organizers become the corporation's initial shareholders once the corporation is recognized by the state. Corporate shareholders may be individuals, other corporations, or other entities such as partnerships. In general, an entity recognized as a corporation under state law is also treated as a corporation for federal tax purposes.”³⁹⁹

³⁹⁷ Id.

³⁹⁸ Rahul Deptt, "ROLE OF DIRECT AND INDIRECT TAX IN DEVELOPMENT OF INDIAN ECONOMY." Commerce, J.C.D. Memorial College, Sirsa. (December 2015) International Journal of Research in Finance and Marketing (IMPACT FACTOR – 5.230).

³⁹⁹ Leandra Lederman, "UNDERSTANDING CORPORATE TAXATION." Law George Mason University School of Law, 2002.

4.2.1.3. Wealth Tax

“Wealth tax is charged on the benefits derived from property ownership. The same property will be taxed every year on its current market value. Wealth tax is charged whether the property is earning an income or not. The tax is levied on the individuals, H.U.F.s, and companies alike. Chargeability depends on residential status. The following will not be taxed as they are "working assets":

- a) Assets held as stock in trade.
- b) Property held as a commercial complex.
- c) Gold deposit bonds.
- d) House property held for business or profession.
- e) House property let out over 300 days in a year.”⁴⁰⁰

In common language, “wealth tax is levied on the wealth of the taxpayer.”⁴⁰¹

4.2.2. Indirect Tax

By contrast, 'indirect taxes', such as the U.K.'s value added tax (V.A.T.), are those that the taxpayer pays to the government indirectly; i.e., the person who bears the tax (the customer) pays it to the retailer, who in turn passes it on to the government."

“An indirect tax is a tax collected by an intermediary (such as a retail store) from the person who bears the ultimate economic burden of the tax (such as the customer). An indirect tax is one that can be shifted by the taxpayer to someone else. An indirect tax may increase the price of a good so that consumers are actually paying the tax by paying more for the products.”⁴⁰²

⁴⁰⁰ Id. 13.

⁴⁰¹ Income Tax Department, Department of Revenue, Ministry of Finance, Government of India. Amended by Finance Tax 2018.

⁴⁰² “DIRECT AND INDIRECT TAXES,” Statistical Yearbook of India (2017). The Government of India, Ministry of Statistics and Programme Implementations.

"Indirect taxes are generally regarded as an inequitable way of raising revenue and as inferior to direct taxes i.e. Income tax. Moreover, indirect taxes generally are regarded as regressive. They fall capriciously on an individual with the same taxing capacity."⁴⁰³

4.2.2.1. Consumption Tax

In general, the tax that is imposed broadly and equitably on consumption is known as Consumption Tax. On balance, in Japan, all goods and commodities provisions and sales are contingent on consumption tax. "While the tax is imposed on sales of business entities as a taxable person, they may deduct tax on purchases from that on sales and pay the remainder to prevent tax accumulation."⁴⁰⁴

In other words, the consumption tax can be referred to as "[t]he form of taxation that is paid on the individual or household consumption of goods (and sometimes on services as well). Consumption taxes are often levied in the form of sales taxes, taxes that are paid by consumers to vendors at the point of sale. These taxes can be applied either to a wide variety of consumer goods or to a particular good alone."⁴⁰⁵ When the tax is implemented to only certain goods, like gasoline or cigarettes, the sales tax is called an "excise"⁴⁰⁶ tax. Consumption taxes are of indirect taxes since they are applied indirectly to individuals through levying taxes on their transactions.

4.2.2.2. Customs Duty

⁴⁰³

⁴⁰⁴ Learn about "Consumption Tax", International comparison of value added tax rates (standard rates and rates on food) 2017.

⁴⁰⁵ Jonathan Gruber, "Public Finance and Public Policy." Part IV-Taxation in Theory and Practice, 3rd edition, (2008).

⁴⁰⁶ A tax levied on certain goods and commodities produced or sold within a country and on licenses granted for certain activities.

“Customs Duty is a tariff or tax imposed on goods when transported across international borders. It is done by controlling the flow of goods (especially the restrictive and prohibited goods) transactions, in and out of the country, only to protect the economy and jobs of countries. Therefore, it can be simply inferred that it is the tax imposed on imports and exports of goods.”⁴⁰⁷

4.2.2.3. Excise Duty

It is the tax that is levied on excisable goods (goods that are subject to an excise tax) that are manufactured for consumption. It is compulsory to pay Excise Duty on the goods manufactured unless they are exempted.

It also “includes any duty other than general consumption tax imposed under the General Consumption Tax Act and an export duty of customs imposed on any articles manufactured in the country.”⁴⁰⁸

It could also be implied as "a type of tax charged on goods produced within the country (as opposed to customs duties, charged on goods from outside the country). It is a tax on the production or sale of a good. This tax is now known as the Central Value Added Tax (CENVAT). It is mandatory to pay duty on all goods manufactured unless exempted.”⁴⁰⁹

4.2.2.4. Service Tax

"Service Tax was imposed in 1994 for the first time on telephone services, services relating to non-life insurance and services provided by Stock Brokers⁴¹⁰ It fact, the Tax "levied on the gross amount charged by the provider on the receiver" is known as the service tax.

⁴⁰⁷ Id. 13.

⁴⁰⁸ Id.

⁴⁰⁹The Excise Duty Act, February 6 1942.

⁴¹⁰ .""SERVICE TAX ACT," Chapter V of the Finance Act, 1994.

4.2.2.5. Sales Tax

"A sales tax is charged at the time of purchase for specific goods and services. In the United States, many State and Local governments have passed laws to tax retail sales. The amount of this tax varies and is usually based on a percentage of the sale amount known as the sales tax rate."⁴¹¹

4.2.2.6. Value Added Tax (V.A.T.)

"It is a tax on the estimated market value added to a product or material at each stage of its manufacture or distribution, ultimately which is passed on to the consumer. It is a multi-point levy on each of the entities in the supply chain."⁴¹²

In other words, "the V.A.T. is a tax on turnover, applied to industrial, commercial and craft activities, professionals, construction work, real-estate operations and importations."⁴¹³

4.2.2.7. Securities Transaction Tax (S.T.T.)

"S.T.T. is a tax levied on all transactions done on the stock exchanges. S.T.T. is applicable on purchase or sale of equity shares, derivatives and equity oriented mutual funds. A person becomes investor after payment of S.T.T. at the time of selling securities (shares)."⁴¹⁴

4.3. Royalty Payments

Royalty payments can be interpreted as a profit sharing mechanism. In other words, by receiving royalty income, a technology licensor shares the profit streams generated from the licensee's efforts in commercializing the patented technology. Royalty rates in a majority of

⁴¹¹ Dave Farnsworth, "Sales Tax."2018.

⁴¹² Id. 13.

⁴¹³ "VALUE ADDED TAX (V.A.T)." Ministry of Economy and Finance – Tax Directorate: General Tax Code (<http://www.impots.gov.ma>) Finance Law, 2016.

⁴¹⁴ Id. 13.

license agreements are defined as a percentage of sales or a payment per unit. However, the profitability of the products or services that incorporate the patented technology plays a dominant role in royalty determination. According to a survey published by Degan and Horton (1997), when asked what financial measures they used in determining royalty amounts, more than half of the survey respondents listed discounted cash flow or profit sharing analysis, while nearly a quarter used the 25 percent rule as a starting point.

Moreover, royalty can be referred to as "any consideration for the use of, or the right to use, any copyright of literary, artistic, scientific or other work (including computer software and cinematographic films) including works reproduced on audio or videotapes or disks or any other means of image or sound reproduction, any patent, trademark, design or model, plan, secret formula or process, or other like right or property, or for information concerning industrial, commercial or scientific experience; and any gain derived from the alienation of any right or property described in subparagraph a) of this paragraph, to the extent that the amount of such gain is contingent on the productivity, use, or disposition of the right or property."⁴¹⁵

4.4. Japan Royalties

A key factor for any business considering moving into new markets is a tax regime of a country. Remarkably it has to be taken into consideration that "in the balance of payments statistics 'Royalties and License Fees' include payments accruing from patent, trademarks, registered designs, utility models, copyrights and technical instruction. Japan's balance of royalties and license fees had remained consistently in deficit since statistics were first compiled⁴¹⁶ until a surplus was registered for the first time in 2003."⁴¹⁷ This casts back extension in royalty receipts

⁴¹⁵ Article 12 of UK/USA Double Taxation Convention Signed July 24 2001 Amending Protocol Signed July 19 2002.

⁴¹⁶ Publication of statistics based on I.M.F. Balance of Payments Manual, Third Edition, began in 1961. The Fourth Edition was adopted in 1979, and the Fifth Edition in 1996.

⁴¹⁷ Eika Yamaguchi, "Recent Characteristics of Royalties and License Fees in Japan's Balance of Payments." Bank of Japan Working Paper Series, 2004.

from the abroad subordinate companies of Japan, which means non-resident corporations, due to the global manufacturing undertakings, which successively has been given promotion to, by such developments as the avoidance of trade discord by Japanese manufacturing industries, countermeasures to act against loss of price competitiveness due to the mounting of the yen, and reducing the costs of market-entry according to expanding W.T.O. membership.⁴¹⁸

In an undetermined and critical stage of payments statistics, "Royalties and License Fees"⁴¹⁹ cross-border transactions are registered as a specific component under the "Current account/Goods and Services account/Services account/other services account."⁴²⁰

"As the balance of payments is based on the criterion of residence, payments of license fees received by licensors resident in Japan from non-resident overseas licensees are registered as the export of services. Conversely, payments of license fees made by licensees resident in Japan to non-resident overseas licensors are registered as the import of services.⁴²¹ A review of recent trends in royalties and license fees shows that this item currently accounts for 16% of total service exports and 10% of total service imports."⁴²²

4.5. European Royalties

"Royalties related to patents, patentable inventions and qualifying production processes accessory thereto are treated as long-term capital gains when received by individuals engaged in a business. The same applies to royalties on original software received by independent

⁴¹⁸ Id.

⁴¹⁹ The item "Royalties and License Fees" was included in income from assets up through the I.M.F. Balance of Payments Manual, Fourth Edition. It was moved to services in the Fifth Edition for the following reason: "Inclusion of this item under services, rather than under income, is in accordance with the S.N.A. treatment of such items as payments for production of services for intermediate consumption or receipts from sales of output used as intermediate inputs" (para. 260).

⁴²⁰ "Other Services" comprises 11 items, such as: "Construction", "Insurance", "Financial", "Merchanting", and "Miscellaneous Business, Professional, and Technical Services". "Royalties and License Fees" accounts for a significant portion of "Other Services," accounting for approx. 29% of total receipts (largest item in 2003) and approximately 23% of total payments (second largest item in 2003).

⁴²¹ It should be noted that the purchase and sale of patents, copyrights, trademarks, etc. do not come under services but are included in "Capital Account."

⁴²² Id. 31.

professionals. The tax is levied at a flat rate of 16%, increased to 29.5% by the 13.5% (15.5% from July 1, 2012) social taxes (see section 2.2.) on the income less incurred expenses. However, the taxpayer may opt for taxation at the ordinary progressive rates (see section 1.9.1.). The flat rate does not apply if the licensee deducts the royalties for income tax purposes and the licensor or licensee directly or indirectly controls the licensee or licensor, respectively."⁴²³

"Other types of royalties (e.g. trademark and copyright royalties) are subject to tax at the ordinary progressive rates⁴²⁴ after deducting actual expenses."⁴²⁵

"Royalties paid to a non-resident entity are subject to the standard corporate income tax rate (currently 33.33%). The rate may be reduced or eliminated under a tax treaty or where the royalties qualify for the benefit of the E.U. interest and royalties directive."⁴²⁶⁻⁴²⁷

4.6. U.S. Royalties

"Based on available evidence, payments and receipts for the use of I.P. through royalties and licensing fees are growing rapidly. Internal Revenue Service data from corporate income tax returns indicate that U.S. corporations received \$115.9 billion dollars in gross royalty receipts in 2002 (I.R.S. 2005b)."⁴²⁸ There has been a growth in royalties from 1994 to 2004. The average

⁴²³ Individual Taxation of France, January 1, 2018.

⁴²⁴ The gross aggregate income is determined by adding up results of all categories of income after applying the specific relief measures. The net aggregate income is determined by applying the personal deductions.

⁴²⁵ Id.

⁴²⁶ International Tax, France Highlight 2018, Deloitte.

⁴²⁷ Controlled foreign companies – The C.F.C. rules apply to more-than-50%-owned or controlled foreign subsidiaries or permanent establishments of a French company when the local taxation is less than 50% of the French rate (i.e. the actual tax paid compared to the French tax that would be due on the income calculated under French GAAP). In such a case, the French company is: (i) taxed on its pro rata share of the income deemed to be received from the C.F.C. if the C.F.C. is a permanent establishment or a branch; or (ii) deemed to have received distributed income from the C.F.C. if the latter is a subsidiary. E.U. companies are outside the scope of the C.F.C. rules, unless the structure was put in place to avoid tax.

Dividends, interest, royalties and payments for services made to companies located in a non-cooperative country may be subject to a 75% withholding tax. Further, dividends received from entities located in non-cooperative countries cannot benefit from the participation exemption.

⁴²⁸ Marshall Reinsdorf and Matthew J. Slaughter, "International Trade in Services and Intangibles in the Era of Globalization." University of Chicago Press, 2009.

of this growth has been rated 11 percent per year since 1994. Comparing to the average of gross output of all private services producing industries over the same time period, the growth rate has been measured about 6 percent per year.⁴²⁹

"Royalties are one component of income reported in U.S. Corporation Income Tax Return Form 1120, and S.O.I. data for active corporations are estimated from a sample of these corporate income tax returns. For 2002 the returns of active corporations reported gross royalty receipts of \$115.9 billion dollars. All manufacturing industries together receive \$72.7 billion dollars in royalty income and three manufacturing industries make up 46 percent of the \$115.9 billion total, or \$53.3 billion dollars. These industries are computer and electronic product manufacturing, chemical manufacturing, and transportation equipment manufacturing."⁴³⁰

4.7. The Comparison of Royalties of Japan, Europe, and U.S.A.

"Setting of royalty rates for the use of inventions and other intellectual property rights is one of the most difficult issues of conducting of technology transfer agreements. The experience of the conclusion of technology transfer agreements between the institutions of the National Academy of Sciences of Ukraine (N.A.S.) and corporations of the U.S.A., France, Canada, China, Korea, and other countries has shown that there are different approaches and challenges related to the setting of initial royalty rates for negotiations."⁴³¹

Remarkably, pursuant to U.S. federal taxation of licensing, "if the transfer of intellectual property rights is merely a license, the tax is recognized upon the receipt of royalty payments rather than upon the execution of the agreement. Accordingly, royalties can spread out the proceeds over a number of tax years."⁴³² Whereas, on the basis of France licensing Operations,

⁴²⁹ Id. 43.

⁴³⁰ Id. P.158.

⁴³¹ Kapitsa, Yu. And Aralova, N., "Determination of Royalty Rates for International Technology Transfer Agreements". Center of Intellectual Property and Technology Transfer, the National Academy of Sciences of Ukraine, Kyiv, 2015.

⁴³² Federal taxation of licensing agreement, § 9.02[2] [b].

"if the patent owner is an individual and is the patentee, he is considered as the inventor and license royalties collected by him are subject to a uniform income tax of only 16%. If his income mainly consists of royalties or, in other words, if he is a "professional" inventor, the tax is only 11%."⁴³³

It has to be mentioned that in Japan, pursuant to obligations regarding use of technology and royalties, if "a licensor requires a licensee to pay a royalty based on the licensee's production volume or the sales volume of the patented products," or, if "a licensor requires a licensee to pay a royalty based on products that are non-patented, regardless of whether the licensed patent is used or not,"⁴³⁴ the Antimonopoly Act may be violated.

In accordance with European/France income taxes on patent royalties, "if the patent owner is neither the patentee nor the inventor and has acquired the patent more than two years previously, he will pay the same income tax as if he were the inventor. The same system also applies to patent owners who are corporations. According to French fiscal regulation, a corporation may be considered as an inventor, especially if the invention has been made at its initiative, under its direction, by its employees and at its expense."⁴³⁵ In contrast, regarding the U.S. imposition of local tax, "royalties from the license of intangible property to a local licensee are generally subject to local tax, regardless of the licensor's other business connections with the licensee's country. This tax is usually imposed at a flat rate on the gross amount of royalties paid and is collected by way of a withholding requirement imposed on the licensee/payer. For example, in the United States, the withholding tax is 30 percent unless reduced by an applicable income tax treaty."⁴³⁶ In some cases, as in Australia, the tax may be calculated on a net basis at the normal applicable rates but still collected by the payer."⁴³⁷ But, taking Japanese transfer of

⁴³³ Licensing Operation in France, § 19.03[29].

⁴³⁴ Guidelines for Patent and Know-how licensing Agreements under the Antimonopoly Act, at Pt. 4(3X2).

⁴³⁵ Id. 48.

⁴³⁶ § 871(a) (1). § 881(a).

⁴³⁷ Id. 47.

royalties and fees into consideration, "the transfer of royalties and fees paid pursuant to agreements which have been approved by the appropriate authorities is unrestricted."⁴³⁸

Notably, corresponding to Japan withholding on taxes, dividends, interests and royalties, non-resident individuals and/or foreign corporations making definite payments pursuant to being under certain treaties, are subject to a 20% national withholding tax under Japanese domestic tax laws. "An exceptional rate of 15% is applied to interest on bank deposits and/or certain designated financial instruments accruing on or after April 1, 1988. Interest on loans, however, is taxed at a 20% rate even after March 31, 1988. Tax treaties with many countries provide reduced tax rates as indicated. Some treaties, however, provide higher tax rates (e.g., Pakistan), or do not provide rates (e.g., Egypt, India, New Zealand etc.). In these instances, rates specified under Japanese domestic tax laws will apply. Each treaty should be consulted to see if a reduced rate for dividends (in the case of substantial holdings) is applicable."⁴³⁹

Likewise, following the U.S. treaty, "to claim a foreign tax credit, a U.S. taxpayer must have paid the tax. Where tax is withheld from royalties by a licensee, the licensor is treated as having paid the tax."⁴⁴⁰ The I.R.S. has argued that a net royalty agreement relieves the U.S. licensor of the burden of the foreign tax, but an I.R.S. ruling seems to support the availability of a credit in such cases.⁴⁴¹ The credibility of local taxes is addressed in the applicable tax treaty.⁴⁴² Accordingly, it has to be mentioned that, in respect of the treaty of Rome, "if a product is lawful in a country, i.e., if it is manufactured by the patentee or if royalties are paid to him, it is allowed free movement in all the other member countries of the Common Market. If in any one of the countries no protection exists, the products may of course be manufactured freely. This, however, does not mean that in case it is exported to a foreign member country of the Common

⁴³⁸ Id. 49, at § 31.04.

⁴³⁹ Id., at § 31.05.

⁴⁴⁰ See Regs. 1.901-2(f)

⁴⁴¹ Rev. RuL. 57-106.1957-1 C.B. 242.

⁴⁴² E.g., Income Tax Treaty between the United States and Australia art. 22. TIAS 10773.

Market, it may be considered lawful if the manufacture and sale of such products are protected by a local patent."⁴⁴³

⁴⁴³ Id. 43, at 19.02[2] [c].

CHAPTER FIVE

Intellectual Property

5.1. IP Law

"Intellectual property refers to creations of the mind: inventions; literary and artistic works; and symbols, names and images used in commerce. Intellectual property is divided into two categories:

1. Industrial Property includes patents for inventions, trademarks, industrial designs and geographical indications.
2. Copyright covers literary works (such as novels, poems and plays), films, music, artistic works (e.g., drawings, paintings, photographs and sculptures) and architectural design. Rights related to copyright include those of performing artists in their performances, producers of phonograms in their recordings, and broadcasters in their radio and television programs."⁴⁴⁴

5.2. Japan Patent

"The Japan Patent Office (JPO) holds jurisdiction over these rights in Japan. It conducts patent examinations, grants rights, and protects the rights. The industrial property right becomes a right that can be exclusively enforced (utilized) for a fixed period of time after an applicant has filed an application for it and after the right has undergone examination and been registered at the JPO. Since Japan is said to be a country poor in natural resources, Japan needs to fully utilize intellectual property rights, including industrial property rights, to increase its industrial

⁴⁴⁴ WIPO - World Intellectual Property Organization (1967, July 14). What is Intellectual Property? Retrieved from http://www.wipo.int/edocs/pubdocs/en/intproperty/450/wipo_pub_450.pdf.

competitiveness and fulfill its aim of becoming a nation based on intellectual property, in order to develop its industries and enable its people to lead stable lifestyles."⁴⁴⁵

5.2.1. Basic Law

"The Japanese patent system has several unique attributes. It permits applicants to defer examination for up to seven years, and examination must be specifically requested. As in the European system, applications are published ("kokai") approximately 18 months after their priority dates. The examination process is similar to that of the U.S. system. Examination is for completeness of description, novelty, non-obviousness, and utility."⁴⁴⁶

The economic peak power of Japan was reached in the 1980s, because of the low labor costs associated with well-trained and skillful Japanese workers and imported technologies from the United States and Europe that led to improvements in manufacturing. However, when Japanese labor costs gradually increased, the competitiveness was swiftly declined in the nineties because challenges from China and other emerging markets were encountered.⁴⁴⁷ The Japanese government, by learning from the United States economy revival via the Reagan and Bush administrations' acquisition of a "pro-patent policy," was able to proliferate its international competitiveness through giving strength to the protection and encouraging intellectual property exploitation. In order to accomplish this goal, strong leadership was necessary, therefore, the Strategic Council on Intellectual Property, comprising Prime Minister Koizumi and his Cabinet, along with legal professionals, scientists, academics, and representatives from

⁴⁴⁵ JPO - Japan Patent Office (2013). Japan Patent Office: Leading the Way in the Intellectual Creation Era. Retrieved from <https://www.jpo.go.jp/shiryousonota/pdf/panhu/panhu02.pdf>.

⁴⁴⁶ Jeffrey I. Auerbach, Ph.D., J.D. Edell, Shapiro & Finnan, LLC. PATENT LAW PRINCIPLES & STRATEGIES. P.27 (October 2006)

⁴⁴⁷ INT'L INST. FOR MGMT. DEV., IMD WORLD COMPETITIVENESS YEARBOOK (on file with author); see also MINISTRY OF FINANCE, TRANSITION OF JAPAN'S INTERNATIONAL COMPETITION POWER, available at http://web.archive.org/web/20051217091651/http://www.mof.go.jp/singikai/sangyokanze/tosin/sk1406mt_37.pdf (last visited Feb. 7, 2009).

industry, was created by the Japanese government.⁴⁴⁸ The IP Council published an extended list of action plans under the slogan of turning Japan into an “IP-based nation,” and also announced a recommendation to enact a law so the plans by establishing a policy headquarters housed in the cabinet would be executed.⁴⁴⁹ In November 2002, the Basic IP Law was enacted by adopting the recommendation, and in March 2003 became effective.⁴⁵⁰ The Basic IP Law, unlike existing IP laws, does not affect private party rights and duties. “Instead, the law gives direction to IP policy by setting forth a fundamental mission with respect to Japan’s national strategy.⁴⁵¹ It also sets forth the roles of government, industry and academics in executing the strategy,⁴⁵² while listing measures necessary to accomplish the individual groups’ missions.”^{453,454}

5.2.2. Conventions

The Japanese government, by taking advantage of the Basic IP Law, acquired the power to establish an IP Strategy Headquarters (“Headquarters”) inside the Cabinet.⁴⁵⁵ It is suggested that this power might have been designed in order to parallel the Patent and Copyright Clause regarded in the U.S. Constitution.⁴⁵⁶ However, in point of fact, this law was the unique solution Japan considered to problems resulting from internal power competition. It was often fought by ministries and agencies over jurisdiction in the past when introducing bills involving new

⁴⁴⁸ For information on the Strategic Council on Intellectual Property, see Prime Minister of Japan & His Cabinet, Concerning the Strategic Council of Intellectual Property (Provisional Translation) (Feb. 25, 2002), http://www.kantei.go.jp/foreign/policy/titeki/konkyo_e.html.

⁴⁴⁹ See STRATEGIC COUNSEL ON INTELLECTUAL PROP., supra note 2.

⁴⁵⁰ Basic Law on Intellectual Property Law No. 122 of 2002. An English translation is available at http://www.kantei.go.jp/foreign/policy/titeki/hourei/021204kihon_e.pdf.

⁴⁵¹ Id. arts. 3–4.

⁴⁵² Id. arts. 5–8.

⁴⁵³ Id. arts. 12–18.

⁴⁵⁴ Toshiko Takenaka, Success or Failure? Japan 's National Strategy on Intellectual Property and Evaluation of Its Impact from the Comparative Law Perspective Washington University Global Studies Law Review. P.381 (January 2009).

⁴⁵⁵ Id. art. 24.

⁴⁵⁶ U.S. CONST., art. I, § 8, cl. 8.

issues related to IP.⁴⁵⁷ "This competition for power made it difficult for Japan to develop a comprehensive IP policy covering the jurisdictions of various ministries and agencies. To make a comprehensive overhaul of the IP system possible and to execute a uniform IP policy, the Japanese government had to implement a strategy that superseded ministerial and agency levels. Solid leadership was necessary to execute action plans that the ministries had already failed to execute prior to the creation of the Headquarters. The Prime Minister and his Cabinet members have provided this leadership since the Headquarters' creation in March 2003. Its composition has remained the same, even when Mr. Koizumi's successors took over the Prime Minister's office."⁴⁵⁸

The secretariat of the Headquarters consists of bureaucrats dispatched from ministries and agencies at the helm of numerous facets of intellectual property. This bureaucratic "think-tank" was led by a former Japanese Patent Office ("JPO") Commissioner Mr. Hisamitsu Arai.⁴⁵⁹ It was Professor Haley's view that Hisamitsu shared as the IP policy of Japan, which was outdated, and thus the JPO was led in an extensive campaign so that the status of IP rights was promoted and the awareness of such rights among politicians would be raised.⁴⁶⁰ Headquarters bureaucrats are dispatched from the ministries and agencies and function as liaison officers to effectively and uniformly execute policies and legislation developed by the Headquarters throughout the government. The Headquarters implemented the national strategy, in addition to this secretariat creation, by expanding a program for elevating creation, protection, and

⁴⁵⁷ A good example is the issue relating to computer software protection; it is well known that the Ministry of Economy, Trade and Industry ("METI") and the Ministry of Education, Culture, Sports, Science and Technology ("MEXT") compete over how to reform the Copyright Act to protect computer software. See NOBUHIRO NAKAYAMA, LEGAL PROTECTION OF COMPUTER SOFTWARE 11–17 (1986).

⁴⁵⁸ Id. 11.

⁴⁵⁹ HISAMITSU ARAI, INTELLECTUAL PROPERTY POLICIES FOR THE TWENTY-FIRST CENTURY: THE JAPANESE EXPERIENCE IN WEALTH CREATION (1999). After retiring from METI, Hisamitsu Arai organized the Intellectual Property National Strategy Forum and prepared proposals to revise Japanese intellectual property laws. The IP Strategy Forum's website is http://www.smips.jp/IP_forum/. Members of the Forum recommended one hundred proposals to change the Japanese IP system. See Hisamitsu Arai, Country Focus: IP Revolution—How Japan Formulated a National IP Strategy, WIPO MAG., June 2007, at 14, available at http://www.wipo.int/wipo_magazine/en/pdf/2007/wipo_pub_121_2007_03.pdf [hereinafter IP Revolution].

⁴⁶⁰ IP Revolution, *supra* note 15.

exploitation of intellectual property, listing action plans, and having the execution of such plans reviewed by ministries and agencies.⁴⁶¹ The Headquarters has published revised annual programs since the publication of its first program in July 2003, each one of these programs is including more than two hundred action plans.⁴⁶² Although the Headquarters do not directly execute these plans, in the program, responsibility for plan execution of each ministry and agency is made clear, and its task force to develop policies to execute the action plans for the most important issues requiring strong leadership is well organized. The medical method patent protection, media contents protection, and intellectual property enforcement to receive supervision from expert task forces was selected by the Headquarters shortly after the plan was generated.⁴⁶³

"Action plans listed in the annual program are classified into five areas: (1) creation, (2) protection, (3) exploitation, (4) media contents protection, and (5) human resources. Important action plans in the area of creation relate to enhancing incentives for scientists and researchers in Japanese universities to develop basic and applied technologies and to the establishment of mechanisms to comprehensively manage IP in such technologies.⁴⁶⁴ Action plans in the area of protection include both procurement and enforcement of IP rights."⁴⁶⁵ The IP rights are impractical unless enforced effectively; therefore, a strong emphasis on improving enforcement mechanisms is placed by the Headquarters and as a result, its own task forces to secure prompt and strong protection is organized. A review of the court system and a recommendation to create a special court with exclusive jurisdiction over appeals arising from

⁴⁶¹ Id.

⁴⁶² English translations of all programs are available at http://www.ipr.go.jp/e_materials.html (follow hyperlinks under the "Intellectual Property Strategic Program" heading) (last visited Feb. 7, 2009).

⁴⁶³ See INTELLECTUAL PROP. POLICY HEADQUARTERS, STRATEGIC PROGRAM FOR CREATION, PROTECTION AND EXPLOITATION OF INTELLECTUAL PROPERTY (2003), available at http://www.kantei.go.jp/foreign/policy/titeki/kettei/030708f_e.html [hereinafter 2003 STRATEGIC PROGRAM].

⁴⁶⁴ Id.

⁴⁶⁵ Id.11.

technology-related IP rights was included by the action plans in the first program.⁴⁶⁶ The independence of courts and impede the balance of power between administrative and judicial branches may be sacrificed by the execution of these plans.⁴⁶⁷ Regarding the area of exploitation, Headquarters acknowledged the importance of industry initiative by increasing the commercialization of unexploited technologies. Thus, the program listed action plans to provide infrastructure to deliver information about such technologies to those who might be interested in commercialization.⁴⁶⁸ In the area of media content protection, action plans call for developing a mechanism for managing extensive media content to fortify intellectual property rights protection in the contents.⁴⁶⁹ In the area of human resources, they are concluded with the long list action plans by recommending an introduction of IP education systems for both lawyers and non-lawyers.⁴⁷⁰

5.2.3. Patentable subject matter

Circumstances surrounding patentable subject matter in Japan in comparison to those of the United States, where an en banc decision in *re Bilski*⁴⁷¹ has recently been rendered by the Federal Circuit, seem rather calm. Nevertheless, the subject matter eligibility in Japan has been the scene of some discussion points. The basic doctrine and current situation about the issue are explained as follows.

In order to understand the patentable subject matter, there are some important provisions in the Japanese Patent Act.

⁴⁶⁶ Id.

⁴⁶⁷ The Supreme Court of Japan has exclusive power to determine the career path of all Japanese judges. Michael K. Young & Constance C. Hamilton, Introduction to Japanese Law, 1 JAPAN BUSINESS LAW GUIDE 7–550 (1988), reprinted in YUKIO YANAGIDA ET AL., LAW AND INVESTMENT IN JAPAN: CASES AND MATERIALS 63, 64 (1995).

⁴⁶⁸ See 2003 STRATEGIC PROGRAM, *supra* note 19.

⁴⁶⁹ Id.

⁴⁷⁰ Id.

⁴⁷¹ *In re Bilski*, 545 F.3d 943 (Fed.Cir.2008)

"At first, Article 1 of the Patent Act provides that the subject to be protected by the Patent Act is "inventions", as follows:

Article 1 (Purpose) The purpose of this Act is, through the protection and the utilization of inventions, to encourage inventions and thereby to contribute to the development of industry.

Then, Article 2 defines the term "inventions"⁴⁷², as follows:

Article 2 (Definition) (1) "Invention" in this Act means creation of technical ideas of a high level which utilizes the law of nature.

Further, Article 29 provides that only industrially applicable inventions are patentable.

Article 29

An inventor of industrially applicable inventions may be entitled to obtain a patent for the said invention..."

As seen above, the Japanese Patent Act clearly shows the definition of the invention, although it is rare for Patent Acts. It also stipulates that industrial applicability is needed to obtain a patent."⁴⁷³

5.2.3.1. Invention and Utilizing a Law of Nature

Regarding the aforementioned Japanese Patent Act, "invention" is defined as "creation of technical ideas of a high level which utilizes the law of nature". "A high level" is stated to be an element to distinguish patents from utility models⁴⁷⁴, so it is important to focus on the element of "creation of technical ideas which utilizes the law of nature" to find whether a claimed matter can be qualified as an "invention". The categories which are not deemed as

⁴⁷² The definition is said to be derived from the doctrine of Josef Kohler (Germany). Katsuya Tamai Concept of "Invention" - Especially in relation to the inventiveness -, Monya Nobuo kyo-jukanreki-kinenचितेकizaisanhon no gendaitekikadai [Commemorating papers for 60th birthday of Professor Nobuo Monya, Current issues of Intellectual Property] 139-166 (2006)

⁴⁷³ Shimako Kato, Discussion over Patentable Subject Matter in Japan. Patent attorney, Abe, Ikubo & Katayama.

⁴⁷⁴ Japan Patent Office, Kogyo- shoyûken- houchikujo-kaisetsu [Article-by article Commentary for industrial property right], 22 (Hatsumei-kyokai 16th ed., 2000)

“invention”, are known for they do not meet the requirement of “creation of technical ideas utilizing a law of nature”.⁴⁷⁵

5.2.3.2. Explanation about important categories

Discoveries of natural products like mineral ore or natural phenomenon are deemed as non-patentable subject matter because an inventor does not consciously create any technical idea (Category (ii)). On the other hand, even if things as such exist in nature, but there need to be isolated artificially from their surroundings using some technique, then those things are deemed as creations (ex. Microorganisms or chemical substances).

The Examination Guidelines describes that if claimed inventions are relevant to any laws as such other than a law of nature (e.g., economic laws), man-arranged rules (e.g., a rule for playing a game as such), mathematical methods or mental activities, or utilization just thereof (e.g., methods for doing business as such), these inventions are not considered to be 'invention', because they do not utilize a law of nature.

Some old decisions give examples, which were not deemed as “industrial invention stipulated in Article 1 of Patent Act”. In a decision regarding an invention of “preparation of code language for telegram”⁴⁷⁶, the Supreme Court said that the preparation per se is technically sophisticated, but it is prepared without any kind of machine, in that sense, the invention does not deserve to be granted as an industrial invention.

Also, there is an old Tokyo High Court decision, which was related to an invention of advertising method using utility poles⁴⁷⁷. The invention is a method comprising the steps of; forming groups A, B, C, and D, each of which includes a certain same number of poles, placing a holding frame on each post in order to present advertisement board, and changing place of

⁴⁷⁵ Japan Patent Office, Examination Guidelines Part II, Capt.1, “Industrially Applicable Inventions”,

⁴⁷⁶ Decision on April 30, 1953 by the first petty court of the Supreme Court (vol.7, No.4, Minshyû 461; vol.4; No.4, Gyôshyû, 910)

⁴⁷⁷ Decision on December 25, 1956 by the Tokyo High Court (vol.7, No.12, Gyôshyû, 3157.)

the advertisement boards in each group in a certain period of time so as to circulate the advertisement boards on the poles. The Tokyo High Court held that:

In light of the contents and purpose of the present invention, the advertising method of the present invention should be understood that the advertising method to increase the advertisement effects by circulating advertisement in a certain period and for that purpose, groups of utility poles and advertisement boards, also holding frame are used. However, no power of nature was used for circulating advertisement boards. In that sense, the present invention does not constitute the industrial invention defined in Article 1 of the Patent Act."

In order to determine whether the law of nature is used in a claimed "invention," the Examination Guidelines mention the following 3 points.

- Even if a part of matters defining an invention stated in a claim utilizes a law of nature, it is understood that the claimed invention considered as a whole does not utilize a law of nature, the claimed invention is deemed as not utilizing a law of nature.
- On the contrary, even if a part of matters defining an invention stated in a claim does not utilize a law of nature, it is understood that the claimed invention as a whole utilizes a law of nature, the claimed invention is deemed as utilizing a law of nature.
- As stated above, the characteristic of the technology should be taken into account in judging whether a claimed invention as a whole utilizes a law of nature.

However, the Examination Guideline does not give a clear explanation on how to understand whether a claimed invention as a whole utilizes a law of nature. Recent lawsuits and discussions over subject matter give explanations on this point (Those cases are shown in following Section 5.).

Category (v) is also important. According to the Examination Guidelines, "those not deemed as technical ideas" includes followings,

- (a) Personal skill (which is acquired through personal experience and cannot be shared with others as a knowledge due to lack of objectivity),
- (b) Mere presentation of information (where the feature resides solely in the content of the information, and the main object is to present information)
- (c) Aesthetic creations (ex. paintings, carvings).

Especially, category (b) shown above is sometimes difficult to understand. The Examination Guidelines says, "Written manual for instructing an operation of a machine or directing a use of a chemical substance, audio compact disc (where the feature resides solely in music recorded thereon), image data taken with a digital camera, program of an athletic meeting made by a word processor, or computer program listings (mere representation of program codes by means of printing them on paper, displaying them on a screen, etc.) are deemed as mere presentation of information. "

Before the Examination Guidelines were amended in 2000, computer programs had been included as an example of "mere presentation of information" and deemed as non-patentable subject matter. However, now, computer programs are clearly patentable subject matter. In the Patent Act, "invention of program or the like" is now treated as a kind of "invention of product".

5.2.4. Examination Procedures

There are two types of examination procedures, one is the accelerated procedures and the other one is computerized procedures, which will be discussed in more detail below.

5.2.4.1. Accelerated Procedures

Revised accelerated examination and revised accelerated appeal examination systems for patent applications were put in place on January 1, 1996. These revised systems are designed

to improve the procedures of the former systems, which had been utilized since February 1986.

The new systems seek to provide:

- (1) International stabilization of patent rights;
- (2) Stable use of inventions by granting rights promptly; and
- (3) Favorable procedures and implementation for the users.⁴⁷⁸

At the same time, the new systems take into consideration the impact of patent procedures on conventional applications and conventional appeals.

If a patent application qualifies for an accelerated examination, the Japanese Patent Office will promptly commence its examination for a patent application prior to conventional applications and will thereafter expedite the examination in order to dispose of it without delay. The Patent Office will register or make the decision to reject such an application within thirty-six months from the date of filing.⁴⁷⁹

Patent applications which satisfy all of the following requirements may be eligible for the accelerated examination procedure:

- (1) The application is a “working-related application” or a foreign-related application. A “working-related application” is a patent application where the invention is being worked by the applicant or a person licensed to work the invention. A “foreign-related application” is a patent application for which a corresponding application has also been filed in a patent office other than the Japanese Patent Office or an intergovernmental organization.⁴⁸⁰
- (2) A request for examination has been made.
- (3) The examination has not yet started.

⁴⁷⁸ JPO-Outline of Accelerated Examination and Accelerated Appeal Examination. Available at https://www.jpo.go.jp/torikumi_e/t_torikumi_e/outline_accelerated.htm

⁴⁷⁹ Id.

⁴⁸⁰ Id.

A request for accelerated examination is made by the filing of an “Explanation of Circumstances Concerning Accelerated Examination” for each patent application for which an accelerated examination is being requested.

The application should include such information as the item's workings related application, an explanation of working conditions, a prior art search, and a comparison with any prior art In the case of a foreign-related application, the applicant should also include an "indication of Application to a Patent Office other than the Japanese Patent Office.” No fees are charged for the filing of an application for an accelerated examination.⁴⁸¹

A patent appeal can also be handled on an accelerated basis if:

- (1) The application is a working-related application or a foreign-related application.
- (2) The invention is being worked by the applicant or a person licensed to work the invention.
- (3) The establishment of patent rights is urgently required.

The establishment of a patent right is urgent, where:

- (1) A third party is apparently working the Invention without authorization or has apparently proceeded with considerable preparations, therefore.
- (2) An opposition to the patent was being filed at the examination.
- (3) Appeal examination by a collegial body has not yet started. (In cases where reconsideration by the examiner before an appeal is being made, it is eligible only after the result has been reported.)
- (4) The case on appeal is against the examiner s decision of rejection.

A request for an accelerated appeal examination is made by the filing of an “Explanation of Circumstances Concerning Accelerated Appeal Examination.” The request should include an “Explanation of Working Conditions,” an “Explanation of Circumstances Requiring Urgency,”

⁴⁸¹ Id.

and “Assertions Regarding Completeness of Specification.” No filing fees are required from an individual seeking an accelerated appeal.⁴⁸²

5.2.4.2. Computerized Procedures

For several years, the Japanese Patent Office has been promoting the Paperless Project as a way to deal with the gigantic amount of data stored as information related to patent applications. The Paperless System is designed to computerize operations from filing applications to examination and distribution of patent information to the public. The system consists of three subsystems.⁴⁸³

1. Electronic Application and Administrative Processing System. The computerized Paperless System processes whole transactions ranging from acceptance of applications to examination, registration and publication in the official gazette. This system features the first electronic filing of applications for patents and utility models in the world. The system accepted the first filing on December 1, 1990 and paved the way for applicants to file applications electronically online or using the conventional paper form. The Japanese Patent Office also uses an online transmission system which enables applicants to receive online notifications at their own terminals. At the same time, the Patent Office also operates an online system that allows online inspection of the necessary documents.⁴⁸⁴

2. Comprehensive Document Database System. This system stores comprehensive domestic and foreign information on computer, including official gazettes related to patents, utility models, designs, and trademarks, and supersedes the paper-based manual practice of obtaining such information. The Comprehensive Document Database holds 41 million documents and the Japanese Patent Office makes the database available to the public.

⁴⁸² Id.

⁴⁸³ David M. Epstein, *Eckstrom's Licensing in Foreign and Domestic Operations: Licensing Operations in Japan*, Chapter 31.

⁴⁸⁴ Id.

3. Document Retrieval System. This system enables a computer search to be conducted for patent documents and the like, replacing the manual method for most prior art searches.

The Paperless System operates on a large scale and uses state-of-the-art computer technology. Over the years since the system started, the Japanese Patent Office has been updating the system and also resolving numerous technical problems arising from computerization, such as formatting, communications, database construction, etc., and legal issues concerning the introduction of the on-line filing system and the associated application fee payment procedures.⁴⁸⁵

5.3. Japan Copyrights

Copyright laws⁴⁸⁶ are deeply associated with the cultural activity status of a country. They help the culture to be developed via enclosing the rights of works inside a protected area of their own, however, when these protections become too restrictive, the works can no longer be conveniently utilized. In line with the time changes, seeking out a balance has become a critical legal viewpoint.⁴⁸⁷

"This law concerns the circumvention of technological copyright protection measures, principally directed against copying. These measures are defined as those taken to prevent any infringement of copyright. The law lays down criminal penalties for persons who manufacture or market devices aimed mainly at circumventing technological protection measures or who publicly transmit computer programs permitting such circumvention. The act of circumvention

⁴⁸⁵ Id.

⁴⁸⁶The Japanese Copyright Act is a civil law modeled on German law, and it differs from the system of common law. A major difference between the U.S. Copyright Act and the Japanese Copyright Act is that in the latter, the content of individual rights and restrictions are precisely stipulated in provisions, there is no legal principle of fair use, and there is the concept of an offense subject to prosecution only on complaint that cannot be brought before the court without a complaint from the copyright holder.

⁴⁸⁷ YAMADA Shōj, (2010) Changes in Japanese Copyright Law Post-1990s: US/Corporate Interest vs. User Demand

is not therefore illegal in itself; it is the trade-in technologies conducive to this result that is prohibited and made subject to legal penalties."⁴⁸⁸

"Copyright extends to all varieties of literary, artistic and musical works. To be eligible for copyright protection, however, such works must satisfy additional criteria, which find their source in the constitutional provision empowering Congress to enact copyright legislation. Article I, section 8, clause 8 of the Constitution gives Congress the power "to promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries." Not only does this provision ensure that federal copyright may not be of perpetual duration, but it also requires that the congressional grant of copyright be to "authors" for their "writings."⁴⁸⁹

5.3.1. General Principles⁴⁹⁰

"The Copyright Law protects two categories of copyright rights: "Author's Rights" (Chapter 2 of the Copyright Law) and "Neighboring Rights" (Chapter 4). Author's Rights are divided further into the "Author's Moral Right" and the "Economic Right," as narrowly defined in Article 17. The Moral Right is strictly personal to the author and is not transferable (Article 59), whereas the Economic Right is transferable, wholly or partly, as is other intellectual property (Article 61)."⁴⁹¹

"A Copyright comes into existence upon creation (Article 51(1)) and no formalities are required for purposes of the enjoyment of Moral Right and Economic Right (Article 17(2)). No copyright notice is required, and failure to attach a notice does not result in forfeiture of the

⁴⁸⁸ Anne Lepage, (2003), DOCTRINE AND OPINIONS: OVERVIEW OF EXCEPTIONS AND LIMITATIONS TO COPYRIGHT IN THE DIGITAL ENVIRONMENT. University of Paris II Assas.

⁴⁸⁹ Robert A. Gorman, (2006), Copyright Law Second Edition. Kenneth W. Gemmill Professor Emeritus University of Pennsylvania Law School, Federal Judicial Center.

⁴⁹⁰ MacLaren, Joint Ventures JA-31 to JA-35 (West Group).

⁴⁹¹ Id. 40.

Author's Rights. Neither deposit of a copy of a work nor registration of the work is necessary to enforce Author's Rights."⁴⁹²

"An employer obtains Author's Rights for a work which is created on the initiative of the employer by an employee during the course of his employment, and which is published in the name of the employer, unless otherwise agreed to in a contract, office regulations, or otherwise, at the time of creation (Article 15(1)) ("a work made for hire"). Attention must be paid to this provision, for a while the Economic Right is subsequently assignable to an employer if a work does not satisfy the requirements for qualifying as a work made for hire under Article 15(1), the Author's Right is not subsequently assignable and thus remains with the creator-employee."⁴⁹³

"A non-Japanese work may be protected if: (1) the work is protectable under treaties with Japan, including the Berne Convention and the International Copyright Convention; or (2) the work is first made public in Japan, or is made public in Japan within 30 days from the date of the original publication outside Japan (Article 6)."⁴⁹⁴

An Economic Right holder has an exclusive right to (1) reproduce his copyrighted work (Article 21); (2) perform his work (Article 22);

5.3.2. Application to Computer Programs

An invention directed to a computer program is not always a patentable subject matter, however, computer programs are still categorically part of them.

"As required by the Japanese Patent Law, a software-related invention is also required to be the creation of technical ideas utilizing a law of nature. The Examination Guidelines for "Computer software-related inventions" explains that in order for those software-related

⁴⁹² Id.

⁴⁹³ Id.

⁴⁹⁴ Id.

inventions to be "creation of technical ideas utilizing a law of nature", information processing by software should be concretely realized by using hardware resources. In other words, in case where (a) information processing equipment (machine) or its operational method is prepared so as to realize arithmetic operation or manipulation of information based on the purpose of the invention and (b) concrete means in which software and hardware resources work closely together are utilized in the equipment of the method, claimed invention is deemed as "creation of technical ideas which utilize a law of nature."⁴⁹⁵

For example, an invention of "a computer to calculate the minimum value of formula $y=F(x)$ in the range of $a \leq x \leq b$ " cannot be considered as "creation of technical ideas utilizing a law of nature".⁴⁹⁶ Because, even though the word "a computer" appears in the claim, the claim does not require that the software for information processing calculate the minimum value of formula $y=F(x)$ and the computer work closely together. In that sense, the claimed invention of the example is not deemed as "creation of technical ideas utilizing a law of nature", which means that it does not constitute "a statutory invention," since the information processing by software is not concretely realized by using hardware resources.

However, this idea to find eligibility based on "whether information processing by the software is concretely realized by using hardware resources or not" is still not very helpful and it is sometimes criticized.⁴⁹⁷ Recent court decisions give some help to clarify the issue.

5.3.3. Trade Secrets and Know-How

Keeping in mind the distinction between tort law and contractual protection of information, as well as the general inadequacy of criminal and damage remedies, one can begin to compare

⁴⁹⁵ Japan Patent Office, Examination Guidelines, Part VII, Capt.1, Computer Software-related Inventions

⁴⁹⁶ This example is shown in the Examination Guidelines in the part of the footnote 7.

⁴⁹⁷ The first group of software committee of JPAA, Current issues on the present patent act regarding the protection of software-related inventions, vol.56, No.2 Patent, 4-16,

trade secret protection in Japan⁴⁹⁸ and the United States. Because Japan is a civil law country, its law derives from its "codes" or statutes, as interpreted by scholars, and its judicial decisions have considerably less precedential value than those in common law countries like the United States. Moreover, Japan is not as litigious a society like the United States, so its case law on trade secrets is sparse.⁴⁹⁹ Nevertheless, several interesting cases and some scholarly comments reveal the scope and nature of Japanese protection of trade secrets or "know-how."

5.3.3.1. Contractual Protection of Information

Japanese law appears to provide adequate protection against direct misappropriation of a trade secret by an individual in contractual privity with the trade secret owner. The leading decision is *Yugen Kaisha Foseco Japan Ltd.*⁵⁰⁰ upon beginning employment, two employees had been

⁴⁹⁸ Although the Japanese are beginning to use the term "trade secrets," see generally INDUSTRIAL RESEARCH CENTER FOUNDATION, INVESTIGATION AND RESEARCH ON AMERICAN TRADE SECRET LAW (1988) (Comparative Law Research Center, in Japanese), in the past they have preferred the term "know-how," especially when referring to trade secret licenses of a technological nature. See, e.g., Amemiya&Guttman, Know-How, in 4 DOING BUSINESS IN JAPAN Ch. 5 (Z. Kitagawa ed. 1987) [hereinafter Know-How]; Osumi, Know-How and its Investment, 1 LAW IN JAPAN: AN ANNUAL 92, 102 (1967) (in English). In American practice, "trade secret" is a legal term of art, while "know-how" is primarily a business term that lacks precise legal meaning. "Know-how" also appears to focus narrowly on information having a technical application, while "trade secrets" may include financial and business information, such as customer lists, at least under American law. Nevertheless, since there is considerable overlap between the subjects covered by the two terms, this article treats them as roughly synonymous.

⁴⁹⁹ I received summaries of the cases discussed here from Japanese scholars engaged in a recent comprehensive, comparative study on trade secrets for the Japanese Ministry of International Trade and Industry in connection with current and forthcoming international trade talks, see supra INDUSTRIAL RESEARCH CENTER FOUNDATION, note 127. These cases are all of the Japanese trade secret cases to which those scholars devoted serious study in preparing their report. Since Japanese civil law does not value precedent highly, the very fact that scholars in Japan selected these cases makes them especially important. Nevertheless, to American scholars and legal practitioners, the number of Japanese judicial decisions discussed in this section may seem small. Perhaps the paucity of Japanese "precedent" in this field derives from the fact that Japan, as a civil law country, values judicial decisionmaking less than common law countries such as the United States do. A more fundamental reason may be the antipathy to litigation that permeates all levels of Japanese society. "[R]ecent scholarship argues persuasively that self-interest has led the Japanese elite to take deliberate steps to discourage litigation." F. UPHAM, LAW AND SOCIAL CHANGE IN POSTWAR JAPAN 16 (1987) (citations omitted). See also id. At 39 (Even among ordinary people poisoned by mercury pollution, "litigation was often unacceptable and individual action extremely painful."). Indeed, among the Japanese firms that might have been involved in trade secret disputes, until recently litigation to resolve commercial differences would have been almost unthinkable.

⁵⁰⁰ 624 HANJI 78 (Nara Dist. Ct. Oct. 23, 1970). This case is also discussed in Professor Kitagawa's treatise on doing business in Japan. See Know-How, supra note 127, § 5.05[4] at V15-7 to -8. I am indebted to Professor Junichi Eguchi, of Osaka University, for providing English summaries of all the Japanese cases discussed in this article. A native Japanese speaker also checked case discussions in this article against reports of the decisions in Japanese periodicals,

paid a special allowance and had signed a special nondisclosure and noncompetition agreement with their employer, which was to last for two years after termination of employment. Both worked for the company for more than ten years.⁵⁰¹ After their retirement, they became directors of a newly established company, which began manufacturing and marketing the same products as their former employer and soliciting the former employer's customers. When the former employer sued, the court awarded it a provisional injunction prohibiting the two employees from manufacturing or marketing products similar to their former employer's products for the duration of the two-year term of the agreement. In awarding injunctive relief to prevent direct misappropriation of information received and used in violation of special nondisclosure and noncompetition agreements, this decision is unremarkable.⁵⁰² But its reasoning is more interesting than its result.⁵⁰³ In enforcing the special agreements, the Nara District Court relied in part upon the defendants' receipt of specific technical information, or "property with objective value," as the court described it, that was not generally available.⁵⁰⁴ By concluding that the employees' knowledge of this information rendered the special agreement enforceable, the court appeared to imply that the contract might not be fully enforceable if the information did not have "objective value."

5.3.3.2. Criminal Sanctions

Reported Japanese cases also indicate that Japan has useful criminal sanctions for willful misappropriation of trade secrets. In several such cases, Japanese courts have imposed criminal sanctions under theories of embezzlement, breach of trust, larceny, and receiving stolen

⁵⁰¹The company manufactured and marketed metallurgical products used in foundries. One of the men worked in the research and development division, and the other worked in the research and marketing divisions.

⁵⁰²See Know-How, *supra* note 127, § 5.04 at V15-5 (Japanese law recognizes both express and implied agreements to keep "know-how" confidential).

⁵⁰³Professor Kitagawa's treatise focuses on the court's analysis of the noncompetition covenant, noting that the court upheld it, despite its lack of territorial limitation, because the defendants were specially-paid key employees working "in a limited technical specialty engaged in throughout the country." *Id.* § 5.05[4] at V15-8. The discussion in the text focuses on the court's analysis of the nondisclosure covenant.

⁵⁰⁴624 HANJI at 78.

property. Perhaps the most comprehensive decision of this kind is *Toyo Rayon Co.*⁵⁰⁵ There an engineer, who was vice-chief of the manufacturing technology division of a chemical plant, received confidential documents relating to his company's new products and sold them to a competitor through two brokers.⁵⁰⁶ He and the two brokers were convicted on charges of embezzlement in the performance of business,⁵⁰⁷ and the competitor's employees who received the stolen documents were convicted of purchasing stolen property.⁵⁰⁸ The court sentenced all the defendants to penal servitude with stay of execution, but the criminal sanctions reached only the named defendants. There is no record of any complaint or sanction against the competitor that received the trade secrets.⁵⁰⁹

5.3.3.3. Civil Remedies in Tort

In theory, Japanese tort law is broad enough to support legal protection for trade secrets or know-how. Article 709 of the Japanese Civil Code contains a very general definition of the concept-of tort, translated into English as follows: A person who intentionally or negligently violates the rights of another is obligated to compensate for damages arising therefrom.⁵¹⁰ In practice, however, there is some doubt whether trade secrets and know-how are the sort of

⁵⁰⁵1012 HANJI 35 (Kobe Dist. Ct. Mar. 27, 1981).

⁵⁰⁶The engineer also copied other documents under the control of other employees and tried to sell them to another competitor without success

⁵⁰⁷See Japanese Penal Code (KEIH6), art. 253 (Law No. 45 of 1907): A person who wrongfully appropriates another's property which the first said person is keeping in his or her custody in the performance of his or her business shall be punished with penal servitude for a period not exceeding ten years. Reprinted in 4 DOING BUSINESS IN JAPAN, supra note 127, app. 1 1A-63. Both the engineer and the brokers also were accused of breach of trust and attempt to commit breach of trust under articles 247 and 250 of the Japanese Penal Code, respectively. They were acquitted of these charges on the ground that the engineer had not been entrusted with keeping the documents and therefore had committed no breach of trust.

⁵⁰⁸See Japanese Penal Code (KEIH6), art. 256, (Law No. 45 of 1907), reprinted in 4 DOING BUSINESS IN JAPAN, supra note 127, app. 11A-64.

⁵⁰⁹Other decisions have found Japanese employees guilty of embezzlement in connection with trade secret theft. See Niigata Tekko, 1190 HANJI 143 (Tokyo High Ct. Dec. 4, 1985) (convicting data processing division manager of embezzlement or conspiracy to embezzle for conspiring with the head of trading company to misappropriate company software for new business); Kanegafuji-Kagaku-Kogyo, 494 HANJI 74 (Osaka Dist. Ct. May 31, 1967) (convicting deputy technical manager of embezzlement for taking materials, documents, and small amount of catalyzer relating to chemical manufacturing process and selling them to competitors seven months after his retirement; court found value of materials taken high enough to invoke criminal sanctions even though amount of catalyzer taken was small).

⁵¹⁰4 DOING BUSINESS IN JAPAN, supra note 127, app. 4A-167.

"rights" that this provision seeks to protect. The question is reminiscent of the dispute between the "property" and "breach of confidence" schools of thought in the United States⁵¹¹ and flows from the same source, the weakness of trade secret protection, which makes courts in all nations' uncomfortable comparing rights in trade secrets with those in patents and copyrights. Three leading Japanese scholars have addressed this question. In 1967, Justice Kenichiro Osumi⁵¹² opined that Japanese law "should recognize" a tort for "infringements of know-how" under Article 709.⁵¹³ He viewed know-how as a matter of "independent property value" without "specific rights," seemingly foreclosing application of Article 709. Nevertheless, he endorsed a tort cause of action based upon "modern theories" of Japanese tort law, which focus on the infliction of damage "by an illegal act regardless of whether or not a specific right has been infringed."⁵¹⁴ Justice Osumi also noted that questions regarding the calculation of damages and the appropriateness of an award of defendant's profits have been resolved in patent law and that Japanese courts could apply the same solutions to know-how without difficulty.⁵¹⁵ However, he stated flatly that Japanese law does not recognize the right to an injunction to protect know-how.⁵¹⁶

5.3.4. Utility Model Law

⁵¹¹See supra text accompanying notes 84-93.

⁵¹²At that time, he was described as an Associate Justice of the Supreme Court and sometime Professor of Law at Kyoto University. Osumi, supra note 127, at 92.

⁵¹³See id. At 102.

⁵¹⁴Id. If one interprets "specific right" as referring to a property right, this reasoning tracks the reasoning of American courts that found the gist of trade secret misappropriation in breaches of confidence, not property rights. See supra note 87 and accompanying text.

⁵¹⁵Osumi, supra note 127, at 102-03. Both logic and American courts' experience suggest, however, that the "reasonable royalty" theory of patent damages should not be so applied. See supra notes 117-20 and accompanying text.

⁵¹⁶Osumi, supra note 127, at 102. Justice Osumi compared know-how to the subject matter of a pending patent application. He pointed out that the latter is not protected by injunctive relief, even though in Japan, a pending patent application, once published, entitles the owner to the same sort of damage remedy as an issued patent. Since Justice Osumi's observation, however, the Japanese patent statute appears to have been amended to provide injunctive relief to enforce the exclusive rights that pertain to published patent applications. See the Patent Law, Law No. 121, Apr. 13, 1959 (as amended through June 1, 1987), arts. 52, 100, 101, reprinted in J. SINNO-r, 2F WORLD PATENT LAW AND PRACTICE Japan-27, Japan-44 (1987) (English Trans.).

The Japanese Utility Model Law, established in 1905, was directed at the protection of so-called petit inventions at that time and was intended to solve the conflict between domestic and international patent policies caused by Japan's accession to the Paris Convention.⁵¹⁷ Japan adopted the German Utility Model Law of 1891, with some differences: the Japanese Utility Model Law covered not only equipment for work and utility goods, but also all commercial goods; it adopted substantive examination instead of the non-examination system used under German law and granted a longer term of protection than applied under German law.

The subject matter of the Japanese Utility Model Law, like its parent German law, was based on devices that have particular shapes and which yield useful effects. However, in providing for the shape of an article as the sole registration requirement, the current Japanese Utility Model law fails to take into consideration that devices are embodied in the shape of articles, thereby treating devices equivalently to inventions subject to the Patent law. Similar systems for the protection of utility models still exist in Italy, Spain, Portugal and Greece, as well as in Southeast Asia.

The tendency to protect petit inventions has thereby been promoted. There has been a similar tendency in Germany, where the shape requirement of articles was repealed as a result of revisions to the Utility Model Law in 1986 and 1990; the law now protects all petit inventions except process inventions. However, since the shape of the article is the requirement for registration under the Japanese Utility Model Law, unlike the current German law mentioned above, the subject matter is not petit inventions of products, but instead petit inventions of article shapes. This is why changing the composition of the article by, for example, substituting a glass product for a plastic product with an accompanying change in thickness can be an

⁵¹⁷[Petit inventions were a type of property rights in Europe that covered minor ideas that lacked an inventive step, and which did not qualify as inventions under regular patent law.]

invention under patent law, but not a device under the Utility Model Law. In this sense, the subject matter of the current German Utility Model Law differs from that of Japanese law.⁵¹⁸

5.3.5. Compulsory Licensing

Compulsory licenses have been used extensively in North America, Japan, and Europe for a variety of purposes, including many that have been issued for computers, software, biotechnology and other modern technologies. In 2000 the US issued several compulsory licenses for tow truck technologies.

The United States spends \$1 billion annually on its patent and trademark office. Europe and Japan also spend large sums to examine patents. Despite these investments in rich countries, the quality of US patent examinations is poor. According to a study by Lemley and Allison of patents litigated to judgment, 54 percent were found to be valid, and 46 percent were invalid.⁵¹⁹ Critics of US patent examinations believe a much larger number of issued patents are not valid under any reasonable tests of utility and invention and would be busted if the patent owners sought enforcement. Patent examination offices in developing countries, if they exist at all, are understaffed, undertrained and have less access to research materials on prior art.⁵²⁰

5.4. EU Intellectual Property Protection at the National and Community Level

For many decades, the European patent system has been confined to a hermetic corner of law, a self-regulated community built on the interaction between patent applicants, patent examiners, and courts. The special structure of the "grant only" European patent system has led

⁵¹⁸Nobuo Monya, (1994). Revision of the Japanese Patent and Utility Model System

⁵¹⁹26 AIPLA Quarterly Journal 185 (1998)

⁵²⁰One example of the problems from under-resourced patent examination involved ddI, a drug for HIV/AIDS. Bristol-Myers Squibb (BMS) was able to obtain patents for formulation claims in Thailand that were rejected by the US Patent and Trademark Office. BMS used this patent to block generic production of ddI pills in Thailand, even though BMS was not the inventor of ddI, and did not own a patent on the use of ddI for treating HIV/AIDS.

to this field being regulated by engineers with specialized legal and technical training, meaning that it is largely incomprehensible to the public and other stakeholders. However, the advent of new technologies, bio-patents and commercial applications of biotechnology have brought many complex and controversial issues into the public sphere, leading to the desirability of greater participation in the patent system.⁵²¹

The national laws governing intellectual property (that is, patents, industrial designs, trademarks and copyrights) are, in one sense, a derogation from the operation of the free market. They are used in order to stimulate innovation. Through such laws, firms can recoup their investment in technical or design improvements by having the right, for a limited time, to prevent imitation by others who have made no such investment. Firms can also protect the reputation and goodwill they have built up by registering their trade or service marks, thereby obtaining the right to prevent others from using them.

While the EEC Treaty prohibits restrictions on imports and exports between the Member States, restrictions are allowable, pursuant to Article 36, where they are justified "for the protection of industrial or commercial property" (another expression for intellectual property). For example, the proprietor of a United Kingdom patent can use the rights the patent gives him to prevent covered goods produced elsewhere in the EC without his consent from being imported into or sold in that country. Conversely, of course, the proprietor of, say, a French patent can, under the same circumstances, prevent the export of goods covered by the French patent from the United Kingdom to France. The same principles apply to other types of intellectual property, so it is important to check the existence of intellectual property rights in a Member State before marketing there.

⁵²¹EvisaKica and Nico Groenendijk, (2011). The European patent system: dealing with emerging technologies. Department of Legal and Economic Governance Studies, Institute for Innovation and Governance Studies, University of Twente, the Netherlands

None of this, however, allows the owners of intellectual property rights to use them to divide up the common market. Once the goods have been put on the market in the EC by the owner or with his consent, he cannot prevent them from being reimported or resold. In other words, intellectual property rights cannot be used to reinforce a policy of differential pricing within the EC.

The national courts and the ECJ strive to ensure that restrictions on trade within the EC are kept to the minimum that can be justified to protect legitimate rights. As stated earlier, differences between national intellectual property laws create obstacles to completing the single market. These are being tackled through important Community initiatives on patents, trademarks and copyrights. (See subsequent sections for a detailed discussion.)

5.4.1. The European patent system

Patent laws are no strangers to controversy, being a compromise between the negative aspects of monopoly that they involve and the good of technological progress they can encourage and even enable when steering a middle way between the Scylla and Charybdis of monopoly and technological failure. And yet such controversy applies mainly to national patent systems. In contrast, the European Patent System, in essence, a unitary application system overlaying national systems, can be seen to have some objectives, benefits and disadvantages which differ from those of purely national patent systems.⁵²²

Providing patent protection for all can be seen as encouraging technology imports, encouraging indigenous technology and helping in attempts to argue for protecting national technology abroad. On the other hand, some are tempted to see the protection of foreign technology as potentially damaging by denying the possibility of free-riding on foreign technology and

⁵²²Robert Pitkethly, (1999). The European Patent System: Implementing Patent Law Harmonization. Said Business School Oxford University 59 George Street Oxford OX1 2BE

perhaps denying developing countries broad access to technology. However, perhaps the best attitude to be taken towards this approach is that of Okuda Yoshito the Japanese Patent Office Commissioner who in 1890 said in a written opinion sent to the Agriculture and Trade Minister: "as for the idea that Japanese inventions are in an early stage of development and that by granting many important patents to foreigners there is a danger of obstructing the development of industry; if such cowardly things are said Japan's development will never progress at all".⁵²³ There is widespread agreement that in a perfectly competitive market in which, among other assumptions, no producer has market power, there is no product differentiation and all firms have immediate and perfect access to the same technologies, the rate of innovation would be very low. As stressed by Schumpeter J. (1942),⁵²⁴ entrepreneurs expect supernormal⁵²⁵ profits by enjoying some kind of exclusive market power over their inventions. That expectation would encourage them to devote time and money to innovation activities. Appropriability is the capacity of an economic agent to retain the added value created by its innovations while being able to exclude competitors from it. The term refers to environmental factors but also to methods or mechanisms that govern the innovator's ability to gain some market power from its innovations.

Nelson (1959)⁵²⁶ and Arrow (1962)⁵²⁷ highlighted the quasi-public good characteristics of knowledge as a barrier for investing in innovation. If inventors or innovators could not rely on some means to protect the knowledge they create, they would be at a disadvantage compared to their rivals that did not incur the costs of creating that knowledge. Such rivals could free ride on the innovation expenses of the innovators and imitate the new product/process at zero cost.

⁵²³Tsuu Syou San Gyou Syou (MITI) (1964) Syou Kou Seisaku Shi - Vol.14 - Tokkyo, Tokyo

⁵²⁴ Schumpeter J. (1942). 'Capitalism, Socialism and Democracy', Harper and Row.

⁵²⁵Normal profit is defined as the minimum level of profit necessary to allow a firm to stay in the market in the long run. Supernormal profit is defined as extra profit above that level of normal profit. Supernormal profit means there is an incentive for other firms to enter the industry (if they can).

⁵²⁶Nelson, R. (1959). 'The Simple Economics of Basic Scientific Research', Journal of Political Economy, V. 67, 297-306.

⁵²⁷Arrow, K. (1962). 'Economic Welfare and the Allocation of Resources for Invention', in The Rate and Direction of Inventive Activity, R. Nelson (ed.), Princeton University Press, Princeton, USA.

Some kind of mechanism is therefore required to incentivize private agents to devote resources to innovation activities.

Intellectual property rights (such as patents, designs, trademarks, plant varieties, or copyright) are some of the appropriability mechanisms that may be used by innovators. However, there are other available mechanisms, including the exploitation of lead time advantage, the complexity of the design, and secrecy. 'Lead time advantage' is the practice to commercialize an innovation as fast as possible to benefit from so-called first-mover advantages. 'Complex design' of a product impedes competitors from engaging in reverse engineering or 'invent-around' strategies. Since labor mobility is also a factor for technology imitation, labor legislation, contracts and the ability to attract and retain key human resources for a company can also be appropriability tools.⁵²⁸

5.4.1.1. The Patent Cooperation Treaty (PCT)

Negotiations on the PCT were concluded in 1970. The treaty was amended in 1970 and again modified in 1984. The PCT is open to states which are also party to the Paris Convention. Documents of ratification or of accession to the PCT must be deposited with the Director General of WIPO, the World Intellectual Property Organization.

The PCT allows patent applicants to see protection for an invention in a large number of countries by filing an "international application." The filing can be made with the national patent office of the contracting State of which the applicant is a national or resident. Alternatively, it may be made with the International Bureau of WIPO in Geneva. If the applicant is a national or resident of a contracting State which is party to the European Patent Convention, the Harare Protocol on Patents and Industrial Designs (Harare Protocol) or the

⁵²⁸Hurmelinna-Laukkanen, P. & K. Puumalainen (2007). 'Nature and dynamics of appropriability: strategies for appropriating returns on innovation'. R&D Management 37(2): 95-12.

Eurasian Patent Convention, the international application may also be filed with the European Patent Office (EPO), the African Regional Industrial Property Organization (ARIPO) or the Eurasian Patent Office (EAPO), respectively.⁵²⁹

5.4.2. Copyrights and Neighboring Rights

The conditions for protection under EU copyright regulation vary depending on the work of art in question, as separate directives apply to the various types of the subject matter. However, recent harmonization of EU copyright law has caused certain fundamental criteria to be applicable regardless of the work's character. Due to the limited scope, the following discussion will be based upon AI⁵³⁰⁵³¹ criteria as a technology reference.⁵³²

In order to qualify for copyright protection, a work of art has to fulfill some fundamental requirements. First, the work has to be classified as a protected subject matter. There is some discussion as to whether this criterion is still in line with EU law, as the CJEU cases *Murphy and Painer*⁵³³ may imply that whether a work qualifies for copyright protection requires solely that the work is original, and not that it also falls within a specific copyright-protected subject-matter.⁵³⁴ However, the Berne Convention for the Protection of Literary and Artistic Works (1986) seems to imply that it is a separate requirement that the work is a production in the literary, scientific or artistic domain. However, as AI programs are capable of creating and contributing to the creation of works in the literary, scientific or artistic domain, the (possible)

⁵²⁹Ares (2014)78204 - 15/01/2014. The strategic use of patents and its implications for enterprise and competition policies.

⁵³⁰ Artificial intelligence ("AI") is a field of science and a set of computational technologies inspired by the ways human beings use their nervous systems and bodies to sense, learn, reason, and take action

⁵³¹Stone, P., et al. (2016), p. 4.

⁵³²EU copyright protection of works created by artificial intelligence systems. UNIVERSITY OF BERGEN, Faculty of Law, (2017).

⁵³³Joined Cases C-403/08 and C-429/08, *Football Association Premier League v. QC Leisure and Karen Murphy v. Media Protection Services*, [2011] ECR I-10909, ECJ Case 145/10, *Painer v. Standard VerlagsGmbH and others*, [2011] ECR I-0000. Hereafter referred to as *Murphy and Painer*.

⁵³⁴Rosati, E. (2013), p. 5.

subject matter condition does not prevent works by AI from copyright protection. Therefore, this criterion will not be discussed further in this thesis.

Second, it is generally accepted that the Berne Convention entails that only “original” works qualify for protection.⁵³⁵ EU harmonization of the originality requirement through legislature has been limited, and no EU-Directive or guideline exists that uniformly defines the originality requirement for all types of the subject matter. However, through CJEU practice, the understanding of the originality requirement has, to a great extent, been harmonized and an EU-wide notion of originality has been adopted.⁵³⁶ The directives concerning computer programs, databases and photographs⁵³⁷ state that a work is considered original if it is “the authors own intellectual creation”. The CJEU states in the Infopaq case that this interpretation of the originality criterion applies to all types of subject matter.⁵³⁸ Thus, the court constituted a uniform interpretation of originality.⁵³⁹ The CJEU has further reiterated and elaborated on its understanding of the originality requirement in several subsequent cases,⁵⁴⁰ which, along with the Infopaq case, will be subject to in-depth analysis in section 3.2 below.⁵⁴¹

The CJEU holding in the Infopaq case implies that regardless of what kind of work an AI program creates, the work is only eligible for copyright protection if such works are original in the sense that it is the "author's own intellectual creation". The next chapter of the thesis is, therefore, concerned with interpreting this requirement more closely, aiming to determine

⁵³⁵WIPO Intellectual Property Handbook: Policy, Law and Use (2004). Paragraph 5.171 et seq

⁵³⁶Infopaq International v. Danske Dagblades Forening (Infopaq I), C-5/08 of 16 July 2009, [2009] ECR I-6569, Joined Cases C-403/08 and C-429/08, Murphy and Painer. These cases will be subject to analysis in section 2.4.

⁵³⁷Arts. 1 (3) of Directive 2009/22, 3 (1) of Directive 96/9 and Article 6 of Directive 2006/116.

⁵³⁸Kur, A. and T. Dreier (2013), p. 291.

⁵³⁹The originality requirement is only referred to by the EU legislature in three directives:

Articles 1 (3) of the Software Directive 91/250/EC, 3 (1) of the Database Directive 96/9/EC and Article 6 of the Term Directive 2006/116/EC. All three directives constitute that in order to deserve copyright protection, the work has to be original in the sense that it is the “author’s own intellectual creation”. The similarities in wording in the three directives imply that EU legislators meant for originality to have a common interpretation for these categories of works.

⁵⁴⁰ ECJ Cases C-393/09, Bezpečnostn. softwarov. asociace v. Ministerstvokultury, [2010] ECR I-13971, paragraph 45 and Murphy, paragraph 97.

⁵⁴¹Rosati, E. (2013), p. xii.

whether and to what extent AI-generated works fulfill the originality requirement, thus qualifying them for copyright protection.

5.4.3. Semiconductor Integrated Circuits

Semiconductor technology is at the origin of today's digital economy. Its contribution to innovation, productivity and economic growth in the past four decades has been extensive. Semiconductor technology is at the origin of the development of the ICT industry and today's digital economy. The invention of semiconductors led to the rapid rise of mainframes and later personal computers (PCs), in turn giving rise to the informatization of entire industries, but also hospitals, schools, transport systems and homes. Semiconductors have had a significant economic impact, which continues to the present. The semiconductor industry itself has been growing for more than four decades.⁵⁴²

5.4.3.1. The Legal Situation within the EC

After interim protection in the United States for nationals and domiciliaries of EC member states⁵⁴³ had been accorded to the EC Commission until November 8, 1987, the EC authorities tastefully prepared a new Directive for chip protection. The first proposal was published in December 1985.⁵⁴⁴

It was examined by the Economic and Social Committee and the European Parliament.⁵⁴⁵ Due to the reports of these two bodies and comments from the member states, the proposal had to

⁵⁴²Thomas Hoeren Francesca GuadagnoSacha Wunsch-Vincent, (2015). Breakthrough technologies – Semiconductor, innovation and intellectual property. World Intellectual Property Organization and United Nations Conference on Trade and Development. Economic Research Working Paper No. 27.

⁵⁴³The first Interim Order has been issued on September 12, 1985 (51 Fed. Reg. 30690).

⁵⁴⁴Proposal of the Commission (COM) (85) 775 final 12 (85/c360/02); cf. [1985] 11 European Intellectual Property Review (EIPR) 331-335.

⁵⁴⁵See Official Journal of the European Communities (OJ) C 189/5-7 of July 28, 1986

be changed on several important points.⁵⁴⁶ Finally, the Directive on the Legal Protection of Semiconductor Products (87/54/EEC) was adopted by the EC Council on December 16, 1986.⁵⁴⁷ The Directive is based on Article 100, paragraph 1 of the EEC Treaty, and is binding on all member states. Article 11(1) of the Directive obliged all EC member states to implement this Directive by November 7, 1987. Up till now, all member states, with the exception of Greece, have enacted or adopted implementing legislation¹⁰. On May 28, 1990, Greece was sent a reasoned opinion by the EC Commission, giving it two months to comply with Community law. After that deadline, the Commission has reserved the right to refer the matter to the Court of Justice". This behavior of Greece could lead to the situation that the EC Commission may not apply for a US Presidential Proclamation, but for yet another Interim Order.⁵⁴⁸

5.4.3.2. The Object of Protection

The core element of the Directive, "topography", is defined in Article 1 as "a series of related images, however, fixed or encoded; (i) representing the three - dimensional pattern of the layers of which a semiconductor product is composed; and (ii) in which series, each image has the pattern or part of the pattern of a surface of the semiconductor product at any stage of its manufacture".⁵⁴⁹

⁵⁴⁶For the history of the EEC directive cf. Christopher J. Millard, Protection in EEC Member States of Semiconductor Product Designs, Paper presented at a conference on Licensing and Protection of Computer Software in Europe, Brussels, European Study Conference, September 20, 1989; Ingwer Koch, 'Rechtsschutz der Topographien von mikroelektronischen Halbleitererzeugnissen', Computer und Recht 1987, 77; Thomas Hoeren, 'EEC computer law', in: Chris Reed (ed.), Computer Law, London 1990, 240; CorienPrins, 'The Dutch answer to the need for protection of chips', Computer Law & Practice 1987, 169; Thomas Dreier, 'Development of the Protection of Semiconductor Integrated Circuits', 19 International Review of Industrial Property and Copyright Law (IIC) 427 (1988).

⁵⁴⁷OJ, L 24/36 of January 27, 1987.

⁵⁴⁸HOEREN, T. (1991) Chip protection in Europe. IN MEIJBOOM, A. & PRINS, C. (Eds.) the law of information technology in Europe. Amsterdam.

⁵⁴⁹Cf. Press Release of the EC Commission of May 28, 1990 - IP (90) 416.

Unlike the SCPA, this definition does not use the term "mask work" to describe the object of chip protection. Therefore, it is open for future technical developments in the chip industry where masks will be replaced by "direct writing" techniques.⁵⁵⁰

A topography is capable of protection if it is "the result of its creator's own intellectual effort and is not commonplace in the semiconductor industry" (Article 2 (2)). This standard of "originality" was interpreted as being the main reason for the sui generis protection system. It is said that copyright and patent law require a very high standard of originality or inventiveness. With regard to this standard, most topographies will remain unprotected under "traditional" industrial property law.⁵⁵¹

However, the scope of conventional protection for chip designs has never been analyzed in detail.⁵⁵² Perhaps it could be shown that the chip protection acts use the same standard of protection as copyright or patent law.⁵⁵³ For instance, the assumption that German law has set up a high standard of originality may be doubted. The German Federal Court of Justice is only reluctant to protect software under copyright law. With regard to other works, the German courts have very generously adapted copyright law. Telephone or address books, catalogs, musical potpourris, collections of letters, films, or technical drawings are held to be capable of copyright protection under German law if their arrangement or structure is not commonplace

⁵⁵⁰Cf. E. Abraham, C. T. Seaton, S. D. Desmond, 'the Optical Computer', *Scientific American* 1983, 63; W. G. Oldham, 'the Fabrication of Microelectronic Circuits', in: D. Flangan (ed.), *Microelectronics*, San Francisco 1977, 41; OECD (ed.), *the Semiconductor Industry: Trade Related Issues*, Paris 1985.

⁵⁵¹Cf. Thomas Dreier, 'L'evolution de la protection des circuits integyres semi-conducteurs', *Revue Internationale du Droit d'Auteur (RIDA)*, no. 142 (1989), 23 et seq.

⁵⁵²A first attempt may be found in: R. J. Hart, 'Legally Protecting Semiconductor Chips in the UK', [1985] 9 *EIPR*, 258; Oxman, 'Intellectual Property Protection and Integrated Circuit Masks', 20 *Jurimetrics Journal* (fur. J.) 405 (1980).

⁵⁵³The copyrightability or patentability of microchips has been considered by JeanPaulTriaille, *ALAI-Report Belgium*, in: *ALAI Canada* (ed.), *L'informatique ET le droit d'auteur*, Quebec 1990, 97.

(idea of the "KleineMünze").⁵⁵⁴ This conception very much resembles the requirements as found in art. 2 (2) of the Directive.

5.4.4. Software Protection Rights

Currently, the software industry is one of the fastest growing industries, developing new technologies, business models, products and services at an astounding rate. According to Economy Watch, the software industry represents the fastest growing aspect of the global economy in general.⁵⁵⁵ Other data reveal that the volume of the global software industry has exceeded 400 billion US dollars in 2013.⁵⁵⁶ This figure does not include losses incurred by software piracy,⁵⁵⁷ especially widespread in developing economies like those of the BRIC bloc, or results of neighboring industries (telecommunications, computer hardware, consulting), but solely on the economic exploitation of software through licensing.⁵⁵⁸ The legal framework chosen for computer programs has had a profound impact on the development of this industry. Even the recession-ridden economy of the Republic of Croatia has had some modest success in this field, characterized by efforts of many small companies and a few medium enterprises.⁵⁵⁹

The issue of regulation of computer programs has previously been visited in Croatian legal literature at different times and in different stages of legal development, first following the

⁵⁵⁴See RGZ 81, 120, 123; RGZ 143, 412, 416 et seq.; BGHZ 31, 308, 311 (AlteHerren); BGH, GRUR 1961, 631 (Telefonbuch); BGH, UFITA 51 (1968), 315, 318 (Gaudeamusigitur); BGH, GRUR 1981, 267, 268 (Dirlada); G. Schulze, Die kleineMünze und ihre Abgrenzungsproblematik bet den Werkarten des Urheberrechts, Freiburg 1983.

⁵⁵⁵According to EconomyWatch: <http://www.economywatch.com/world-industries/software/>, last accessed on January 12, 2015.

⁵⁵⁶See Gartner report: www.gartner.com/newsroom/id/2696317, last accessed on January 12, 2015.

⁵⁵⁷According to Business Software Alliance (BSA), unlicensed software in BRIC countries amounted to 67% in the year 2013. See http://globalstudy.bsa.org/2013/downloads/studies/2013GlobalSurvey_Study_en.pdf, last accessed on January 12, 2015.

⁵⁵⁸Id.

⁵⁵⁹IDC Adriatic market research for 2013 shows that software exports from Croatia have amounted to 1.22 billion kunas and that the sector employs a little over ten thousand developers, mostly in small and medium enterprises. According to Poslovni.hr, available at: <http://www.poslovni.hr/tehnologija/hrvatska-softverska-industrija-lani-zaposlila-1066-radnika-273543>, last accessed on January 12, 2015.

institution of Croatia as an independent legal system (along the lines of the established Central European legal tradition)⁵⁶⁰, and then usually following the adoption of new national laws,^{561,562} new European Directives etc.⁵⁶³ In order to present the legal regulation of computer programs in the comparative European and Croatian legal framework, there are but two basic choices. One would start with an analysis of our national, specific regulations, court rulings and decisions, and then move to the international framework, especially the WIPO Treaties, EU Directives and decisions by the European Court of Justice⁵⁶⁴ and the national courts⁵⁶⁵ that had the opportunity to consider the above-mentioned issues.

A Directive on the legal protection of computer programs was formally adopted by the Council in May 1991 (OJ 1991 L122). The Directive will ensure that computer programs are protected in much the same way as literary works. By harmonizing the national provisions, it is hoped that the new Directive will help combat piracy of computer programs in the Community and also encourage increased software research by providing the necessary legal framework to ensure that creators are rewarded for their efforts. Protection under the Directive will be for fifty years from the death of the author (creator). The provisions of the Directive comply with the Berne Convention on Copyright.⁵⁶⁶

⁵⁶⁰Z. Parać: Imovinskopravnazaštitaiprijenoskompjutorskogsoftwarea, doctoral dissertation, University of Zagreb, Faculty of Law, Zagreb, 1990; id.: Autorskopravnazaštitaikompjutorskihprograma, in: I. Henneberg (ed.): Novetehnologijei autorskopravo, Autorskaagencijaza SR Hrvatsku, Zagreb, 1989.

⁵⁶¹Z. Parać: AutorskopravnazaštitaikompjutorskihprogramanakonizmjeneZakona o autorskompravu, dioprvi, Privredaipravo, Vol. 29, No. 9-10, 1990, pp. 645 – 661; id.: AutorskopravnazaštitaikompjutorskihprogramanakonizmjeneZakona o autorskompravu, diodrugii, Privredaipravo, Vol. 29, No. 11-12, 1990, pp. 793 – 807.

⁵⁶²R. MatanovacVučković and I. Gliha: NovelaZakona o autorskompravuisrodnimpravimaiz 2007. godine, in: R. Matanovac (ed.): Prilagodbahrvatskogpravaintelektual-nogvlasništvaeuropskompravu, Narodnenovine and DržavnizavodzaintelektualnovlasništvoRepublikeHrvatske, Zagreb, 2007, pp. 115 – 146.

⁵⁶³Kunda and MatanovacVučković, op. cit. (fn. 1). See also N. FikeysKrmić: Licencniugovorizaračunalni software, ZbornikHrvatskogdruštva autorskopravo, Vol. 10, 2009, pp. 123 – 132; M. Vukmir: Abundance of sources – the true meaning of the terms copy and original; semantic changes in art and copyright terminology in digital environment and change of the role of law in digital societies, ZbornikHrvatskogdruštva autorskopravo, Vol. 11-12, 2011, pp. 71 – 152.

⁵⁶⁴SAS Institute Inc v World Programming Ltd, ECJ C-406/10.

⁵⁶⁵AVM ComputersystemeVertriebs GmbH v Cybits AG, Landgericht Berlin 16 O 255/10.

⁵⁶⁶European Union - IP & Antitrust 2016 Know-How - GCR CHAPTER 18 Licensing and Antitrust in the European Communities.

5.4.5. Copyrights Protection for Software

The Berne Convention on the protection of literary and artistic works is an international convention signed by more than 140 countries, originates from 1886., last revised in 1971. It forms the basis of international copyright law, as it prescribes minimum standards to the copyright legislation of the members of the Berne Union, and also includes the rule of national treatment. However, the Berne Convention does not provide specific regulations on software-works.

One of the results of the GATT Uruguay round was the adoption of the TRIPS-agreement⁵⁶⁷ in 1994. This was the first multilateral agreement, which had clear provisions on the copyright protection of software. The signatory states of the agreement are obliged to provide the same copyright protection to computer software (even in source code, even in object code), like the Berne Convention provides for literary works.

In 1996, when the need of creating an international basis for harmonized national legislation concerning copyright issues in the digital age became urgent, the diplomatic conference of WIPO (World Intellectual Property Organization) adopted two international treaties (currently signed by more than 50 countries of the world), the WIPO Copyright Treaty (hereinafter referred as WCT) and the WIPO Performances and Phonograms Treaty (hereinafter referred as WPPT). The aim of these treaties was primarily to describe the uses of authors' works that take place within and via the internet as a series of temporary and permanent reproductions and communications made directly or indirectly to the public.

From our point of view, the most important provision of the WCT can be found in Art. 4. (1.§ (2) c.), upon which signatory states are also obliged to give copyright protection to computer software.

⁵⁶⁷ Agreement on Trade-Related Aspects of Intellectual Property Rights, Including Trade In Counterfeit Goods

5.4.5.1. The Legal Definition of Software

Neither international treaties, nor national copyright regulations contain definition with regards to computer software. But there are a few (e.g., American, Australian, Japanese) exceptions: "A "computer program" is a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result."⁵⁶⁸ "Computer program means an expression, in any language, code or notation, of a set of instructions (whether with or without related information) intended, either directly or after either or both of the following:

- (a) conversion to another language, code or notation;
- (b) reproduction in another material form; to cause a device having digital information processing capabilities to perform a particular function."⁵⁶⁹

Despite the lack of formal definition, most of the national and international rules contain a few elements of the software, which are considered to be under copyright protection. For example, according to the Hungarian CA "computer program creations and related documentation (hereinafter referred to as software), whether fixed in source code or object code or in any other form, including application programs and operating systems"⁵⁷⁰ shall fall under copyright protection.⁵⁷¹

5.4.5.2. Subject of the Protection and Copyright

According to the legal tradition, and general principles of copyright law, copyright protects only the expression of the original work (e.g., software), without any formal registration or other processes in order to attain copyright. "Expression" indicates "the need for copyrightable

⁵⁶⁸ 17 US Code on copyrights, § 101.

⁵⁶⁹ Australian Copyright Act of 1968, sec. 10 (1)

⁵⁷⁰ CA Art. 1. (2) c)

⁵⁷¹ The three basic protected elements of the software (object code, source code and documentation) were first introduced in the 1977 model law of the WIPO.

works to be in some sort of physical or material form”.⁵⁷² “Originality” does not require that there must be an inventive thought, which serves as a basis of the work, but the work must not be copied from another authors’ original work.

Therefore, any ideas, principles, algorithms or interfaces are excluded from copyright protection.⁵⁷³ The reason for this is to allow non-infringing independent creations of similar nature to the original work.

There are several motives and reasons for protecting software in the field of copyright law.

First, there is a theoretical reason. From the general aspect, computer programs are often considered to be – “only” – technical solutions, therefore regarded as “outsiders” among other – traditionally – copyright protected types of authors' works, such as musical or literary works. Software itself is not just a technical result, but an authors' creation, which has technical character. The only difference is the “active” nature of the computer program, meaning that it has a technical effect in computer hardware during its operation. However, this fact does not state the reason for the software – as an original expression – being excluded from copyright protection.

On the other hand, there are a few practical reasons why copyright is the most suitable form of the legal protection of software. According to Steckler,⁵⁷⁴ these main points are:

- International acceptance of copyright: via international agreements⁵⁷⁵ the protection is not only recognized by EC members, but also by their most important trading partners;
- The lack of monopolies: only the expression of the work is protected, and not the underlying idea, therefore independent research (speeding up innovation) is not considered to be an

⁵⁷² Stoianoff, 1999, p. 500.

⁵⁷³ According to the Hungarian act, any „idea, principle, concept, procedure, method of operation or mathematical operation on which the interface of the software is based” is excluded from the protection. (CA Art. 58.)

⁵⁷⁴ Steckler, 1994, p. 294.

⁵⁷⁵ See supra 1.1.1., especially the TRIPS-agreement.

infringement, and yet the authors are granted the rights suitable for the exploitation of their creation;

- Flexibility: via licensing contracts, the rights of users and producers can be tailored to their real needs (within the balanced framework of internationally harmonized legislation).

5.4.6. Industrial Models and Designs

Industrial designs matter. It is undisputed that design is crucial for the success of a product. That is why companies are using intellectual property laws in an effort to protect their industrial design.⁵⁷⁶ This article will describe how intellectual property laws can protect the design and compare the design protection regimes in the US and the EU. The comparison will show that design protection is significantly different in the US and the EU. Within the EU, further harmonization is needed in order to provide strong coherent design protection. The paper will point out that the ubiquitous requirement of non-functionality outside the realm of utility patent law in the US is no longer appropriate in a world where the most successful designs purposefully combine functional and aesthetic elements.⁵⁷⁷

Think of Apple's iPad. What picture comes to mind? Maybe you are already thinking of the design war between Apple and Samsung in the US and the decision *Apple, Inc. v Samsung Electronics Co., Ltd.*, where Apple failed to get a preliminary injunction because the court doubted the validity of Apple's design patent due to possible lack of novelty.⁵⁷⁸ Or of Apple's successful Community design lawsuit in Düsseldorf, Germany, where the company has been

⁵⁷⁶ Schickl, L. (2013), "Protection of Industrial Design in the United States and in the EU: Different Concepts or Different Labels?", INTERNATIONAL ASSOCIATION FOR THE ADVANCEMENT OF TEACHING AND RESEARCH IN INTELLECTUAL PROPERTY, <http://atrip.org/wp-content/uploads/2016/12/2012-2Lena-Schickl.pdf>

⁵⁷⁷ Id.

⁵⁷⁸ *Apple, Inc. v Samsung Electronics Co.*, [2011] No. 11-cv-1846 (N.D. Cal. Dec. 2, 2011); The US Court of Appeals for the Federal Circuit, however, recently declared that the District Court erred in its analysis of the validity issue. The court remanded for findings on the balance of hardships and the public interest; *Apple, Inc. v Samsung Electronics Co., Ltd.*, F.3d, 2012 WL 1662048 (Fed. Cir.).

granted a preliminary injunction against Samsung's Galaxy, barring all distribution of its allegedly infringing tablet in the entire EU except for the Netherlands.⁵⁷⁹

Let us first go back to the basic questions. Why do people pay a lot of money for these kinds of products? Because of the reputation of the company producing them? Because they want to belong to the customer group that uses them? Because of the quality and functionality of the products? Because of their appealing designs? The answer is the typical one for the legal profession: "It depends". But it is very likely that many or even all of these reasons affect the customer's purchase decision. Nowadays, customers are used to having a broad range of products to choose from, and most customers base their buying decision not only on the functionality or quality of the product but also on its design. The iPad example perfectly illustrates what a modern customer finds appealing: simple and elegant design adorned with little or no ornamentation. These products enjoy a high reputation, which primarily derives from the fact that customers perceive them as embodying the perfect combination of functionality and appearance (Di Rienzo, 1993, p. 79). At the same time, industrial design is increasingly important for a company's success. Not only does it define the visual appeal of the product itself, but it also has an essential impact on its competitiveness and commercial success within a specific market (Suthersanen, 2010, pp. 4-5). From a company's point of view, the design is often considered as a robust marketing tool, and from a consumer's perspective, it allows product differentiation as well as "socio-economic differentiation among the consuming public" (Suthersanen, 2010, p. 4).⁵⁸⁰

The answers to these questions are different in each case and jurisdiction. Industrial design protection is debated all around the world and different jurisdictions offer different approaches. Their common denominator is that legislators and courts see the need to offer protection for

⁵⁷⁹ Apple, Inc. v. Samsung Electronics Co., Ltd., [2011] 14c O 194/11 (District Court of Düsseldorf 2011). The injunction did not include the Netherlands since, at the time, there were separate proceedings underway.

⁵⁸⁰ Id. at 576.

industrial design. But especially when it comes to simplistic design having little or no ornamentation, there is a lot of controversy as to whether and under which intellectual property laws protection can be granted. Modern designs are often created in such a way that the “form [i.e., design] follows the function” (Afori, 2007- 2008, p. 1105, p. 1122). From a designer’s perspective, this may bring disadvantages in effectively protecting their work, since legislators and courts are traditionally somewhat reluctant to offer protection to designs under trademark or copyright law. This reluctance is based on the assumption that the purpose of these laws does not really include design protection.⁵⁸¹

5.4.6.1. The Paris Convention for the Protection of Industrial Property

The Paris Convention was the first international treaty that regulated patents. It was signed in 1883 and was last revised in 1967. Unlike the Berne Convention, the Paris Convention directly addresses the protectability of industrial designs. Art. 5 quinquies of the Convention sets forth that “industrial designs shall be protected in all the countries of the Union”. Contrary to the rule of doubt in favor of copyright protection set forth in the Berne Convention, industrial design is categorized as industrial property in Art. 1 (2) of the Paris Convention. This suggests a more patent-like protection. However, the Paris Convention does not provide any regulations about the subject matter, the requirements, or the scope of protection.⁵⁸²

5.4.6.2. The TRIPS Agreement

The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) became effective in 1994 and is administered by the World Trade Organization (WTO). It imposes

⁵⁸¹ Id.

⁵⁸² Id.

minimum standards for the protection of intellectual property in general. However, only two provisions of TRIPS directly refer to industrial design protection.⁵⁸³

Art. 25 TRIPS sets forth the requirements for protection, whereas Art. 26 TRIPS defines the scope of protection. According to Art. 25 (1) of TRIPS member states are required to protect certain types of industrial design:

“Members shall provide for the protection of independently created industrial designs that are new or original. Members may provide that designs are not new or original if they do not significantly differ from known designs or combinations of known design features. Members may provide that such protection shall not extend to designs dictated essentially by technical or functional considerations.”

Although TRIPS gives some guidance as to the requirements of protection (independently created, new or original), it does not provide a definition of industrial design or the subject matter constituting industrial design. TRIPS adopted both the Berne and the Paris Conventions but did not take a position as to their different classifications regarding the nature of design protection. It remains unclear, therefore, what type of protection should be applied to industrial design by the member states. The "independent creation" as well as the "originality" requirement seems to point to copyright protection, whereas the novelty requirement might refer to patent-like protection or a sui generis design regime (Suthersanen, 2010, p. 42).

Since TRIPS did not settle the dispute about the nature of protection and only guarantees a minimum standard, member states are still relatively free in drafting their national laws in such a way as to match their local objectives (Reichman, 1995, p. 345, p. 375).⁵⁸⁴

5.4.6.3. Design Protection in the EU

⁵⁸³ Id.

⁵⁸⁴ Id.

Design protection has always played an important role at the European level. Already in the 1950s, the Europeans aimed to harmonize patents, trademarks and design (Musker, 2001, p. i). After a failed attempt to harmonize the national laws, the European Commission finally succeeded in introducing European legislation intended to lead to a European design patent regime. The European Union passed a Design Directive in 1998 and a Design Regulation in 2001. Similar to the Community Trademark, the goal was to first harmonize the national laws of the member states and subsequently create a parallel form of protection at the Community level, known as the Community design system (Musker, 2001, p. ii).⁵⁸⁵

5.4.6.3.1. Directive on the Legal Protection of Designs (1998)

The Directive was adopted in 1998 and Member States had to revise their national design laws by October 28, 2001. The Directive sets minimal standards as to the eligibility and scope of protection for industrial designs. In order to be eligible for protection, a design must be novel and have individual character.⁵⁸⁶ The owner then has the exclusive right to use it and to prevent others from using it.⁵⁸⁷ The term of protection can be renewed every five years but may not exceed twenty-five years.⁵⁸⁸

However, Member States are still free to independently regulate the “procedural provisions concerning registration, renewal and invalidation of design rights and provisions concerning the effects of such invalidity”.⁵⁸⁹

5.4.6.3.2. Justification of the European Laws

⁵⁸⁵ Id.

⁵⁸⁶ See Art. 3 (2) Design Directive.

⁵⁸⁷ See Art. 12 Design Directive

⁵⁸⁸ See Art. 10 Design Directive.

⁵⁸⁹ See Recital (6) Design Directive; note, that the substantive grounds for refusal of registration and invalidation are not subject to the Directive.

The CDR, coupled with the Design Directive, has a high impact on design protection in Europe. Not only were the Member States required to harmonize parts of their national design laws, but the European legislator also introduced a totally new form of design protection called Community design.

There are several reasons why design protection is so strongly regulated by the European legislator. The most prominent one goes back to one of the original core objectives of the European Union, namely the establishment of an internal market as set forth in Art. 26 of the Treaty on the Functioning of the European Union (TFEU) (Suthersanen, 2010, p. 87). In the mid-1980s, legislators recognized the high impact of design for a product's commercial success and found it to be crucial for the trade between the Member States.⁵⁹⁰ The fact that Member States offered design protection at very different levels was, therefore, seen as a threat to undistorted competition within the internal market (Suthersanen, 2010, p. 87).

The European laws, therefore, point out that design protection can only refer to the appearance of a product and may by no means extend to aspects that are solely dictated by the product's technical function.⁵⁹¹

Another aim of the European laws was to comply with and implement the obligations under the TRIPS (Trade Related Intellectual Property Issues) Agreement, which set minimum standards for protection, compulsory licensing and enforcement (Musker, 2001, p. 6, p. 27).

5.5. U.S. Intellectual Property Rights Based on Federal Statutes

Traditionally, the justification for IP laws is based on the view that strong protection of IPR is the best, if not the only, means of stimulating innovation and economic growth. Despite widespread support of this view, opposition to IPR protections has persisted for centuries.⁵⁹²

⁵⁹⁰ Recital (2) Design Directive; Recitals (3)-(5) Community Design Regulation (EC) No 6/2002.

⁵⁹¹ See Art. 7 (1), (2) Design Directive, Recital 10, Art. 8 Community Design Regulation (EC) No 6/2002.

⁵⁹² Kanwar, Sunil, and Robert E. Evenson, Does Intellectual Property Protection Spur Technological Change? Economic Growth Center, Yale University, June 2001: 2.

Views on the appropriate role of government and law in the development of IP vary tremendously among economists, political theorists, sociologists, the legal community, law enforcement, and various IP consumers. Since one of the consequences of governmental involvement in IP issues is the criminalization of IP use and exchange, examining these differing views is a necessary part of evaluating the nature and consequences of IP laws, and tangentially the nature and consequences of IPR violations.

Recent arguments favoring weak IPR protections include the contention that levels of IPR protections can be inversely related to innovation, economic growth, and global health. Specifically, it is argued, weak protections tend to keep market prices low, thus stimulating economic growth; strong protections, “by creating a monopoly, may induce the producer to accumulate ‘sleeping patents’ in an effort to preserve market share,”⁵⁹³ thus stifling both innovation and economic growth. In addition, strong protections, including the World Trade Organization’s agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), could, according to some, threaten global health because they reduce access to life-saving medicines, particularly in developing countries.⁵⁹⁴ Although this on-going and currently unresolved, the argument has produced more questions than solutions, in part because of the “lack of cumulative empirical evidence,”⁵⁹⁵ the dialogue is a useful complement to a summary of problems and concerns in IPR enforcement for an assessment of future research needs.⁵⁹⁶

5.5.1. Notable Economic Theories

⁵⁹³ Ibid., 5.

⁵⁹⁴ Kamal, Mohga, and Michael Bailey, “TRIPS: Whose Interests Are Being Served?” *The Lancet* 362 (July 26, 2003): 260.

⁵⁹⁵ Kanwar, and Everson, *Does Intellectual Property*, 3.

⁵⁹⁶ National White Collar Crime Center, *Intellectual Property and White-collar Crime: Report of Issues, Trends, and Problems for Future Research*, Date Received: December 2004, <https://www.ncjrs.gov/pdffiles1/nij/grants/208135.pdf>

From an economic perspective, a primary purpose of IP laws, like many other laws, is to produce the desired result that market forces, or competition, fail to produce. Specifically, IP laws are designed, in part, to protect future economic gain from IP products as an incentive for investing in research and development (R & D) today. Without such protections, it is assumed that innovation would decline because initial costs cannot be recovered in a free market environment. In 1962, Kenneth Arrow identified "three reasons why perfect competition might fail to allocate resources optimally in the case of invention":⁵⁹⁷ risk, inappropriability, and indivisibility.⁵⁹⁸ Both "risk" and "indivisibility" address the problem that R & D often require substantial expenditures of time and money. When invention efforts are unsuccessful, this theory holds, expenditures fail to yield reasonable economic benefit to the inventor. When they are successful, the cost of producing the first prototype is usually far greater than the cost of producing subsequent copies, yet pricing (in a free market) tends to be more closely related to the latter. "Inappropriability" of the invention describes the inability of an inventor to take exclusive possession of IP, as IP does not have a physical form. Addressing some of these problems, Paul Romer suggested in the 1980s and 1990s that economic variables such as taxes, interest, and government subsidies could help to balance inequities that market forces fail to correct.⁵⁹⁹ In other words, fiscal and monetary policy could provide incentives for innovation. However, central to Romer's theory is the belief that innovation requires some degree of monopoly power, which, of course, is consistent with current practices of protecting IPR. Rejecting the analyses of both Arrow and Romer, Boldrin and Levine argued in 1997 that innovation can thrive in perfectly competitive markets and that "copyrights and patents may be

⁵⁹⁷ Clement, Douglas, "Creation Myths: Does Innovation Require Intellectual Property Rights?" Reason online (March 2003). Retrieved September 25, 2003, from <http://reason.com/0303/fe.dc.creation.shtml>.

⁵⁹⁸ Arrow, Kenneth J., "Economic Welfare and the Allocation of Resources for Invention," in *The Rate and Direction of Inventive Activity*, ed. R. Nelson, Princeton, NJ: Princeton University Press, 1962.

⁵⁹⁹ Romer, Paul, "Are Nonconvexities Important for Understanding Growth?" *The American Economic Review* (Papers and Proceedings) 80 (1990): 97-103.

socially undesirable.”⁶⁰⁰ Economists James Bessen and Eric Maskin supported this idea, pointing out that the strengthening of patent protection in the 1980s “ushered in a period of stagnant, if not declining, R & D among those industries and firms that patented most.”⁶⁰¹ To explain this position, Boldrin and Levine outlined a challenge to the mainstream assumption that innovation is a single function – a function with costs that cannot be recovered in a free market. Instead, they argued, innovation is composed of two functional parts: (1) creation, or R & D (with high initial costs) and (2) reproduction, or mass production (with small reproduction costs). Separated in this way and accompanied by a well-defined “right of first sale”⁶⁰² for the inventor, the free market value of creation and reproduction can be determined independently. For example, a drug designer can sell the first prototype of an idea (e.g., a drug) to a distributor for the estimated value of future sales. This represents the “right of first sale.” Then the distributor can sell reproductions in mass at a unit price that the market will bear. Both stages are subject to a competitive market yet valued in a distinctly different manner. In addition, both stages assign value only to the product of IP and never to the idea disembodied from the product because, Boldrin and Levine argued, ideas “have economic value only to the extent that they are embodied into either something or someone.”⁶⁰³ An important element of current IPR models that is eliminated in this model is the right of the inventor to control, limit, or prevent the reproduction or modification of the IP product. The importance of this difference is that it theoretically allows innovation to contribute to future innovation more easily and ideas to be expanded and incorporated with other ideas more rapidly. In other words, the Boldrin and

⁶⁰⁰ Boldrin, Michele, and David K. Levine, Perfectly Competitive Innovation. University of Minnesota and UCLA, 2003: 1.

⁶⁰¹ Bessen, James, and Erik Maskin, “Sequential Innovation, Patents, and Imitation” [Working Paper], Massachusetts Institute of Technology, Department of Economics, January 2000: 2. Retrieved October 10, 2003, from <http://www.researchoninnovation.org/patent.pdf>.

⁶⁰² Boldrin, and Levine, Perfectly Competitive Innovation, 27.

⁶⁰³ Id.

Levine model eliminates the unintended consequences of stifled innovation that current IP laws and practices tend to produce.⁶⁰⁴

5.5.2. Notable Political Theories

Although justifications for IP laws rely heavily on economic assumptions, they also rely on political theories, such as the concept that ideas should be regarded as property and the government should protect these forms of property. Therefore, examination of IP laws, including violations of those laws, should include analysis of underlying political theories to determine if the consequences of IP laws are consistent with established belief systems of the society in which the laws apply. For example, U.S. public policy is (in theory) designed to secure and promote general welfare (i.e., make people's lives better) and protect individual rights. However, IP law that is based on protections of individual rights (of control and economic benefit) without consideration of the effects of IP law on all people, or vice versa, is not consistent with the belief systems of the U.S.⁶⁰⁵

In a 1999 article, Robert Ostergard acknowledged this conflict of interests, stating, “any approach must balance the rights of creators with the needs of others.”⁶⁰⁶ Ostergard began his argument by examining “two dominant...lines of reasoning” for the justification of IP rights: John Locke's labor theory of property and a traditional doctrine of utilitarianism. The former provides a micro perspective, focusing primarily on individual rights, and the latter provides a macro perspective, focusing primarily on group benefit. He concluded that these lines of

⁶⁰⁴ National White Collar Crime Center, Intellectual Property and White-collar Crime: Report of Issues, Trends, and Problems for Future Research, Date Received: December 2004, <https://www.ncjrs.gov/pdffiles1/nij/grants/208135.pdf>

⁶⁰⁵ The Universal Declaration of Human Rights, adopted by the General Assembly of the United Nations, has recognized protection of intellectual property as a universal human right. However, definitions and applications related to IP continue to be a matter of controversy, as does the very basis for the UN declaration.

⁶⁰⁶ Ostergard, Robert L., “Intellectual Property: A Universal Human Right?” Human Rights Quarterly 21.1 (1999): 167.

reason, even when considered together, “do not constitute an adequate or coherent prescriptive theory for the recognition of IP rights.”^{607 608}

5.5.3. International Intellectual Property Issues

Since U.S. based IP constitutes a major portion of IP available worldwide, the application of U.S. IP law outside of the U.S. has become a subject of serious legal debate. There is, for example, a strong sentiment in U.S. law that "legislation of Congress, unless a contrary intent appears, is meant to apply only within the territorial jurisdiction of the United States."⁶⁰⁹ To the extent that U.S. law is applicable abroad, the doctrine of “substantial effect”⁶¹⁰ is often the basis for a legal challenge. This doctrine establishes that "a state has jurisdiction to prescribe law with respect to...conduct outside its territory that has or is intended to have a substantial effect within its territory."⁶¹¹ Specifically, the U.S. Supreme Court has held that “it is well established by now that [U.S. law] applies to foreign conduct that was meant to produce and did, in fact, produce some substantial effect in the United States.”⁶¹² Taken broadly, this doctrine (of substantial effect) gives the U.S. justification for applying its laws to acts that occur wholly between foreign nationals in a foreign country in accordance with that country's laws, so long as the acts affect the United States. One principle that is generally (though not universally)⁶¹³ accepted, however, is that the extraterritorial exercise of criminal jurisdiction

⁶⁰⁷ Id., 147.

⁶⁰⁸ National White Collar Crime Center, Intellectual Property and White-collar Crime: Report of Issues, Trends, and Problems for Future Research, Date Received: December 2004, <https://www.ncjrs.gov/pdffiles1/nij/grants/208135.pdf>

⁶⁰⁹ *Foley Bros., Inc. v. Filardo*, 336 U.S. 281, 285, 93 L. Ed. 680, 69 S. Ct. 575 (1949).

⁶¹⁰ Restatement of the Law, Third, Foreign Relations Law of the United States. Philadelphia, PA: The American Law Institute, 1987: Sec. 403.

⁶¹¹ Restatement of the Law: Sec. 402.

⁶¹² *Hartford Fire Ins. Co. v. California*, 509 U.S. 764 (1993).

⁶¹³ *United States v. Nippon Paper Industries, Co.*, 109 F.3d.1 (1st Cir. 1997).

requires a stronger finding of reasonableness than a purely civil action.⁶¹⁴ Needless to say, U.S. attempts to apply this doctrine have been challenged.⁶¹⁵

Given the debate over this matter, the application of IP law to activities outside of the U.S. is decided on a case-by-case basis by judges whose socio-political perspectives may vary widely and who may assign different values to competing interests. To help minimize this variability, a number of U.S. agencies have recently established significant relationships with foreign and international organizations.

Since 2002, the National Intellectual Property Rights Coordination Center (IPR Center), formed by the Federal Bureau of Investigation (FBI) and the Immigration and Customs Enforcement (ICE), has had substantial success coordinating IP efforts in the U.S. with those in other countries, as well as coordinating law enforcement efforts with those of IP-based industries.⁶¹⁶ International agencies engaged in activities with the IPR Center include the International Criminal Police Organization (Interpol), the World Intellectual Property Organization (WIPO), and the World Trade Organization (WTO). Other U.S. agencies that are actively involved in IP information exchange and enforcement efforts include the U.S. Department of State, Bureau of Economic and Business Affairs, and the U.S. Commerce Department. Non-governmental organizations that advance enforcement of IPR violations include the International Intellectual Property Alliance (IIPA), International Anti-Counterfeiting Coalition (IACC), Recording Industry Association of America (RIIA), Business Software Alliance (BSA), Motion Picture Association of America (MPAA), and Pharmaceutical Security Institute Inc. (PSI). Despite these efforts, the effectiveness and likelihood of bilateral or multilateral cooperative agreements tend to vary widely from country

⁶¹⁴ Restatement of the Law: Sec. 403.

⁶¹⁵ Warner, Mark A. A., Esq., "Restrictive Trade Practices and the Extraterritorial Application of U.S. Antitrust and Trade Legislation," *Northwestern School of Law Journal of International Law and Business* (Winter 1999).

⁶¹⁶ NW3C, Responses to Interviews and Questionnaires on White-collar Crime and Intellectual Property, (NW3C Suvey), 2003–04

to country. In addition, violators of IPR have shown a willingness to relocate their activities to countries without a good working relationship with U.S. law enforcement or the ability to effectively enforce IP laws.

In a recent World Intellectual Property Organization (WIPO) publication, Dr. Peter Drahos addressed the problem of international cooperation from a different perspective. He stated that "the development of intellectual property policy and the law has been dominated by an epistemic community comprised largely of technically minded lawyers. In their hands, intellectual property has grown into highly differentiated and complex systems of rules. The development of these systems has been influenced in important ways by the narrow and often unarticulated professional values of this particular group."⁶¹⁷ Rather than further particularizing current IP laws to address the varied forms and functions of IP, this remark implies, a fruitful approach to reevaluating IP law might involve discussion and evaluation at a much more basic level. "Ideally," Drahos suggested, "the human rights community and the intellectual property community should begin a dialogue." The human rights discourse can contribute by "encourag[ing] us to think about ways in which the property mechanism might be reshaped to include interests and needs that it currently does not," and the IP community can contribute by conveying "the diffuse principles that ground human rights claims to new forms of intellectual property" to something more concrete "through models of regulation."⁶¹⁸ Given that each community is unlikely to concede the fundamental rights that it defends and that the judicial system is an inappropriate venue for the determination of the issues at stake, Drahos offers a reasonable proposal. However, implementation of such a discourse, which must necessarily include deeply factional cultures that are defined by geography, religion, politics,

⁶¹⁷ Drahos, Peter, "The Universality of Intellectual Property Rights: Origins and Development," in *Intellectual Property and Human Rights*, WIPO Publication No. 762(E), 1999.

⁶¹⁸ Drahos, Peter, "The Universality of Intellectual Property Rights: Origins and Development," in *Intellectual Property and Human Rights*, WIPO Publication No. 762(E), 1999.

cultural norms, and age, would be extremely complex.⁶¹⁹ Preliminary steps to this dialogue, perhaps, would be the identification of individuals and groups that would collectively represent these two communities, followed by an extensive inquiry into IPR issues, interests and needs of each. These steps serve the purpose of identifying some of the key subjects for dialogue and of acknowledging the value of those who have traditionally remained marginal in the development of IP policy.⁶²⁰

5.5.4. Licensable Rights based on Federal statutes

With copyright law in the United States lying primarily in the realm of federal law, the laws of the U.S. states concerning copyright do not typically attract significant attention from scholars, practitioners, and policymakers. Some recent events have drawn attention to state copyright laws—for example, litigation against a satellite radio provider for infringement of state common-law public performance rights in pre-1972 sound recordings. However, in general, state copyright laws remain largely in the shadow of federal copyright law, and state law is typically not viewed as a particularly useful vehicle for pursuing the policies that copyright law should support. Yet, when used effectively, state copyright law, together with state law in other areas such as contract, tax, employment, and environmental law, may assist states in promoting state interests in innovation and creativity. This section of the paper explores the limits of state law concerning copyright and uses four copyright-related statutes of the State of Nevada to analyze problems that arise in current state copyright law. State legislatures should not only remedy the problems in state copyright law but should revise state laws to best benefit states'

⁶¹⁹ Drahos, Peter, “The Universality of Intellectual Property Rights: Origins and Development,” in *Intellectual Property and Human Rights*, WIPO Publication No. 762(E), 1999.

⁶²⁰ National White Collar Crime Center, (2004). *Intellectual Property and White-collar Crime: Report of Issues, Trends, and Problems for Future Research*. NCJRS has made this Federally funded contract report available electronically in addition to traditional paper copies. <https://www.ncjrs.gov/pdffiles1/nij/grants/208135.pdf>

interests in innovation policies, taking into account developments in intellectual property law.⁶²¹

Copyright law in the United States falls primarily in the domain of federal law; however, individual U.S. states (the “states”) do have state laws that concern copyright. The preemption doctrine, as applied to copyright law, leaves some space in which state copyright law may exist—both as a remnant of common law and as state statutory law. This section focuses on state copyright-related statutes, their current condition, and their hidden potential as tools for state policies. The following part has two goals: first, to illustrate the problems that currently exist in state copyright legislation and suggest why and how the statutes should be updated to serve state interests in promoting innovation and creativity; and second, to explore recent trends in state and federal intellectual property (“IP”) law that state legislatures should be aware of as they consider revising their state statutes concerning copyright.⁶²²

State laws that concern IP are typically not thought of as useful vehicles for the implementation of state policies to attract innovation and creativity (“innovation policies”), particularly with regard to copyright and patent laws, which lie largely in the realm of federal law, are shaped by federal policies, and are therefore non-controllable starting points for state innovation policies that leave limited leeway for the effects of state law. Yet, state IP law should not be ignored when states implement innovation policies, and state IP-related statutes should be up to date and should correspond to the innovation policies that a state wishes to pursue.⁶²³

⁶²¹ 21 STAN. TECH. L. REV. 66 (2017), https://law.stanford.edu/wp-content/uploads/2017/11/Trimble_FINAL_TO-PUBLISH.pdf

⁶²² Id. 67.

⁶²³ Id. 68.

Of course, successful innovation policies do not rely solely on well-designed and carefully balanced IP laws;⁶²⁴ in fact, some critics may argue that the role of IP laws is negligible. Studies concerning developments in the United States and in foreign countries question whether IP statutes actually affect innovation, or affect innovation in the manner intended by the drafters of the statutes.⁶²⁵ Additionally, there seems to be little room for legislative creativity; international law creates a general framework for national IP laws, setting a common denominator that is, at least as far as the laws on the books are concerned, shared by most countries in the world, and permits little national and/or state experimentation.⁶²⁶ Nevertheless, international law does provide space for differences in national IP laws, and these differences can influence the course of innovation in the fields of science and technology and in particular industries.⁶²⁷

5.5.4.1. Limits of State Copyright Legislation

State copyright statutes exist within a space that is, like that of other state statutes, constrained by several forces: at the federal level, the preemption doctrine and the dormant Commerce Clause limit the reach of state laws, and international law that binds the United States also shapes the space for state laws. General constitutional requirements stemming from both the federal Constitution and a state's Constitution also affect state laws.⁶²⁸ Moreover, canons of

⁶²⁴ IP laws need to be well-balanced in order to contribute to an appropriate environment for innovation. Finding the proper balance is difficult, and a discussion of the balance is beyond the scope of this article. While Anupam Chander is correct that "overly rigid intellectual property laws can prove a major hurdle to Internet innovations," overly flexible or unenforceable IP laws may discourage innovation and creativity in other areas, including innovation and creativity without which no internet venture could exist. Anupam Chander, *How Law Made Silicon Valley*, 63 EMORY L.J. 639, 643-44 (2014).

⁶²⁵ See, e.g., Mario Cimoli et al., *Innovation, Technical Change, and Patents in the Development Process: A Long-Term View*, in INTELLECTUAL PROPERTY RIGHTS: LEGAL AND ECONOMIC CHALLENGES FOR DEVELOPMENT 57 (Mario Cimoli et al. eds. 2014); Anthony D. So et al., *Is Bayh-Dole Good for Developing Countries? Lessons from the U.S. Experience*, in INTELLECTUAL PROPERTY RIGHTS: LEGAL AND ECONOMIC CHALLENGES FOR DEVELOPMENT 201 (Mario Cimoli et al. eds. 2014).

⁶²⁶ On international law and intellectual property, see *infra* Part I, Section C.

⁶²⁷ Differences may exist among countries' IP statutes, interpretation of the statutes, procedural norms, and other aspects of national law and practice.

⁶²⁸ For a discussion of an IP-related provision in the Nevada Constitution, see *infra* notes 113-115 and accompanying text.

statutory interpretation and best practices of legislative work should be reflected in any legislative effort, and legal certainty, clarity, and preservation of legitimate expectations are among the principles that legislators should pursue.

Copyright laws lie in the realm of U.S. federal law pursuant to the IP Clause of the U.S. Constitution, according to which “[t]he Congress shall have power . . . to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.”⁶²⁹ The Supremacy Clause dictates that federal law shall prevail over state law, and the preemption doctrine safeguards the supremacy of federal law.⁶³⁰ Although copyright laws are largely a product of federal law, courts have not found copyright law to be subject to field preemption that would entirely exclude state law on copyright.⁶³¹ There is therefore some, albeit limited, space for state legislation. However, identifying what federal law has left to the states to legislate is often a difficult task.⁶³²

The space for state copyright law is carved out by an express preemption provision⁶³³ that has been included in Section 301 of the 1976 Copyright Act.⁶³⁴ The preemption provision calls for an assessment of two aspects—subject matter and rights. The subject matter covered by state law must "not come within the subject matter of copyright,"⁶³⁵ nor must the rights provided by the state law be “equivalent to any of the exclusive rights within the general scope of

⁶²⁹ U.S. CONST., art. I, § 8, cl. 8. On the scope of the IP Clause of the U.S. Constitution, see, e.g., Graeme B. Dinwoodie, Copyright Lawmaking Authority: An (Inter)Nationalist Perspective on the Treaty Clause, 30 COLUM. J.L. & ARTS 355 (2007); Jeanne C. Fromer, The Intellectual Property Clause’s External Limitations, 61 DUKE L.J. 1330 (2012).

⁶³⁰ U.S. CONST., art. VI, cl. 2.

⁶³¹ *Goldstein v. California*, 412 U.S. 546 (1973); *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470 (1974). For a definition of field preemption see Caleb Nelson, Preemption, 83 VA. L. REV. 225, 227 (2000).

⁶³² For a general discussion of preemption and federal patent and copyright law see Mark A. Lemley, Beyond Preemption: The Law and Policy of Intellectual Property Licensing, 87 CALIF. L. REV. 111, 137-42 (1999).

⁶³³ For a definition of express preemption see Nelson, *supra* note 20, at 226- 27.

⁶³⁴ 17 U.S.C. § 301 (2015). For a detailed discussion of the express preemption provision in § 301 see Joseph P. Bauer, Addressing the Incoherency of the Preemption Provision of the Copyright Act of 1976, 10 VAND. J. ENT. & TECH. L. 1, 15-106 (2007). For a discussion of the legislative history of § 301 see Howard B. Abrams, Copyright, Misappropriation, and Preemption: Constitutional and Statutory Limits of State Law Protection, 11 SUP. CT. REV. 509, 537-50 (1983).

⁶³⁵ 17 U.S.C. § 301(a) (2015).

copyright.”⁶³⁶ Although Section 301 was adopted to clarify the preemption doctrine in copyright law,⁶³⁷ it has not—and realistically probably could not have—achieved perfect clarity.⁶³⁸

Because the 1976 Act was designed to eliminate the duality of federal copyright for published works and state copyright for unpublished works by subsuming both published and unpublished works under federal copyright,⁶³⁹ the Act expressly preempts state law on unpublished works.⁶⁴⁰ State statutes are also preempted if they extend to works of the same “general subject matter categories” as the Act⁶⁴¹ but the works have “fail[ed] to achieve Federal statutory copyright because [they were] too minimal or lacking in originality to qualify [for federal protection], or because [they have] fallen into the public domain.”⁶⁴² For example, states cannot provide copyright protection for factual information contained in a book⁶⁴³ or for the non-original aspects of databases;⁶⁴⁴ nor may they legislate extensions to the copyright term set by federal law,⁶⁴⁵ because these extensions would impermissibly constrain the public domain.

States may legislate on works that are not protected under federal copyright because the works do not fall within the subject matter covered by the Act⁶⁴⁶ and/or are not fixed in a tangible

⁶³⁶ Id. See also, e.g., *Laws v. Sony Music Entm’t, Inc.*, 448 F.3d 1134, 1137-38 (9th Cir. 2006); *Kodadek v. MTV Networks, Inc.*, 152 F.3d 1209, 1212 (9th Cir. 1998).

⁶³⁷ REP. COMM. JUDICIARY, S. REP. NO. 93-983, at 165 (1974) (“The declaration of [the preemption] principle in section 301 is intended to be stated in the clearest and most unequivocal language possible. . .”). See REP. COMM. JUDICIARY, S. REP. NO. 94-473 (1975), at 114.

⁶³⁸ Bauer, *supra* note 23, at 2 (noting that “this goal has never been realized. Instead, there are literally hundreds of federal and state decisions interpreting [§ 301], which can charitably be described as inconsistent and even incoherent.”).

⁶³⁹ See, e.g., REP. COMM. JUDICIARY, S. REP. NO. 91-1219, at 4 (1970).

⁶⁴⁰ For a detailed discussion of the subject matter problems of preemption see *Abrams*, *supra* note 23, at 559-66.

⁶⁴¹ Protectable subject matter is defined in 17 U.S.C. §§ 102-103 (2015).

⁶⁴² H.R. REP. NO. 94-1476, at 129-33 (1976).

⁶⁴³ *Harper & Row, Inc. v. Nation Enters.*, 723 F.2d 195, 200 (2d Cir. 1983), *rev’d on other grounds* 471 U.S. 539 (1985). See also *National Basketball Assoc. v. Motorola, Inc.*, 105 F.3d 841, 848-49 (2d Cir. 1997) (rejecting the “partial preemption” doctrine).

⁶⁴⁴ See *Feist Publ’ns, Inc. v. Rural Telephone Serv. Co.*, 499 U.S. 340 (1991).

⁶⁴⁵ 17 U.S.C. §§ 302-305 (2015). But cf. *Goldstein v. California*, 412 U.S. 546, 560-61 (1973). On Congress’ decision not to permit perpetual copyright for pre-1972 sound recordings see H.R. REP. NO. 94-1476, at 133 (1976).

⁶⁴⁶ 17 U.S.C. §§ 102-103 (2015).

medium of expression.⁶⁴⁷ While it might be difficult to think of a subject matter not covered by the Act,⁶⁴⁸ it is easier to picture examples of unfixed works, such as unfixed performances, in whose protection state legislation can play an important role.⁶⁴⁹ States can also, until February 15, 2007, legislate on sound recordings that were fixed in a tangible medium before February 15, 1972—the date on which federal law began protecting sound recordings.⁶⁵⁰

5.5.5. Licensable Patent Rights⁶⁵¹

It should come as no surprise that the patent licensing market in the U.S., like most other technologically advanced nations today, is skewed heavily in favor of large corporations with massive patent portfolios.⁶⁵² The current patent system provides very few opportunities for smaller patentees⁶⁵³ and severely undercuts their ability to operate in the licensing market.⁶⁵⁴ Even if they somehow obtain access to licensing opportunities, they still face significant barriers in negotiating favorable licensing terms with potential licensees.⁶⁵⁵ Unable to earn their fair share of compensation for their patents through licensing, some small patentees who lack the means to commercialize their patents have resorted to litigation or threat of litigation as a way to assert their rights and seek monetary reward for their patents.⁶⁵⁶ Because the current

⁶⁴⁷ 17 U.S.C. § 102 (2015).

⁶⁴⁸ See *infra* Part II, Section C for a discussion of one example.

⁶⁴⁹ *Id.*

⁶⁵⁰ 17 U.S.C. § 301(c) (2015). Sound Recordings Act, Pub. L. No. 92-140, 85 Stat. 39 (Oct. 15, 1971). See also *Goldstein v. California*, 412 U.S. 546 (1973); COMM. ON THE JUDICIARY, S. REP. NO. 91-1219, at 4 (1970); COMM. ON THE JUDICIARY, S. REP. NO. 93-983, at 166 (1974). 21 STAN. TECH. L. REV. 66 (2017)

⁶⁵¹ Yuichi Watanabe, J.D., 2009, University of Houston Law Center, PATENT LICENSING AND THE EMERGENCE OF A NEW PATENT MARKET. <https://oshaliang.com/wp-content/uploads/2014/12/Patent-Licensing.pdf>

⁶⁵² Peter N. Detkin, Leveling the Patent Playing Field, 6 J. Marshall Rev. Intell. Prop. L. 636, 636 (2007).

⁶⁵³ A patentee is “[o]ne who either has been granted a patent or has succeeded in title to a patent.” BLACK’S LAW DICTIONARY 1162 (8th ed. 2004). Inventors are presumed to be the patentees unless there is an assignment of ownership. See John A. O’Brien, Taking Invention Disclosures: Practical and Ethical Considerations, in FUNDAMENTALS OF PATENT PROSECUTION 2008: A BOOT CAMP FOR CLAIM DRAFTING & AMENDMENT WRITING 11, 43 (2008), available at 936 PLI/Pat 11 (Westlaw).

⁶⁵⁴ Detkin, *supra* note 1, at 636.

⁶⁵⁵ *Id.* at 637-39.

⁶⁵⁶ *Id.* at 640.

patent system does not provide a viable solution to this problem, patent licensing firms have recently emerged to provide novel business models for struggling smaller patentees.⁶⁵⁷ According to some practitioners, the variety of market-based strategies and resources that these licensing firms offer to small patentees could help improve overall market efficiency by enabling smaller patentees to play a more prominent role in the patent licensing market.⁶⁵⁸ The idea is that, with better representation in the market, smaller patentees would no longer need to resort to litigation to solve their problems.⁶⁵⁹ Some critics, however, believe patents are valuable only so long as they are commercialized into useful products, and have accused non-practicing patentees⁶⁶⁰ and their licensing firms of abusing the patent system and impeding the progress of useful arts.⁶⁶¹ Others, contrarily, argue the problems are actually caused by fundamental deficiencies in the patent system itself.⁶⁶²

At this time, courts and lawmakers are not particularly concerned with the lack of opportunities accorded to smaller patentees in the patent licensing market.⁶⁶³ In fact, some scholars and practitioners predict that recent United States Supreme Court decisions and legislative reforms will exacerbate the situation for smaller patentees.⁶⁶⁴ Hence, patent licensing firms believe

⁶⁵⁷ Id. at 637; see also Joff Wild, IV's Detkin Explores the Role of Aggregators in a Changing Patent World, IAM MAGAZINE, Sept. 22, 2007, available at <http://www.iammagazine.com/blog/detail.aspx?g=6514d2f4-5426-4ab9-9864-071ef26c87b9> (critiquing Detkin, supra note 1).

⁶⁵⁸ See Detkin, supra note 1, at 637 (describing how the patent commercialization strategies deployed by patent licensing firms can "marshal capital, expertise, connections, and economies of scale to knock down the barriers that have thwarted small inventors and offer alternatives to litigation, with all its expenses, delays, and uncertainties").

⁶⁵⁹ Id.

⁶⁶⁰ Infra Part II.D.

⁶⁶¹ Detkin, supra note 1, at 637.

⁶⁶² Survey - Patents & Technology: Voracious Venture, ECONOMIST, Oct. 22, 2005, available at 2005 WLNR 17008347 (founder of Intellectual Ventures, Nathan Myhrvold, stating that the traditional view of patents is "archaic"); see also John M. Golden, "Patent Trolls" and Patent Remedies, 85 TEX. L. REV. 2111, 2112 (2007) ("Academics, policymakers, and even sitting judges have suggested that patent law may have overleaped its proper bounds, or at least become too likely to frustrate, rather than to fulfill, its constitutional purpose of 'promot[ing] the Progress of Science and useful Arts.'").

⁶⁶³ Detkin, supra note 1, at 636.

⁶⁶⁴ See, e.g., id. at 636-37. ("Many of the patent law reforms under consideration would tilt an already unbalanced playing field to further benefit larger corporations in the information technology industries."); see also Sara M. King, Clearing the Patent Thicket: The Supreme Court and Congress Undertake Patent Reform, 19 NO. 9 INTELL. PROP. & TECH. L.J. 13, 13 (2007) ("Current patent reform efforts, however, are spurred by the perception that the US patent system is in danger of becoming a drag on, rather than an impetus to, innovation and the development of useful products.").

what is necessary is a fundamental transformation in the way smaller patentees operate in the licensing market.⁶⁶⁵ For instance, Peter Detkin, co-founder and managing director at Intellectual Ventures, L.L.C., asserts that Intellectual Venture's novel market-based solutions "offer great promise to solve some of those systematic failures, and so present a complement — and in certain cases an alternative — to the legislative reform that the Congress has been deliberating."⁶⁶⁶

5.5.6. Licensable Copyrights

Copyright scholars suggest that computer technology has reduced transaction costs associated with copyright transfer, allegedly eliminating the need for the fair use doctrines that were developed to allow limited use of copyrighted material in situations where the transaction costs of securing authorized use would be prohibitive. According to this emerging view, in an ideal world with no contracting costs, third party use of copyrighted material could realistically only take place with the express consent of the copyright holder. This would give the author absolute power to dispose of his work, including the right to veto uses, without the possibility of fair use "override" of any sort.⁶⁶⁷

If transaction costs provide the dominant economic justification of "fair use" doctrines, an exogenous reduction of such transaction costs would limit the scope and application of the defense of fair use. Nevertheless, it is demonstrated that, when viewed in light of the anti-commons theory, fair use doctrines retain a valid efficiency justification even in a zero transaction cost environment. Fair use defenses are justifiable, and in fact instrumental, in minimizing the welfare losses prompted by the strategic behavior of the copyright holders.

⁶⁶⁵ See, e.g., Detkin, *supra* note 1, at 637-38.

⁶⁶⁶ *Id.* at 636.

⁶⁶⁷ Ben Depoorter and Francesco Parisi, FAIR USE AND COPYRIGHT PROTECTION: A PRICE THEORY EXPLANATION. Center for Advanced Studies in Law and Economics, Faculty of Law, Ghent University (Belgium). Professor of Law & Co-Director, J.M. Buchanan Center for Political Economy, Program in Economics and the Law, George Mason University (USA).

Even if copyright licenses can be transferred at no cost (for instance, in a "click and pay" frictionless computer world), the strategic behavior of the copyright holders would still create possible deadweight losses.⁶⁶⁸

"When new technological advances in the dissemination of information conflict with the precepts of standard copyright law, the doctrine of fair use, which delineates limited circumstances under which the work may be used without the author's permission, is called upon to reconcile the two. Proponents of new technology and copyright holders generally stand diametrically opposed when it comes to determining the proper scope of the fair use defense⁶⁶⁹ in the information age. The mass popularization of the Internet and continued technological advances in information dissemination has produced a new argument that goes one step further: fair use will become obsolete in a world where one-click technology provides instantaneous communication between copyright holders and users.⁶⁷⁰ Universally accessible Internet gateways will allegedly provide copyright holders the opportunity to charge users of their works licensing fees in quasi-automatic fashion, eliminating the transaction-cost argument that provides one of the main pragmatic justifications of fair use. In turn – the argument goes – the traditional rationales for the existence of fair use doctrines will lose their persuasive power."⁶⁷¹

5.6. International Intellectual Property Establishments and Agreement

⁶⁶⁸ Id.

⁶⁶⁹ Generally, the key role of fair use in resolving tension between new technology and traditional copyright is well appreciated, see Marsh (1984) at 635: 'Successful resolution of the resulting tension between products of the new technologies and copyright law will depend largely on the doctrine of fair use.'

⁶⁷⁰ See Bell (1998) arguing that fair use will, to a large extent, be replaced by 'fared use', where automated rights management(ARM) will become the dominant instrument for copyright transfer; Kitch (2000), examining the potential effect of both a structural approach (denying fair use treatment when the copyright owner could have established Internet permission) and a transactional one (fair use falters only in situations that Internet permissions are easily available) in leading to a reduced scope of fair use; Merges (1997), pondering the reduced role of fair use, while proposing a new, subsidy-oriented, foundation for the fair use doctrine that would better emphasize the doctrine's redistributive concerns; Post (1996), arguing that automated rights management techniques drastically reduce transaction costs of negotiating license fees, thereby calling into question the role of fair use. But see, Dowell (1998), examining the prospect of fair use in the context of fragmented literal copying of small chunks of content, concluding that the cost-minimization function of automated licensing does not take into consideration the public benefit purpose of fair use.

⁶⁷¹ Id. 187.

In the following the leading organizations that work on Intellectual Property principles and the international agreements which are in effect will be discussed.

5.6.1. International Regimes and Intellectual Property Regime Shifting

Challenges to existing methods of international intellectual property lawmaking are becoming more prevalent and more pointed. Those challenges increasingly targeted 1994 Trade-related Aspects of intellectual property rights agreement (hereinafter referred to as TRIPs, or the Agreements)⁶⁷² which folded into world trade organization (WTO) an enhanced set of patent, copyright, trademark, and other private rights of intellectual property owners. Unlike prior international intellectual property agreements negotiated under the auspices of the world intellectual property organization (WIPO), TRIPs has teeth. It contains detailed, comprehensive substantive rules and is linked to the WTO's comparatively hard-edged dispute settlement system in which treaty bargains are enforced through mandatory adjudication backed up by the threat of the retaliatory sanctions. TRIPs has been and continues to be defended by its strongest proponents- The United States, the European Communities (EC), Japan, and their respective intellectual property industries- on both normative and instrumental grounds. Normatively, TRIPs proponents argue that a uniform set of relatively high standards of protection fuels creativity and innovation attracts foreign investment and encourages a more rapid transfer of technology. Strong domestic intellectual property rules, in this view are essential to economic growth and development.⁶⁷³ Instrumentally, proponents defend TRIPs as part of the WTO package deal in which developing countries receive freer access to the markets

⁶⁷² Agreement on trade-related aspects of intellectual property rights. Dec, 15 1993. Marrakesh Agreement Establishing the world trade organization, Annex 1C legal instruments results of the Uruguay Round 1, 31 33 I.L.M. 81 (1994) [hereinafter TRIPs].

⁶⁷³ See Peter K. Yu. Toward a non-zero sum Approach to resolving global intellectual property disputes: what we can learn from mediators, business strategies, and international relations theorists, 70 U. Cin L Rev 569 635 (2001) (restating and reviewing claim by developed countries that intellectual property rights "attract foreign investment, increase taxes, create new jobs, and facilitates technology transfer." And citing numerous supporting authorities).

of industrialized nations in exchange for their agreement to protect the intellectual property rights of foreign nationals.⁶⁷⁴ According to this rationale, governments importing intellectual property products agree to suffer the (hopefully short-term) welfare losses that strong intellectual property rules can engender in exchange for the immediate benefits and concessions they receive from other WTO agreements.⁶⁷⁵

Both of these claims are now increasingly questioned, perhaps not coincidentally at a time when phase-in rules have expired and WTO members with developing and transitional economies are facing the reality of compliance with TRIPs.⁶⁷⁶ Consider just a few examples. In February 2003, the United Nations Development Programme (UNDP) released a report on the world trading system that was remarkably critical of the treaty. Asserting that the "relevance of TRIPs is highly questionable for large parts of the developing world," the report urged developing countries to "begin dialogues to replace TRIPs . . . with alternate intellectual property paradigms" and, in the interim, to "modif[y] . . . the way the agreement is interpreted

⁶⁷⁴ See, e.g., Ernst-Ulrich Petersmann, Constitutionalism and International Organizations, 17 NW. J. INT'L L. and Bus. 398, 442 (1996-97) (characterizing agreements relating to services and intellectual properties as part of "global package deals" negotiated within the GATT/WTO).

⁶⁷⁵ For a nuanced economic assessment of the effects of TRIPs-mandated intellectual property rights on different national jurisdictions, see Keith E. Maskus, Intellectual property rights in the global economy 27-234 (2000).

⁶⁷⁶ See TRIPs, supra note 1, art. 65, 33 I.L.M. at 107 (setting transition periods for phase-in of most of TRIPs); see also J.H. Reichman, the TRIPs agreement comes of age: conflict or cooperation with the developing countries?, 32 case W. RES. J. INT'L L. 441, 450 (2000) (stating that TRIPs enters into force for most developing countries in 2000) [hereinafter Reichman, TRIPs agreement].

and implemented.⁶⁷⁷ Increasingly broad and vocal consortiums of nongovernmental organizations (NGOs) are challenging the "moral, political and economic legitimacy"⁶⁷⁸ of TRIPs, focusing on provisions of the treaty that affect public health, human rights, biodiversity, and plant genetic resources. Furthermore, revisionist reading of TRIPs's negotiating history now stresses the power-based bargaining strategies that industrialized countries employed to

⁶⁷⁷ U.N. Development Programme, making global trade work for people 221, 222 (2003), <http://www.undp.org/dpa/publications/globaltrade.pdf>. An approach critical of the TRIPs agreement also appears in a September 2002 study authored by the UK-based Commission on intellectual property rights. The report questions a cornerstone principle of TRIPs- that minimum standards of intellectual property protection must be adopted by all WTO members, whatever their economic circumstances or level of development. See commission on intellectual property rights, integrating intellectual property rights and development policy 5-6 (2002). http://www.iprcommission.org/graphic/documents/final_report.htm [hereinafter commission on IPRs]. (standards of IP protection that may be suitable for developed countries may cause greater costs than benefits when applied in developing countries which must rely in large part on knowledge or products embodying knowledge generated elsewhere to satisfy basic needs and foster their development."). A similar perspective animates a joint capacity building project on intellectual property and development launched by the United Nations Conference on Trade and Development (UNCTAD) and the International Center for trade and sustainable development (ICTSD) in August 2001. A key objective of the capacity building project is "to improve understanding of the development implications of the TRIPs agreement" and [t]o strengthen the analytical and negotiating capacity of developing countries so that they are better able to participate in IPR-related negotiations in an informed fashion in furtherance of their sustainable developments objectives." IPRsonline.org, UNCTAD-ICTSD capacity building project on intellectual property rights, <http://www.IPRsonline.org/unctadictsd/description.htm> (last visited Nov. 23, 2003). In addition to commissioning and publishing studies and reports, the project is developing a resource book on TRIPs and developments to assist developing country government officials in negotiations in WTO and elsewhere. See IPRsonline.org, resource book on TRIPs and development: An authoritative and practical guide to the TRIPs Agreement, at <http://www.IPRsonline.org/unctadictsd/resourcebookindex.htm> last visited Nov. 23, 2003).

⁶⁷⁸ CEAS CONSULTANTS (WYE) LTD. ET AL., DG TRADE EUROPEAN COMMISSION, STUDY ON THE RELATIONSHIP BETWEEN THE AGREEMENT ON TRIPS AND BIODIVERSITY RELATED ISSUES: FINAL REPORT 50-51, 125 (2000) [hereinafter CEAS CONSULTANTS] (identifying a dozen civil society organizations whose shared objectives included "opposing trends in intellectual property and international trade law, especially the patenting of life-forms," encouraging benefit sharing, and protecting the knowledge and rights of indigenous communities); see also South Centre, NGOs Demand 'Re-Thinking' on TRIPs, <http://www.southcentre.org/info/southbulletin/bulletin21/bulletin21-01.htm> (last visited Nov. 23, 2003) (noting creation of "TRIPs Action Network" of 130 NGOs which called for "a fundamental re-thinking of TRIPs in the WTO").

coerce developing states into agreeing to treaty terms about which they had little understanding, let alone meaning input.⁶⁷⁹

Given the expansion of intellectual property rights that globalization and new information technologies have engendered, many of these critiques have been leveled at intellectual property standards generally, including those found in other international agreements (such as those administered by WIPO) and in national laws.⁶⁸⁰ Yet it is striking that states, NGOs, and intergovernmental actors have specifically identified TRIPs and "TRIPs-plus" bilateral

⁶⁷⁹ Peter Drahos, *Developing Countries and International Intellectual Property Standard Setting*, 5 J. WORLD INTELL. PROP. 765, 769-70 (2002) [hereinafter Drahos, *Developing Countries*] (analyzing TRIPs's negotiating history in detail and arguing that it undermines the claim that the treaty was the "result of bargaining amongst sovereign and equal States... which agreed to TRIPs as part of a larger package of trade-offs that contained gains for all"); Susan K. Sell, *TRIPs and the Access to Medicines Campaign*, 20 WIS. INT'L L.J. 481, 481 (2002) [hereinafter Sell, *Access to Medicines*] ("TRIPs was a product of tireless and effective agency and economic coercion."); see also SUSAN K. SELL, *PRIVATE POWER, PUBLIC LAW: THE GLOBALIZATION OF INTELLECTUAL PROPERTY RIGHTS* 108-20 (2003) (analyzing bargaining strategies used during the negotiation of TRIPs); Ruth Okediji, *A Cartography of WTO TRIPs Dispute Settlement and the Future of Intellectual Property Policy*, 62-102 (2001) (unpublished manuscript, on file with The Yale Journal of International Law) [hereinafter Okediji, *Cartography*] (applying coalition theory to analyze the negotiation of TRIPs). For an important early discussion of the benefits and drawbacks of linking intellectual property to the world trading system, see J.H. Reichman, *Intellectual Property in International Trade: Opportunities and Risks of a GA TT Connection*, 22 VAND. J. TRANSNAT'L L. 747 (1989).

⁶⁸⁰ A few recent intellectual property initiatives include TRIPs as part of a broader effort to revise intellectual property protection standards to take into account the needs of developing country governments and their nationals. See COMMISSION ON IPRS, *supra* note 6, at 172, 178-86 (discussing the "international architecture" of intellectual property protection, including WTO, WIPO, and regional and bilateral agreements); Press Release, *The Rockefeller Foundation Initiative to Promote Intellectual Property (IP) Policies Fairer to Poor People* (Nov. 4, 2002), <http://www.rockfound.org>. [hereinafter *Rockefeller IP Initiative*] (discussing the launch of a "multi-year initiative to support the emergence of fairer, development-oriented IP policies").

agreements⁶⁸¹ as the principal targets of their ire, challenging treaty bargains once thought settled at the conclusion of the Uruguay Round.⁶⁸²

Perhaps the most well-known manifestation of this challenge appears in the Declaration on the TRIPs Agreement and Public Health⁶⁸³ (Public Health Declaration) adopted in November 2001 as part of the launch of a new round of WTO trade talks in Doha.⁶⁸⁴ The Declaration responds to the claim by developing nations that they are unable to afford the patented pharmaceuticals needed to address the massive HIV/AIDS crisis within their borders. It grants least developed countries an additional ten years before they must protect pharmaceuticals,⁶⁸⁵ and it reaffirms the principle of balanced intellectual property protection already embedded in various clauses of TRIPs.⁶⁸⁶ The Public Health Declaration applies only to the narrow, albeit politically charged issue of access to patented medicines. But it may be a harbinger of more broad-based

⁶⁸¹ These bilateral treaties are referred to by the appellation "TRIPs-plus" because they contain intellectual property protection standards more stringent than those found in TRIPs, obligate developing countries to implement TRIPs before the end of its specified transition periods, or require such to accede to or conform to the requirements of other multilateral intellectual property agreements. See Peter Drahos, BITs and BIPs, 4 J. WORLD INTELL. PROP. L. 791, 792-807 (2001) (describing "TRIPs-plus" bilateral agreements negotiated by the United States and the EC with individual developing country governments); Genetic Resources Action International (GRAIN), "TRIPs-plus" Through the Back Door: How Bilateral Treaties Impose Much Stronger Rules for IPRs on Life than the WTO, <http://www.grain.org/docs/trips-plus-en.pdf> (July 2001) [hereinafter GRAIN, TRIPs-plus] (same); ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, REGIONALISM AND THE MULTILATERAL TRADING SYSTEM 111-22 (2003), http://www1.oecd.org/publications/ebook/220303_1_E.pdf (same).

⁶⁸² Final Act Embodying Results of the Uruguay Round of Multilateral Trade Negotiations, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, LEGAL INSTRUMENTS-RESULTS OF THE URUGUAY ROUND vol. 1, 33 I.L.M. 1140 (1994). See Steve Lohr, The Intellectual Property Debate Takes a Page from 19th Century America, N.Y. TIMES, Oct. 14, 2002, at C4 (noting the "growing backlash in developing countries against the imposition of a strong global system of intellectual property rights"); Sell, Access to Medicines, supra note 8, at 482 (stating that "the unwitting 'victims' of TRIPs" have "gradually mobilized to demand a change" in the structures it created).

⁶⁸³ Declaration on the TRIPs Agreement and Public Health, WTO Doha Ministerial Conference, 4th Sess., WTO Doc. WT/MIN(01)/DEC/W/2 (Nov. 14, 2001) [hereinafter Public Health Declaration].

⁶⁸⁴ Ministerial Declaration, WTO Doha Ministerial Conference, 4th Sess., WTO Doc. WT/MIN(01)/DEC/W/1 (Nov. 14, 2001) (hereinafter Doha Ministerial Declaration) (declaration setting forth negotiating agenda for new trade talks).

⁶⁸⁵ Public Health Declaration, supra note 12, para. 7 (extending until 2016 the transitional period for least developed WTO members to implement provisions of TRIPs governing patents and undisclosed information relating to pharmaceutical products).

⁶⁸⁶ The Declaration states that TRIPs "can and should be interpreted and implemented in a manner supportive of WTO Members' right to protect public health and, in particular, to promote access to medicines for all," and it reaffirms "the right of WTO Members to use, to the full, the provisions in the TRIPs Agreement, which provide flexibility for this purpose." Id. para. 4. For a more detailed discussion of the Public Health Declaration and the negotiations it has spawned, see infra Section V.B.

efforts to revise, reinterpret, or supplement intellectual property protection standards adopted in the WTO and in WIPO.⁶⁸⁷ This Article assesses an under-explored dimension of these challenges to TRIPs and to expansions of intellectual property rights more generally. Drawing on the writings of political scientists who analyze international regimes,⁶⁸⁸ the Article reveals that TRIPs has had unanticipated effects on international intellectual property lawmaking. In particular, the Agreement's strengthening of intellectual property rights has led states, NGOs, and officials of intergovernmental organizations to raise concerns about those rights in an expanding list of international venues. The few short years since TRIPs entered into force have seen nothing less than an explosion of interest in intellectual property issues in a broad array of international fora. Intellectual property issues are now at or near the top of the agenda in intergovernmental organizations such as the World Health Organization and the Food and Agriculture Organization, in international negotiating fora such as the Convention on Biological Diversity's Conference of the Parties and the Commission on Genetic Resources for Food and Agriculture, and in expert and political bodies such as the United Nations Commission on Human Rights and its Sub-Commission on the Promotion and Protection of Human Rights.⁶⁸⁹ In some of these venues, "intellectual property lawmaking"⁶⁹⁰ involves the negotiation of new treaties; in others, such lawmaking occurs through the reinterpretation of

⁶⁸⁷ See Lohr, *supra* note 11 (noting that the Public Health Declaration may embolden developing countries to extend public health arguments to other areas of intellectual property policy); Sell, *Access to Medicines*, *supra* note 8, at 519 (citing the Public Health Declaration as "evidence of movement away from the industry-sponsored IP orthodoxy that animated deliberations leading up to the TRIPS accord" and that "could have a significant impact . . . in redressing the imbalance between private and public interests in the context of intellectual property").

⁶⁸⁸ As used by political scientists, the term international "regime" describes a concept that is broader than a single intergovernmental organization or a particular international agreement. A regime refers to the principles, norms, and rules governing a particular issue area of international relations, and to the formal institutional structures and decision-making procedures through which those principles, norms, and rules are developed. Regimes form when the interests of states converge around certain shared objectives that can best be achieved through interstate cooperation. For a more detailed discussion of regimes and their components, see *infra* Section H.A.

⁶⁸⁹ See *infra* Part III.

⁶⁹⁰ In this Article, I use the phrase "intellectual property lawmaking" to refer both to the negotiation or amendment of binding international agreements and to the drafting of declarations, resolutions, interpretative statements, guidelines, and other processes by which nonbinding legal norms are created.

existing agreements and the creation of new nonbinding declarations, guidelines, recommendations, and other forms of "soft law."⁶⁹¹

The theoretical and practical consequences of these developments have yet to be fully explored. I argue that the expansion of intellectual property lawmaking into these diverse international fora is the result of a strategy of "regime shifting" by developing countries and NGOs that are dissatisfied with many provisions in TRIPs or its omission of other issues and are actively seeking ways to recalibrate, revise, or supplement the treaty. As I explain in detail below, state and non-state actors shift lawmaking initiatives from one international venue to another for many reasons. In the case of intellectual property rights, developing countries and their allies are shifting negotiations to international regimes whose institutions, actors, and subject matter mandates are more closely aligned with these countries' interests. Within these regimes, developing countries are challenging established legal prescriptions and generating new principles, norms, and rules of intellectual property protection for states and private parties to follow. Intellectual property regime shifting thus heralds the rise of a complex legal environment in which seemingly settled treaty bargains are contested and new dynamics of lawmaking and dispute settlement must be considered.⁶⁹²

5.6.2. Regime Shifting from WIPO to GAT to TRIPs

International lawyers and international relations theorists often speak of nation states as if they were unitary actors that rationally calculate and then rationally pursue their national interests when interacting with other states.

⁶⁹¹ International law and international relations scholars have recently emphasized the importance of non-binding norms, or soft law, as a method to promote international cooperation and alter state behavior. For illuminating discussions, see COMMITMENT AND COMPLIANCE: THE ROLE OF NON-BINDING NORMS IN THE INTERNATIONAL LEGAL SYSTEM (Dinah Shelton ed., 2000); Kenneth W. Abbott & Duncan Snidal, Hard and Soft Law in International Governance, 54 INT'L ORG. 421 (2000) [hereinafter Abbot & Snidal, Hard and Soft Law].

⁶⁹² Laurence R. Heifer, Regime Shifting: The TRIPs Agreement and New Dynamics of International Intellectual Property Lawmaking, Available at: <https://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=1225&context=yjil>

Although this simplifying assumption can be a useful way to model many forms of inter-state behavior,⁶⁹³ the reality of international cooperation is far more complex. States are not unitary but are composed of a diverse array of governmental institutions populated by officials who pursue their own agendas and draw legitimacy from their relationship to domestic constituencies. Private interest groups and members of civil society are also critical players, aggregating individual preferences and lobbying the various branches of government to adopt the policies they favor.⁶⁹⁴ Disaggregating states into transparent entities composed of distinct governmental and nongovernmental actors makes possible a public choice analysis of international lawmaking and regime shifts in particular.⁶⁹⁵ The public choice theory views government decisions as the product of interest group politics. It argues that concentrated interest groups with high individual stakes will devote significant resources to lobbying government officials if doing so allows those groups to acquire advantages through regulation that would be unavailable in the market. Because such interest groups face lower informational and organizational costs than more diffusely organized voters or consumers, they tend to be more successful in mobilizing resources and influencing legislative outcomes.⁶⁹⁶ Viewing international lawmaking through the lens of public choice helps to identify the specific governmental and private actors who motivate states to engage in regime shifting. The

⁶⁹³ See Andrew T. Guzman, A Compliance-Based Theory of International Law, 90 CAL. L. REV. 1823, 1841 n.73 (2002) (noting that the "standard assumptions about states" in models of international relations are that "they are rational, they act in their own self-interest, and they are aware of the impact of international law on behavior").

⁶⁹⁴ See Anne-Marie Slaughter, A Liberal Theory of International Law, 94 AM. SOC'Y INT'L L. PROC. 240, 241 (2000) (describing insights of liberal international relations theory as including its bottom-up view, its linking of international and domestic spheres, its rendering of state-society relations as transparent, and its transformation of states into governments).

⁶⁹⁵ Paul Stephan is the leading proponent of a public choice analysis of international institutions. See, e.g., Paul B. Stephan, Accountability and International Lawmaking: Rules, Rents and Legitimacy, 17 Nw. J. INT'L L. & Bus. 681 (1996-1997) [hereinafter Stephan, Accountability and International Lawmaking]; Paul B. Stephan, The Futility of Unification and Harmonization in International Commercial Law, 39 VA. J. INT'L L. 743 (1999). See also Jeffrey L. Dunoff & Joel P. Trachtman, The Law and Economics of Humanitarian Law Violations in Internal Conflict, 93 AM. J. INT'L L. 394, 396 (1999) ("Public choice can be used to analyze treaties, as well as the creation and interaction of international institutions.").

⁶⁹⁶ See, e.g., Dunoff & Trachtman, *supra* note 74, at 396; Andrew T. Guzman, Choice of Law: New Foundations, 90 GEO. L.J. 883, 903 (2002).

incorporation of intellectual property rights into the WTO, manifested in the move from WIPO to GATT to TRIPs, was nominally carried out by trade officials from the United States and the EC. But, as I explain in greater detail below, it was a strategy adopted at the urging of American and European intellectual property industries, who were dissatisfied with status quo approaches to intellectual property lawmaking and foresaw considerable advantages from shifting negotiations into the trade regime.⁶⁹⁷

5.6.2.1. Motivations for the Shift from WIPO to GATT

Two factors motivated the United States and the EC, in response to pressures from their respective intellectual property industries, to shift intellectual property lawmaking from WIPO to GATT. The first is related to dissatisfaction with treaty negotiations hosted by WIPO. The second focused on institutional features of the GATT that facilitated adoption of more stringent intellectual property protection standards that these states favored.

The United States' concerns with WIPO date to the 1970s, when developing countries became increasingly critical of the international patent system. These governments raised their concerns at a WIPO diplomatic conference, held between 1980 and 1984, where they demanded a revision of the patent rules of the Paris Convention⁶⁹⁸ to grant them preferential treatment. The United States strongly opposed any efforts to weaken the treaty and fought developing countries to a standstill. The diplomatic conference ended in deadlock in 1985 without adopting any treaty revisions.⁶⁹⁹

Although successful in fending off attempts to undermine the Paris Convention, the United States came under increasing pressure from its intellectual property industries to improve their

⁶⁹⁷ Laurence R. Heifer, *Regime Shifting: The TRIPs Agreement and New Dynamics of International Intellectual Property Lawmaking*, at 18-19.

⁶⁹⁸ Paris Convention for the Protection of Industrial Property, Mar. 20, 1883 (as revised at Stockholm, July 14, 1967), 21 U.S.T. 1583, 828 U.N.T.S. 305 [hereinafter Paris Convention].

⁶⁹⁹ For detailed discussions of the Paris Convention diplomatic conference, see SELL, POWER AND IDEAS, *supra* note 71, at 107-30.

competitiveness in foreign markets by combating widespread infringement⁷⁰⁰ and raising standards of protection.⁷⁰¹ The failed negotiations over patent protection led the United States to conclude that it could not achieve that goal within WIPO.⁷⁰² The government had, however, increased protection standards by linking intellectual property to trade in a series of bilateral consultations with developing countries in the 1980s. Buoyed by the success of that linkage strategy and at the urging of corporate intellectual property owners, the United States shifted to a multilateral approach. It pressed for the inclusion of intellectual property issues in the 1986 negotiating mandate for the Uruguay Round of GATT negotiations leading to the creation of the WTO.⁷⁰³ The EC later endorsed this approach and offered its own proposal for negotiations on trade-related aspects of intellectual property rights.⁷⁰⁴

⁷⁰⁰ See Edgardo Buscaglia & Jos&-Luis Guerrero-Cusumano, Quantitative Analysis of Counterfeiting Activities in Developing Countries in the Pre-GATT Period, 35 *JURIMETRICS* J. 221, 225- 31 (1995) (reporting results of empirical case study measuring the infringement of patented and copyrighted goods and services in developing countries).

⁷⁰¹ SELL, POWER AND IDEAS, supra note 71, at 130 (stating that after the failed Paris Convention diplomatic conference the "United States radically refined its interests in intellectual property protection under industry-based pressure to stay economically competitive"); Sell, Access to Medicines, supra note 8, at 483-91 (discussing influence of paper by economist Jacques Gorlin that advocated incorporation of intellectual property rules into the trade regime, a position later adopted by twelve American transnational corporations who formed the Intellectual Property Committee); see also Okediji, Cartography, supra note 8, at 67-99 (discussing coalitions formed by intellectual property industries and trade officials who negotiated TRIPs); CEAS CONSULTANTS, supra note 7, at 40 (noting that "the industry lobby groups essentially wrote the TRIPs Agreement, especially the US industry and a narrower group in the EU").

⁷⁰² See BRAITHWAITE & DRAHOS, supra note 54, at 566 (noting that negotiations in WIPO followed the one-state-one-vote rule and "so the US could never expect to get its way on intellectual property issues through a voting contest"); Ulrich Joos & Rainer Moufang, Report on the Second Ringberg-Symposium, in GATT OR WIPO?, supra note 71, at 3, 31 (describing history of the United States' successful efforts to fend off attempts to weaken the Convention, and concluding that "this experience apparently led the U.S. to the conclusion that an improvement of the [Paris Convention] could not be achieved in the present context of the North-South conflict"); Bal Gopal Das, Intellectual Property Dispute, GATT, WIPO: Of Playing by the Game Rules and Rules of the Game, 35 *IDEA* 149, 158 n.45 (1994) ("Dissatisfaction with WIPO's ineffectiveness as a forum to end the impasse which ensued after the failed Paris Revision Conference, aggravated by the continued intransigence of the Developing countries, motivated the movement away from WIPO to GATT as the negotiating forum.").

⁷⁰³ See GATT Ministerial Declaration on the Uruguay Round of Multilateral Trade Negotiations, Sept. 20, 1986, 25 *I.L.M.* 1623 (1986); United States Proposal for Negotiations on Trade-Related Aspects of Intellectual Property Rights, GATT Doc. MTN.GNG/NG1 I/W/14 (Oct. 20, 1987), reprinted in GATT OR WIPO?, supra note 71, at 179-86; see also SELL, POWER AND IDEAS, supra note 71, at 132-38 (discussing United States' linking of trade and intellectual property protection in bilateral negotiations and the evolution of a multilateral linkage strategy within GATT supported by American intellectual property industries).

⁷⁰⁴ Guidelines Proposed by the European Community for the Negotiations on Trade-Related Aspects of Intellectual Property Rights, GATT Doc. MTN.GNG/NG1 I/W/16 (Nov. 20, 1987), reprinted in GATT OR WIPO?, supra note 71, at 203-10.

Three institutional features of the GATT/WTO made it a superior venue for the United States and the EC to negotiate intellectual property protection⁷⁰⁵ standards. First, these states enjoy significant negotiating leverage in the GATT/WTO. As the region and the nation with the largest domestic markets, the EC and the United States have the most power to shape trade bargains according to their interests by promising to open (or threatening to close) their markets to foreign goods.⁷⁰⁶ In addition, GATT/WTO negotiations operate on the principle of consensus, which the United States and the EC have used strategically to force disclosure of weaker states' preferences, block the advancement of proposals those states favored, and advance their own initiatives.⁷⁰⁷ Consensus also masks the real power dynamics at work in the GATT/WTO, legitimizing final treaty bargains as the product of unanimous consent among equal sovereigns.⁷⁰⁸

Second, the ability to link intellectual property protection to other issue areas within the GATT/WTO expanded the zone of agreement among states with widely divergent interests. The instrumental explanation for why states whose laws contained only weak protections for foreign rights holders would agree to stronger intellectual property standards is precisely the allure of this global "package deal."⁷⁰⁹ Developing nations agreed to include intellectual property within the newly created WTO in exchange for securing access to the markets of

⁷⁰⁵ See, e.g., SELL, POWER AND IDEAS, supra note 71, at 132 (identifying advantages for the United States of negotiations in GATT); Joos & Moufang, supra note 80, at 25 (discussing advantages of negotiating intellectual property issues in GATT).

⁷⁰⁶ See Steinberg, supra note 69, at 341 (noting that "the EC and the United States have dominated bargaining and outcomes at the GATT/WTO from its early years"); Richard H. Steinberg, Trade-Environment Negotiations in the EU, NAFTA, and WTO: Regional Trajectories of Rule Development, 91 AM. J. INT'L L. 231, 232 (1997) ("richer countries tend to be more powerful in trade negotiations than poorer countries since, in the international trade context, 'power' may be seen as a function of relative market size").

⁷⁰⁷ BRAITHWAITE & DRAHOS, supra note 54, at 570 ("One reason why the US has been prepared to shift its agenda into WTO is that consensus offers it a tool of domination."); Steinberg, supra note 69, at 350-67 (arguing that a consensus to launch new trade rounds of trade talks is achieved by including all states' initiatives in negotiating mandates, but that rounds are closed through power based bargaining in which the proposals of the United States and the EC are ultimately adopted).

⁷⁰⁸ See Steinberg, supra note 69, at 365 (noting that "the GATT/WTO decision-making rules have allowed adherence to both the instrumental reality of asymmetrical power and the logic of appropriateness of sovereign equality").

⁷⁰⁹ Petersmann, supra note 3, at 442.

industrialized states for their agricultural products, textiles, and other goods. According to this explanation, moving negotiations to the WTO made it possible for the United States and the EC to achieve broader and deeper agreements on intellectual property protection than would have been possible had negotiations been confined to WIPO.⁷¹⁰

Third, the GATT's dispute settlement system was perceived to be far more effective than the mechanisms for reviewing states' compliance with WIPO-based conventions-mechanisms that were cumbersome in theory and never utilized in practice.⁷¹¹ Although the GATT system was far from perfect-losing parties could, for example, block the adoption of unfavorable panel reports-states were not hesitant to invoke the dispute settlement process. And the very existence of an authoritative decision endorsing one side's arguments created pressure on the losing state to modify its laws. Moreover, one of the major achievements of the Uruguay Round was a restructuring of dispute settlement rules to make decisions binding on all states and to authorize the use of retaliatory sanctions by prevailing states if their opponents did not alter WTO-incompatible national laws or provide compensation.⁷¹²

These three features of the trade regime explain why the GATT/WTO would be attractive to industrialized countries as a forum for intellectual property lawmaking. But they do not explain why the United States-so often suspicious of multilateralism-would cede authority to an intergovernmental organization with significant independent enforcement powers. The answer

⁷¹⁰ See Leebron, *supra* note 33, at 12-13.

⁷¹¹ Frank Emmert, *Intellectual Property in the Uruguay Round-Negotiating Strategies of the Western Industrialized Countries*, 11 MICH. J. INT'L L. 1317, 1343 (1989) (describing dispute settlement provisions in Berne and Paris Conventions as "effectively worthless"); see also Monique L. Cordray, *GA TT v. WIPO*, 76 J. PAT. & TRADEMARK OFF. SOC'Y 121, 131-32 (1994) (critiquing dispute settlement provisions of WIPO-based intellectual property conventions).

⁷¹² See Laurence R. Heifer, *Adjudicating Copyright Claims Under the TRIPs Agreement: The Case for a European Human Rights Analogy*, 39 HARV. INT'L L.J. 357, 383-85 (1998) (collecting authorities discussing the importance to the WTO dispute settlement system of the prevailing state's ability to impose trade sanctions on the losing state). But see Frischmann, *supra* note 50, at 778 (emphasizing that the WTO Dispute Settlement Body may impose only "prospective trade measures intended to offset only the prospective harm imposed on the injured party" and that "[n]either compensation for past harm nor punitive sanctions are permitted") (emphasis omitted); Ruth Okediji, *Rules of Power in an Age of Law: Process Opportunism and TRIPs Dispute Settlement*, in *HANDBOOK OF INTERNATIONAL TRADE LAW* (Kwan Choi & James Hartigan eds.) (forthcoming 2004) (asserting that WTO dispute settlement system is structured as a signaling game that encourages the parties to "opt out of the formal process and settle the dispute informally").

to this question is that such adherence was in the United States' interests. Even if developing countries were prepared to acquiesce in efforts to include intellectual property rights and other new regulatory issues within a more powerful trade regime, they were unwilling to do so unless the United States abandoned or markedly reduced the policy of imposing unilateral trade sanctions that it had adopted in the 1980s.⁷¹³ From this perspective, the United States' decision to bind itself to hard-edged multilateralism was a necessary part of the bargain required to close the Uruguay Round with a package of treaty commitments highly favorable to U.S. interests.⁷¹⁴ By the spring of 1994, the United States and the EC had achieved their objective of incorporating internationally enforceable intellectual property norms into the world trading system. The newly created WTO included a detailed and comprehensive Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) to which all WTO members were required to adhere. The next section describes the consequences for developing countries of this shift in intellectual property lawmaking from WIPO to TRIPs.⁷¹⁵

5.6.2.2. The Consequences of TRIPs for Developing Countries

As has been widely discussed by commentators, TRIPs revolutionized international intellectual property law. It enhanced the substantive rules found in preexisting agreements negotiated within WIPO and included them within a single treaty that imposed a comprehensive set of intellectual property protection standards. The obligation to provide such protection extended

⁷¹³ See G. Richard Shell, *Trade Legalism and International Relations Theory: An Analysis of the World Trade Organization*, 44 DUKE L.J. 829, 843-44 (1995) ("The statutory vehicles for unilateral action were section 301, 'Super 301,' and 'Special 301,' all of which are parts of the Trade Act of 1974, as amended.") (footnotes omitted); see also Jagdish Bhagwati, *Aggressive Unilateralism: An Overview*, in *AGGRESSIVE UNILATERALISM: AMERICA'S 301 TRADE POLICY AND THE WORLD TRADING SYSTEM 1* (Jagdish Bhagwati & Hugh T. Patrick eds., 1990) (discussing private interest groups pressing for imposition of unilateral trade sanctions by the United States).

⁷¹⁴ See Shell, *supra* note 91, at 844-45 (explaining how the "use of section 301 as a unilateral trade weapon against foreign governments and industries outside the legal framework of the GATT upset many U.S. trading partners and became a major issue in the Uruguay Round") (footnotes omitted).

⁷¹⁵ Laurence R. Heifer, *Regime Shifting: The TRIPs Agreement and New Dynamics of International Intellectual Property Lawmaking*, at 20- 23.

to the entire WTO membership, including many developing states whose previous commitment to intellectual property protection was nonexistent or at best equivocal.⁷¹⁶

Unlike prior intellectual property agreements, compliance with TRIPs could not be shirked or neglected through partial implementation or slow and cumbersome dispute settlement procedures. For foreign intellectual property owners, TRIPs promised meaningful enforcement rights within national legal systems,⁷¹⁷ a promise that required states to adopt extensive changes to domestic judicial and administrative systems. For states dissatisfied by the weak intellectual property laws of their fellow WTO members, TRIPs promised high levels of treaty adherence through two new institutions: the Council for TRIPs (TRIPs Council), which conducts transparent reviews of national implementation measures and provides members with a forum for consultations on compliance issues; and a Dispute Settlement Body with the power to sanction treaty violations.⁷¹⁸ Faced with the prospect of robust review and enforcement of intellectual property rules, WTO members not surprisingly devoted significant time and resources to transposing TRIPs commitments into their national legal systems.⁷¹⁹

TRIPs's drafters recognized that overhauling national intellectual property laws was likely to be difficult. Thus they gave the least developed and developing states and countries with economies in transition additional time to comply with the treaty.⁷²⁰ But with the end of the five-year transition period in 2000 looming large, and implementation proving increasingly

⁷¹⁶ For a review of the changes TRIPs wrought, see J.H. Reichman, *Universal Minimum Standards of Intellectual Property Protection Under the TRIPs Component of the WTO Agreement*, 29 INT'L LAW 345 (1995).

⁷¹⁷ TRIPs, *supra* note 1, arts. 41-46, 33 I.L.M. at 99-101 (establishing procedures for domestic enforcement of intellectual property rights).

⁷¹⁸ *Id.* art. 64, 33 I.L.M. at 107 (linking TRIPs to WTO's Dispute Settlement Understanding (DSU)), art. 68, 33 I.L.M. at 108 (creating Council for TRIPs). But see Okediji, *supra* note 90 (arguing that the DSU is structured to encourage settlement rather than the imposition of sanctions).

⁷¹⁹ See Communication from Australia-Review of the Implementation of the Agreement Under Article 71.1, at 2, WTO Doc. IP/C/W/210 (Oct. 3, 2000) ("[M]any WTO Members have undertaken extensive legislative and administrative action to give effect to their obligations under the Agreement. Implementation has been a complex and diverse process in many jurisdictions ...").

⁷²⁰ TRIPs, *supra* note 1, arts. 65-66, 33 I.L.M. at 107-08 (specifying transition periods for different categories of WTO members).

slow, costly, and a source of domestic opposition, TRIPs had begun to look increasingly problematic for many developing states.⁷²¹ The United States and the EC added to this perception by pressuring developing countries to sign "TRIPs-plus" bilateral agreements. These agreements contained intellectual property protection standards that exceeded those found in TRIPs or required developing countries to implement their treaty obligations before the end of TRIPs transition periods. For all of these reasons, the TRIPs implementation process did not generate the consensus in favor of higher intellectual property protection standards that some observers had predicted.⁷²² Instead, it fostered a growing belief, shared by many developing countries, NGOs, and commentators, that TRIPs was a coerced agreement that should be resisted rather than embraced.⁷²³

5.6.2.3. The Importance of WIPO

The negotiation of the TRIPs Agreement marked a watershed moment for the expansion and enforcement of intellectual property protection standards. However, the WTO did not supplant

⁷²¹ See Reichman, *supra* note 93, at 450 ("[T]he bulk of the developing countries appear behind schedule in implementing the TRIPs Agreement. Many will not be ready by January 1, 2000 and they are in an increasingly angry and resentful frame of mind.") (footnote omitted); *id.* at 451 (noting the "growing perception that the benefits of higher intellectual property protection may be very unevenly distributed" although "all the developing countries must bear" significant transaction costs).

⁷²² See J.H. Reichman & David Lange, *Bargaining Around the TRIPs Agreement: The Case for Ongoing Public-Private Initiatives to Facilitate Worldwide Intellectual Property Transactions*, 9 *DUKE J. COMP. & INT'L L.* 11, 13 (1998) (questioning the "widespread belief that, once the transitional deadlines begin to expire, the developing countries will succumb to an evolving high-protectionist agenda" for intellectual property lawmaking).

⁷²³ See, e.g., Declaration of the Group of 77 and China on the Fourth WTO Ministerial Conference at Doha, Qatar (Oct. 22, 2001), <http://www.g77.org/Docs/Doha.htm> (noting "with great concern that the benefits of the existing multilateral trading system continue to elude developing countries" and characterizing Uruguay Round Agreements, including TRIPs, as containing "inherent asymmetries and imbalances"); Inge Govaere & Paul Demaret, *The TRIPs Agreement: A Response to Global Regulatory Competition or an Exercise in Global Regulatory Coercion?*, in *REGULATORY COMPETITION AND ECONOMIC INTEGRATION: COMPARATIVE PERSPECTIVES* 364, 369 (Daniel C. Esty & Damien Geradin eds., 2001) (noting that industrialized countries "did not hesitate to coerce the developing countries into accepting their terms" regarding the need for intellectual property protection); Lohr, *supra* note 11 (quoting statement by Professor Keith Maskus that "[TRIPs] was a matter of powerful companies with intellectual property concerns essentially dictating trade policy"); South Centre, *supra* note 7 (articulating demand by 130-member consortium of NGOs for "a fundamental rethinking of TRIPs" in the WTO); Martin Khor & Chakravarthi Raghavan, *Third World Network, WTO Secretariat Explains Its TRIPs 'Negotiating History,'* at <http://www.twinside.org.sg/title/explains.htm> (June 11, 2001) ("The 'history' of the TRIPs negotiations ... shows that it is a case of an agreement negotiated and concluded under coercion, and hence illegitimate.").

WIPO as the principal intergovernmental organization devoted to intellectual property lawmaking. TRIPs itself implicitly acknowledges the continuing importance of WIPO as a forum for negotiating treaties, particularly those embodying "higher levels of protection of intellectual property rights."⁷²⁴ In addition, a 1995 agreement between WIPO and the WTO requires each organization to provide technical and legal assistance to developing countries, delegates to WIPO certain administrative functions in TRIPs and enhances information sharing about national intellectual property laws.⁷²⁵

Seen from this perspective, the shift from WIPO to GATT to TRIPs was not intended to eclipse WIPO. Rather, it established a new venue for trade related intellectual property lawmaking, in effect creating a bimodal intellectual property regime within which the two organizations shared authority according to their respective areas of expertise. Whereas the WTO emphasized implementation, enforcement, and dispute settlement, WIPO focused on generating new forms of intellectual property protection, administering existing intellectual property agreements, and providing technical assistance to developing countries.⁷²⁶

⁷²⁴ See TRIPs, *supra* note 1, art. 71(2), 33 I.L.M. at 110 (discussing streamlined procedures for TRIPs amendments "merely serving the purpose of adjusting to higher levels of protection of intellectual property rights achieved, and in force, in other multilateral agreements and accepted under those agreements by all Members of the WTO").

⁷²⁵ Agreement Between the World Intellectual Property Organization and the World Trade Organization, Dec. 22, 1995, art. 3, 35 I.L.M. 754 (implementing Article 6ter of the Paris Convention for purposes of TRIPs); *id.* art. 4, 35 I.L.M. at 758-59 (legal-technical assistance to and technical cooperation with developing countries); *id.* arts. 2(3) & 2(4), 35 I.L.M. at 756-57 (information sharing).

⁷²⁶ Commentators have discussed how intellectual property lawmaking competencies might be shared between the WTO and WIPO. Frederick Abbott, for example, has proposed a division of lawmaking along functional lines. He argues that "the primary role of the WTO should be to maintain the competitive balance in trade among WTO Members as foreseen in the TRIPs Agreement." WIPO, by contrast, should aim to "promote technological development, particularly in developing countries, to provide a forum for the negotiation of new multilateral IPRs rules (in coordination with the TRIPs Council), and to administer multilateral IPR conventions as at present." Abbott, *Future of TRIPs*, *supra* note 43, at 678; see also Frederick M. Abbott, *Distributed Governance at the WTO-WIPO: An Evolving Model for Open-Architecture Integrated Governance*, 3 J. INT'L ECON. L. 63, 70 (2000) (asserting that WIPO and WTO have "entered into a symbiotic relationship that takes advantage of the strengths of each of them"). Michael Ryan emphasizes similar concerns, distinguishing between the "function specific" lawmaking in WIPO and the "linkage-bargain" lawmaking in the GATT and WTO. Ryan, *supra* note 43, at 541. This division does not, of course, preclude the WTO from conducting its own negotiations on intellectual property issues, particularly in cases where agreement can be facilitated by "cross-concessions in other fields that the WIPO forum cannot provide." Abbott, *Future of TRIPs*, *supra* note 43, at 679.

The emergence of this two-track system has facilitated the growth of intellectual property protection standards. In the few short years since TRIPs was adopted, WIPO and its member states have been exceptionally active in negotiating new treaties⁷²⁷ and in undertaking an ambitious program of soft lawmaking.⁷²⁸ These activities have not unambiguously favored either industrialized states or developing countries. Although some initiatives in WIPO do appear to advance the interests of industrialized states,⁷²⁹ developing countries retain considerable influence within the organization to shape treaty negotiations and influence soft law initiatives.⁷³⁰ Equally as important, WIPO's increased output has started to create a

⁷²⁷ In December 1996, for example, WIPO hosted a major diplomatic conference that adopted two new treaties relating to the Internet. See WIPO Copyright Treaty, Dec. 20, 1996, 36 I.L.M. 65; WIPO Performances and Phonograms Treaty, Dec. 20, 1996, 36 I.L.M. 76. WIPO's efforts in the area of patents, trademarks, databases, and audiovisual works have been equally impressive, even if members have not always reached agreement on new treaty texts. See Graeme B. Dinwoodie, *The Architecture of the International Intellectual Property System*, 77 CHI.-KENT. L. REV. 993, 1005 (2002) (noting that "the sudden emergence of the WTO as part of the international intellectual property law-making process seemed to energize WIPO, resulting in the conclusion of several new treaties in copyright, patent and trademark law") (footnotes omitted); WIPO Committee Takes Up Proposals on Treaty for Protection of Broadcasters' Rights, 4 Computer Tech. L. Rep. (BNA), No. 13, at 278 (July 4, 2003) (discussing proposals for treaties to protect broadcasters' rights and databases being discussed by WIPO Standing Committee on Copyright and Related Rights).

⁷²⁸ See Assemblies of the Member States of WIPO, Joint Resolution Concerning Provisions on the Protection of Well-Known Marks, Thirty-Fourth Series of Meetings, Sept. 1999, at 3, para. 9, WIPO Doc. No. A/34/13 (Aug. 4, 1999) ("[T]his creates no legal obligation for any country, but following such a recommendation would produce practical benefits."), <http://www.wipo.int/eng/document/govbody/wogbab/pdf/a34113.pdf>; see also Edward Kwakwa, *Some Comments on Rulemaking at the World Intellectual Property Organization*, 12 DUKE J. COMP. & INT'L L. 179, 192 (2002) (discussing resolutions and recommendations that comprise "the new 'soft law initiative' at WIPO").

⁷²⁹ See J.H. Reichman, *Enforcing the Enforcement Procedures of the TRIPS Agreement*, 37 VA. J. INT'L L. 335, 354 (1997) ("Prior to the Uruguay Round, WIPO lost credit with the industrialized countries because of its scrupulous concern for the interests of developing countries... Since the Uruguay Round, WIPO is seen as the cowed and altogether accommodating servant of dominant special interests in the United States and the European Union.."); GRAIN, *WIPO Moves Toward "World" Patent System*, <http://www.grain.org/publications/wipo-patent-2002-en.cfm> (July 2002) [hereinafter GRAIN, *World Patent System*] (stating that the negotiation of the Substantive Patent Law Treaty "is largely a debate between the US and Europe").

⁷³⁰ See Pamela Samuelson, *The US. Digital Agenda at WIPO*, 37 VA. J. INT'L L. 369, 388-90 & 388 n.108 (1997) (discussing the influence of African bloc of states at the diplomatic conference that adopted the WIPO Copyright Treaty); see also Marney L. Cheek, *The Limits of Informal Regulatory Cooperation in International Affairs: A Review of the Global Intellectual Property Regime*, 33 GEO. WASH. INT'L L. REV. 277, 314-15 (2001) (stating that WIPO is "sponsoring regional caucus meetings to foster consensus-building among developing countries" to "give developing countries more leverage as the industrialized countries continue to change WIPO's traditional negotiating structure"). For a discussion of developing countries' influence in WIPO relating to genetic resources and traditional knowledge, see *infra* Sections V.C & VI.C.

normative feedback loop in the WTO, influencing both TRIPs dispute settlement⁷³¹ and member states' proposals to amend or supplement TRIPs.⁷³² WIPO thus continues to function as a critically important venue for intellectual property lawmaking by all of its member states in a post-TRIPs environment.⁷³³

5.6.3. TRIPs and the Dynamics of Intellectual Property Lawmaking

TRIPs Agreement has been studied to be resilient to changes in domestic law. It has been argued that such resilience is necessary because information production is a dynamic enterprise; that additions to the domain of knowledge change the intellectual landscape and alter creative opportunities and challenges. As new industries emerge and mature, nations must have the flexibility to modify their intellectual property rules to readjust the balance between public and private rights.⁷³⁴ In effect, Article 1(1) of the TRIPs Agreement plays an important role and is hard to be understood. It recognizes member autonomy and gives member states latitude to comply with their international obligations in ways best suited to their political, institutional, economic, and social conditions.⁷³⁵ In the course of that study, approaches to TRIPs dispute resolution that could cabin the choices of legislation available to deal with

⁷³¹ See WTO Dispute Panel Report on United States-Section 110(5) of the U.S. Copyright Act, para. 6.70, WTO Doe. WT/DS160/R (June 15, 2000) [hereinafter United States-Section 110(5) Dispute Panel Report] (stating that when interpreting the provisions of the TRIPs Agreement and the Berne Convention, it is appropriate to "seek contextual guidance" in the WIPO Copyright Treaty so as to "develop[] interpretations that avoid conflicts" within the "overall framework for multilateral copyright protection"); Neil W. Netanel, *The Next Round: The Impact of the WIPO Copyright Treaty on TRIPs Dispute Settlement*, 37 VA. J. INT'L L. 441, 488-96 (1997) (predicting the influence of WIPO Copyright Treaty and its Agreed Statement on the adjudication of digital copyright issues in TRIPs dispute settlement cases).

⁷³² For a discussion of such proposals, see *infra* Sections V.A & B.

⁷³³ Laurence R. Heifer, *Regime Shifting: The TRIPs Agreement and New Dynamics of International Intellectual Property Lawmaking*, available at:

<https://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=1225&context=yjil>

⁷³⁴ Graeme B. Dinwoodie & Rochelle Cooper Dreyfuss, *International Intellectual Property Law and the Public Domain of Science*, 7(2) J. INT'L ECON. L. 431 (2004); Graeme B. Dinwoodie & Rochelle Cooper Dreyfuss, *WTO Dispute Resolution and The Preservation of the Public Domain of Science Under International Law*, in *INTERNATIONAL PUBLIC GOODS AND TRANSFER OF TECHNOLOGY UNDER A GLOBALIZED INTELLECTUAL PROPERTY REGIME* (Keith E. Maskus & J. H. Reichman eds., Cambridge U. Press) (forthcoming 2005).

⁷³⁵ Agreement on Trade-Related Aspects of Intellectual Property Rights, art. 1(1), Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization [hereinafter WTO Agreement], Annex IC, 33 I.L.M. 1197, 1198 (1994) [hereinafter TRIPs Agreement].

emergent substantive problems, and which could distort the legal environment in which creative enterprises are conducted, were examined. It was noted that the literalist and formalist views that TRIPS jurists take to the text of the Agreement, and it was argued that these approaches tend to denigrate what was termed neo-federalist values, values that were seen as internal to the Agreement and important to-indeed implicit in-the structure of the international intellectual property system. In this piece, we continue our consideration of the resilience of the Agreement and its commitment to neo-federalism. Here, however, from a focus on outcomes to the dynamics of the legislative process, examining the extent to which TRIPS dispute resolution adequately accommodates the operation of each member's political economy as it relates to intellectual property lawmaking, were considered. Frequently, as intellectual property lawmaking becomes fiercely contested, reforms can only occur when a balanced package of rules can be reached. Thus, copyright term extension legislation was packaged with a reduction in the scope of protection for nondramatic musical works (the latter later found by a WTO panel to violate TRIPS). The same dynamic was at play with respect to reforms involving patent protection for pharmaceuticals, where term extension was coupled with rights to experiment. It was asked whether such deals (or perhaps which of such deals, depending upon the connection between the reforms) should be taken into account by WTO panels. It was argued that when legislation represents offsetting benefits and detriments, respect for domestic political dynamics requires panels to consider constituent pieces of such legislation in the context of the package in which they were enacted. It was acknowledged that both GATT (United States-Section 337) and WTO (United States-Section 211)jurisprudence have rejected the argument of substantive equality (or offsetting equality) in adjudicating claims for violations of national treatment and that, instead, there has been an insistence on formal

equality.⁷³⁶ Thus, a member state has not been able to successfully argue that, although it applies different rules to nationals of different countries, equality of treatment in fact results when the applicable rules are viewed as a whole that is, when the ways in which particular rules offset one another are taken into account.

The TRIPS Agreement's commitment was tested to what is called neo-federalist values, which is to say, the ability of states to structure their intellectual property laws to deal with changing internal conditions, including changes within the institutional structure of their creative industries, changes in the types of works the country typically produced, and changes in the nature of science or the technological environment. In those pieces, it was looked at how discrete legislative provisions were assessed by WTO adjudicators and expressed concern that the analytic approaches they were adopting were not sufficiently hospitable to national priorities. In fact, however, the autonomy interests of states, particularly democratic states, may be even more tightly constrained. Intellectual property laws are not always enacted as discrete mandates; rather, they tend to balance the needs of user groups against the interests of rights holders. Disaggregating such measures and testing individual proposals against TRIPS principles ignores this political reality.

To be sure, in a democracy, the packaging is an inherent part of the legislative process generally: benefits are traded off until a measure is produced that commands a majority.⁷³⁷ But in intellectual property legislation, this dynamic tends to play out in ways that pit different stakeholders in the creative industries against one another, prompting tradeoffs internal to the intellectual property system itself. We can only speculate as to why this is so. Perhaps at one

⁷³⁶ See GATT Panel Report on United States-Section 337 of the Tariff Act of 1930, L/6439-36S/345 (Nov. 7, 1989) [hereinafter Panel Report on United States-Section 337]; Appellate Body Report on United States-Section 211 Omnibus Appropriations Act of 1998, WT/DS176/AB/R (Jan. 2, 2002) [hereinafter Appellate Body Report on United States-Section 221].

⁷³⁷ Indeed, one could argue that this was the core problem with the Line Item Veto Act, 2 U.S.C. § 691, which allowed the President to "cancel in whole" certain provisions that had been signed into law: it gave the President power to unravel legislation in order "to reward one group and punish another[.]" *Clinton v. City of New York*, 524 U.S. 417, 434 & 451 (1998) (Kennedy, J., concurring).

time, the topics were thought too technical and without substantial political interest; perhaps now that their significance has been realized, it is because their economic salience has rendered them acutely controversial. However, it is noted that the centrality of tradeoffs to the intellectual property lawmaking process. One example is the comprehensive revision of the Copyright Act in 1976, which is well recognized as the product of direct inter-industry negotiation. It was essentially a contract among stakeholders in the copyright industries, embodying tradeoffs and compromises between interested groups, and then enacted into law by Congress.⁷³⁸ Like all contracts, individual provisions do not reflect the benefits that any one party extracted; instead, the impact of the Act on particular intellectual property holders depends on how the Act applies as a whole.⁷³⁹

⁷³⁸ See *Community for Creative Non-Violence v. Reid*, 490 U.S. 730, 743 (1989) (noting that the 1976 Copyright Act, "which almost completely revised existing copyright law, was the product of two decades of negotiation by representatives of creators and copyright-using industries, supervised by the Copyright Office and, to a lesser extent, by Congress"); Jessica D. Litman, *Copyright, Compromise, and Legislative History*, 72 *CORNELL L. REv.* 857, 860-861 (1986-1987) ("[M]ost of the statutory language was not drafted by members of Congress or their staffs at all. Instead, the language evolved through a process of negotiation among authors, publishers, and other parties with economic interests in the property rights the statute defines.").

⁷³⁹ Graeme B. Dinwoodie and Rochelle C. Dreyfuss, *TRIPS and the Dynamics of Intellectual Property Lawmaking*, 36 *Case W. Res. J. Int'l L.* 95 (2004) Available at: <https://scholarlycommons.law.case.edu/jil/vol36/iss1/5>

CHAPTER SIX

Computer Technologies

6.1. Types of Computer Technology

"A computer is an electronic device, operating under the control of instructions stored in its own memory that can accept data (input), process the data according to specified rules, produce information (output), and store the information for future use."⁷⁴⁰

"A computer is a programmable machine designed to perform arithmetic and logical operations automatically and sequentially on the input given by the user and gives the desired output after processing. Computer components are divided into two major categories, namely hardware and software. Hardware is the machine itself and its connected devices such as a monitor, keyboard, mouse, etc. Software is the set of programs that make use of hardware for performing various functions."⁷⁴¹

A number of diverse types of technologies are embraced by computer technology, each with its own inherent characteristics. Computer hardware which is the computer machine, and computer software that is the programs that operate the machine, are the most basic types of computer technology.⁷⁴² A hybrid system called "firmware" practically gets the distinction between hardware and software blurred. "Firmware is the hardware that has software embedded in it."⁷⁴³ Considering each type of computer technology, separately, is beneficial, and it must be borne in mind that type involves different problems in licensing and protecting intellectual property rights. "Moreover, "software," "hardware," and "firmware" can be further subdivided into subcategories possessing their own unique attributes in terms of licensing and

⁷⁴⁰ Vermaat, Misty E. Microsoft Office 2013 Introductory. Cengage Learning, p.IT3. 2014

⁷⁴¹ Available at <http://download.nos.org/coa631/ch1.pdf>. (12/03/2019)

⁷⁴² Lotus Dev. Corp. v. Paperback Software Int'l, 740 F. Supp. 37,15 U.S.P.Q.2d 1577, 1579 (D. Mass. 1990) ("A personal computer system consists of hardware and software.").

⁷⁴³ Id.

protection."⁷⁴⁴ Following, the different sorts of "hardware," "software," and "firmware" will be discussed.

6.1.1. Hardware

"These are physical parts, such as the system unit and peripheral devices. Hardware is the physical parts of the computer like the monitor, keyboard, mouse, speakers, and of course, the computer itself called the system unit. Hardware is also the parts inside the system unit that you can't see unless you open. Computer hardware is the physical part of a computer, including its digital circuitry, as distinguished from the computer software that executes within the hardware. The hardware of a computer is infrequently changed."⁷⁴⁵ The term "hardware", in computer technology, denotes the tangible parts of the machine and all of its component parts which include a central processing unit (CPU) that performs the computations. The heart of the computer is the CPU. "Hardware includes the input devices such as a disc drive. It also includes output devices such as printers. Finally, it includes memory storage devices such as magnetic discs."⁷⁴⁶ In a brief and clearly expressed manner, the stated hardware is "[the] tangible machinery of the computer."⁷⁴⁷

Depending on the power, i.e., the amount of computing ability the computers possess, they often are subdivided into mainframes, minicomputers, and microcomputers. As more powerful CPU's are being developed, the myriad ranges of computer power for each category have been

⁷⁴⁴ Brooks, contracting for Computer Software, Protecting, Acquiring and Marketing Computer Software for the Mass Market at S-9 (D. Brooks ed. 1982).

⁷⁴⁵ F. I. MUGIVANE. INTRODUCTION TO COMPUTER. University of Nairobi; College of Agriculture and Veterinary Sciences: Department of Agricultural Economics. In collaboration with: CENTRE FOR OPEN AND DISTANCE LEARNING UNIVERSITY OF NAIROBI, (2014).

⁷⁴⁶ Newman, Jr., Important Computer Terms and Concepts at A2, AIPLA, The Law of Computer-Related Technology [hereinafter cited as Newman]; Newman, Jr., A Tutorial of Important Computer and Communication Terms and Concepts from the Barrier to the State-of-the-Art, The Law of Computer Related Technology at A.2 (AIPLA 1992) [hereinafter cited as Newman 11].

⁷⁴⁷ United States v. Seidlitz. 589 F.2d 152 (4th Or. 1978), cert. denied, 441 U.S. 922 (1979). For a brief description of how computers operate see W. Bennett and C Evert, Jr., What Every Engineer Should Know About Microcomputers (1980).

shifting. That is to say, the power of today's microcomputers has been increased to the level characteristic of minicomputers of five years ago. It is, thus, more suitable to define different categories of computers by their intended use and the type of software they use rather than computer power ranges. The mainframes are used by research institutions and major corporations. They generally have custom designed software suitable for the particular user. Medium-size businesses use minicomputers. These computers employ customized and also custom designed hardware. The microcomputers, usually with prepackaged software, are generally exerted by consumers, professionals, and small businesses.

6.1.1.2. Input Devices

"Parts of the computer that allow information or data to be given to the computer like a keyboard or a mouse."⁷⁴⁸ Reading characters and transform them into electrical pulses and send them to the CPU is the function of input hardware in a computer system. A disc drive is the most popular form of an input device. Sending the corresponding electrical signals to the CPU of the computer via the magnetic characters on a diskette is the disc drive results. Other input devices read magnetic tapes, paper tapes with holes punched in paper cards. Their basic function is to transform instructions and data into electrical pulses and send them to the CPU, although the design and operation of these input hardware devices varies one from another.⁷⁴⁹

6.1.1.3. Central Processing Unit (CPU)

"The CPU (central processing unit) is the heart of every embedded system and every personal computer. It comprises the ALU (arithmetic logic unit), responsible for the number crunching, and the CU (control unit), responsible for instruction sequencing and branching. Modern

⁷⁴⁸ Id. 6.

⁷⁴⁹ Newman, *supra* note 4 at A2>A3.

microprocessors and microcontrollers provide on a single chip the CPU and a varying degree of additional components, such as counters, timing coprocessors, watchdogs, SRAM (static RAM), and Flash-ROM (electrically erasable ROM). Hardware can be described on several different levels, from low-level transistor- level to high-level hardware description languages (HDLs). The so called register-transfer level is somewhat in-between, describing CPU components and their interaction on a relatively high level. We will use this level in this chapter to introduce gradually more complex components, which we will then use to construct a complete CPU. With the simulation system Retro,^{750,751} we will be able to actually program, run, and test our CPUs."

The required computations are performed by the central processing unit of the computer. The instructions are also stored and an output in the form of electrical pulses is provided by the CPU. The CPU unit has been described by various courts as follows:

"The CPU is the part of the computer where 'most of the logical junctions and calculations are performed.'"⁷⁵²

"The CPU is an 'integrated circuit that executes programs.'"⁷⁵³

"The hardware includes the central processing unit ('CPU') which contains the electronic circuits that control the computer and perform the arithmetic and logical functions."⁷⁵⁴

6.1.1.4. Output Devices

⁷⁵⁰ CHANSAVAT, B., BRÄUNL, T. Retro User Manual, Internal Report UWA/CIIPS, Mobile Robot Lab, 1999, pp. (15), web: <http://robotics.ee.uwa.edu.au/retro/ftp/doc/UserManual.PDF>

⁷⁵¹ BRÄUNL, T. Register-Transfer Level Simulation, Proceedings of the Eighth International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems, MASCOTS 2000, San Francisco CA, Aug./Sep. 2000, pp. 392–396 (5)

⁷⁵² Telex Corp. v. IBM Corp., 367 F. Supp. 258,179 U.S.P.Q. 777 (N.D. Okla. 1973), off'd in part and rev'd in part, 510 F.2d 894.184 U.S.P.Q. 521 (10th Or.), cert dismissed, 423 U.S. 802 (1975).

⁷⁵³ Apple Computer V. Franklin Corp..714F.2d 1240,219U.S.P.Q. 113(3dCir. 1983), cert dismissed, 464 U.S. 1033 (1984).

⁷⁵⁴ Lotus Dev. Corp. v. Paperback Software Inti, 740 F. Supp. 37,15 U.S.P.Q.2d 1577,1579 (D. Mass. 1990).

The electrical pulses generated by the CPU are received by the output devices of a computer system and converted into forms readable by human or into storable signals. Printers, TV monitors, and voice synthesizers are the most common output devices.⁷⁵⁵

6.1.1.5. Secondary Storage Devices

"Secondary storage devices are storage devices that operate alongside the computer's primary storage, RAM, and cache memory. Secondary storage is for any amount of data, from a few megabytes to petabytes. These devices store almost all types of programs and applications. This can consist of items like the operating system, device drivers, applications, and user data. For example, internal secondary storage devices include the hard disk drive, the tape disk drive, and compact disk drive."⁷⁵⁶

The secondary storage devices are included in most computer systems that give permission to storage or data and instructions in a medium horn which it can be easily and rapidly retrieved.⁷⁵⁷ As it has been mentioned, in a hard disk, which is an example of a secondary storage device, the data can be stored and from which it can be quickly retrieved into the primary memory, usually random access memory (RAM). In personal and business microcomputers, a program, for instance, LOTUS, and the associated data may be stored on a hard disk. When the program is about to be run by the operator, it is loaded into RAM to either be used as the program with the existing data or to be created as new data. The new data can be stored on the hard disk after the run is completed.⁷⁵⁸

6.1.1.6. Primary Memory

⁷⁵⁵ Newman, supra note 4 at A3.

⁷⁵⁶ Available at https://www.komprise.com/glossary_terms/secondary-storage/. (12/03/2019).

⁷⁵⁷ Id.

⁷⁵⁸ Newman II at A-8.

"Also called "core memory", "store", or "storage", "main memory" or "internal memory" which is located in the motherboard of system or as we say which is directly connected to the CPU. It is the place where only a little bit of data is stored either by the manufacturer or by the user."⁷⁵⁹ Where the computer programs process the commands is known as the primary memory. In general, the primary memory is in "the form of random access memory (RAM). RAM allows information to be written into it or read from it."⁷⁶⁰

6.1.2. Software

"Computer software is the product that software engineers design and build. It encompasses programs that execute within a computer of any size and architecture, documents that encompass hard-copy and virtual forms, and data that combine numbers and text but also include representations of pictorial, video, and audio information. The software development is done by Software engineers and virtually everyone in the industrialized world uses it either directly or indirectly."⁷⁶¹

"System software is a collection of programs written to service other programs. Some system software (e.g., compilers, editors, and file management utilities) process complex, but determinate, information structures. Other systems applications (e.g., operating system components, drivers, telecommunications processors) process largely indeterminate data. In either case, the system software area is characterized by heavy interaction with computer hardware; heavy usage by multiple users; concurrent operation that requires scheduling, resource sharing, and sophisticated process management; complex data structures; and multiple external interfaces."⁷⁶²

⁷⁵⁹ Id.

⁷⁶⁰ Id. At A-7.

⁷⁶¹ B.G III Comp Applications (IV Unit) Mr. Ovass Shafi. (Assistant Professor) Budgam Department of Computer Applications (2017), Sheikh Ul Alam Memorial Degree College.

⁷⁶² Id.

The instructions that tell the computer how to process the data and how to report the results are the software system of the computer. A number of definitions have been employed by courts to describe software. The Fourth Circuit in *Seidlitz* stated one of the most succinct definitions as:⁷⁶³ " 'Software' refers to the logic and directions loaded into the machine that causes it to do certain things on command."

The district court defined software in *Lotus Development Corp.*, by describing its function: "The software includes one or more computer programs usually stored magnetically on hard or floppy disks, along with such items as instruction manuals and 'templates' which are pieces of plastic that fit around the function keys on the keyboard, identifying the specific functions or commands that can be invoked by those keys."⁷⁶⁴

"Software can be subdivided into two main types: (1) the operating system programs, and (2) the application programs."⁷⁶⁵ "Computer software also encompasses the program documentation."⁷⁶⁶

6.1.2.1. Operating System Programs

A program which controls the execution of all other programs like applications, and acts as an intermediary between the user(s) and the computer, with the objectives of convenience, efficiency, extensibility, similar to a law-abiding government is likely to be known as a truthful example of an operating system.⁷⁶⁷

The use of the hardware components and the usage among the competing demands from various programs are both controlled and prioritized by the operating system of the

⁷⁶³ *United States v. Seidlitz*, 589 F.2d 152,154 n.3 (4th Cir. 1978), cert denied, 441 VS. 922 (1979).

⁷⁶⁴ *Lotus Dev. Corp. v. Paperback Software Inti*, 1SU.S.P.Q.2d 1577,1579 (D. Mass. 1990).

⁷⁶⁵ Kutten, *Computer Software* i 1.02 at 1-3(Supp. 1990).

⁷⁶⁶ American Patent Law Association, *The Law Computer-Related Technology—Computer Primer and Glossary* at 50 (1984).

⁷⁶⁷ S. Hand, *Operating Systems* Michaelmas Term. 2010, 12 lectures for CST IA.

computer.⁷⁶⁸ Also a necessary link between the hardware and the specific application programs are provided by this functioning system.⁷⁶⁹ DOS, CP/M, VNIIX, and OS/2 are the best examples of operating system programs. In general terms, only in the machine readable object code and the operating system software is available, not in the source code.

6.1.2.2. Application Programs

"A program is a set of instructions written in a language (such as BASIC) understandable by the computer to perform a particular function on the computer. It is a computer scientist (a professional) skilled in using constructs of programming languages to develop executable and acceptable computer programs. A software developer is a programmer. Programmers often work hand in hand with system analysts on large projects. Programming languages are artificial notational languages created or developed to be used in preparing coded instructions on the computer for later execution by the computer."⁷⁷⁰

The instructions that tell the CPU what to compute are the application programs. They "permit a user to perform some particular task such as word processing, database management, or spreadsheet calculations, or permit a user to play video games."⁷⁷¹ The application programs are consisting of a source code translated by a compiler⁷⁷² into an object code, which operates the computer, in turn. Source codes are written in languages such as BASIC and FORTRAN, which are understandable by humans. The object code is understandable only to the computer.

⁷⁶⁸ Nimmer, *The Law of Computer Technology*, § 1.03[5][b] (1985 Supp. 1990).

⁷⁶⁹ *Innovation Data Processing v. International Bus. Mach.*, 585 F. Supp. 1470,1472 (D.N.J. 1984) on reconsideration summary judgment granted, 603 F. Supp. 646 (D.N.J. 1984); Gordon, *Computer Software: Contracting for Development and Distribution* at 25 (1986); *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240 (3d Cir. 1983) (operating system programs "generally manage the internal functions of the computer or facilitate use of application programs"): see also Harmon, *Patents and the Federal Circuit* 23-24 (1988).

⁷⁷⁰ U. O. Lateef, G. Ogunsanwo, A. Owoade, (2016) *INTRODUCTION TO COMPUTER PROGRAMMING (BASIC)*. Computer and Information Sciences Department, TASUED.

⁷⁷¹ *Lotus Dev.*, 15 U.S.P.Q.2d at 1579. *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240 (3d Cir. 1983) (application programs "usually perform a specific task for the computer user, such as word processing, checkbook balancing, or playing a game").

⁷⁷² Gordon, *Computer Software; Contracting for Development and Distribution* f 1.12 (1986).

"The application programs can further be subdivided into custom programs and mass distribution (standard package) programs. The formers are written for a particular application by a user. The latter are standard programs which are identical and generally not designed or intended for modification by the user."⁷⁷³

6.1.2.3. Program Documentation

The materials that explain the program or explain the logic and the manner in which the program is structured and written is referred to as "program documentation." Flow charts, programmer's explanatory notes, and user manuals are the best examples of these materials.

"The program documentation that explains the logic and structure of the program is usually necessary for making modifications or customizing the program. However, access to such program documentation allows for easy duplication of the concept of the program."⁷⁷⁴

6.1.2.4. Accessories

In addition to hardware and software which are necessary for operating a computer, a number of other components have been developed to make the system more efficient. These include computer firmware and modems.

6.1.2.5. Firmware

"Firmware" or "microcode" has been defined as follows: "Microcode is a set of encoded instructions... that controls the fine details of one or more primitive functions of a computer.

⁷⁷³ Brooks, Contracting for Computer Software, Protecting, Acquiring and Marketing Computer Software for the Mass Market at 9 (Brooks ed. 1982).

⁷⁷⁴ Transfer of Computer Technology, 2012

Microcode serves as a substitute for certain elements of hardware circuitry that had previously controlled that function."⁷⁷⁵

Firmware is sometimes referred to as a "smart" appliance because it performs functions once performed by a hardware component.

6.1.2.6. Modems

"The output of a computer is converted into signals by modems. These outputs can be transmitted over telephone lines and the transmitted signals are converted into those which can be received by a computer."⁷⁷⁶

6.2. Computer Technology and Protection of Proprietary Rights

"The software industry is a knowledge-intensive industry whose output is information, the coded instructions that guide the operations of a computer or a network of computers. Both the inputs and much of the output of this industry consist of intangibles."⁷⁷⁷

"The rewards to innovators in the software industry of the 1980s and 1990s have been extraordinary, illustrated by the meteoric rise of William Gates III to control of the largest personal fortune in the world. The modern computer software industry thus is an extreme example of an industry in which the returns to innovators' investments, and in many cases, market structure, are heavily influenced by the ownership of intellectual property. As such, it

⁷⁷⁵ Samuelson, "CO NTV Revisited: The Case Against Copyright Protection for Computer Programs in Machine-Readable Form," 1984 Duke LJ. 663,6T7.

⁷⁷⁶ Newman, *supra* note 4 at A26.

⁷⁷⁷ S. Graham and D. C. Mowery, (2003). Intellectual Property Protection in the Software Industry. Haas School of Business U.C. Berkeley.

is hardly surprising that the legal framework establishing and regulating ownership of such property has attracted considerable attention and debate."⁷⁷⁸

A number of available approaches are in the world for protecting computer software with legal protection based on trade secrets, utility patents, design patents, copyrights, trademarks, trade dress, and contracts."⁷⁷⁹ "They also include technological means of protection, such as the use of object code and copy protected programs."⁷⁸⁰

Based on the changes in the law and changes in the way software is marketed or distributed, in the United States, the preferred forms of protection and the strategy for protecting computer programs have been changing. It was revealed by the 1977 poll of the members of the Association of Data Processing Service Organizations that the use of object programs as the most effective protection of proprietary software was thoroughly considered by the members. "The legal protection of software ranked much lower and of the legal methods of protection the trade secret approach was considered to be the most effective. On a scale of 0 (not at all effective) to 5 (completely effective), it was rated 2.31. Copyright protection was rated 1.48 and patent protection rated a distant third at 0.54. Accordingly, trade secret protection was usually the legal approach for protection followed by most software owners."⁷⁸¹

"Because the protection of software is quite different, in the nineties, the experts advocated the legal approach. It is still being recognized that the trade secret protection is an important form of available protection."⁷⁸² Regardless of how, copyright protection and patent protection are

⁷⁷⁸ Id. presentations at the "International Symposium on Innovation and Patents," Hitotsubashi University, Tokyo, Japan, Feb. 12-13, 1999, and the National Research Council's conference on "Intellectual Property Rights," Washington, D.C., Feb. 3, 2000. We are grateful to participants in both conferences and to Rosemarie Ziedonis for comments on the paper. We also appreciate assistance with our analysis of patenting data from Arvids Ziedonis.

⁷⁷⁹ Brooks, *Contracting for Computer Software, Protecting, Acquiring and Marketing Computer Software for the Mass Market* (1982) at 12-13 (hereinafter Brooks); Kuttan, *Computer Software* at xii; Gage, "New Thinking Regarding Software Protection," 13 *Licensing L. O Bus Rep* 157 (1990) (hereinafter Gage).

⁷⁸⁰ Brooks, *supra* note 1 at 17.

⁷⁸¹ Id.

⁷⁸² Jager, "Trade Secrets: The Steady Protection for Computer Technology," 15 *Licensing L. & Bus. Rep.* 85 (1992).

now considered viable alternatives, which means, they might interchangeably be preferred in some cases. The preferred approach seems to be a "global" one which considers all available forms of protection and using as many forms of protection for a given software as is practicable.⁷⁸³

Besides, to include design patents,⁷⁸⁴ trademark, and potentially trade dress,⁷⁸⁵ the legal methods of protection have been expanded.

6.2.1. Trade Secret Protection

"Trade secret law provides a mechanism for protecting proprietary and sensitive business information. A trade secret, by definition, is information that has economic value and is secret. There are no formal application requirements to obtain a trade secret. Unlike patents, there are no statutory requirements that a trade secret be novel, useful, non-obvious, and there is no examination process. Trade secret protection arises once the appropriate steps are taken to create a valid trade secret. Trade secrets are not subject to a predefined term and can be maintained for an indefinite period of time."⁷⁸⁶

"A trade secret is defined as any information that is: (1) not generally known to the relevant business circles or to the public; (2) confers some sort of economic benefit on its owner. This benefit must derive specifically from the fact that it is not generally known, and not just from the value of the information itself; and (3) the subject of reasonable efforts to maintain its secrecy. A trade secret continues for as long as the information is maintained as a trade secret.

⁷⁸³ Gage, *supra* note 1 at 165.

⁷⁸⁴ Parker, Xyrox Gets Patents for Viewpoint Icons, *Infoworld* (Aug. 22,1988).

⁷⁸⁵ Beutel, "Trade Dress Protection for 'Look and Feel' of Software: The Lanham Act as an Emerging Source of Proprietary Rights Protection for Software Developers," 71J. Pat & Trademark Office Soc'y 974 (1989).

⁷⁸⁶ O'Donnell, R.W.; O'Malley, J.J.; Huis, R.J.; Halt, G.B. 2008, XVIII, 150 p. 6 illus., softcover. ISBN: 978-0-387-77388-9. Intellectual property in the food technology industry, protecting your innovation.

However, it has to be borne in mind that, anything that is easily and completely disclosed by the mere inspection of a product put on the market cannot be a trade secret."⁷⁸⁷

The specific application of trade secret laws to software is under discussion further on.

6.2.1.1. Historical Perspective

It has to be mentioned that trade secret protection was the primary form of protection of software until about 1980 or so.⁷⁸⁸ Owners of software contributed several factors to the- to some extent- universal reliance on trade secret protection. In the first place, it should be noticed that up to that time the other forms of intellectual property protection were, neither available nor yet developed.⁷⁸⁹ Thus, patent protection did not emerge as being clearly applicable to computer software until about 1980.⁷⁹⁰ Similarly, copyright protection was expressly extended to computer software by Congress only in 1980.⁷⁹¹ Second, the software programs in the early age of computers were either custom written for particular customers or sold by individually negotiated contracts. The personal nature of the transaction made the trade secret protection easy to establish. The required secrecy and prohibitions on distribution and reverse engineering could be provided for in the negotiated contract. Moreover, the relatively small number of software users made it easy for the software owner to police the compliance.

"As other forms of protection of software have become available, the relative importance of trade secret protection has diminished. However, trade secret protection continues to be the sentimental favorite of the software industry."⁷⁹² In fact, it has been suggested by one commentator that it may be a fatal error which could jeopardize the viability of the proprietary

⁷⁸⁷ Id.

⁷⁸⁸ Gage, supra note 1; 1 Kuttan, Computer Software § 4.01 (Supp. 1990).

⁷⁸⁹ Id.

⁷⁹⁰ Diamond v. Diehr, 450 U.S. 175 (1981).

⁷⁹¹ Pub. L No. 517.94 Stat. 3028 (1980), codified at 17 U.S.A. H101 and 117 (1988).

⁷⁹² Jager, Trade Secrets: The Steady Protection for Computer Technology," 15 lie. L 8c Bus. Rep. 85 (1992); Bender, Computer Software Licensing, Protecting Trade Secrets 347, 374 (PU 1981).

interest in the software if the reliance on trade secret protection alone at this point is continued.⁷⁹³

"It should be emphasized that both hardware and software can be protected under trade secret laws."⁷⁹⁴ "Illinois amended its trade secrets statute to specifically provide for protection of computer programs."⁷⁹⁵

6.2.1.2. Advantages and Disadvantages

Trade Secrecy may have several advantages. Acquiring trade secret protection requires no application, no lengthy examination or registration process, nor any expensive fees. Unlike patents and trademarks, the details of a trade secret do not have to be revealed to a governmental agency. Trade secret protection exists as soon as the business entity takes reasonable precautions to keep the information confidential. Thus, where technology is rapidly changing, trade secrecy can keep pace with the changes. On this point, it may be known as quick and easy to establish. Unlike patents and trademarks, there are no maintenance fees since there are no periodic fees that must be paid in order to maintain trade secret protection. Perpetual protection is another advantage in this domination. Protection can last indefinitely, so long as the trade secret is not discovered and made publicly know. One example, frequently discussed, is the formula for making Coca Cola syrup. It has remained secret since its inception, and it is said to be known only by two people. Kentucky Fried Chicken's "secret formula" of herbs and spices is another example.⁷⁹⁶

⁷⁹³ Cage, supra note 1; Smedinghoff, "Critique of Trade Secret Approach to Protecting Computer Software," 2 Software Protection (1984).

⁷⁹⁴ Telex Corp. v. International Business Machines Corp., 510 F.2d 894, 184 U. S.P.Q. 521 (10th Cir.), cert denied, 423 U.S. 802 (1975) (hardware); Data Gen. Corp. V. Digital Computer Controls, Inc., 188 U.S.P.Q. 276 (Del. Ch. 1975) (hardware); Com- Share, Inc. V. Computer Complex, Inc., 338 F. Supp. 1229 (E.D. Mich.), offd, 458 F.2d 1341 (6th Cir. 1972) (software); University Computer Co. v. Lykes-Youngstown Corp., 504 F.2d 518,183 U.S.P.Q. 705 (5th Or. 1974) (software).

⁷⁹⁵ M. Rev. Stat. Ch. 140 ^ 352(^. See ISC-Bunker Ramo Corp. v. Altech, Inc., 765 F. Supp. 1310 (N.D. III. 1990), for application of this statute to protect the source code.

⁷⁹⁶ OLIVE & OLIVE, P.A. INTELLECTUAL PROPERTY LAW. (1957), TRADE SECRETS. DURHAM, NORTH CAROLINA 27702-2049.

Trade secret protection has lost its status as practically the only available form of the legal protection of software. Nevertheless, it continues to be an important form of protection. It is instructive to consider the major advantages and disadvantages of reliance on this form of software protection.

One advantage of relying on trade secrets for protection of software is that trade secret protection continues indefinitely. As long as the trade secret remains secret and is not generally used in the industry, the protection continues. Unlike patent and copyright protection which require disclosure of the program in return for the protection, disclosure is not a prerequisite to maintaining trade secret protection. An additional advantage of trade secret protection is that it is automatic. No approval or identification or description or other costly procedure is needed for effecting protection.

There are disadvantages that have been measured for trade secrecy. Once a trade secret becomes known to the public, it is virtually lost and can never become a trade secret again. Both independent development and reverse engineering (analyzing a lawfully acquired product to discover its secret method of design or manufacture) are permitted under state law, although it remains to be seen whether at least some forms of reverse engineering will now be considered a Federal criminal offense. (The Federal Economic Espionage Act of 1996 defines downloading, uploading, and "replicating" trade secret information as types of wrongful conduct.) Thus, in many situations, if a product is available to the public, there is little that a company can do to prevent its analysis by others and use of the analyzed information. The unfortunate reality is that due to the vast array of scientific technology, almost anything can be broken down, analyzed, and copied. In spite of the fascinating history of the Coca Cola formula, statistics have been compiled which indicates that the average trade secret is secure for only

about four to five years. This average life will decrease in the future; as technological advances make reverse engineering easier.⁷⁹⁷

The protection is forever lost if a trade secret is discovered. In most cases, it is irrelevant whether the trade secret is discovered through legitimate or illegal means. While a trade secret owner has the right to sue anyone who discovered your trade secret illegally, there typically is no protection against one who acquires the information by honest means. Both independent development and reverse engineering are permitted under state law and may be permitted even under the more stringent Federal statute, and thus result in difficulty in enforcement.

The uncertainty also plays an important role inside the disadvantages one may experiences while taking up with trade secrecy. "A trade secret holder cannot know when the secret will be lost, thus triggering the loss of all protection. Trade secrets do not have a fixed or known term like the seventeen years of a patent or ten years of a trademark. Thus, if a business relies on trade secrecy as a significant asset, it must face the reality that the asset has an uncertain life."⁷⁹⁸

A significant disadvantage of trade secret protection is that with respect to the patentable matter, it is inferior to the corresponding patent rights. This concept is best explained by an example. Let's assume that Company A develops a unique program to cure rubber. The process is determined to be patentable, but a decision is made to protect it as a trade secret instead. The process is used for several years to produce rubber, having unique and superior quality. A few years after initial development by Company A, Company B independently discovers substantially the same process. Company B applies for and obtains patent protection. By analyzing the properties of the rubber being sold by Company A. Company B forms a reasonable belief that its patented process is being used by Company A, Company A then files

⁷⁹⁷ Id.

⁷⁹⁸ Id.

a lawsuit for patent infringement against Company B. Company B defends on the ground that it developed the process in question first.

The likely outcome of this lawsuit would be an injunction and damages in favor of Company B. Company A would not be able to defend on the basis of its earlier developed process. This is because the prior secret process is not prior art under the patent law statute. Specifically, the prior art is defined in section 102 of the statute.⁷⁹⁹ Subsection (a)'s requirement that the invention alleged to be prior art be "patented or described in a printed publication" necessarily was not fulfilled when the process had been maintained as a trade secret.⁸⁰⁰ The earlier secret process of Company B is not prior art under subsection (b)⁸⁰¹ because there was no public disclosure of the process and non-enabling sales of products made by a third party do not place the process by which the product is made "on sale."⁸⁰² Therefore, the secret process of Company A does not become prior art under subsection (b).

The process of Company A satisfies the first part of section 102(g) prior art. However, to maintain the process as a trade secret Company necessarily kept the process in secrecy. Accordingly, the earlier development is considered to be "abandoned, suppressed or concealed" and therefore not prior art under section 102(g).⁸⁰³

The remaining subsections of section 102 are clearly not applicable, which means that Company A may not rely on its earlier developed and used process to invalidate the later patent of Company B.

6.2.1.3. Requirements

⁷⁹⁹ 35 U.S.C. § 102.

⁸⁰⁰ 35 U.S.C. § 102(a).

⁸⁰¹ 35 U.S.C. § 102(b) (die prior art invention must be "patented or described in a printed publication ... or in public use or on sale").

⁸⁰² D.L. Auld Co. V. Chroma Graphics Corp., 714 F.2d 1144,219 UAP.Q. 13 (Fed. Cir. 1983), cert denied. 474 US 825 (1985); Palmer v. Dudzik, 481 F.2d 1377,178 U.S.J.Q. 608 (CCPA 1973).

⁸⁰³ 35 U.S.C. § 102(g).

"Patent or copyright protection generally requires one to make some disclosure or publication of the information. A temporary protection is then afforded for a period of years, after which the information becomes freely available to the public. Trade secret protection exists for as long as the holder is successful in maintaining the secrecy of the information. If commercial exploitation of the information necessarily results in its disclosure, such as where a product itself reveals the information, then patent or copyright protection is more appropriate. Where it is possible to keep the information from prying eyes, such as with an internal manufacturing method or formula, trade secret protection is preferred. Indeed, in such circumstances, patent protection may be less effective due to the difficulty in identifying infringements."⁸⁰⁴

Secrecy is one of the requirements for trade secret protection. The information protected must actually be secret. Secrecy need not be absolute. The trade secret owner may share the information with employees and business partners. Secrecy requires instead that the information must not be publicly accessible and that it is revealed to others only under conditions that maintain secrecy with respect to the broader public.⁸⁰⁵

Commercial Value is also another requirement for undertaking this process. The information must have economic value as a result of its being secret. Trade secret law most typically protects commercial information; that information must derive some utility from being kept secret.

In order to maintain secrecy, reasonable efforts must be entirely predetermined. The information must be the subject of reasonable efforts on the part of the rights holder to maintain its secrecy. By its nature, a trade secret claim arises when measures to protect the secret have failed. Thus, the law does not require one who claims a trade secret to be entirely successful at protecting it. However, the law does require the owner to make some efforts to maintain

⁸⁰⁴ T. Duston and T.R. Marshall, Intellectual property protection for trade secrets and know-how Gerstein & Borun, Chicago, IL.

⁸⁰⁵ Approaches to The Protection of Trade Secrets, Chapter 3. Approaches to The Protection of Trade Secrets, (2015), Enquiries into Intellectual Property's Economic Impact.

secrecy. In national laws, the necessary effort is often broadly described as "reasonable," in keeping with Article 39 of TRIPS. However, some countries impose more specific, additional obligations, which might be characterized as a particular implementation of the broad reasonableness requirement. For example, some common law countries require that the defendant have a contractual or implied obligation to keep the information secret. Other countries require written agreements with recipients and confidentiality notices.⁸⁰⁶

To obtain trade secret protection, the owner must take the necessary customary steps to assure secrecy⁸⁰⁷ and the software must not be what is public knowledge or what is generally known in the industry.⁸⁰⁸ However, the confidential distribution of software to a large number of licensees does not destroy trade secret protection.⁸⁰⁹

The steps necessary to ensure the required secrecy need not be extraordinary. Indeed, the required secrecy may sometimes be implied from the circumstances without the need to take any affirmative steps.⁸¹⁰ For example, in *Coin-Share, Inc.*⁸¹¹ sufficient internal secrecy for software was established by showing that the pertinent documents were stamped as "Confidential," passwords had to be used to obtain access to software, and magnetic tape and symbolic were locked when not in use.⁸¹² Of course, a total failure to protect the confidentiality of software will result in the loss of trade secret protection.⁸¹³

⁸⁰⁶ Id.

⁸⁰⁷ *Structured Dynamics Research Corp. V. Engineering Mechanics Research Corp.*, 401 F Supp 1102, 1117 (E.D Mich. 1975)

⁸⁰⁸ *Kewanee Oil Co. v. BicTon Corp.*, 416 U.S. 470,475 (1974) ("The subject of a trade secret must not be of public knowledge or of general knowledge in the trade or business.")

⁸⁰⁹ *Data Gen. Corp. v Digital Computer Controls, Inc*, 297 A.2d 433 (Del Ch), *off'd*, 297 A 2d 437, 175 U.S P.Q 486 (Del.1972) (confidential distribution of 6,000 manuals did not destroy trade secret protection). *Management Science of Am, Inc v. Cyborg*, 6 Comp L. Serv. Rep 921 (N D. Ill 1978) (confidential distribution of software to MX) licensees did not destroy trade secrets)

⁸¹⁰ *Corn-Share, Inc. V Computer Complex, Inc*, 338 F. Supp 1229 (ED Mich. 1971), *off'd* 458 F.2d 1341 (6th Cir. 1972).

⁸¹¹ Id.

⁸¹² Id. at 123-1.

⁸¹³ *Defiance Button Mach. Co. v. C&C Metal Prods Corp*, 759 F 2d 1053, 1063 (2d Cir. 1985) ("the company failed, upon selling most of its tangible assets (including its computer), to take reasonable steps to protect the list [of its customers]")

The requirement that trade secret software may not be publicly known or generally known in the industry does not mean that all the elements of the program must be new or unique. It is well known that programmers use common programming techniques and utilities.⁸¹⁴ The use of such techniques and utilities does not preclude trade secret protection of a program that possesses a unique logic or is arranged in a unique way.⁸¹⁵

6.3. Utility of Patent Protection

"The requirement that an invention must have utility is one of the most fundamental of the patent laws. In the United States, for example, the concept of utility is rooted in the Constitution: Article 1, Section 8, gives Congress the power to grant exclusive rights to inventors in order "[t]o promote the progress of Science and useful Arts." Other jurisdictions recognize utility in the form of inventions that have "industrial applicability" or are "capable of exploitation in industry," with all of these terms and phrases generally viewed as being synonymous."⁸¹⁶

Historically, nearly every jurisdiction has excluded some type of invention from patentability as lacking utility. A common and enduring utility-based exclusion is the perpetual motion machine, with the justification being scientific: because perpetual motion is not physically possible, an invention which claims such a feature cannot in fact work and therefore fundamentally lacks utility. Jurisdictions also make exclusions on policy grounds. In Europe, for example, methods of treating human and animal bodies are not patentable, but the justification for doing so, which previously was based on lack of industrial applicability, is now expressly linked to public health policy. In an ever-more global economy, inventions are at the

⁸¹⁴ 1 Kuttan, Computer Software § 20 03[4][a]

⁸¹⁵ Cybertek Computer Prods., Inc. v. Whitefield, 203 U.S. PQ 1020 (1977), Com-Share, Inc V Computer Complex, Inc., 338 F. Supp 1229 (E D. Mich. 1971).

⁸¹⁶ J. Erstling, A. M. Salmela, J. N. Woo, (2012), Usefulness Varies by Country: The Utility Requirement of Patent Law in the United States, Europe and Canada. Mitchell Hamline School of Law, jay.erstling@mitchellhamline.edu

heart of commercial transactions that know no geographic boundaries and are increasingly valued for their job and wealth creation. Obtaining patent protection in multiple jurisdictions therefore is increasingly common. At least to reduce costs and increase efficiency, patent owners, policymakers and practitioners alike have sought increased inter jurisdictional cooperation and patent law harmonization in the patent examination and granting process.

6.3.1. Patentable Subject Matter

Given the existence of fine-grained requirements for patentability such as non-obviousness, the utility of a separate requirement of patentable subject matter has sometimes been questioned. The courts' fumbling efforts to regulate patentable subject matter have helped stain the enterprise with suspicion and even disrepute. The following first defends limitations on subject-matter eligibility by showing that they provide a categorical filter that can improve patent-system performance. Then argues that the enterprise of regulating patentable subject matter should be primarily entrusted to the USPTO, rather than, as it is now, to the courts. Two mathematical models illustrate (1) how more individualized tests for patentability can fail to ensure that patents improve social welfare and (2) how a particular form of subject matter fundamental principles having a very high number of potential uses can generate particularly high social costs and thus qualify as a form of subject matter that the patent system would best filter out. With respect to the proper locus for rulemaking authority, the USPTO's capacity and incentive to respond promptly and meaningfully to questions of subject-matter eligibility make it the best candidate. Moreover, giving the USPTO rulemaking authority with respect to subject-matter eligibility does not require giving it the rulemaking authority on all matters of patent-law substance. Just as other regimes of U.S. law have divided tasks of adjudication and enforcement between different institutions, the patent system can divide areas of primary interpretive authority between the USPTO and Article III courts. Such an institutional

innovation appears the best way to leverage the relative institutional competence of the USPTO, the courts, and congress.⁸¹⁷

A mathematical formula alone, sometimes referred to as a mathematical algorithm, viewed in the abstract, is considered the unpatentable subject matter.⁸¹⁸ Since the process of manipulation of numbers is a fundamental part of computer technology, the courts have had to reexamine the rules that govern the patentability of such technology. The dramatic changes in both law and technology are an example of the law adapting to new and innovative concepts while remaining true to basic principles.⁸¹⁹

At one time, the Patent and Trademark Office published guidelines that, for the most part, rejected die notion that computer programs could be patented.⁸²⁰ This position has not, however, survived. It has, instead, eroded as die technology in this area developed.⁸²¹

It is now settled that inventions which involve computer technology (whether hardware or software) are eligible for patent protection in the United States. The Supreme Court made this clear in *Diamond v. Diehr*:⁸²² "[A] claim drawn to subject matter otherwise statutory does not become non-statutory simply because it uses a mathematical formula, computer program or digital computer."

However, there are significant limitations on the subject matter dial that can be patented. These limitations arise from the nature of software and the fundamental principle of patent law that

⁸¹⁷ John M. Golden, (2011). Patentable Subject Matter and Institutional Choice. THE UNIVERSITY OF TEXAS SCHOOL OF LAW, Law and Economics Research Paper No. 206.

⁸¹⁸ *AT&T Corp. v. Excel Communications. Inc.*, 172 F.3d 1352,50 U.S P.Q 2d 14J7 (Fed. Cir. 1999).

⁸¹⁹ *Id.* at 1356

⁸²⁰ *Id.* citing 33 Fed Reg. 15581, 15609-10 (1968)

⁸²¹ *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d at 1356.

⁸²² *Diamond V. Diehr*, 450 U.S. 175 (1981). For discussion of implications of granting patent protection to computer software inventions, see Note, "The Policy Implications of Granting Patent Protection to Computer Software. An Economic Analysis" 37 Vand L. Rev. 147, 153 (19&4).

scientific principles⁸²³ and mathematical formulas cannot be patented.⁸²⁴ Only the specific utilization of scientific principles or mathematical formulas can be subject of a patent.⁸²⁵ The Supreme Court clearly stated this fundamental principle in Mackay Radio:⁸²⁶ "[W]hile a scientific truth, or the mathematical expression of it, is not a patentable invention, a novel and useful structure created with the aid of a scientific truth may be."

Software to solve a mathematical equation in the abstract would not satisfy these requirements.⁸²⁷ However, the mere fact that a claimed invention involves inputting numbers, calculating numbers, outputting numbers, and storing numbers, in and of itself, would not render it non-statutory subject matter, unless, of course, its operation does not produce a useful, concrete and tangible result.⁸²⁸ Thus, while a mathematical algorithm is not patentable in isolation, a process that applies an equation to a new and useful end generally is. The key is whether the algorithm is being applied in a useful way.⁸²⁹

For the most part, the court's inquiry requires an examination of the contested claims to see if the claimed subject matter as a whole is a disembodied mathematical concept representing nothing more than a "law of nature" or an "abstract idea." If that is all that it is, the item will be patentable. On the other hand, if the mathematical concept has been reduced to some

⁸²³ Funk Bros. Seed Co. v. Kalo Inoculant Co., 333 U.S. 127 (1948), In re Meyer, 688 F.2d 789, 794-95 (C.C.P.A. 1981); Leroy v. Totham, 55 U.S. 155 (1852), O'Reilly v. Morse, 56 U.S. 61, 132-33 (1853).

⁸²⁴ Rubber-Tip Pencil Co. v. Howard, 87 U.S. 498, 507 (1874) ("[a]n idea of itself is not patentable, but a new device by which it may be made practically use hit is"), Gottschalk v. Benson, 409 U.S. 63 (1972), Parker V. Flook, 437 U.S. 584 (1978) See generally Mc-Claskey, "The Menial Process Doctrine- Its Origin, Legal Basis & Scope," 55 Iowa L. Rev. 1148 (1970); Ambrose, "The Mental Steps Doctrine," 48 Temi. L. Rev. 903 (1981); 1 Chisum, Patents § 103[6] (Supp. 1989).

⁸²⁵ Cochrane v Deener, 94 U.S. 780 (1876), 1 Robinson, The Law of Patents for Useful Invention § 166 (1890).

⁸²⁶ Mackay Radio Corp. & Tel Co v Radio Corp of Am., 306 US 86, 94 (1939)

⁸²⁷ Diamond v. Diehr, 450 U.S. 175 (1981), Gottschalk v Benson, 409 U.S. 63 (1972); Parker V. Flook, 437 U.S. 584 (1978). See also Chisum, The Patentability of Algorithms," 47 U. Pitt. L. Rev. 959 (1986); Samuelson, "Benson Revisited. The Case Against Patent Protection for Algorithms and Other Computer-Program Related Inventions," 39 Emory L.J 1U25 (1990)

⁸²⁸ State Street Bank & Trust Co v. Signature Fin Group, Inc, 149 F.3d 1368, 47 U.S.P.Q.2d 1596 (Fed Cir 1998) (patent generally directed to a data processing system for implementing an investment structure which has developed for use in a party's business as an administrator and accounting agent for mutual funds involved statutory subject matter).

⁸²⁹ AT&T Corp v Excel Communications, Inc., 172 F.3d at 1357.

practical application rendering it "useful," it will at least satisfy the threshold requirement for patentability.⁸³⁰

The courts have rejected the argument that claims containing mathematical algorithms are patentable subject matter only if there is a "physical transformation" or conversion of subject matter from one state into another.⁸³¹ A "physical transformation" is not an invariable requirement for patentability. It is merely one example of how a mathematical algorithm may bring about a useful application.⁸³²

6.3.2. Advantages and Disadvantages of Patent Protection

Patent systems are one of the oldest policies to promote innovation. So it is surprising how little factual information is available about their economic costs and benefits. The data that are available seem to be regularly ignored in patent policy discussions.⁸³³ suggests this imperviousness to fact shows that the idea that innovation will not occur without patents has achieved the status of myth.⁸³⁴

"Patent policy is based on a conundrum: designed to increase innovation, it operates by initially suppressing the dissemination of new patented technologies. Balance is therefore central to patent policy. Benefits deriving from any induced higher level of innovation must offset, at least at the societal level, the costs due to the grant of monopoly privileges."⁸³⁵

The right to exclude is absolute.⁸³⁶ In other words, the second inventor cannot defeat patent infringement action by establishing that he invented the subject matter of the patent

⁸³⁰ In re Alappat, 33 F3d 1526, 31 U S P.Q 2d 1545 (Fed Cir. 1994).

⁸³¹ AT&T Corp v Excel Communications, Inc., 172 F3d at 1358.

⁸³² Id.

⁸³³ Mazzoleni, R. and R.R. Nelson, (1998), 'The Benefits and Costs of Strong Patent Protection: A Contribution to the Current Debate', Research Policy, 27, 273-284.

⁸³⁴ Macdonald, S., (2004), 'When Means Become Ends: Considering the Impact of Patent Strategy on Innovation', Information Economics and Policy, 16:1, 135-158.

⁸³⁵ Hazel V J Moir, (2008). What are the costs and benefits of patent systems? CENTER FOR GOVERNANCE OF KNOWLEDGE AND DEVELOPMENT WORKING PAPER.

⁸³⁶ 35 U S C A. § 271(d).

independently, without knowledge of the patent⁸³⁷ or that he did not copy⁸³⁸ is one advantage of patent protection over copyright and trade secret protection. In addition, patent protection extends beyond the subject matter literally encompassed by the claim.⁸³⁹ It also covers a product or a process "if it performs substantially the same function in substantially the same way to obtain the same result."⁸⁴⁰ Infringement is established if all elements of the claim or their equivalents are found in the accused process or device.⁸⁴¹

"One significant disadvantage of patent protection is that the inventor must describe this invention in the patent application."⁸⁴² "The description becomes public upon issuance of the patent,⁸⁴³ thereby destroying trade secret protection for the disclosed invention."⁸⁴⁴ Moreover, the description must be sufficient to teach one skilled in the art how to make and use the invention. The patent application must also disclose the best mode contemplated by the inventors for carrying out their invention at the time the patent application is filed. If the non-disclaimed program is standard and the specific program is not important, the best mode requirement is not violated.⁸⁴⁵ However, if the applicant knows prior to the filing of his application that a standard approach is not the best mode and withholds the best mode, the patent may be found invalid for failure to disclose the best mode.⁸⁴⁶ The disclosure must include not only the claimed invention but also parts of the technology that are "necessary to enable those skilled in the art to 'make and use the same.'"⁸⁴⁷ If the applicant tries to keep an

⁸³⁷ Shelcore. Inc. v. Durham Indus, 745 F.2d 621, 223 U S P.Q. 5&1 (Fed. Cir. 1984).

⁸³⁸ See generally Rosenberg Patent Law Fundamentals § 2 08A.

⁸³⁹ Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 608 (1950), Elmer Corp V. Computer vision Corp., 732 F.2d 888,401-02, 221 U.S.P.Q. 669 (Fed Cir), cert denied, 469 US 857(1984).

⁸⁴⁰ Sanitary Refrigerator Co. v. Winters, 280 U.S. 30, 42 (1929). See also Machine Co. v. Murphy, 97 U.S. 120, 125 (1878); Winans v. Denmead, 56 US 330 (1853)

⁸⁴¹ Penwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931 (Fed Cir 1987)

⁸⁴² 35 U S C A. § 112.

⁸⁴³ Under U S. patent laws, a patent application remains confidential 35 U S C. § 122.

⁸⁴⁴ Scharmer v. Carrollton Mfg. Co, 525 F.2d 95, 187 U S P Q. 736 (6th Gr. 1975). See Jager, Trade Secrets Law § 6.03[3]

⁸⁴⁵ In re Sherwood, 613 F.2d 809, 204 U.S.P.Q. 537 (CC PA 1980), cert, denied, 450 US 994 (1981).

⁸⁴⁶ Northern Telecom, Inc v. Datapoint Corp, 908 F.2d 931, 15 U.S.P.Q.2d 1321 (Fed Cir.), cert denied. 498 U.S. 120, 111 S Ct 296 (1990)

⁸⁴⁷ White Consol Indus. v. Vega Servo-Control, Inc, 713 F.2d 788, 791 (Fed. Cir. 1983)

essential part of the enabling description as a trade secret, the patent may be invalid.⁸⁴⁸ However, the patent specification need not always set forth a computer program for carrying out the claimed invention. If "a programmer of reasonable skill could write a satisfactory program with ordinary effort," the omission of such program from the specification is not fatal.⁸⁴⁹ Moreover, an attempt to enforce such patent is likely to subject the patentee to payment of attorney fees.⁸⁵⁰

The disclosure requirements are cornerstones of the patent system.⁸⁵¹ In exchange for the disclosure, the patentee obtains the right to exclude others for seventeen years. If a patentee were allowed to maintain as a trade secret a part necessary for practice of the invention, he could "theoretically extend its exclusionary rights beyond the 17-year life of the patent... a result inconsistent with the objectives of the patent system."⁸⁵²

As a result, a valid patent teaches competitors what they may not be able to ascertain by mere examination or reverse engineering of the computer program itself. It should be kept in mind, however, that since in the United States⁸⁵³ patent applications are maintained in secrecy,⁸⁵⁴ public disclosure occurs only if and when the patent is issued. Until shortly before the issuance of the patent, the patent owner has the option of abandoning his patent application and patent rights and relying instead on trade secret protection. This option is, of course, not available once foreign patent applications for the same invention are published.

A number of much less significant or nonexistent disadvantages of patent protection have been articulated by commentators. For example, some commentators cited the cost of obtaining

⁸⁴⁸ Id.

⁸⁴⁹ Northern Telecom, Inc v. Datapoint Corp, 908 F.2d 931, 15 U.S P Q 2d 1321 (Fed. Cir), cert, denied, 498 U.S. 920, 111 S Ct 296 (1990)

⁸⁵⁰ White, 713 F.2d at 792, 35 US CA. § 285.

⁸⁵¹ White Consol Indus v. Vega Servo-Control, Inc., 713 F.2d 788 (Fed. Cir. 1983) ("The sine qua none of a valid patent is a full, clear, enabling description of die invention")

⁸⁵² Id at 791

⁸⁵³ In most countries patent applications are published eighteen months after filing of the first application for the claimed invention.

⁸⁵⁴ 35 US C A §122

patent protection as being a significant disadvantage.⁸⁵⁵ However, a five to ten thousand dollar expenditure for protection of a significant computer program is a de minimis if the patent keeps the competition from practicing the invention for seventeen years from its issue date. Another disadvantage mentioned by commentators is that the patent prosecution often takes several years and by that time, the software is likely to be obsolete.⁸⁵⁶ This argument is spurious for two reasons. First, Patent Office provides for acceleration of the prosecution in the event the claims of the application are being infringed.⁸⁵⁷

6.4. Copyright Protection

Copyright is one of the branches or aspects of Intellectual Property Rights (IPR). IPR has been defined by World Intellectual Property Organization (WIPO) as "Intellectual Property, very broadly, means the legal rights which result from intellectual activity in the industrial, scientific, literary and artistic fields. Countries have laws to protect intellectual property for two main reasons. One is to give statutory expression to the moral and economic rights of creators for their creations and the rights of the public in access to those creations. The second is to promote, as a deliberate act of Government policy, creativity and the dissemination and application of its results and to encourage fair trading which would contribute to economic and social development".⁸⁵⁸

Promoting the public good by encouraging and fostering cultural and scientific activity is the objective of copyright. Copyright protects cultural works, the creative expression of thoughts and feelings. These works are in a variety of forms, artworks, music, novels and poetry. They are the expression of a culture – its heritage, which is built on by each generation adding their own perspective to the existing culture, which will enrich the lives of generations to come. "To

⁸⁵⁵ 1 Kuttan, Computer Software § 301[6]

⁸⁵⁶ Id.

⁸⁵⁷ M P E.P. § 708 02 (Supp .1990)

⁸⁵⁸ Available at <http://www.wipo.int/portal/en/index.html>. (13/03/2019).

demonstrate its importance to culture and society, copyright is recognized as one of the Human Rights in the Universal Declaration of Human Rights. Consequently, the value and benefits associated with copyright and the systems which support it cannot be underestimated. Many countries are now using copyright to protect valuable indigenous cultures, ensuring their vibrant and individual national cultural expression continues. The existence of strong and enforceable copyright laws is also a necessary precursor to participation in the global economic community, bringing particular benefits to the economies of developing countries."⁸⁵⁹

Written computer programs fall squarely, under current U.S. copyright law, within the definition of words the meaning of which is specified forms of copyrightable subject matter into terms of:⁸⁶⁰ " 'Literary works' are works other than audiovisual works, expressed in words, numbers or indicia, regardless of the nature of the material objects, such as . . . tapes, disks, or cards, in which they are embodied." As literary works, they are eligible for copyright protection.⁸⁶¹ Similarly, object code⁸⁶² and source code⁸⁶³ have been held to be copyrightable.

⁸⁵⁹ Ms. Caroline MORGAN, (2010), Introduction to Copyright, General Manager, Corporate Services Division, Copyright Agency Limited, Australia.

⁸⁶⁰ 17 U.S.C A § 101. In the House Report, computer databases and computer programs were specially stated to lie included in the "literary works" definition. House Judiciary Committee, H R Rep. No 1476, 94th Cong, 2d Sess, at 54 {1976} [hereafter House Report]

⁸⁶¹ 17 U S C A. § 102(a); Stem Elecs. Inc. v Kaufman. 669 F.2d 8.52, 855 n 3. 213 U.S.P Q. 443 (2d Cir. 1982)

⁸⁶² Williams Elecs, Inc. v. Arctic Int'l, Inc., 685 F.2d 870, 876-77, 215 USPQ 405 (3d Cir 1982), Hubeo Data Prods. Corp v. Management Assistance, Inc., 219 USPQ 450 (D. Idaho 1983). See also S Rep at 51 and 1 louse Report at 52 ("it makes no difference... whether it is capable of perception directly or by means of any machine"); GCA Corp v. Chance, 217 U S P Q. 718(ND. Cal 1982) ("copyright of the source code protects the object code as well").

⁸⁶³ Apple Computer, Inc. v. Franklin Computer Corp, 714 F.2d 1240, 1243, 219 U.S.P Q 113 (3d Cir. 1983), cert denied, 46-1 U.S. 1053 (1984), CCA Corp v. Chance, 217 U.S.P Q, 718, 720 (N.D Cal 1982), Midway Mfg. Co v Strohon, 564 F. Supp. 741, 750, 219 U.S.P Q. 42 (N.D. 111. 1983), Digital Communications Assocs, Inc. v Softklone Distrib. Corp, 659 F. Supp. 449, 454, 2 U S P Q 2d 1385 (N D Ca. 1987) Cf Sony Computer Entertainment, Inc. V. Connectix Corp. an F.3d 596, 2000 WL 144399 *2 (9th Cir 2000) (the object code of a computer program may be copyrighted as expression, but the program will also contain ideas and perform functions that are not entitled to copyright protection).

The expression aspects of operating system programs are also copyrightable.⁸⁶⁴ Detailed flowcharts also fall within the scope of the copyrightable subject matter.⁸⁶⁵

It is also generally held that copyrightable protection also extends to the non-literal aspects of computer programs.⁸⁶⁶ In *Computer Associates International, Inc. v. Altai, Inc.*,⁸⁶⁷ the court stated that:

"[I]f the non-literal structures of literary works are protected by copyright and if computer programs are literary works, as we are told by the legislature, then the non-literal structures of computer programs are protected by copyright."

While screen displays are an example of the non-literal elements of a computer program,⁸⁶⁸ certain types of screen displays represent products of computer programs rather than the programs themselves. If a computer audiovisual display is copyrighted separately as an audiovisual work, apart from the program that generates it, the display may be protectable regardless of the underlying program's copyright status.⁸⁶⁹

Microcodes are also copyrightable, but the scope of their protection is likely to be limited to virtually identical copying.⁸⁷⁰

6.4.1. Special Aspects of Copyright Protection for Computer Software

⁸⁶⁴ *Apple Computer, Inc. v. Formula Int'l, Inc.*, 725 F.2d 521, 221 U.S.P.Q. 762 (9th Cir. 1984). See *Sony Computer Entertainment, Inc. v. Connectix Corp.*, 48 F. Supp.2d 1212 (N.D. Cal. 1999) (where emulation software was developed that copied a video game system manufacturer's copyrighted code, that was not fair use; the emulation software was developed to directly compete with the manufacturer's game system and the manufacturer had been harmed by the sales of the software).

⁸⁶⁵ *Whelan Assocs., Inc. v. Jaslow Dental Lab, Inc.*, 797 F.2d 1222, 1241, 230 U.S.P.Q. 481 (3d Cir. 1980), cert. denied, 479 U.S. 1031 (1987); *Data Cash Sys., Inc. v. JS&A Group, Inc.*, 480 F. Supp. 1063, 1067 n.4, 203 U.S.P.Q. 735 (N.D. III 1979), aff'd on other grounds, 628 F.2d 1038, 208 U.S.P.Q. 197 (7th Cir. 1980).

⁸⁶⁶ *Computer Assocs Int'l, Inc. v. Altai, Inc.*, 982 F.2d 693 (C.A.2d, 1992). See *Lotus Dev. Corp. v. Paperback Software Int'l*, 740 F. Supp. 37, 15 U.S.P.Q.2d 1577, 1591-99 (D. Mass. 1990). See also *Digital Communications Assoc., Inc. v. Softklone Distrib. Corp.*, 659 F. Supp. 449, 2 USPQ-0 2d 1407 (N.D. Ga. 1987), *Manufacturers Techs., Inc. v. CAMS, Inc.*, 706 F. Supp. 984, 10 U.S.P.Q.2d 1321 (D. Conn. 1989), *Telemarketing Resources v. Symantec Corp.*, 12 U.S.P.Q.2d 1991 (N.D. Cal. 1989).

⁸⁶⁷ *Computer Assocs Int'l, Inc. v. Altai, Inc.*, 982 F.2d at 702-703.

⁸⁶⁸ *Mitek Holdings, Inc. v. Arce Eng'g Co.*, 89 F.3d 1548 (11th Cir. 1996).

⁸⁶⁹ *Computer Assocs Int'l, Inc. v. Altai, Inc.*, 982 F.2d at 703.

⁸⁷⁰ *NEC Corp. v. Intel Corp.*, 10 U.S.P.Q.2d 1177 (N.D. Cal. 1989).

"The issue of adequate legal protection for computer programs is a major concern in the international software industry. United States trade officials estimate that between eight and twenty billion dollars in sales have been lost annually due to the counterfeiting of software products and semi-conductors.' In the United Kingdom, it is estimated that at least 150 million pounds per year are lost due to software piracy.⁸⁷¹ It is not surprising that software producers are increasingly seeking legal protection."⁸⁷²

Copyright has emerged as a dominant means of protecting software in the international marketplace.⁸⁷³ Other means of intellectual property protection, such as patents, have been rejected as unsuitable for software creations.⁸⁷⁴ Similarly, the use of trade secret licenses, although initially favored, has significantly diminished with the advent of personal computers. When the personal computer market expanded to allow for the promotion of mass-market programs, negotiation of trade secret licenses became impractical.⁸⁷⁵ Furthermore, trade secret

⁸⁷¹ From an unpublished paper by R. Tuckett, "Controlling Infringement of Copyright in Computer Software" Jan. 1985. Software piracy has been defined by FAST (Federation Against Software Theft, a computer trade group) as the replication of programs without permission, production of look-alike copies, and the unauthorized supply and use of computer software. The parliamentary debates on the Software Amendment revealed the results of a university study. The study reported that one in four microcomputer software houses suffered serious losses due to piracy. 73 Parl. Deb., H.C. (5th ser.) 1337 (1985).

⁸⁷² Nancy Kemp DuCharme Robert F. Kemp, (1987). COPYRIGHT PROTECTION FOR COMPUTER SOFTWARE IN GREAT BRITAIN AND THE UNITED STATES: A COMPARATIVE ANALYSIS.

⁸⁷³ Taphor, Software Protection in the International Marketplace, 10 N.C.J. OF INT'L LAW AND COM. REG. 617, 623 (1985).

⁸⁷⁴ According to the United States Supreme Court's interpretation of the Patent Act (35 U.S.C. § 101 (1952)), patent protection of software is unavailable, although some limited aspects of programs may be covered. *Diamond v. Bradley*, 450 U.S. 381 (1981); *Diamond v. Diehr*, 450 U.S. 175 (1981). It is generally agreed that the writing of programs does not constitute an invention for purposes of the Patent Act. Taphorn, *supra* note 3, at 622. The U.K. Patent Act of 1977 expressly declares that computer programs as such are not patentable. Rumbelow, Software Protection in the United Kingdom, 10 INT'L BUS. LAWYER 263 (1982) (citing § 1(2)(c) of the Patents Act).

⁸⁷⁵ Baeza, Acquisition and Exploitation of Mass Market Software, Computer Software And Chips 1986: PROTECTION AND MARKETING, 515, 529 (M. Goldberg ed. 1986).

In fact, it has been deemed impractical for three reasons: (1) a lengthy license agreement would inhibit sales and negatively impact the image of the "friendly" computer; (2) the transaction costs of negotiating a detailed legal agreement are not justified; and (3) there is little or no opportunity for direct bargaining between the vendor and the ultimate customers. PERFECTING, PROTECTING & LICENSING PROPRIETARY RIGHTS AFTER THE 1980 Copyright AMENDMENT, 126 (D. Brooks & M. Kiplinger ed. 1981).

In the U.K., contractual provisions between licensors and licensees are under the law of confidentiality. Secrecy cannot be maintained when programs are mass-marketed. Anderson, Piracy and the New Technologies the Protection of Computer Software Against Piracy, from papers presented by the ABA at the meeting in London, at 173 (1985).

laws are governed by state law in the United States, thus providing no uniformity.⁸⁷⁶ As a result, copyright protection has emerged as the favored legal device.

6.4.1.1. Deposit Requirement

A deposit of two complete copies of the best edition of the copyrighted work within three months of the date of publication of such work is required by copyright law.⁸⁷⁷ Regarding the computer software, which is not in human readable form, a problem is created by the deposit requirement. The regulations exempt the automated databases available only online in the United States.⁸⁷⁸ The following categories of material are exempt from the deposit requirement of Section 407(a) of Title 17: . . .

Automated databases available only online in the United States... Literary works, including computer programs and automated databases, published in the United States in the form of machine-readable copies (such as magnetic tape or disks, punched cards, or the like) from which the work cannot ordinarily be visually perceived except with the aid of a machine or a device.

6.4.1.2. Requirements for Registration

A delivery of deposit is required for the statute in order to obtain registration of the copyright in that work.⁸⁷⁹ Hence a problem is presented by this requirement considering the programs that are machine-but not human-readable. In order to deal with deposits of the machine-readable works, the specific regulations were promoted or made widely known. They provide for the deposit of "identifying portions" in the form of the first and last twenty-five pages of

⁸⁷⁶ Kesler & Hardy, Legal Protection of Software in the United States. A Status Report, 10 INT'L. Bus. LAWYER 266, 267 (1982).

⁸⁷⁷ 17 U.S.C.A. § 407.

⁸⁷⁸ 37 C.F.R. 5 202.19©(5).

⁸⁷⁹ 17 U.S.C.A. § 408(a). Failure to register results in the forfeiture of statutory damages, attorneys' fees and the prima facie evidence of the validity of the copyright 17 U.S.C.A. §§ 412(2) and § 410(c).

the corresponding source code and a page containing the copyright notice, if any. However, if the program is fifty pages or less, the required deposit is the entire source code. If the program is a revised version of another program, the deposit "should consist of the page containing the copyright notice and any fifty pages of source code representative of the revised material."⁸⁸⁰ If the relevant pages contain trade secret material, the regulations allow blocking out of the trade secrets "provided that die blocked-out portions are proportionately less than die material remaining, and the deposit reveals an appreciable amount of original computer code."⁸⁸¹ In the alternative, die deposit may include the first and last ten pages of the source code with no blocked-out portion or the first and last twenty-five pages together with ten or more consecutive pages of source code with no blocked out portions.

If the copyright application includes a specific claim in related computer screen displays, the deposit must also include visual reproductions of the expressions (such as printouts, photographs, or drawings) or, if the work is predominantly audiovisual, a one-half inch VHS format videotape reproducing the copyrightable expression.⁸⁸²

The required deposit for automated databases, compilations, statistical compendia is one copy of identifying portions of die word reproduced in a visually perceptible form.⁸⁸³ First and last twenty-five pages generally satisfy the "identifying portions" requirement.⁸⁸⁴

The regulations contain further detailed provisions for deposits involving multiple data files and group registrations.⁸⁸⁵

6.4.1.3. Infringement Test

⁸⁸⁰ 37 C.F.R. § 202.20©(3)(vii)(A)(1).

⁸⁸¹ 37 C.F.R. § 202.20©(3)(vii)(A)(2).

⁸⁸² 37 C.F.R. § 202.20©(vii)© (except that printouts, photographs or drawings must be deposited where the computer screen material "simply constitutes a demonstration of the fractioning of the computer program").

⁸⁸³ 37 C.F.R. § 202.20©(ii)(D).

⁸⁸⁴ 37 C.F.R. § 202.20©(ii)(D)(1).

⁸⁸⁵ 37 C.F.R. § 202.20©(ii)(D)(a) and (5).

"Infringement of copyright may be categorized as direct or primary infringement, in which an owner's exclusive, legislated rights are violated, and indirect or secondary infringement, consisting of certain dealings with respect to infringing works. A distinguishing feature between the two is knowledge on the part of the infringer that copyright is being infringed. Such knowledge is required in the case of indirect infringement, whereas direct infringement may occur whether or not knowledge is present. A common feature of any infringement is the absence of consent on the part of the copyright owner. In accordance with subsection 5(1), infringement of copyright presupposes a work in which copyright subsists."^{886,887}

By showing (1) access and (2) similarity, the infringement, in computer software cases, is proved.⁸⁸⁸ By showing that the large percentage of the code is identical and that errors from the copyrighted code were also found in the accused code and hidden (non-displayed) legends, this infringement can similarity be indicated.⁸⁸⁹ However, simply because programmers use a number of common techniques in writing programs, computer programs are expected to have certain identical portions. The similarity is only relied upon the courts in this domain; therefore,

⁸⁸⁶ see *Canadian Admiral Corporation v. Rediffusion, Inc.*, (1954), [1954] Ex. C.R. 382 (Ex. Ct.) Cameron J., at p. 390, i.e., a literary, dramatic, artistic or musical work, a performer's performance, a sound recording or a communication signal.

⁸⁸⁷ See also the discussion on copyright protection in unlawful works in *LADDIE* (Hugh) et al., *The Modern Law of Copyright*, 2nd ed. (London, Butterworths, 1995), at nos. 2.143-2.146. Because copyright does not exist other than under and in accordance with the Copyright Act or any other statutory enactment in force (section 89), direct infringing activities are limited to violations of a 4 copyright owner's rights as enumerated in section 3 (works), section 15 (performer's performances), section 18 (sound recordings) and section 21 (communication signals). Indirect infringement may only take place with respect to works or other subject-matters found to infringe a validly subsisting copyright or works or other subject-matters which would infringe copyright if they had been made within Canada: see subsection 27(2) in fine.

⁸⁸⁸ *Atari v. North American*, 672 F.2d 607,614 (7th Cir.), cert denied, 459 U.S. 880 (1982); *Warner Bros. V. American Broadcasting Ca*, 654 F.2d 204, 208 (2d Cir. 1981).

⁸⁸⁹ *Williams Electronics, Inc. v. Artic Int'l Inc.*, 685 F.2d 870, 876 n 6 (3d Cir. 1982).

they focus their inquiry on the substantial parts of the program rather than a mere mechanical comparison of similar commands.⁸⁹⁰

"Because all steps of a computer program are not of equal importance, the relevant inquiry cannot, therefore, be the purely mechanical one of whether most of the program's steps are similar. Rather, because we are concerned with die overall similarities between the programs, we must ask whether the most significant steps of the programs are similar."

If the substantial similarity of significant parts is established, the overall similarity is also established.⁸⁹¹

The Second Circuit has set out an approach to be used in order to determine whether the non-literal elements of two or more computer programs are substantially similar.⁸⁹² Under step one of this test, the court breaks down the alleged infringed program into its constituent structural parts. Under step two, the court examines each of these parts for such things as incorporated ideas, expressions that are necessarily incidental to those ideas, and elements that are taken from the public domain. The court is then able to shift out all non-protectable material. Under the third step, the court left with a "kernel, or possible kernels," of creative expression compares this material with the structure of an allegedly infringing program. The result of this comparison determines whether the protectable elements of the programs at issue are substantially similar so as to warrant a finding of infringement.⁸⁹³

⁸⁹⁰ Whelan Assocs. v. Jaslow Dental Laboratory, Inc., 797 F.2d 1222,1246 (3d Cir 1986), cert denied, 479 U.S. 1031 (1987) (Took and feel" test); Russo and Derwin, "Copyright in the 'Look and Feel' of Computer Software," 1 The Computer Lawyer 1 (1985), Pinheiro and Lacroix, "Protecting the 'Look and Feel' of Computer Software," 1 High Tech. L.J. 411 (1987); Conley, "Look and Feel, In Defense of the Current Case Law," 5 The Computer Lawyer 1 (1988); Lundberg Michelle and Sumner, The Copyright/Perfect Interface: Why Utilitarian "Look and Feel" Is Un-copyrightable Subject Matter," 6 The Computer Lawyer 5 (1989), Moreno, "Look and Feel as a Copyrightable Element: The Legacy of Whelan and Jaslow? Or Can Equity in Computer Infringement Cases Be Found Instead by the Proper Allocation of Burden of Persuasion?" 51 La. L. Rev. 177 (1990). See also Soft Computer Consultants, Inc. v. Shahram Lalehzarzadeh Comtron, Inc., 1 CCH Computer Cases 1 46,087 (E.D.N.Y. 1968).

⁸⁹¹ Id.

⁸⁹² Computer Associates International, Inc. v. Altai, Inc., 982 F.2d 693,706 (2d Cir. 1992).

⁸⁹³ Id.

The ease with which programs can be copied and the consequences of such copies is an obvious problem for software producers. As a result, software publishers often license, rather than sell, their software. Purchasers from a licensee are subject to the same licensing restrictions under which the licensees operate.⁸⁹⁴

6.4.1.4. The Constituents of Copying

In Tanzanian context, copyright can be defined as the exclusive right granted by law to the author of a work to disclose it as his own creation, to reproduce it and to distribute or disseminate it to the public in any manner or by any means and also to authorize others to use the work in specific ways.⁸⁹⁵

In other words, copyright is a property right which vests in the authors of original literary, dramatic, musical and artistic works. Copyright also vests in authors of sound recordings, films, broadcasts, cable programmers and typographical arrangements of published editions. Several copyrights can exist in one work. For example, a song can be split into three (3) separate copyright works⁸⁹⁶ such as, Copyright in the music itself (a "musical work");⁸⁹⁷ . Copyright in the lyrics (a "literary work");⁸⁹⁸ and Copyright in the sound recording of the music (a "sound recording").⁸⁹⁹

If someone loads validly copyrighted software onto his or her own computer without the owner's permission and then uses the software for the principal purposes for which it was

⁸⁹⁴ Microsoft Corp. V. Harmony Computers & Electronics, Inc., 846 F. Supp. 208 (E.D.N.Y. 1994).

⁸⁹⁵ Section 4 of the Copyright and Neighboring Rights Act of 1999, Cap 218.

⁸⁹⁶ Lexglobe LLP, A Short Guide to Copyright Law in Tanzania, available at www.lexglobelaw.com/assets/guide_copyright2.pdf - Retrieved on 21st July 2013.

⁸⁹⁷ This term is not defined in the Interpretation section of the Act, a musical work consists of the musical notes and lyrics (if any) in a musical composition. Available at http://itlaw.wikia.com/wiki/Musical_work - retrieved on 8th September 2013.

⁸⁹⁸ Is the work of a writer; anything expressed in letters of the alphabet (especially when considered from the point of view of style and effect). Available at <http://www.thefreedictionary.com/literary+work> - Retrieved on 8th September 2013.

⁸⁹⁹ Is an electrical or mechanical inscription and recreation of sound waves, such as spoken voice, singing, instrumental music, or sound effects. The two main classes of sound recording technology are analog recording and digital recording. See www.sound2record.com/sound-recording.html - Retrieved 8th September 2013.

designed, there can be no real doubt that the protected elements of the software have been copied and the copyright infringed. In one case,⁹⁰⁰ the court noted that, as an analytical matter, there were two different ways to describe the impermissible "copying" that occurred in that case. First, it could be concluded, quite simply, that copying occurred when the defendants installed and used the software for the principal purposes for which it was intended- Alternatively, following a line of analysis adopted by a number of courts, it could be concluded that the defendants copied the software when it was booted up for use for its principal purposes, and thereby loaded into RAM.⁹⁰¹

The court noted that these two theories might be two ways of saying the same thing. The language of the Copyright Act, case law, and common sense support the proposition that the installation of software on a computer, results in "copying" within the meaning of the Copyright Act.⁹⁰²

6.4.1.5. Right to Make Archival Copies

The statute specifically allows the owner of a copy of a computer program to make copies of that program as an essential step in the utilization of the computer program or for archival purposes.⁹⁰³ The exact copies of such program can be transferred only in connection with the transfer of the computer.⁹⁰⁴ The adoptions of the program can only be transferred upon authorization of the copyright owner.⁹⁰⁵

6.4.2. Advantages and Disadvantages of Copyright Protection

⁹⁰⁰ Stenograph LLC, v. Bossard Associates, Inc., 144 F.3d 96 (D.C Cir. 1998).

⁹⁰¹ Id.

⁹⁰² Id.

⁹⁰³ 17 U.S.C.A. § 117. See Data Prods., Inc. v. Repparz, 18 U.S.P.Q.2d 1058,1063 (D. Kan. 1990) ("§ 177 is designed to protect software purchasers who make modifications or enhancements to the software for their own use only"); Foresight Resources Corp. v. Pfortmiller, 719 F. Supp. 1006, 13 U.S.P.Q.2d 1721 (D. Kan. 1989).

⁹⁰⁴ 17 U.S.C.A. § 117.

⁹⁰⁵ Id.

One advantage of copyright protection is that it offers strong protection against copying. The copyright owner who shows copying and relies on statutory presumption of validity can obtain damages, injunction, attorney fees, and preliminary injunction. Another advantage is that copyright protection is relatively inexpensive and easy to obtain.

One disadvantage of copyright protection for computer programs is that registration and deposit of the program may give sufficient information to the competitor to allow him to produce a competing program that might not be sufficiently similar to amount to copyright infringement.

6.5. Mask Work Protection

The Semiconductor Chip Protection Act of 1984 (SCPA) created a new form of protection for computer chips.⁹⁰⁶ The law protects the masks used to create the chip structure and the chips themselves.⁹⁰⁷ The SCPA is discussed at § 4.06, supra. It should be noted that, based on the legislative history, the inclusion of the software on a chip should not erode copyright protection that may be available for the software.⁹⁰⁸

In the first significant case under SCPA, the plaintiff prevailed on its infringement claim.⁹⁰⁹ The jury found that the defendant did not prove its reverse engineering defense and that the defendant misappropriated a material portion of the mask work.

6.6. Design Patent Protection

⁹⁰⁶ 17 U.S.C.A. §§ 901-914.

⁹⁰⁷ I Kuttan, Computer Software § 2.09[2][a] (West Group), Note. "Copyright for Integrated Circuit Designs. Will the 1976 Act Protect Against Chip Pirates?" 24 S. Tex. L.J. 817 (1983).

⁹⁰⁸ See, t g., 130 Cong. Rec. S 12925 (Oct. 3, 1984) (Sen. Mathias); Explanatory Memorandum-Mathias-Leahy Amendment to S. 1201, 130 Cong. Rec. S 12918 (Oct 3, 1984).

⁹⁰⁹ Brooktree Corp. V. Advanced Micro Devices, Inc., 757 F. Supp. 1088, 18 U.S.P.Q.2d 1692 (S.D. Cal. 1990).

Design patents can be used to protect ornamental features of computer hardware and software.⁹¹⁰ The use of design patents to protect the design of a console or other external features of a computer component involves traditional concepts and application of design patent law. These concepts are discussed at § 4.02[4][b] and § [6][b]. Recently, however, design patents were issued to a major U.S. company on ornamental features of the designs appearing on the computer screen.⁹¹¹

The advantage of this newly-utilized form of protection stems from the nature of patent protection itself. Unlike other types of protection, independent development by the infringer and general use by the industry after the invention date of the patent are not available as defenses.⁹¹²

The disadvantages of the design patent approach include the cost and time necessary to prepare and prosecute the patent application. Such costs and time are generally significant when compared to the value of the protection.

Additionally, the pendency of design patent applications, usually two years, may delay the enforceability of the patent. Early filing of patent design applications and expediting prosecution once infringement is discovered may eliminate the timing problem. Usually, the icons of computer software are selected and internally approved long before the software is tested and certainly long before its introduction. Filing[^] of patent applications as soon as the screen display features (icons) are decided upon, may eliminate or at least significantly reduce the time gap between market introduction of the software and grants of the design patents for that software. Moreover, marking of this software with "Design Patent Pending"⁹¹³ labels may provide a sufficient chilling effect on potential copiers to deter or delay their copying.

⁹¹⁰ Kluth & Lundberg, "Design Patents: A New Form of Intellectual Property Protection for Computer Software," 5 The Computer Lawyer 1 (1988); 1 Kuttner, Computer Software §3.06 (West Group).

⁹¹¹ U.S. Design Patent Nos. 296,218; 295,631; 295,632; 295,762,295,764,296,218; 296,339.

⁹¹² 32 U.S.C.A. § 102. See also discussion at § 12.02[3][b], supra.

⁹¹³ 35 U.S.C.A. § 292 provides penalties for false markings.

If infringing software is introduced on the market while the design patent application is still pending, the patent applicant should use the available Patent Office procedure and prompt responses to Office Actions⁹¹⁴ to expedite the prosecution of his application. Specifically, the Manual of Patent Examining Procedure provides that applications may be taken out of turn and considered by the Patent Office if it is designated as being special.⁹¹⁵ One ground for designating an application is infringement of the pending claims. To obtain the "special" designation based on "infringement"⁹¹⁶ of the claims during pendency of the application, the following procedure is indicated;⁹¹⁷

"Subject to a requirement for further showing as may be necessitated by the facts of a particular case, an application may be made special because of actual infringement (but not for prospective infringement) upon payment of the fee under 37 C.F.R. § 1.17(i) and the filing of a petition alleging facts under oath or declaration to show, or indicating why it is not possible to show; (1) that there is an infringing device or product actually on the market or method in use, (2) when the device, product or method alleged to infringe was first discovered to exist; supplemented by an affidavit or declaration of the applicant's attorney or agent to show, (3) that a rigid comparison of the alleged infringing device, product, or method with the claims of the application has been made, (4) that, in his or her opinion, some of the claims are unquestionably infringed, (5) that he or she has made or caused to be made a careful and thorough search of the prior art or has a good knowledge of the pertinent prior art, and (6) that he or she believes all of the claims in the application are allowable."

It is likely that design patent protection will be used more extensively. for software protection in the future. The new possibilities for protection of software by means of design patents were

⁹¹⁴ Generally, the applicant is given three months to respond to an Office Action with up to three months of extensions. However, the applicant may respond shortly after he receives the Patent Office Action.

⁹¹⁵ M.P.E.P. § 708.02 (Supp. 1990).

⁹¹⁶ Technically, there can be no infringement until the patent issues. The term "infringement" is used in this context to indicate that another process or device is covered by the pending claims of the patent application.

⁹¹⁷ M.P.E.P. § 708.02 (Supp. 1990).

further opened by a recent change in the law erasing the requirement that the patented ornamental features must be visible in the final use of the article.⁹¹⁸ The Federal Circuit overruled prior law and held that the patented design features need not be visible in the final use of the article to which these design features are applied. In *Webb*, the ornamental features were visible in the distribution chain prior to the final use. Accordingly, a feature that is never visible and entirely hidden in the computer program would not provide the basis for design patent protection. However, ornamental features of a program that are visible to programmers and servicemen but not to the ultimate user seem to be within the holding in *Webb*. The use of such ornamental features and design patents covering them may present a powerful new method of protecting software, especially protecting it from being copied in its entirety.

6.7. Trademark and Trade Dress Protection

Trademark and trade dress laws can offer significant ancillary protection for computer technology. The nature, requirements for protection, and enforceability of trademark and trade dress are described in § 4.03 and §4.04. This subsection is directed to the application of trademark and trade dress protection to computer technology.

Specifically, with respect to computer technology, the names of the programs, ancillary services, and hardware (including computers, modems and consoles to house the computer) can be protected by applying the general rules of trademark protection.⁹¹⁹ However, the trademark owner must be careful to select a mark that is protectable and use it so that it does not become generic. An example of an unwise choice of a mark and subsequent use of the mark in a generic sense is described in *Intel Corp. V. Advanced Micro Devices, Inc.*⁹²⁰ Intel chose "80386" as the mark for its extremely successful computer chip. It advertised the chip in a

⁹¹⁸ *In re Webb*, 916 F.2d 1553 (Fed. Cir. 1990).

⁹¹⁹ *Midway Mfg. Co v. Strohon*, 564 F. Supp 741 (N D III 1983).

⁹²⁰ *Intel Corp. V. Advanced Micro Devices, Inc.*, 75(i F. Supp 1291 (N.D Cal. 1991).

generic manner as the "386." The court held that the mark "386" is "a generic name for a type of microprocessor." It further held that 80386 merely denotes a part number.

In *America Online, Inc. v. AT&T Corp.*⁹²¹ an Internet service provider's (ISP) use of the phrase "You Have Mail" to indicate when a customer had new e-mail service was generic and not enforceable as a trademark. The phrase fell within the common meaning and usage of that phrase. Its use was also a functional phrase and one used similarly by other services. However, the court also held that whether the term "Buddy List" used by the ISP was generic raised questions of fact that could not be determined on a motion for summary judgment.

Trade dress protection has been applied to the configuration of the console's housing and computer hardware and graphics depicting the name and cartoon figures used in a popular computer game.⁹²² In *Midway Mfg. Co. v. Strohon*,⁹²³ the court held that the substitution of another name for PACMAN in connection with the same cartoons would not diminish the confusion or the natural tendency to assume that the CUTE-SEE game emanated from the same source as PAC-MAN. It has been suggested that trade dress protection is also available for the "look and feel" of computer software.⁹²⁴ However, except for a video game display,⁹²⁵ the trade dress protection theory has not been successfully applied to date.⁹²⁶

An individual's registration of a corporation's trademarks as domain names on the Internet constituted a dilution of those marks under federal and state law. In *Panavision Intentional L.P.*

⁹²¹ *America Online, Inc. v. AT&T Corp.*, 243 F.3d 812, 57 U.S.P.Q.2d (BNA) 1902, 56 Fed.R.Evid.Serv. 738 (4th Cir. 2001).

⁹²² *Midway Mfg. Co. v. Strohon*, 564 F.Supp. 741 (N.D. Ill. 1983) ("the cartoon figures themselves are associated in the public mind with Midway's PAC-MAN game"); Comment, "Consumer Meets Computer" An Argument for Liberal Trademark Protection of Computer Hardware Configuration Under § 43(a) of the Lanham Trademark Act," 41 Wash. & Lee L. Rev. 283 (1987). Cf. *Digital Equipment Corp v. C. Itoh & Co.*, 229 U.S.P.Q. 598 (D.N.J. 1985) (layout and general appearance not protectable because they are functional)

⁹²³ *Midway Mfg Co. v. Strohon*, 564 F.Supp. 741 (N.D. Ill. 1983)

⁹²⁴ Armstrong, "Trade Dress Protection for the 'Look and Feel' of Software. The Lanham Act as an Emerging Source of Proprietary Rights Protection for Software Developers," 71 J. Pat. Off. Soc'y 974 (1989); Gage, "New Thinking Regarding Software Protection," 13 Licensing L. & Bus. Rep. 157 (1990)

⁹²⁵ *Midway Mfg Co. v. Dirkschneider*, 543 F. Supp. 466 (D. Neb. 1981).

⁹²⁶ *United States Golf Ass'n v. St Andrews Sys.*, 749 F.2d 1028 (3d Cir. 1984) (trade dress protection denied because of failure to satisfy the non-functionality requirement).

v. Toeppen,⁹²⁷ the Ninth Circuit agreed with the district court's conclusion that the defendant's conduct diminished the capacity of the corporation's marks to identify and distinguish die corporation's goods and services on the Internet. The court of appeals rejected the defendant's premise that a domain name is nothing more than an address: "A significant purpose of a domain name is to identify the entity that owns die web site."⁹²⁸

In *Brookfield Communications Inc. c. West Coast Entertainment Corp.*,⁹²⁹ Brookfield, a company dial provided information on the entertainment industry, brought an action against 'West Coast', a chain of video rental stores. The action was based on West Coast's use of Brookfield's "MovieBuff" trademark in the domain name of West Coast's Web site and Web site's metatags. The Ninth Circuit held that Brookfield had established the likelihood of success on the merits of its claim that the video rental store chain's use of term "moviebuff.com" as its domain name would create the likelihood of confusion, and therefore was entitled to a preliminary injunction, even if the "MovieBuff" mark was weak, in view of die marks' similarity, the fact that both parties' products were related to the entertainment industry, and both parties' use of the Internet as a marketing and advertising facility.

The court also held dial the use of the Web site metatags is actionable as trademark infringement under the Lanham Act, since the use of metatags can create "initial interest confusion." Metatags are a type of Hypertext Markup Language (HTML) code that is used by search engines but is not visible to Web users. Web surfers looking for Brookfield's "MovieBuff" products who are taken by a search engine to "westcoastvideo.com" will find a database sufficiently similar to "MovieBuff" that a sizeable number of consumers who were initially looking for Brookfield's product will simply decide to use West Coast's products instead. Although there is no source confusion in the sense that consumers know they are

⁹²⁷ *Panavision Inti, L.P. v Toeppen*, 141 F.3d 1316 (9th Cir 1998)

⁹²⁸ U at 1327.

⁹²⁹ *Brookfield Communications Inc. v. West Coast Entertainment Corp.*, 174 F.3d 1036 (9th Cir. 1999)

patronizing West Coast rather than Brookfield, there is nevertheless initial interest confusion in the sense that, by using "moviebuff.com" or "MovieBuff" to divert those looking for "MovieBuff" to its Web site. West Coast improperly benefits from the goodwill that Brookfield developed in its mark.⁹³⁰

Legislation passed by Congress in 1999 is aimed at curbing some of the trademark abuses, known as "cyberpiracy," that had become common on the Internet⁹³¹. Under this legislation, a person may be liable in a civil action brought by the owner of a mark, including a personal name, if, without regard to the goods or services of the parties, that person has a bad faith intent to profit from that mark and registers, traffics in, or uses a domain name that:

1. In the case of a mark that is distinctive at the time of registration of the domain name, is identical or confusingly similar to that mark; or
2. In the case of a famous mark that is famous at the time of registration of the domain name, is identical or confusingly similar to or dilutes that mark.⁹³²

"Traffics in" includes sales, purchases, loans, pledges, licenses, exchanges of currency, and any other transfer for consideration or receipt in exchange for consideration.⁹³³

In order to determine whether a person has such a bad faith intent, the court may consider the following factors:

1. The trademark or other intellectual property rights of the person, if any, in the domain name;
2. The extent to which the domain name consists of the legal name of the person or a name that is otherwise commonly used to identify that person;

⁹³⁰ Id. at 1063-1065.

⁹³¹ 15 U.S.C.A. § 1025(d).

⁹³² 15 U.S.C.A. § 1025(d)(1)(A).

⁹³³ 15 U.S.C.A. § 1025(d)(1)(D).

3. The person's prior use, if any, of the domain name in connection with a bona fide offering of goods or services;
4. The person's bona fide noncommercial or fair use of the mark in a site accessible under the domain name;
5. The person's intent to divert consumers from the mark owner's online location to a site accessible under the domain name that could harm the goodwill represented by the mark, either for commercial gain or with the intent to tarnish or disparage the mark, by creating a likelihood of confusion as to the source, sponsorship, affiliation, or endorsement of the site;
6. The person's offer to transfer, sell, or otherwise assign the domain name to the mark owner or any third party for financial gain without having used, or without intending to use, the domain name in the bona fide offering of goods or services;
7. A pattern of practices like those listed in factor 6;
8. The person's use of material and misleading false contact information when applying for the registration of the domain name, the person's intentional failure to maintain accurate contact information, or the person's prior conduct indicating a pattern of such conduct;
9. The person's registration or acquisition of multiple domain names which the person knows are identical or confusingly similar to marks of others that are distinctive at the time of registration of such domain names, or the person's dilution of famous marks of others that are famous at the time of registration of such domain names, without regard to the goods or services of the parties; and
10. The extent to which the mark incorporated in the person's domain name registration is or is not distinctive and famous.⁹³⁴

⁹³⁴ 15 U.S.C.A. § 1025(d)(1)(A).

Bad faith intent will not be found in any case in which the court determines that the person reasonably believed that the use of the domain name was a fair use or was otherwise lawful.⁹³⁵

A person is liable for using a domain name only if that person is the domain name registrant or that registrant's authorized licensee.⁹³⁶

In any civil action under this statute, the court may order the forfeiture or cancellation of the domain name or the transfer of the domain name to the owner of the mark.⁹³⁷

Under certain circumstances which prevent the trademark holder from bringing an in person action, the statute provides for an in-rem action.⁹³⁸

6.8. Contract Protection

The protection of computer software by means of a contract is akin to trade secret protection but in many respects is broader. The confidential business information that may not rise to the level of trade secrets may nevertheless be protected by an agreement.⁹³⁹ Similarly, contracts in most jurisdictions can include reasonable noncompetition clauses that reduce the risk of intentional or inadvertent potential disclosure of the confidential information to a competitor. Without a contract, it is difficult to stop disclosure or police access to information by competitors.⁹⁴⁰

The protection of computer technology by means of a contract is differentiated here from trade secret protection to emphasize the distinctions and overlaps between the two. A contract can provide the necessary relationship that triggers the trade secret protection. However, trade secret protection is limited to improvements which possess the necessary attributes to qualify

⁹³⁵ 15 U.S.C.A. § 1025(d)(1)(A)(ii).

⁹³⁶ 15 U.S.C.A. § 1025(d)(1)(D).

⁹³⁷ 15 U.S.C.A. § 1025(d)(1)(C).

⁹³⁸ 15 U.S.C.A. § 1025(d)(2).

⁹³⁹ *Modem Controls, Inc. v. Andreadakis*, 578 F.2d 1264, 1268 (8th Cir. 1978); *Electronic Data Sys. Corp. v. Powell*, 524 S.W.2d 393, 398 (Tex. Civ. App. 1975).

⁹⁴⁰ *Maloney v. E. I. du Pont de Nemours Co.*, 352 F.2d 936, 938 n.4 (D.C. Cir. 1965), cert. denied, 383 U.S. 948 (1966).

as trade secrets. Moreover, the remedies available to a trade secret owner are limited. For example, trade secret laws rarely allow the owner of the trade secret to prevent an employee from working for a competitor.⁹⁴¹ A contract allows a broader range of information that can be protected and can extend beyond trade secret to cover the know-how. The contract also can prevent the employee from competing with the owner or prevent the employee from using or disclosing the information which may not qualify as a trade secret.⁹⁴² Some contracts also include the prohibition on reverse engineering of software. However, it is presently not clear whether such restrictions are enforceable.⁹⁴³ Arguments have been made that they are inconsistent with federal patent policy.⁹⁴⁴

6.9. Technological Protection

The technological methods of protection of software have been considered the most effective and desirable methods of preventing copying. It appears, however, that the popularity of this approach, especially with respect to copy-protecting the programs, has been declining. One possible reason for this decline may be the increased availability and viability of legal forms of protection. Another reason may be that technological forms of protection provide significant problems that may affect the marketability of the copy protected software. Once the negative effect of using copyright protection is perceived by the manufacturer, the manufacturer may decide that the increased risk of copying is outweighed by the increased desirability of a non-copy-protected program. The technological approaches of protection include: (1) prevention of access to the source code; (2) copy-protecting programs; and (3) locking programs. The program locks can further be subdivided into those which prevent running of the program and

⁹⁴¹ AMP, Inc V Fleischhacker, 823 F.2d 1199 (7th Cir. 1987).

⁹⁴² Modem Controls v. Andreadakis, 578 F.2d 12H-I (8th Cir. 1978)

⁹⁴³ Pooley, "Guiding the Software Startup through the Tradeseecret Minefield," in 2 The Law of Computer Related Technology J-1 (AIPLA 1992).

⁹⁴⁴ Bonito Boats, Inc. v. Thunder Craft, -189 US 141 (1989)

those that actually destroy files stored in the computer. These technological approaches are individually discussed in the following subsections.

6.9.1. Restricting Access to the Source Code

The source code is written in a human-readable form. It includes instructions that are later translated into an object code. It also usually includes comments by the computer programmer with respect to the logic of the program, problems experienced in proceeding to the next step, and even regarding abandoned approaches to affect various portions of the program. The source code is indispensable when trying to eliminate problems in a program or to modify, update, or customize the program. The access to the source code of a program (especially a well-documented source code) makes it much easier to copy the program.

It is possible to "reverse engineer" a program from its object code. Software engineers designing a product that must be compatible with a copyrighted product frequently must reverse engineer the copyrighted product to gain access to the functional elements of the copyrighted product. Reverse engineering includes several methods of gaining access to the functional elements of a software program. They include:

1. Reading about the program;
2. Observing the program in operation on a computer;
3. Performing a "static examination" of the program's instructions contained within the program; and
4. Performing a "dynamic examination" of the program's instructions while the program is being run on a computer.⁹⁴⁵

⁹⁴⁵ Sony Computer Entertainment, Inc. v. Connectix Corp, 203 F.3d 596, 2000 WL 144399, at *2 (9th Cir. 2000).

Reverse engineering software from its object code has been simplified with the development of "disassembler" programs. Disassembly will be considered fair use of a copyrighted work where the use of such programs is the only way to gain access to the ideas and functional elements embodied in a copyrighted program, as long as there is a legitimate purpose for seeking this access. Object code cannot be read by humans. Therefore, the unprotected ideas and functions of the code are frequently undiscoverable in the absence of investigation and translation that may require copying the copyrighted material.⁹⁴⁶

In *Sony Computer Entertainment, Inc. v. Connectix Corp.*,⁹⁴⁷ a software developer was involved in the development of emulator software that would allow a manufacturer's games to be played on a computer, in addition to the manufacturer's console. In order to do so, the software developers engaged in the intermediate copying of the manufacturer's copyrighted basic input-output system (BIOS) firmware during the course of reverse engineering the BIOS by disassembling its object code into source code. The court held that the developer's actions constituted fair use because the copying was necessary to access the unprotected functional elements of the BIOS. In addition, any copying was "intermediate": the developer's final product contained no infringing material.

As a result of these technological and legal developments, one method of protecting software is by limiting the access to the source code to persons who have the absolute need to see it. The restrictions on access to the source code may not, however, be acceptable to the licensee or the purchaser of the program. Without access to the source program, the licensee or the purchaser would not be able to deal with potential errors (bugs) in the program, some of which may not become evident until years after the program is first used. Similarly, without the source program, modifications of the program or adoption of the program to a different computer may

⁹⁴⁶ Id. at 2000 WL 14439, at *5. See *E.F. Johnson Co. v. Uniden Corp. of Am.*, 623 F. Supp 1485, 228 U.S.P.Q. 891 (D. Minn 1985); *Sega Enters. Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 24 U.S.P.Q.2d 1561 (9th Cir. 1992).

⁹⁴⁷ *Sony Computer Entertainment, Inc. v. Connectix Corp.*, 203 F.3d 596, 2000 WL 144399, at *2 (9th Cir. 2000)

not be practically feasible. Finally, the licensee or the purchaser may be concerned about the loss of the original source program as the result of future improvement of the program or corporate changes involving the owner of the source code.

If the access to the source code cannot be entirely eliminated, it is advisable to restrict the access by setting up what has been termed "an escrow" arrangement. A copy of the source code is provided to a third party who maintains it in confidence and allows access to it only upon occurrence of events agreed to by the owner of the program.

6.9.2. Copy-Protected Programs

Another form of technological protection used by program owners is to copy-protect the program so that it cannot be copied using normal procedures. A variety of methods have been developed to prevent copying. None of these methods are entirely effective. The protection is generally effective against unsophisticated users, but programs have been developed to overcome copy protection. An effort to outlaw such anti-copy protection programs has failed. In *Vault Corp. v. Quaid Software, Ltd.*,⁹⁴⁸ the court was asked to enjoin the manufacturer of a program that unlocked the programs provided by plaintiff. The plaintiff based its action on three copyright infringement claims. First, that Quaid infringed "by copying Vault's program into its computer memory for the purpose of developing the unlocking program. Second, that Quaid through its unlocking program, contributes to copyright infringement of Quaid's program. Third, that the versions of Quaid's program that contained thirty characters from Vault's program are unauthorized 'derivative works.'"⁹⁴⁹

The court held that copying of Vault's program into the computer memory does not infringe Vault's copyright because such use of the program was within the exemption of section

⁹⁴⁸ *Vault Corp. v. Quaid Software, Ltd.*, 47 F.2d 255, 7 U.S.P.Q.2d 1281 (5th Cir. 1988)

⁹⁴⁹ *Id.*

117(1).⁹⁵⁰ This section provides that making a copy is not an infringement if "such a new copy or adaptation is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner."⁹⁵¹

The court rejected Vault's argument that the copy made under section 117(1) "must be employed for a use intended by the copyright owner."⁹⁵²

The court rejected Vault's claim of contributory infringement because Quaid's program "serves substantial non-infringing use by allowing purchasers of programs on PROLOK diskettes to make archival copies as permitted under 17 U.S.C. § 117(2)."⁹⁵³ The court held that the availability of substantial non-infringing use precludes the finding of contributory infringement.⁹⁵⁴

Finally, the court dismissed Vault's claim based on the derivative work theory. The court found that thirty identical characters in a fifty-to-eighty pages source code is not significant enough to qualify as a "derivative work." Quaid's program did not incorporate a sufficient amount of the copyrighted work and the court found that qualitatively overlapping portions served functions different from those of the copyrighted program. However, in *Bishop V. Wick*, the court found copyright infringement where defendants disabled the anti-copying safeguards and then duplicated and distributed the copied programs.⁹⁵⁵

The use of copy protection creates problems for legitimate users, making the copy-protected programs less desirable. Depending on the type of copy protection used, the legitimate user is not able to make archival copies of the program, back-up the disk and/or load and reload the program into the hard disk, and/or interface with other programs. The user, therefore, may prefer a similar program that is not copy-protected. Thus, copy protection may decrease the

⁹⁵⁰ 17 U.S.C A. § 117(1).

⁹⁵¹ *Id.*

⁹⁵² *Vault*, 847 F.2d at 267-68.

⁹⁵³ *Id.* at 262

⁹⁵⁴ The court relied on *Sony of Am. v. Universal City Studios*, 464 U.S. 417,434-42 (1984).

⁹⁵⁵ *Bishop V. Wick*, 11 U.S.P Q 2d 1360 (N.D. III. 1988).

marketability of the program. Additionally, the archival copies which are often provided by the manufacturer of copy-protected programs, result in additional copies of the program being available.

6.10. Unfair Competition

Another basis for the protection of computer technology can be provided via unfair competition. In computer technology, particularly, it is important that the software be compatible with other software and hardware and that hardware be compatible with other hardware. The makers of software and hardware often want to advertise their products as being compatible with preexisting products. If the subsequent products are not in fact fully compatible, the makers of the preexisting products or competing add-on products may have a claim for unfair competition based on the false advertisement of compatibility. The test for standing to sue is that the party must have a reasonable interest to be protected against the allegedly false advertising claims.⁹⁵⁶

The seminal case in this area is Princeton Graphics Operating, L.P. v. NEC Home Electronics (17.S.A), Inc.,⁹⁵⁷ in which the plaintiff sold add-on products in competition with defendant's add-on products. Specifically, both plaintiff and defendant manufactured VGA computer monitors. Defendant advertised that its VGA monitor is "fully compatible" with the IBM PS/2 computer.⁹⁵⁸ In fact, manual adjustments of the monitor were required under certain conditions.⁹⁵⁹ Plaintiff sued for unfair competition under Section 43(a) of the Lanham Act⁹⁶⁰ and under New York unfair competition statute.⁹⁶¹ One key issue in the lawsuit was the

⁹⁵⁶ PPX Enters., Inc. v. Audiofidelity, Inc., 746 F.2d 120, 124, 224 U.S.P.Q. 340 (2d Cir. 1984); Princeton Graphics Operating, L.P. v. NEC Home Elecs. (USA), Inc, 732 F. Supp. 1258 (S.D.N.Y. 1990); Tripleedge Prods., Inc v. Whitney Resources, Ltd., 735 F. Supp 1154, 15 U.S.P.Q.2d 14.34 (E.D.N.Y. 1990).

⁹⁵⁷ Princeton Graphics Operating, LP. v. NEC Home Elecs. (U.S.A.), Inc, 732 F. Supp. 1258 (SONY. 1990).

⁹⁵⁸ Id at 1260

⁹⁵⁹ Id.

⁹⁶⁰ 15 use A. § 1125(a).

⁹⁶¹ N.Y. Gen. Bus. Law §§ 368-d and 3.50-d

meaning of the term "compatible." In deciding this issue, the court first focused its attention on the target audience of the advertisement.⁹⁶²

⁹⁶² 732 F. Supp. at 1260.

CHAPTER SEVEN

Comparison and Recommendation

7.1. Licensing in Different Jurisdictions

"As a result of increasing in internationalization of contracts relating to intellectual property (IP) rights, it has become the norm that licenses involve a conflict of laws in circumstances that may raise complex issues concerning the applicable law."⁹⁶³

"The territorial nature of these exclusive rights greatly influences the law applicable to them in sharp contrast to the content of the conflict of law rules on contracts. In this context, the characterization of some issues relevant to IP licenses as either contractual or falling within the scope of application of the law that governs the IP right as such is key to determining the applicable law. An additional factor of complexity is that the globalization of commercial activity has increased the interest of right holders in exploiting IP rights simultaneously in many jurisdictions by means of multistate licenses. Since IP rights are exclusive rights with limited territorial scope, protection of the relevant subject matter for the territory of several countries presupposes the acquisition or recognition of parallel rights for each of the countries or territories covered by the contract. The fragmentation resulting from territoriality may eventually lead to the application of different national laws to the IP rights, which are the subject matter of a multistate license."⁹⁶⁴

"Across jurisdictions, there is a jarring lack of alignment of both the relevant branches of the law and the manners in which they intersect."⁹⁶⁵ Besides, while the foundational tenets of

⁹⁶³ Zenhäusern, Urs (1), *Der Internationale Lizenzvertrag*, Fribourg: Universitätsverlag (1993)

⁹⁶⁴ Pedro A. de Miguel Asensio, "The law governing international intellectual property licensing agreements (a conflict of laws analysis)," *Research Handbook on Intellectual Property Licensing*. Cheltenham, Edward Elgar Publishing, 2013, pp. 312-336.

⁹⁶⁵ See generally De Werra, *supra* note 8; Michael Anthony C. Dizon, The symbiotic relationship between global contracts and the international IP regime, 4 *J. INTELLECT. PROP. LAW PRACT.* 559, 564, (2009).

national legislations regulating the most prominent IP rights archetypes have been harmonized by multiple international projects,⁹⁶⁶ Inadequate fruit has been yielded by similar initiatives allocated to the law governing contractual dealings incriminating IP rights and license agreements.⁹⁶⁷

7.2. How a Company Takes Advantage of International Software Licensing?

Through a contractual arrangement, the right to distribute or manufacture a product or service in a foreign country is transferred by a certain company. Also, the right to utilize certain proficiencies that may incorporate patents, trademarks, company name, technology and technological know-how, design or even business methods are known as definite advantages taken by the company submitting to them. In exchange for the rights, according to the contract, a fee or percentage of sales is paid by the licensee.⁹⁶⁸

⁹⁶⁶ A list of the primary international IP treaties administered by the World Intellectual Property Organisation (WIPO) is available at <http://www.wipo.int/treaties/en/index.html>. For commentary on these sources see generally SAM RICKETSON & JANE C. GINSBURG, *INTERNATIONAL COPYRIGHT AND NEIGHBOURING RIGHTS, V 1-2: THE BERNE CONVENTION AND BEYOND* (2005); JÖRG REINBOTHE & SILKE VON LEWINSKI, *THE WIPO TREATIES 1996: THE WIPO COPYRIGHT TREATY AND THE WIPO PERFORMANCES AND PHONOGRAMS TREATY: COMMENTARY AND LEGAL ANALYSIS* (2002); SILKE VON LEWINSKI, *INTERNATIONAL COPYRIGHT LAW AND POLICY* (2008); SAM RICKETSON, *THE PARIS CONVENTION FOR THE PROTECTION OF INDUSTRIAL PROPERTY: A COMMENTARY* (2015); DIETER STAUDER, *2 EUROPEAN PATENT CONVENTION: A COMMENTARY* (2003); JON NELSON, *INTERNATIONAL PATENT TREATIES: WITH COMMENTARY* (2007); ELLEN P. WINNER & AARON W. DENBERG, *INTERNATIONAL TRADEMARK TREATIES WITH COMMENTARY* (2004); Carlos Correa, *Trade related aspects of intellectual property rights: a commentary on the TRIPS agreement*, OUP CAT. (2007); FRIEDRICH-KARL BEIER & GERHARD SCHRICKER, *FROM GATT TO TRIPS: THE AGREEMENT ON TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS* (1996); JUSTIN MALBON, CHARLES LAWSON & MARK DAVISON, *THE WTO AGREEMENT ON TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS: A COMMENTARY* (2014); IRENE CALBOLI & JACQUES DE WERRA, *THE LAW AND PRACTICE OF TRADEMARK TRANSACTIONS: A GLOBAL AND LOCAL OUTLOOK* (2016); JUSTINE PILA & ANSGAR OHLY, *THE EUROPEANIZATION OF INTELLECTUAL PROPERTY LAW: TOWARDS A EUROPEAN LEGAL METHODOLOGY* (2013) (for critical reflections on the harmonization of substantive IP law in the European Union).

⁹⁶⁷ For one of the few examples of intergovernmental initiatives focused on licensing law see the WIPO SUCCESSFUL TECHNOLOGY LICENSING GUIDE (http://www.wipo.int/edocs/pubdocs/en/licensing/903/wipo_pub_903.pdf).

⁹⁶⁸ Available at: <https://www.tcii.co.uk/2012/10/26/licensing-arrangements-the-pros-and-cons/10/13/2019>

When legal protection is possible in the target environment, and in order to boost up sales potential in the target country, licensing always sounds a perfect choice where there are barriers levied on import and investment. It includes the following advantages:

- “A company can “jump” border and tariff barriers through quick and easy entry into foreign markets
- lower capital requirements
- potential for a large return on investment (ROI), which can be realized fairly quickly
- low risk, since you enter with an established product and you take fewer financial and legal risks.”⁹⁶⁹

In accordance with Portfolio Media. Inc.⁹⁷⁰ many businesses are in possession of profound IP portfolios comprising patents, patentable inventions, know-how and copyrights, in addition to trade secrets, trademarks and domain names. There are many potential advantages to licensing out IP that may be less evident. For instance, outbound licensing can:

- “strengthen relationships and reinforce a company’s value with its existing customers and others;
- facilitate penetration into new markets and distribution channels that may have been inaccessible (without an increase in capital expenditures or ongoing expenses);
- allow a business to rely on the expertise, capacity and skill of a licensee to commercialize IP, which is especially valuable when a company lacks the infrastructure, financial resources and know-how to bring a product to market independently;

⁹⁶⁹ Id.

⁹⁷⁰ Toni Hickey, William Barrow and Charles Harris (August 3, 2018, 12:57 PM EDT) 111 West 19th Street, 5th Floor | New York, NY 10011 | www.law360.com

- provide access to improvements a licensee made to its licensed technology without the related research and development costs (i.e., through “grant-back” clauses in licenses);
- provide a company with access to new technology or neutralize blocking technology through cross-licensing;
- give a business some control over the technical standards set by national and international standard-setting organizations, which typically require that patentees grant licenses for technology adopted in the standard-setting framework under fair, reasonable and nondiscriminatory terms, or that the license be royalty-free;
- enhance the company’s brand recognition in new markets; and
- convert an infringer or competitor into a collaborator by avoiding or settling IP litigation, and reduce the risks of future litigation or licensing demands.”⁹⁷¹

7.3. The Comparison of Different Companies' Software Licenses in Different Jurisdictions and Countries

In this part of the study, it is headed to have a closer look at different software licenses agreements in different jurisdictions and parts of the world.

7.3.1. Blancco End-user Agreement

One of the industries that has taken the land of neo-software technology is Blancco that has standardized data erasure and mobile device diagnostics software. "Blancco data erasure solutions provide thousands of organizations with the tools they need to add an additional layer of security to their endpoint security policies through secure erasure of IT assets. All erasures are verified and certified through a tamper-proof audit trail."⁹⁷²

⁹⁷¹ Id.

⁹⁷² Available at: <https://www.blancco.com/about-us/ 09/10/2019>

More than fifteen governing bodies and leading organizations around the world have tested, certified, approved and recommended Blancco data erasure solutions. This level of compliance is way too far than the reach of any other data erasure software which would boast with the rigorous requirements set by government agencies, legal authorities and independent testing laboratories.

All the mobile devices of the customers are easily, quickly and accurately identified and resolved their performance issues via mobile network operators, retailers and call centers that are enabled by Blancco Mobile Diagnostics. "As a result, mobile retailers can spend less time dealing with technical issues and, in turn, reduce the quantity of NTF returns, save on operational costs and increase customer satisfaction."⁹⁷³

"Additionally, Blancco Mobile Diagnostics solutions empower mobile processors, 3PLs (third party logistics), recyclers and repair and refurbishment operations to easily, quickly and accurately process used mobile devices to identify any issues and determine overall value, by incorporating Blancco Mobile Diagnostics, mobile processors automate processes, deliver intelligent routing based on device attributes and increase overall efficiency, while driving incremental revenue and profitability."⁹⁷⁴

In this section, with more detailed evaluation, the end-user license agreement of Blancco industry will be overly checked out in different parts of the world.

In accordance with the end-user license agreement of Blancco, within AMERICAS, the continents of North and South America, the differences are exposed as their applications are restricted toward the regulations of each governing countries.

In the United States, the policy of Blancco comprising the agreement is with Blancco US LLC, a company incorporated under the laws of the State of Delaware, USA.⁹⁷⁵ Whereas according

⁹⁷³ Id.

⁹⁷⁴ Id.

⁹⁷⁵ Blancco Technology Group, End User License Agreement.

to the end user agreement of the same industry, regarding its policy inside Canada, the agreement is with 7755473 Canada Inc, a company incorporated under the laws of Canada. So, it is not going to be surprising if it is taken into consideration that within Mexico and LATAM, the agreement goes with Software Blancco S.A. de C.V, a company incorporated under the laws of Mexico. Corresponding to all the facts about the agreement within borders of AMERICAS, it is understood that Blancco is a large industry with widespread interrelated correspondent companies inside several different jurisdictions of various parts of the world. This industry has also spread the domination over its managerial representations in EMEA, a shorthand way of referencing the three continents of Europe, the Middle East and Africa all at once, but with limited representatives in some countries only in Europe i.e. Germany, where the agreement is with Blancco Central Europe GmbH, a company incorporated under the laws of Germany. Scandinavian regions like Finland, where the agreement is with Blancco Oy Ltd, a company incorporated under the laws of Finland, or Sweden, the country in which the agreement is with SFÖ – Mjukvaruprodukter för dataradering AB, a company incorporated under the laws of Sweden.⁹⁷⁶

Blancco France SAS, a company incorporated under the laws of France, as clear as it takes care of the agreement policy within the borders of France, and Blancco Italy, SRL, a company incorporated under the laws of Italy, does the same thing into the jurisdiction of Italy.

However, when it comes to the rest of EMEA i.e., Middle East, Africa and those left of European countries, especially UK, the domination of the agreement policy goes to Blancco UK Limited, a company incorporated under the laws of England & Wales. For this particular reason, it is fully perceived that if any of LMIC countries, that is a developing country or more commonly a low- and middle-income country, wants to take action with Blancco agreement, it

⁹⁷⁶ Id.

has to come along with the laws of Blancco UK Limited.⁹⁷⁷ Regardless of how, according to Blancco's End User License Agreement. Version 2.3,⁹⁷⁸ this matter is taken care of by the authority of Blancco Oy Ltd, a company incorporated under the laws of Finland.

For analyzing how these agreements are being taken by countries from different parts of the world, the quiddity of each company taking care of Blancco's issues in each different region should be widely seen through.

7.3.1.1. The Importance of Data Erasure Certifications

"Data erasure product certifications are not easy to achieve. That is why Blancco is so proud to be the most certified data erasure software provider globally. By its very definition, product certification endorses our products' effectiveness by subjecting them to independently validated quality and performance tests. It is the strongest possible indicator of the quality within the product and the environment in which it has developed. To earn a certification, an organization must meet compliance with specific industry standards and/or data privacy/security regulations."⁹⁷⁹ Regarding what has been mentioned, it is striking to be brought in that Blancco has the following global certifications:⁹⁸⁰

1. "NYCE: Blancco's data erasure software is approved and certified in accordance with Mexican standards for development. As a result, Blancco's methods of erasure have been evaluated and deemed to be in compliance with the criteria established by the INAI Guide to secure data deletion.
2. Netherlands National Communication Security Agency: The Dutch National Signals Security Bureau (NBV), part of the General Intelligence and Security Service of the

⁹⁷⁷ Id.

⁹⁷⁸ End User License Agreement. Version 2.3 – Effective: 01 July

⁹⁷⁹ Available at: <https://www.blancco.com/blog-data-erasure-certifications-3rd-party-validations-important/09/10/2019>

⁹⁸⁰ Id.

Netherlands that promotes the protection of government information, has approved Blancco 5 for erasing HDDs and SSDs.

3. National Cyber Security Centre (NCSC): Blancco is certified by the National Cyber Security Centre (NCSC), the UK Government's National Technical Authority for Information Assurance. The Blancco product exceeded the highest security specifications detailed in the HMG Infosec Standard No: 5.
4. The Federal Service for Technical and Export Control (FSTEC): The Federal Service for Technical and Export Control (FSTEC) of Russia implements national policy for information security and protection of sensitive information. Blancco has been awarded a certificate from FSTEC confirming the software's compliance with a range of technical requirements, including the validation of its security functions.
5. BSI – Federal Office for Information Security: Blancco is certified by the Federal Office for Information Security (BSI), also known as the German Information Security Agency (GISA). The approved version fulfills the stringent security requirements of the BSI guidelines for classified documents and has been audited by the TÜV SÜD.
6. Certified for Common Criteria (ISO 15408): Common Criteria is an internationally recognized independent security certification recognized by governments in 26 countries across Europe, Australasia, Asia and North America. Blancco 5 and Blancco File Eraser Are Common Criteria certified.
7. Swedish Armed Forces: Blancco is certified by the Swedish Armed Forces, providing our Scandinavian and Nordic customers with an absolute line of defense against security breaches.
8. Central Information Systems Security Division: Blancco is certified and recommended by the DCSSI (Central Information Systems Security Division under the authority of

the French General Secretary for National Defense). Blancco is the only certified data erasure solution in France.

9. The Polish Internal Security Agency: The ABW, revered as the Polish special service, is responsible for the protection of the country's internal security and its constitutional order. Blancco is the only data erasure software certified by Polish authorities.”

Each of the above brought in certificates vividly indicates the jurisdiction to which Blancco can handle the issues that would be possibly set regulated by the hands of its subordinate corporations inside that country.

7.3.1.1.1. The Importance of Third Party Validation

"Perhaps even more important than certifications, third-party validations confirm that data erasure software works as a vendor promises it does. At Blancco, these validations allow our customers to trust that our products have been verified externally. You do not have to take our word that our products are the best; these trusted, nonpartial leaders in the data sanitization space have verified that for you."⁹⁸¹

To stay contemporaneous with new product updates, third-party validations must be renewed on a stable basis. Often standalone data erasure software solutions are proven by these validations, and besides, they are superior to OEM hardware solutions, which sometimes include a data erasure component. It is likely that these solutions would not get certified or validated via external experts, and also in the absence of this kind of proof of erasure, confidential company, customer and PII data (personal identifiable information) may by some chance be overlooked and ignored. "To prove data sanitization, a data erasure solution must not only securely erase data, but also verify that erasure and produce an auditable, tamper-proof

⁹⁸¹ Id.

Certificate of Erasure report to prove compliance with global regulations. OEM solutions typically do not offer this type of proof."⁹⁸²

7.3.2. MICROSOFT SOFTWARE LICENSE AGREEMENT

Microsoft is certainly one of the world's biggest software centers of all time. Considering this company's software agreement, it is remarkable to have a closer look at different privileges it holds for some certain developed countries, including Japan.⁹⁸³

"If you live in Japan or acquired the software while you lived in Japan, we grant you the following rights under our licenses." It is explicitly indicated in the license agreement of Microsoft that some particular exclusive rights are designated for those who live or lived in Japan during the software assumption.

PIPC⁹⁸⁴ It is to be known the software designated for Japan and its subscribers and users. If the software marked as "PIPC," the user may install and run one copy of the software on one licensed computer, but only if they comply with all the terms of this agreement. This type of Microsoft software license is permanently assigned to the licensed computer.⁹⁸⁵

It is notable that this kind of agreement has been made on the basis of the fact that Japan is not an EU Member State and, therefore, has not implemented the General Data Protection Regulation (GDPR) or the Data Protection Directive. However, the Act on the Protection of Personal Information (Act No. 57 of 2003) (the "APPI") contains similar provisions.⁹⁸⁶

According to governing laws of End-User License Agreement (EULA), "if the SOFTWARE was obtained in Japan, this EULA shall be governed by and construed in accordance with the

⁹⁸² Id.

⁹⁸³ MICROSOFT SOFTWARE LICENSE AGREEMENT, MICROSOFT OFFICE 2013 DESKTOP APPLICATION SOFTWARE

⁹⁸⁴ The Personal Information Protection Commission is a Japanese government commission charged with the protection of personal information. It was established on January 1, 2016, to replace the Specific Personal Information Protection Commission.

⁹⁸⁵ Id.

⁹⁸⁶ Available on <https://www.linklaters.com/en/insights/data-protected/data-protected---japan>.

laws of Japan and the parties accept the exclusive jurisdiction of the Tokyo District Court of Japan."⁹⁸⁷ However, it is regarded to be mentioned that "if the SOFTWARE was obtained in the United States, Canada, Mexico, Belize, Costa Rica, El Salvador, Guatemala, Honduras, Montserrat, Nicaragua, Panama, Turks and Caicos Islands, Virgin Islands, or Taiwan, this EULA shall be governed by and construed in accordance with the laws of the State of California, United States of America. With respect to any dispute which may arise in connection with this EULA and/or this SOFTWARE, you consent to the exclusive jurisdiction and venue of the federal and/or state courts in the county of Santa Clara in the state of California."⁹⁸⁸

It is vital to be known that the ownership of the SOFTWARE contains valuable trade secrets and confidential information belonging to ABBYY⁹⁸⁹ and third parties and is protected by copyright laws, including, without limitation, by United States Copyright Law, laws of Russian Federation, international treaty provisions, and the applicable laws of the country in which it is being used or obtained. And this fact makes the authority of the U.S. government cover the whole agreements and laws upon it.⁹⁹⁰

Also, for editions other than PIPC, one may install and run one copy of the software on one licensed computer (the first licensed computer), but only if the person complies with all the terms of this agreement. Provided that you comply with all the terms of this agreement, you may install another copy of the software on a second licensed computer for use by the primary user of the first licensed computer. One may make a single copy of the software for backup purposes and use that backup copy as described below. You may transfer the software to another computer that belongs to you. The person using it may also transfer the software

⁹⁸⁷ ABBYY® FlexiCapture®, End-User License Agreement (EULA).

⁹⁸⁸ Id.

⁹⁸⁹ ABBYY is a multinational software company that specializes in document capture and optical character recognition.

⁹⁹⁰ Id.

(together with the license) to a computer owned by someone else if a) you are the first licensed user of the software and b) the new user agrees to the terms of this agreement. To make that transfer, one must transfer the original media, the Certificate of Authenticity, the product key and the proof of purchase directly to that other person, without retaining any copies of the software. The so called user may use the backup copy we allow you to make or the media that the software came on to transfer the software. Anytime you transfer the software to a new computer, you must remove the software from the prior computer. You may not transfer the software to share licenses between computers.

The non-commercial use restrictions for Academic, University or Home and Student Edition software do not apply to the user if they live in Japan or acquired the software while they lived in Japan.⁹⁹¹

Another interesting section of the Microsoft Licensing Agreement is the provision on subcontractors; “Microsoft and its affiliates operate the services offered under the Data Processing Terms (DPT) section of its Online Services Terms (OST). Microsoft may hire other companies to provide limited services on its behalf. Any such subcontractors will be permitted to obtain Customer Data only to deliver the services Microsoft has retained them to provide, and they are prohibited from using Customer Data for any other purpose. These subcontractors may provide services to one or more services offered under the DPT. The list below does not apply to Previews or other services not yet in general release”.⁹⁹²

There are myriads of subcontractors from various parts of the world that affiliate with Microsoft undertaking limited services for certain purposes. Regarding all these, NTT Group

⁹⁹¹ Id. 11.

⁹⁹² Microsoft Subcontractors’ list. Available at: <http://download.microsoft.com/download/7/b/9/7b9cb6a6-c8ed-4f65-98f9-e715d1ba8615/subcontractor%20list.pdf>.

(NIPPON TELEGRAPH AND TELEPHONE CORPORATION) in Tokyo, Japan is one of the companies that deploys the “secured PC” across its organization with Microsoft 365.⁹⁹³

Microsoft office 365 is fully covered by PIPC of Japan and all its affairs and actions are under the regulations the Japanese laws suggest.

7.4. The Role of Antitrust in Computer Software

"The computer and software sector is a tremendously important and visible part of the economy. It is also a sector in which there have long been concerns about monopolization. In the past, these concerns centered on monopolization by IBM. Today, the concerns are with Microsoft, but in many ways, they are the same. IBM was accused of attempting to sabotage industry standards in Fortran; Microsoft is accused of sabotaging JAVA. IBM was accused of predatory product pre-announcements; Microsoft has been accused of employing “vaporware”—the tactic of announcing products before they are ready in order to preempt the market—to undercut its competitors. IBM was accused of bundling functionality into its CPUs to reduce the value of peripheral equipment; Microsoft is battling government lawyers over the bundling of Internet Explorer with Windows 95. IBM was accused of manipulating interfaces and refusing to reveal them to competitors; Microsoft is accused of refusing to reveal interfaces to competitors. Both companies entered into consent decrees with the Department of Justice to settle antitrust charges."⁹⁹⁴

Self-styled crusader Gary Reback, for example, has asserted that “[r]ight now the antitrust division is being held hostage by economists,”⁹⁹⁵ which he apparently believes is a bad thing.

⁹⁹³ Office 365 is a line of subscription services offered by Microsoft as part of the Microsoft Office product line. The brand encompasses plans that allow the use of the Microsoft Office software suite over the life of the subscription, as well as cloud-based software as a service product for business environments, such as hosted Exchange Server, Skype for Business Server, and SharePoint, among others. All Office 365 plans include automatic updates to their respective software at no additional charge, as opposed to conventional licenses for these programs—where new versions require the purchase of a new license.

⁹⁹⁴ Michael L. Katz and Carl Shapiro, ANTITRUST IN SOFTWARE MARKETS. University of California at Berkeley, 22 September (1998).

⁹⁹⁵ Wired, August 1997 at 112.

The most notable of these characteristics is that software markets often are subject to network effects, whereby the value of a piece of software (e.g., an operating system) rises with the number of other end users who run that same software.

Although the theoretical tools to analyze software markets exist, and antitrust enforcers do have a track record, it is also true that economists and lawyers still are learning how to analyze many of these issues.⁹⁹⁶

7.4.1. The Fundamental Economics of Software

Software markets possess several economic characteristics that must be taken into account by an antitrust analysis.

7.4.1.1. Systems and Network Effects

Almost entirely, a system is constituted by the components of the software that is not valuable by itself and together with hardware, user training, and other software, this will mean as a whole.

The economics of a competing system brings in the discussion that to distinguish between two types of systems is often helpful. Remarkably each user owns a single component in communications networks⁹⁹⁷ Furthermore, a system is made up of these components that provides the users to have clean communication experienced with one another.

"Users of word processing programs who wish to communicate with one another by sharing files are one example. In this example, two users are on the same network if their programs can share files, and they are on different networks if their programs cannot share files. To the extent

⁹⁹⁶ For one statement of the Justice Department's views towards network effects, see Shapiro (1996a). For a more recent and broader statement of DOJ policy towards high-tech industries, see Klein (1998). See also Economides and White (1994) for an analysis of antitrust and network effects. For a more comprehensive discussion of how network effects affect the law, see Lemley and McGowan (1997).

⁹⁹⁷; a component may itself be a system, such as a modem or a fax machine, comprising sub-components.

that users wish to share files, the greater the number of users on a given network, the greater will be the benefits of belonging to that network. This positive feedback is what is known as a network effect."⁹⁹⁸

The recognition of that network effects which can arise even in the absence of any communications network is highly significant. When a system consists of two distinct components, A and B, these effects can arise, and both of the two components are purchased by a single user.⁹⁹⁹ By way of illustration, "A may be the operating system needed to make word processing program B work. Positive feedback arises when an increase in the number of users who adopt component A leads to an increase in the benefits that consumers can enjoy from the purchase of component B. The greater the number of users who adopt a given operating system, for example, the greater the number and variety of applications programs that are likely to be available that can run on that platform. There also may be greater competition in the supply of those application programs. These effects arise when there are economies of scale in the provision of component B, so that a larger market makes additional entry profitable."¹⁰⁰⁰

It is also implied by the network effects that market performance can strongly be affected by the degree of concentration on the side of the market that buying is always accomplished.¹⁰⁰¹

This influence derives from the fact that network effects can constitute a significant barrier to entry and lead to collective lock-in of an established technology. Consider, for example, entry by a new brand of an electronic spreadsheet that is incompatible with existing programs. Each individual user faces switching costs in adopting the new brand (e.g., the costs of learning the new program and the imperfections in transferring data to a new format). Moreover, because

⁹⁹⁸Id. 27.

⁹⁹⁹ In a communications network, a user with component A wishes to communicate with another user who also owns a component A. The two A components constitute a system.

¹⁰⁰⁰ Id. 27.

¹⁰⁰¹ This is an application of the general economic principle that efficiency is enhanced if parties responsible for causing externalities can deal with each other without bearing prohibitive transaction costs.

of network effects, the attractiveness of the new program hinges on its popularity, presenting a chicken-and-egg problem. A single large user, or a coordinated group of users, can take control and move the market to the new product if it is superior for their needs. Thus, buyer concentration can erode seller power in network industries generally and software specifically. By the same token, uncoordinated buyers can be extremely vulnerable. Even though users are neither directly connected to one another, nor do they communicate, their actions do affect one another. Small users acting alone cannot protect themselves from harm by exercising their own consumer sovereignty. Collective action may be needed, and it may be challenging to organize. We will refer to this as a problem of coordination costs.

7.5. Software Industry Problems in Iran

"Industry and non-oil exports are among the countries' strategies for developing and globalization. Nowadays, the software is one of the industries that is paid special attention, and today it is considered as an important source of income in some countries, but this requires a compiled planning and clear vision to exploit this possibility. In the past few years, many countries in the world have stabilized their position in the global markets with complied planning and different applications for their software production and export in different platforms. For example, Ireland with a 10-year planning, was introduced as the first exporter of software in the world in 2012. India and Russia are among the leading countries in the field of software export."¹⁰⁰²

"Competition law is attracting considerable interest in developing countries because of their desire for economic development and competitive markets. Few studies have been published

¹⁰⁰² "Study of the Software Industry Problems in Iran" Erfan Khaksar¹, Alireza Khaksar, Iran University of Science and Technology, Student of Computer Engineering Department, Hengam Street, Resalat Square, Narmak, Tehran, Iran 2 Islamic Azad University, Department of Computer Engineering Department, Information Technology-Karaj, Iran *Corresponding author: erfana1375@gmail.com Received November 23, 2014; Revised February 04, 2015; Accepted February 09, 2015

about Iranian Competition Law and several comparative law studies have found that Iran does not have a competition law, competition authority, or the merger control regime. This perception is due to two reasons. The first is that, even though historically in Iranian law there had been some provisions regarding competition law and unfair competition until 2007, Iran did not have a competition act. The second reason is, notwithstanding the fact that Iran approved a competition law in 2007, this act was part of another act regarding privatization and remained hidden. So, this perception is false. This paper presents the competition law provisions of Iran, especially the Act of the execution of the General Policies of Article 44 of the Constitution (2007) ("the Act") and uses a comparative study method. The European Union has one of the most valuable and practical competition laws in the world. Many countries, including Iran, have been inspired by European competition law and policy, and many acts are modeled upon European competition provisions. In succeeding we will examine the similarities and differences between Treaty on the Functioning of the European Union (TFEU) and the Act."¹⁰⁰³

Up to the time of a little while back, in the same manner as a great deal of other developing countries, Iran did not have a specific competition act. However, considering competition law issues, with reference to past events, there were some provisions in different acts. "Article 244(A) of the abrogated Penal Code of Iran¹⁰⁰⁴ (1925), Articles 1¹⁰⁰⁵ Moreover, 2¹⁰⁰⁶ of the

¹⁰⁰³ Hosseini, Mina. (2015). An Introduction to Iranian Competition Law and Policy. Competition Policy International.

¹⁰⁰⁴ "Unfair competition is forbidden, and its perpetrator shall be punished by three to six months of imprisonment and payment of a fine of between 1000 Rials and 5000 Rials or one of these punishments."

¹⁰⁰⁵ "Any person who, without legal authority, intentionally or as a result of carelessness inflicts an injury or loss to body, health, property, freedom, dignity, commercial reputation or any other right created for individuals by law, which causes tangible or intangible loss to another person's, shall be responsible for the payment of compensation for the damage arising out of his act."

¹⁰⁰⁶ "Where the act of the party inflicting the injury or loss has resulted in either tangible or intangible damage to the injured party, the court, after trial and establishing the facts, shall issue a judgment against him to pay compensation for the said damage."

Civil Responsibility Act (1960), Article 64¹⁰⁰⁷ of the Electronic Commerce Act (2003), Article 133 of the bill of amendment of commerce code¹⁰⁰⁸ (1969), and the Paris Convention for the Protection of Industrial Property (1833) of which Iran is a member, are some examples of Iran's competition law provisions before 2007. However, most of these articles concerned unfair competition."¹⁰⁰⁹

The state-owned sector expanded rapidly after the 1979 revolution and the war with Iraq that lasted for eight years. Obviously, there was no need for competition law on that situation. On top of that, the acquired constitution encompassed a large number of reproving judgmental notions in relation to the private sector. It is extremely required to avail the article 44 of the constitution as follows:

The economy of the Islamic Republic of Iran is to consist of three sectors: state, cooperative, and private, and is to be based on systematic and sound planning. The state sector is to include all large-scale and mother industries, foreign trade, major minerals, banking, insurance, power generation, dams and large scale irrigation networks, radio and television, post, telegraph and telephone services, aviation, shipping roads, railroads and the like; all these will be publicly owned and administered by the State. The Cooperative Sector is to include cooperative companies and enterprises concerned with production and distribution, in urban and rural areas, in accordance with Islamic criteria. The private sector consists of those activities concerned with agriculture, animal husbandry, industry, trade, and services that supplement the economic activities of the state and cooperative sectors. Ownership in each of these three sectors is protected by the laws of the Islamic Republic, as far as this ownership is in conformity with

¹⁰⁰⁷ "In order to protect legitimate and fair competitions in electronic transactions, illegal acquisition of trade or economic secrets of agencies and institutions or the disclosure of such secrets to third parties in electronic environment is deemed an offense and the offender will be sentenced according to this Law."

¹⁰⁰⁸ "The directors and the managing director shall not be allowed to conclude transactions identical to the transactions of the company and which are considered to compete with the company. If any director, acting in contradiction of the purport of this article, inflicts a loss to the company by his violation, he shall be held responsible to indemnify the company's losses. The losses mentioned in this article purport actual losses incurred or reductions in profit."

¹⁰⁰⁹ Id. 36.

the other articles of this chapter, does not go beyond the bounds of Islamic law, contributes to the economic growth and progress of the country, and does not harm society. The [precise] scope of each of these sectors, as well as the regulations and conditions governing their operation, will be specified by law.

Competition law issues are also discussed in Article 43 of the constitution. Impositions, including "The prohibition of infliction of harm and loss upon others, monopoly, hoarding, usury, and other illegitimate and evil practices..." are overshadowed by this article.

Another instance of an evident and vigorous proclivity with regard to nationalization and the foreign participation embargo in the local economy is Article 81 of the Constitution.¹⁰¹⁰ "The granting of concessions to foreigners for the formation of companies or institutions dealing with commerce, industry, agriculture, services or mineral extraction, is absolutely forbidden."

"On July 6, 1993, the Iranian Parliament adopted the amended text of the Paris Convention dealing with industrial property. This Parliament also authorized the government to sign the Convention creating the WIPO (branch of Paris Convention) signed on 14/07/1967 at Stockholm as well as the amendments which followed on 2nd October 1979."^{1011,1012}

After many debates over the years among economists and lawyers about productivity and the efficiency of a state-dominated economy, however, the economics of the structure of Iran have commenced to change and a privatization process has been initiated. Although there were privatization goals in the First Five-Year Development plan (1989-1993), until the Third Five-Year Development plan (2000-2004) the privatization process hadn't been initiated. In this last plan, there were rules about state-owned enterprises, privatization (chapter 2), monopolies, and the promotion of competition in economic activities (chapter 4).

¹⁰¹⁰ MAHER M. DABBAH, COMPETITION LAW AND POLICY IN THE MIDDLE EAST (2007).

¹⁰¹¹ Available at: http://fita.org/countries/iran.html?ma_rubrique=business_environment 09/10/2019

¹⁰¹² See the WIPO site.

In 2004, The Expediency Council¹⁰¹³ Offered a new interpretation of Article 44 of the Constitution and the Supreme Leader approved it as a new policy.¹⁰¹⁴ This policy led to a law regarding privatization that also has some provisions about competition. The Act of “Execution of the General Policies of Article 44 of the Constitution” (“the Act”) was adopted in 2007.

7.5.1. The Classification of Software in the aspect of Software Layers

"In aspect of computer software, the software layers are divided into five groups: 1- Operating system software 2- Development of system capabilities software 3- Database software/data communications software 4- Interpreter/translator software 5- Application software/facilities software The first, four layer, is called fundamental software that applications and a facilities software can be written by using them."^{1015,1016}

7.6. Intellectual Property Rights for Developing Countries

Historically, the creative endeavors of humans in the form of inventions predate the notion of intellectual property (IP) as we know it. New tools, techniques and technologies were being invented for thousands of years before legal constructs awarded individuals and organizations limited ownership rights for the ideas they produced.¹⁰¹⁷ Recent decades have witnessed a remarkable growth in the importance of IP. Overall increase in research and development (R&D) investment, shortening of product life cycles, the advance of imitation techniques, the emergence of new technological fields and patentable categories, and trade relating of intellectual property rights (IPRs) within the WTO framework, are among the contributing

¹⁰¹³ Expediency Council was created in 1988. It works as a mediatory body when there is a dispute between Parliament and the Council of Guardians.

¹⁰¹⁴ H. RASTEGAR & A. OMIDVAR, IRAN PRIVITIZATION PERFORMANCE REPORT (2011).

¹⁰¹⁵ Id. 35

¹⁰¹⁶ Id. 27.

¹⁰¹⁷ Lemelson-MIT Program, 2003. Intellectual property workshop. School of Engineering, Massachusetts Institute of Technology. Available at: <http://web.mit.edu/invent/n-pressreleases/downloads/ip.pdf>.

factors.¹⁰¹⁸ The protection of IPRs in developing countries has also come to the fore in recent years. Over the past decade, IP has joined fiscal, monetary, trade and industrial policies, and overseas development assistance, as a critical area in which developing countries have come under pressure to identify their interests and adopt appropriate policies. In a global economy increasingly propelled by knowledge-based industries, the protection of ideas and innovations has become a priority in the competitive strategy of powerful industries and countries. Thus, ownership and distribution of these assets have become an issue of paramount importance in international negotiations.¹⁰¹⁹ Iran is no exception regarding the abovementioned trends. The need to revamp the IP system of the country has been fueled by World Trade Organization (WTO) membership aspirations as well as internal debates. However, a study painting a coherent picture of the IP landscape as well as taking stock of the latest debates is still missing.¹⁰²⁰

"The existing literature on intellectual property (IP) in the context of developing countries mostly deals with IP law and enforcement as well as IP aware-ness as compared to widely accepted norms and standards. The same general rule, to a great extent, applies to prior IP studies in Iran, since the limited number of papers published in the field only deal with Iran's IP laws and regulations and the evolution thereof. These papers clearly indicate that Iran's IP law has improved dramatically during the last decade."¹⁰²¹

"Considering this major upgrade of the country's IP law, one may wonder if there has been any change in the Iranian firms' approach to IP, that is, do Iranian companies regard IP as an effective means of value creation and capture? Do they manage their IP to acquire and maintain

¹⁰¹⁸ Kingston, W., 2001. Innovation needs patents reform. *Research Policy* 30, 403–423.

¹⁰¹⁹ UNCTAD-ICTSD, 2003. Intellectual property rights: implications for development. Policy Discussion Paper, UNCTAD-ICTSD Project on IPRs and Sustainable Development.

¹⁰²⁰ Intellectual property rights for developing countries: Lessons from Iran." Alfred Sarkissian, Management and Accounting Faculty, Allame Tabataba'ee University, Nezami Ganjavi Street, Tavanir Street, Vali Asr Avenue, Tehran 1434863111, Iran

¹⁰²¹ Ghazinoory, Sepehr & Abedi, Sadegh & Seyed, Kamran & Bagheri, & Adibi, Mahyar. (2012). IP Management in the Context of Developing Countries ± The Case of Iran's Industrial Companies. *IIC International Review of Intellectual Property and Competition Law*. 43.

a competitive advantage in the market? Trying to answer the above questions, we investigated the attitude of Iranian small and medium-sized manufacturing companies toward IP and IP management in more detail. To this end, we quantitatively surveyed a sample of 180 manufacturing firms active in the industrial parks of Qazvin Province. The share of small and medium manufacturing companies of all manufacturing industries in Iran during the second, third, and fourth development programs (1995±2010) (see Table 2 below) was more than 80%, which makes the study essential in this area. In Table 1, Iranian companies in the manufacturing industries during the fourth development program are listed by size and number of companies, number of employees, production value, and value added. According to Table 1, in 2009 the proportion of small and medium-sized companies in terms of the number of firms in the industry was 87%; and in terms of number of employees, they made up 36% of the sector. However, the share of big companies in terms of production value and value added reached 85% in this period."¹⁰²²

Table 1 ± Share of Iranian Production Sector in Employment and Value Added

Size of Company	Number of Companies	Number of Employees	Percentage of Production Value	Percentage of Value Added
Small	11,337	251,296	10.1	9.1
Medium	1,781	120,644	6.3	5.7
Large	1,946	371,940	87.7	85.2
Total	15,064	1,030,700	100	100

¹⁰²² Id.

Source: Iran Statistic Center, Annual Report 2010

Small: fewer than 50 employees, Medium: 50 to 100 employees, Large: more than 100 employees

7.6.1. The Outlook of IP in Iran

The first Iranian "patent and trademark" laws date back to 1924.¹⁰²³ Since then, the IP landscape of the country has witnessed many improvements, the main drivers of which are believed to be the national policies aimed at encouraging the development of knowledge-based products and commercialization of research results. Accordingly, these policies view the IP system largely through the lens of incentive function.¹⁰²⁴ The growing attention paid to improving the country's IP system can be well seen in Iran's Economic, Social, and Cultural Development Plans. These plans usually define the macro-economic directions of the country for five-year periods. Table 2 clearly shows the growing concerns of policymakers with the role of the IP system in national development.¹⁰²⁵

Table 2 ± IP Consideration in Iran's Development Plans (1990±2009)

Plans	The degree of considering IPR in the documents of the plan	Clarity of special policies and strategies for improving the IPR system in the documents of the plan
First Plan (1990-1994)	None	No specific policy or strategy
Second Plan (1995-1999)	None	No specific policy or strategy

¹⁰²³ M. Rezapour, S.K. Bagheri, M. Rashtchi & M.R. Bakhtiari, "The Iranian patenting system: an introduction", 29 World Patent Information 250 (2007).

¹⁰²⁴ A. Sarkissian, "Intellectual property rights for developing countries: Lessons from Iran", Technovation (2008), doi: 10.1016/j.technovation.2008.04.001.

¹⁰²⁵ M. Goodarzi & S.K. Bagheri, "IP system in Iran: a comparative study", in: "Proceedings of the Portland international conference management of engineering and technology", 8±13 (Istanbul, Turkey 2006).

Third Plan (2000-2004)	Reference to the defects in Iran's IPR regime and the necessity of solving the problems	No specific policy or strategy
Fourth Plan (2005-2009)	Clear reference to the existence of many defects in Iran's IPR regime and the necessity of removing them during the execution years	Obligated the government to plan and implement a comprehensive IPR system

The mentioned policies, in addition to increasing IP awareness in the country, have led to a series of legislative changes in support of a general trend toward a stronger IP system.¹⁰²⁶ A brief history of IP-related legislative changes is shown in Table 3.

Table 3 - IP-Related Legislation History of Iran¹⁰²⁷

1924	Patent and Trademark Act
1930	Parliamentary permission to exchange "patents, industrial and trade-mark, trade names, industrial designs and industrial and literary rights protection agreement between Iran and Germany"
1931	Patent and Trademark Registration Act.
1933	Trade Law
1970	Act for the Protection of Authors', Composers' and Artists' Rights

¹⁰²⁶ S.K. Bagheri, H.A. Moradpour & M. Rezapour, "The Iranian patent reform", 2009 World Patent Information 31, 32.

¹⁰²⁷ A. Sarkissian, "Intellectual property rights for developing countries: Lessons from Iran", Technovation (2008), doi:10.1016/j.technovation.2008.04.001.

1973	Act for Translation and Reproduction of Books, Periodicals and Audio Works
2000	Protection of Computer Software Creators' Rights Act
2003	Electronic Commerce Act
2004	Ministry of Science, Research and Technology (MSRT) established, Objectives and Functions Act
2005	Protection of Geographical Indications Act
2008	Patents, Industrial Designs, Trademarks and Trade Names Registration Act

Similar changes and improvements in many aspects have been accordingly experienced by the patent system of this country. Changes of landmark and the chief characteristics of the patent system are to some extent reflected in Table 4.

Table 4 - Evolution of Iranian Patent Law¹⁰²⁸

The first patent law	Patent and Trademark Registration Act, 1924
Shift to "first to file" rule	From the beginning
First attempt to clarify the invention requirements	Patents, Industrial Designs, Trademarks and Trade Names Registration Act, 2008
Patentability of software	Registration and Protection of Computer Software Act, 2001
Introduction of microbiology patents	Not yet
Responsibility for the Patent Office	Judiciary from the beginning
Grace period	six months (as of 2008)

¹⁰²⁸ S.S. Ghazinoory, M. Abdi & S.K. Bagheri, "Promoting nanotechnology patenting: A new experience in the National Innovation System of Iran", 12 Journal of Intellectual Property Rights 464 (2010).

Addition of "non-obviousness" requirement	Patents, Industrial Designs, Trademarks and Trade Names Registration Act, 2008
Adoption of the doctrine of equivalents	Not yet
Terms of protection	Up to 20 years from the beginning
Accession to the Paris Convention	December 16, 1959
Accession to the Patent Cooperation Treaty (PCT)	Not yet (although approved by the parliament years ago)

Only Japan and the US have managed to achieve synergies between their technology policy paradigms and the IP system, the former in a defensive mode and the latter in an offensive mode. Relatively speaking, the US industry is focused on the creation of new knowledge while most other countries seek the diffusion and utilization of technologies.¹⁰²⁹ The US believes IP protection is primarily for the creation rather than the diffusion and application of technology. As a result, internationally stringent IP regimes will be complementary to the mission-oriented policy of the US and a strong IP system will increase the economic value of the generated technology. In a relative sense, the Japanese system is in favor of the industry rather than the patentee and favors the Japanese firm rather than the foreign inventor. The purpose of this system is to improve industrial development and to support the diffusion-oriented technology policy of Japan. Concludes that a modern IP system aimed at encouraging inventions by universal or international standards has little relevance for industrialization and can even be disadvantageous for industrialization purposes.¹⁰³⁰

¹⁰²⁹ Chiang, J.-T., 1995. Technology policy paradigms and intellectual property strategies: three national models. *Technological Forecasting and Social Change* 49, 35–48.

¹⁰³⁰ Id.

Recent years have witnessed a surge of interest in revamping the IPRs system of Iran. As a case in point, article 45 of the fourth economic, social and cultural development plan of Iran¹⁰³¹ calls on the government to design and implement a comprehensive IP system to encourage the development of knowledge-based products and commercialization of research results. This section attempts to document and critique the latest developments in the IP scene. The rationale of IP debates, institutional aspects of the IP system, and the patenting performance of Iranian entities are the major issues dealt with here.

7.7. Reasons for Considering Licensing Agreements

In today's knowledge-based economies, the prevailing model of IP collaboration among academic and business organizations is "open innovation", based on licensing deals among various participating partners. Therefore, there is a growing interest on the part of innovation stakeholders in the World Intellectual Property Organization (WIPO) Member States in acquiring more practical knowledge about licensing as a useful tool for the transfer of knowledge and IP.¹⁰³²

Intellectual property rights are intangible rights. Unlike other personal property rights, they cannot be touched or seen. For example, a copy of a book is a personal asset that is easily viewed and identified. Copyright does not prevent you from reading the book or giving your copy of the book to another person. But the copyright does protect the expression of the words and ideas in the book, and it is that expression that is protected, not the physical copy of the book itself.¹⁰³³

¹⁰³¹ The fourth economic, social and cultural development plan of Iran (2005–2010), enacted 3 September 2004. Available at: [http://www.mim.gov.ir/uploads/lawssys/laws_sys/main/root/upload/law/9ec32abe-56b8-4bda-95e0-139e026329c0/related doc/LAW-four. Doc S \(in Farsi\).](http://www.mim.gov.ir/uploads/lawssys/laws_sys/main/root/upload/law/9ec32abe-56b8-4bda-95e0-139e026329c0/related%20doc/LAW-four.Doc%20S%20(in%20Farsi).doc)

¹⁰³² Successful Technology Licensing, IP Assets Management Series. Available at WIPO

¹⁰³³ D. M. Cameron R. Borenstein, (2003). KEY ASPECTS OF IP LICENSE AGREEMENTS. Ogilvy Renault.

There are some usual factors that prompt U.S. companies to enter into license agreements when direct investments have been eliminated as the best solution; a company policy to become more aggressive, decision of expanding, interest on the part of prospective licensees.¹⁰³⁴ The details of these factors can be represented as follow:

- a) Obtaining royalty income. Where the owner of an invention, for whatever reason, is not making or selling the product, he receives no benefit from his invention unless he licenses it to someone else and obtains royalty income;
- b) Obtaining a source of supplies for tools, components, or materials. A company may have invented in such products or use them in its business but finds it uneconomical or impractical to manufacture them itself. Therefore, it offers a license to a qualified supplier to make and sell these products. The license usually includes the right to sell to others, and the increased volume of manufacture enables the licensor to obtain the goods at a lower price. Also, a royalty revenue gives it a legitimate competitive edge over its competitors who may also buy the licensed goods;
- c) Increased market acceptance of the goods. The company manufacturing and selling the patented device may find that the market is reluctant to buy a device which is available from only one source. Licensing to other sources may increase market acceptance.
- d) Creating an enlarged field of use for its goods. For example, a company making a patented component may invent various systems that require the use of such a component. Licensing others to make such systems increases the company's sales of the component and, in addition, generates substantial royalty income;
- e) Customers of licensor expanding, and he is unable to meet the commands adequately.

¹⁰³⁴ See Friedman, Wolfgang and Kalmanoff, George, Joint International Business Ventures (1961). See also Lovell, Enid Baird, Foreign Licensing Agreements (Vol, I), The National Industrial Conference Board, New York, NY (1958).

7.8. Discussion of Results

Developing countries have come under pressure to identify their interests and adopt appropriate policies over the past decade. In the context of developing countries, the only literature on intellectual property deals with IP law and enforcement, and it is got a light shed on accepted norms and standards. In the competitive strategy of powerful industries and countries, the protection of ideas and innovations has become a priority by knowledge industries in a global economy. Iran is also regarded by these trends. However, there are a few number of papers published in the field only dealing with Iran's IP laws and regulations and the evolution thereof. It all indicates that Iran's IP law has improved dramatically during the last decade.

According to Ghazinoory et al, on the first plan of IP Consideration in Iran's Development Plans the policy or any strategy turned out to leave no traces at all from 1990 to 1994. The IPR system in the documents of the plan went on clean as no improvement was shown off. No specific policy or strategy was taken into advantage for the whole years of the second plan, and only some references to the defects in Iran's IPR regime were seen into stepping through the third plan in the four initial years from 2000. However, in mid to late 2000's, an apparent reference to the existence of defects in Iran's IPR regime and the necessity of removing them during the execution years obliged the government to plan and implement a comprehensive IPR system which has led the country to a general trend toward a stronger IP system.

Considering the IP-Related Legislation History of Iran and all its components, it is understood that IP awareness in this country has been through a not-so-long but evolving proceeding that is, comparing to most developing countries in the world, respectfully grading and significant. Although the country was in a profound shortage of international development from the late of 1970s to 1999 and also experienced the worst and weakest political and economic conditions back at those decades, the restoration of made up organizational brain-work that started lifting its flag amid the increasing rise of technology was and still is eminently kind of astonishing.

Remarkably, before the Islamic Republic succeeding the leadership and take over the reign, patent and trademark were introduced and subjectively added to the legislative acts. However, patentability of software registration and protection of computer software, which was subjected as a legislative Act in 2001, was not a great interactional repetitive concern back at those ages regarding the lack of the whole foresaid technology as a major conductive interpersonal and intra-social facility.

7.9. Implications and Recommendations

From the results of the present study, several theoretical and research implications emerged. To begin with, the study could be an attempt to contribute to the Iranian and also other developing countries' experimental reform process, encouraging an effective introduction and implementation of the IP laws in variety. This, of course, implies thorough research toward the difficulties and challenges that might impede a better understanding of the subject matter. Such elicited study would encourage Iranian and less developed countries' lawyers, jurists and those stepping in this way to adopt the provided and stockpile functional enlightenments as a ready set out supper table full of tasty in this field. The present study suggests several other procedures before the implementation, such as promoting the wit behind the subject by pushing through many useful subliminal types of research about technology and law, at least, concentrating on pair and group work, to make a better gist of the main idea in full details.

The idea that is central to this issue is that the contribution of this study to educational theory lies in its attempt to link the IP and technology subjects to law practices. For much IP-related law practice, this will need a modification in such research in order to allow some opportunities for lawmakers to rely on. However, the dominance of lawmakers' traditional role could be reduced through pre-service and in-service training on the principles of the IP related law-abiding subjects.

This study also indicated that textbooks which are more communicative could enhance lawyers and jurists' communicative competence. With the absence of such textbooks, the present study suggests looking for supplementary materials in order to bridge the gap that can be found in traditional textbooks.

Overall, the study results indicated that the IP laws, especially those who have worked out in other countries so far, are as applicable to the Iranian context as it is to other contexts. Thus, its adoption in Iranian constitutions may be extremely necessary.

The recommendations that can be drawn from the foregoing conclusions and implications are:

1. IP-Rights policy and lawmakers should consider the applicability of the IP in the Iranian context.
2. Recent methodological developments accompanied by IP should be taken into consideration by Iranian constitutions and lawmakers.
3. lawmakers should receive in-service training in applying IP principles.
4. Lawyers and jurists' supervisors should facilitate the process of the IP and technology-based laws implementation.
5. Particular establishments should include technology chambers in order to provide opportunities for exposure to the targets of technology subjects as used by more developed countries.
6. Pair and develop group works to promote the technology favorable laws must be fully considered.
7. Such a trend would certainly encourage the use of handy technologies applied by other countries to be employed in developing countries as well, which will result in leveling up the legal framework and all related components with a fuller arena.

7.10. Limitations of The Study

The aforesaid study expectedly comprises certain limitations that are needed to be mentioned for later implications and sequels. It's a pure research-center study that is based on accumulated materials of other scholars, which have yielded solid statistics toward the pursued topics throughout the era of IP-related technologies. It certainly needs more rigid points and

supplementary details to be wrapped up with more comprehensiveness and meticulous intelligence over the years.

7.11. Suggestions for Further Research

In order to complement the findings of the present study, some further research can be suggested: 1. Much empirical research is needed worldwide to further our understanding of the positive effects of the IP components on both Iranian constitutions and lawmakers' competence. 2. Further investigation is needed to find ways to facilitate the adaptation of the IP to the Iranian constitutions and thereby enhance lawmakers' opportunities to have a full understanding of proficiently and accurately. 3. Similar studies are critically needed in other parts of still-emerging countries in order to see whether the results will be the same as or different from the results of the present study.

7.12. Summary

The present study tried to measure the implementation of the IP components in developing countries, specifically Iranian constitutions. As discussed in detail in Chapter One, historical background and basic definitions of license, the meaning of the term, comparison of assignments, franchises, joint ventures and licenses with every other related part like industrial property rights and IP were proficiently and appropriately brought into the surface. Chapter Two discussion is on technology, its principals and influence, then linking it to marketing and the role of IP in licensing of technology. In the Third Chapter, antitrust and competition law and the IP implementation in three diverse legal systems in different continents and parts of the world through the dominance constitutions of more developed countries such as Japan, Europe, and of course, U.S.A were thoroughly elaborated. After that, a brief allude to taxing and tax on royalties in theses jurisdictions is discussed in Chapter Four. Following in Chapter

Five, more detailed discussion on IP laws and practices, examination process in each of the reviewed country in covered. Chapter Six explains different types of technologies and the IP protection options provided. Last but not least in Chapter Seven, the study concentrated on licensing in different jurisdictions for Microsoft and Blancco companies. Also, the extent to which IP and licensing are regarded in Iranian constitutions and implemented throughout history was taken into consideration, at the end, recommendations and suggestions for further research concludes this paper.

Bibliography

ABA

1. Anderson, Piracy and the New Technologies the Protection of Computer Software Against Piracy, from papers presented by the ABA at the meeting in London, at 173 (1985).
2. Chapter 12, Antitrust Issues Involving Intellectual Property, Antitrust Law Developments (Sixth), Volume II, ABA Books, 1077-1168, 2007.

ANTITRUST GUIDELINES

1. ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: Promoting Innovation and Competition. ISSUED BY THE U.S. DEPARTMENT OF JUSTICE AND THE FEDERAL TRADE COMMISSION APRIL (2007), p. 1.
2. Guidelines for Patent and Know-how Licensing Agreements under the Antimonopoly Act, PL 1.
3. Guidelines for Patent and Know-how Licensing Agreements under the Antimonopoly Act, Pt. 3.
4. Guidelines for the Regulation of Unfair Trade Practices with Respect to Patent and Know-How Licensing Agreements, February 15, 1989, Executive Bureau, Fair Trade Commission, reprinted in BENDER, PATENT ANTIRUST 645-691 (1989) [hereinafter Guidelines]
5. Hearings information and materials can be accessed on the Agencies' websites. D.O.J./Antitrust, Competition and Intellectual Property Law in the Knowledge-Based Economy, <http://www.usdoj.gov/atr/hearing.htm>; Federal Trade

Commission, Competition and Intellectual Property Law in the Knowledge-Based Economy, <http://www.ftc.gov/opp/intellect>.

6. U.S. Department of Justice & Federal Trade Commission, Antitrust Guidelines for the Licensing of Intellectual Property (1995).
7. U.S. DEPT' OF JUSTICE & FEDERAL TRADE COMM'N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY § 1 (1995), reprinted in 4 Trade Reg. Rep. (C.C.H.) ¶ 13,132, available at <http://www.usdoj.gov/atr/public/guidelines/0558.pdf> [hereinafter ANTITRUST-IP GUIDELINES].

BOOKS

1. Abbott F. M., Distributed Governance at the WTO-WIPO: An Evolving Model for Open-Architecture Integrated Governance, 3 J. INT'L ECON. L. 63, 70 (2000).
2. Alghamdi S. and Bach C. "Technological Factors to Improve Performance of Marketing Strategy". University of Bridgeport, Bridgeport, CT, USA. (April 3-5, 2014)
3. Arora A. Visiting Associate Professor of Economics, Stanford University, Associate Professor of Economics and Public Policy, Carnegie Mellon University; Jonathan I. Gleklen, Partner, Arnold & Porter; Paul F. Kirsch, Partner, Townsend and Townsend and Crew L.L.P.; Benjamin Klein, Professor of Economics, University of California, Los Angeles; Jeffrey K. Mackie-Mason, Arthur W. Burks Professor of Information and Computer Science, Professor of Economics and Public Policy, University of Michigan; A. Douglas Melamed, Partner, Wilmer, Cutler & Pickering; Carl Shapiro, Transamerica Professor of Business Strategy, Haas School of Business; Director and Professor of Economics, Institute of Business and Economic Research, University of California, Berkeley; Christopher J. Sprigman, Counsel, King & Spalding; Mark D.

Whitener, Antitrust and General Counsel, General Electric; John Shepard Wiley, Jr., Professor of Law, University of California, Los Angeles. This session was moderated by then Deputy Assistant Attorney General R. Hewitt Pate, Antitrust Division, U.S. Department of Justice; Pam Cole, Attorney, Antitrust Division, U.S. Department of Justice; Suzanne Majewski, Economist, Antitrust Division, U.S. Department of Justice; Gail Levine, then-Deputy Assistant General Counsel for Policy Studies, Federal Trade Commission; and C. Edward Polk, Jr., then-Associate Solicitor, U.S. Patent and Trademark Office. May 1, 2002 Hearing., The Strategic Use of Licensing: Is There Cause for Concern About Unilateral Refusals to Deal? at 2-3, <http://www.ftc.gov/opp/intellect/020501xscript.pdf> [hereinafter May 1 Hearing.].

4. Areeda P. A. & Hovenkamp H. Antitrust Law: An Analysis of Antitrust Principles and Their Application ¶ 709b2, At 222 (2d Ed. 2002).
5. Areeda P. A. & Hovenkamp H. Antitrust Law ¶ 709c, at 234 n.71.
6. Auerbach J. I. Ph.D., Edell J.D. Shapiro & Finnan, LLC. PATENT LAW PRINCIPLES & STRATEGIES. P.27 (October 2006)
7. Arai H. Intellectual Property Policies for The Twenty-First Century: The Japanese Experience in Wealth Creation (1999). WIPO MAG., June 2007, at 14, available at http://www.wipo.int/wipo_magazine/en/pdf/2007/wipo_pub_121_2007_03.pdf [hereinafter IP Revolution].
8. Arrow K. J. (1962). 'Economic Welfare and the Allocation of Resources for Invention', in The Rate and Direction of Inventive Activity, R. Nelson (ed.), Princeton University Press, Princeton, USA.
9. Abraham Cf. E. Seaton C. T. Desmond S. D. the Optical Computer', Scientific American 1983, 63; W. G. Oldham, the Fabrication of Microelectronic Circuits', in:

- D. Flangan (ed.), *Microelectronics*, San Francisco 1977, 41; OECD (ed.), *the Semiconductor Industry: Trade Related Issues*, Paris 1985.
10. Abdul Wahab S., "Defining the Concepts of Technology and Technology Transfer: A Literature Analysis". National Defense University of Malaysia, Kuala Lumpur 57000, Malaysia. (Vol. 5, No. 1; January 2012)
 11. Abbott K. W. & Snidal D., *Hard and Soft Law in International Governance*, 54 *INT'L ORG.* 421 (2000)
 12. Baeza M. L., *Acquisition and Exploitation of Mass Market Software*, *Computer Software and Chips 1986: PROTECTION AND MARKETING*, 515, 529 (M. Goldberg ed. 1986).
 13. Bagheri S.K., Moradpour H.A. & Rezapour M., "The Iranian patent reform", 2009 *World Patent Information* 31, 32.
 14. Baron, Joshua (January 22, 2014). *Great Power Peace and American Primacy: The Origins and Future of a New International Order*. United States: Palgrave Macmillan. Isbn 1-137-29948-7.
 15. Bauer, supra note 23, at 2 (noting that "this goal has never been realized. Instead, there are literally hundreds of federal and state decisions interpreting [§ 301], which can charitably be described as inconsistent and even incoherent.").
 16. Beutel R. A. "Trade Dress Protection for the 'Look and Feel' of Software. The Lanham Act as an Emerging Source of Proprietary Rights Protection for Software Developers," 71 *J Pat Off. Soc'y* 974 (1989);
 17. Bishop V. Wick, 11 U.S.P Q 2d 1360 (N D. III. 1988).
 18. Boldrin M., and Levine D. K., *Perfectly Competitive Innovation*, 27.
 19. Braham, M. (1977). *The grounding of the technologist*. In R. Budgett J. & Leedham, J. (Eds.), *Aspects of Educational Technology VII*, London: Pitman Publishing, 45-56.

20. Bräunl, T. Register-Transfer Level Simulation, Proceedings of the Eighth International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems, MASCOTS 2000, San Francisco CA, Aug./Sep. 2000, pp. 392–396 (5)
21. Braithwaite J. & Drahos P., supra note 54, at 570 ("One reason why the US has been prepared to shift its agenda into WTO is that consensus offers it a tool of domination.").
22. Brooks D. & Kiplinger M., Perfecting, Protecting & Licensing Proprietary Rights After The 1980 Copyright Amendment, 126 (1981).
23. Burca G., Craig P., EU Law: Text, Cases and Materials (2011) 5th ed. Oxford University Press p.6.
24. Buscaglia E. & Jos&-Luis Guerrero-Cusumano, Quantitative Analysis of Counterfeiting Activities in Developing Countries in the Pre-GATT Period, 35 JÜRIMETRICS J. 221, 225- 31 (1995) (reporting results of empirical case study measuring the infringement of patented and copyrighted goods and services in developing countries).
25. Cameron D. M. Borenstein R., (2003). KEY ASPECTS OF IP LICENSE AGREEMENTS. Ogilvy Renault.
26. Chander A., How Law Made Silicon Valley, 63 EMORY L.J. 639, 643-44 (2014).
27. Chansavat, B., Bräunl, T. Retro User Manual, Internal Report UWA/CIIPS, Mobile Robot Lab, 1999, pp. (15), web: <http://robotics.ee.uwa.edu.au/retro/ftp/doc/UserManual.PDF>
28. Chiang, J.-T., 1995. Technology policy paradigms and intellectual property strategies: three national models. Technological Forecasting and Social Change 49, 35–48.

29. Coase R. H., The Problem of Social Cost, 3 J.L. & ECON. 1 (1960).
30. Covert K. (1 July 2011). Ancient Greece: Birthplace of Democracy. Capstone. p. 5.
ISBN 978-1-4296-6831-6. Ancient Greece is often called the cradle of western civilization. ... Ideas from literature and science also have their roots in ancient Greece.
31. Cimoli M. et al., Innovation, Technical Change, and Patents in the Development Process: A Long-Term View, in Intellectual Property Rights: Legal and Economic Challenges for Development 57 (Mario Cimoli et al. eds. 2014); Anthony D. So et al., Is Bayh-Dole Good for Developing Countries? Lessons from the U.S. Experience, in Intellectual Property Rights: Legal and Economic Challenges for Development 201 (Mario Cimoli et al. eds. 2014).
32. Dabbah M. M., Competition Law and Policy in The Middle East (2007).
33. Denysyuk V. International technology transfer: a modern content, analysis of foreign and national statistics / V. Denisyuk // The Economist: magazine. - № 2. - February 2011 - P. 43
34. Depoorter B. and Parisi F., FAIR USE AND COPYRIGHT PROTECTION: A PRICE THEORY EXPLANATION. Center for Advanced Studies in Law and Economics, Faculty of Law, Ghent University (Belgium). Professor of Law & Co-Director, J.M. Buchanan Center for Political Economy, Program in Economics and the Law, George Mason University (USA).
35. Detkin P. N., Leveling the Patent Playing Field, 6 J. Marshall Rev. Intell. Prop. L. 636, 636 (2007).
36. Diehr D. V., 450 U.S. 175 (1981).
37. Dinwoodie G. B. & Dreyfuss R. C., International Intellectual Property Law and the Public Domain of Science, 7(2) J. INT'L ECON. L. 431 (2004); Graeme B.

- Dinwoodie & Rochelle Cooper Dreyfuss, WTO Dispute Resolution and The Preservation of the Public Domain of Science Under International Law, in INTERNATIONAL PUBLIC GOODS AND TRANSFER OF TECHNOLOGY UNDER A GLOBALIZED INTELLECTUAL PROPERTY REGIME (Keith E. Maskus & J. H. Reichman eds., Cambridge U. Press) (forthcoming 2005).
38. Dinwoodie G. B. and Dreyfuss R. C. TRIPS and the Dynamics of Intellectual Property Lawmaking, 36 Case W. Res. J. Int'l L. 95 (2004) Available at: <https://scholarlycommons.law.case.edu/jil/vol36/iss1/5>
39. Douglas C., "Creation Myths: Does Innovation Require Intellectual Property Rights?" Reason online (March 2003). Retrieved September 25, 2003, from <http://reason.com/0303/fe.dc.creation.shtml>.
40. Drahos P., "The Universality of Intellectual Property Rights: Origins and Development," in Intellectual Property and Human Rights, WIPO Publication No. 762(E), 1999.
41. Drahos P., Developing Countries and International Intellectual Property StandardSetting, 5 J. WORLD INTELL. PROP. 765, 769-70 (2002) Dreier Cf. T., "L'evolution de la protection des circuits integres semi-conducteurs", Revue Internationale du Droit d'Auteur (RIDA), no. 142 (1989), 23 et seq.
42. DuCharme N. K. Kemp R. F. (1987). Copyright Protection For Computer Software In Great Britain And The United States: A Comparative Analysis.
43. Duchesne R. (7 February 2011). The Uniqueness of Western Civilization. BRILL. p. 297. ISBN 90-04-19248-4. The list of books which have celebrated Greece as the "cradle" of the West is endless; two more examples are Charles Freeman's The Greek Achievement: The Foundation of the Western World (1999) and Bruce Thornton's Greek Ways: How the Greeks Created Western Civilization (2000).

44. Dunoff & Trachtman, *supra* note 74, at 396; Andrew T. Guzman, Choice of Law: New Foundations, 90 GEO. L.J. 883, 903 (2002).
45. Duston T. and Marshall T.R. Intellectual property protection for trade secrets and know-how Gerstein & Borun, Chicago, IL.
46. Eckstrom L. Licensing in Foreign and Domestic Operations (1984).
47. Edelman P. B., Japanese Product Standards as Non-Tariff Trade Barriers: When Regulatory Policy Becomes a Trade Issue, 24 STAN. J. INT'L L. 389, 435-37 (1988); HAXY, Administrative Guidance versus Formal Regulation: Resolving the Paradox of Industrial Policy, in LAW AND TRADE ISSUES OF THE JAPANESE ECONOMY 107 (G. Saxonhouse & K. Yamamura, eds. 1986).
48. Eduard S. (July 22, 2011). "R&D and Innovation as a Growth Engine" (PDF). National Research University – Higher School of Economics. Retrieved May 11, 2013.
49. El-Ansary, A.I., Marketing strategy: taxonomy and frameworks. European Business Review, 2006. 18(4): p. 266-293.
50. Emmert F. Intellectual Property in the Uruguay Round-Negotiating Strategies of the Western Industrialized Countries, 11 MICH. J. INT'L L. 1317, 1343 (1989) (describing dispute settlement provisions in Berne and Paris Conventions as "effectively worthless"); see also Monique L. Cordray, GA TT v. WIPO, 76 J. PAT. & TRADEMARK OFF. SOC'Y 121, 131-32 (1994) (critiquing dispute settlement provisions of WIPO-based intellectual property conventions).
51. Epstein D. M. Eckstrom's Licensing in Foreign and Domestic Operations Licensing Operations in Japan. Chapter 31 (2002).

52. Erstling J. Salmela A. M. Woo J. N. (2012), Usefulness Varies by Country: The Utility Requirement of Patent Law in the United States, Europe and Canada. Mitchell Hamline School of Law, jay.erstling@mitchellhamline.edu
53. EvisaKica and Nico Groenendijk, (2011). The European patent system: dealing with emerging technologies. Department of Legal and Economic Governance Studies, Institute for Innovation and Governance Studies, University of Twente, the Netherlands
54. Evrard, et al., "International Licensing of Intellectual Property Rights: Issues Arising Under U.S., European, and Japanese Competition Law." (Issue 148 April 2009)
55. Flugreisen A. S. and Reisebiro S. L., GmbH v. Zentrale zur BeUmpfung unlauteren Wettbewerbs e.V., Case 66/86, [1989] E.C.R. 803, [1990] 4 C.M.L.R. 102; Soci6t6 Alsacienne et Lorraine de T6l6communications et d'Electronique (Alsatel) v. Novasam SA, Case 247/86, [1988] E.C.R. 5987, [1990] 4 C.M.L.R. 434.
56. Farnsworth Dave, "Sales Tax."2018.
57. Francesca T. H. GuadagnoSachaWunsch-Vincent, (2015). Breakthrough technologies – Semiconductor, innovation and intellectual property. World Intellectual Property Organization and United Nations Conference on Trade and Development. Economic Research Working Paper No. 27.
58. Friedman, Wolfgang and Kalmanoff, George, Joint International Business Ventures (1961). See also Lovell, Enid Baird, Foreign Licensing Agreements (Vol, I), The National Industrial Conference Board, New York, NY (1958).
59. Gage, "New Thinking Regarding Software Protection," 13 Licensing L. & Bus. Rep. 157 (1990)
60. Ghazinoory, Sepehr & Abedi, Sadegh & Seyed, Kamran & Bagheri, & Adibi, Mahyar. (2012). IP Management in the Context of Developing Countries ± The Case

of Iran's Industrial Companies. IIC International Review of Intellectual Property and Competition Law. 43.

61. Gilbert, R. and Shapiro C., Antitrust Issues in the Licensing of Intellectual Property: The Nine No-No's Meet the Nineties, Brookings Papers: Microeconomics, 1997, 283-336.
74. Gilmore G. "Book Review: The Bramble Bush" (1951). Faculty Scholarship Series. Paper 2669. http://digitalcommons.law.yale.edu/fss_papers/2669
75. Glanville Williams, "Learning the law", Sweet & Maxwell 2002-06-20
76. Gleklen J. I., CSU, 203 F.3d at 1327; May 1 Tr. at 19-26; Antitrust Liability for Unilateral Refusals to License Intellectual Property: Xerox and Its Critics (May 1, 2002 Hr'g R.) at 2-4, <http://www.ftc.gov/opp/intellect/020501gleklen.pdf> [hereinafter Gleklen Submission].
77. Gleklen J. I., Unilateral Refusals to License I.P. (May 1, 2002 Hr'g R.) (slides) at 11, <http://www.ftc.gov/opp/intellect/020501gleklenppt.pdf>.
78. Golden J. M., (2011). Patentable Subject Matter and Institutional Choice. The University of Texas School of Law, Law and Economics Research Paper No. 206.
79. Goodarzi M. & Bagheri S. K., "IP system in Iran: a comparative study", in: "Proceedings of the Portland international conference management of engineering and technology", 8±13 (Istanbul, Turkey 2006).
80. Gordon D. L., Computer Software; Contracting for Development and Distribution f 1.12 (1986).
81. Gorman R. A., (2006), Copyright Law Second Edition. Kenneth W. Gemmill Professor Emeritus University of Pennsylvania Law School, Federal Judicial Center.

82. Graham S. and Mowery D. C., (2003). Intellectual Property Protection in the Software Industry. Haas School of Business U.C. Berkeley.
83. Gruber J. I., May 1 Tr. at 33-35; "Public Finance and Public Policy." Part IV- Taxation in Theory and Practice, 3rd edition, (2008).
84. Grübler A. "Technology: Concepts and Definitions". Cambridge University Press. (1998).
85. Guido C. Some Thoughts on Risk Distribution and the Law of Torts, 70 Yale L.J. 499 (1961). See Also Guido Calabresi, The Costs of Accidents: A Legal and Economic Analysis (1970), Which is a very important work in the law and economics tradition because it provides an economic efficiency analysis of the rules of tort law.
86. Guzman A. T., A Compliance-Based Theory of International Law, 90 CAL. L. REV. 1823, 1841 n.73 (2002) (noting that the "standard assumptions about states" in models of international relations are that "they are rational, they act in their own self-interest, and they are aware of the impact of international law on behavior").
87. Hagelin T., "Valuation of Patent Licenses", 12 Tex. Intell. Prop. L.J. 423 (2004).
88. Hand S., Operating Systems Michaelmas Term. 2010, 12 lectures for CST IA.
89. Herren A., RGZ 81, 120, 123; RGZ 143, 412, 416 et seq.; BGHZ 31, 308, 311; BGH, GRUR 1961, 631 (Telefonbuch); BGH, UFITA 51 (1968), 315, 318 (Gaudeamusigitur); BGH, GRUR 1981, 267, 268 (Dirlada); G. Schulze, die kleine Münze und ihre Abgrenzungsproblematik bet den Werkarten des Urheberrechts, Freiburg 1983.
90. Hickey T., William Barrow and Charles Harris (August 3, 2018, 12:57 PM EDT)
111 West 19th Street, 5th Floor | New York, NY 10011 | www.law360.com

91. Hoeren, T. (1991) Chip protection in Europe. IN MEIJBOOM, A. & PRINS, C. (Eds.) the law of information technology in Europe. Amsterdam.
92. Holmes O. W., "Collected Papers: The Path of the Law." New York Harcourt, Brace and Company, (1920)
93. Hosseini, Mina. (2015). An Introduction to Iranian Competition Law and Policy. Competition Policy International.
94. Hurmelinna-Laukkanen, P. & Puumalainen K. (2007). 'Nature and dynamics of appropriability: strategies for appropriating returns on innovation'. R&D Management 37(2): 95-12.
95. Jager, "Trade Secrets: The Steady Protection for Computer Technology," 15 Licensing L. & Bus. Rep. 85 (1992).
96. James B., and Erik Maskin, "Sequential Innovation, Patents, and Imitation" [Working Paper], Massachusetts Institute of Technology, Department of Economics, January 2000: 2. Retrieved October 10, 2003, from <http://www.researchoninnovation.org/patent.pdf>.
97. James W., "Treaty of Rome", CIVITAS Institute for the Study of Civil Society (11/2005)
98. Kamiyama S., Sheehan J. and Martinez C., "Valuation and Exploitation of Intellectual Property". Organization for Economic Co-operation and Development (30-Jun-2006)
99. Kamiyama, S., J. Sheehan and C. Martinez (2006), "Valuation and Exploitation of Intellectual Property", OECD Science, Technology and Industry Working Papers, 2006/085, OECD Publishing.
100. Kapitsa Yu. And Aralova, N., "Determination of Royalty Rates for International Technology Transfer Agreements". Center of Intellectual Property

- and Technology Transfer, the National Academy of Sciences of Ukraine, Kyiv, 2015.
101. Kato Sh., Discussion over Patentable Subject Matter in Japan. Patent attorney, Abe, Ikubo & Katayama.
 102. Kipperman D., "Teaching Through Technology Concepts", ORT Israel. (2006)
 103. Kirsch P. F., May 1 Tr. at 134-35, 137, 200-01; see also Kirsch Presentation at 7.
 104. Kirsch P. F., Refusals to License I.P. – The Perspective of the Private Plaintiff (May 1, 2002 Hr'g R.) (slides) at 3, <http://www.ftc.gov/opp/intellect/020501kirsch.pdf> [hereinafter Kirsch Presentation].
 105. Kunda and MatanovacVučković, op. cit. (fn. 1). See also N. FikeysKrmić: Licencniugovorizaračunalni software, ZbornikHrvatskogdruštva za autorsko pravo, Vol. 10, 2009, pp. 123 – 132; M. Vukmir: Abundance of sources – the true meaning of the terms copy and original; semantic changes in art and copyright terminology in digital environment and change of the role of law in digital societies, ZbornikHrvatskogdruštva za autorsko pravo, Vol. 11-12, 2011, pp. 71 – 152.
 106. Kur, A. and T. Dreier (2013), p. 291.
 107. Laurence R. Heifer, Adjudicating Copyright Claims Under the TRIPs Agreement: The Case for a European Human Rights Analogy, 39 HARV. INT'L L.J. 357, 383-85 (1998)
 108. Laurence R. Heifer, Regime Shifting: The TRIPs Agreement and New Dynamics of International Intellectual Property Lawmaking, Available at: <https://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=1225&context=yjl>

109. Leandra Lederman, "UNDERSTANDING CORPORATE TAXATION." Law George Mason University School of Law, 2002.
110. Lemley M. A., Beyond Preemption: The Law and Policy of Intellectual Property Licensing, 87 CALIF. L. REV. 111, 137-42 (1999).
111. Lepage A., (2003), DOCTRINE AND OPINIONS: OVERVIEW OF EXCEPTIONS AND LIMITATIONS TO COPYRIGHT IN THE DIGITAL ENVIRONMENT. University of Paris II Assas.
112. Lewis & Wigen 1997, p. 226
113. Luppicini, R. (2005). A Systems Definition of Educational Technology in Society. Educational Technology & Society, 8 (3), 103-109.
114. Jessica D. Litman, Copyright, Compromise, and Legislative History, 72 CORNELL L. REV. 857, 860861 (1986-1987).
115. Machlup, F. (1962), "The Production and Distribution of Knowledge in the United States", Princeton, NJ: Princeton University Press.
116. Marmor A. and Sarch A., "The Nature of Law", The Stanford Encyclopedia of Philosophy (Fall 2015 Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/fall2015/entries/lawphil-nature/>.
117. MatanovacVučković R. and Gliha I.: NovelaZakona o autorskompravuisrodnimpravimaiz 2007. godine, in: R. Matanovac (ed.): Prilagodbahrvatskogpravaintelektual-nogvlasništvaeuropskompravu, Narodnenovine and DržavnizavodzaintelektualnovlasništvoRepublikeHrvatske, Zagreb, 2007, pp. 115 – 146.
118. McGee A., Weatherill S., 'The Evolution of the Single Market – Harmonisation or Liberalisation' (1990), 53 MLR 585, p. 595.

119. McGinn, R. (1978). What is technology. *Research in Philosophy and Technology*, 1, 179-197.
120. McVey T. B., *International Business Compliance Programs* by: Esq., p.4
121. Melamed A. D. & Stoeppelwerth A. M., *The C.S.U. Case: Facts, Formalism and the Intersection of Antitrust and Intellectual Property Law*, 10 *GEO. MASON L. R.E.V.* 407, 426-27 (2002); see also May 1 Tr. at 246-47 (Melamed) (proposing objective test for analyzing refusals to deal that examines whether conduct made "economic sense" but for its tendency to exclude a rival).
122. Millard C. J., *Protection in EEC Member States of Semiconductor Product Designs*, Paper presented at a conference on Licensing and Protection of Computer Software in Europe, Brussels, European Study Conference, September 20, 1989; Ingwer Koch, 'Rechtsschutz der Topographien von mikroelektronischen Halbleitererzeugnissen', *Computer und Recht* 1987, 77; Thomas Hoeren, 'EEC computer law', in: Chris Reed (ed.), *Computer Law*, London 1990, 240; CorienPrins, 'The Dutch answer to the need for protection of chips', *Computer Law & Practice* 1987, 169; Thomas Dreier, 'Development of the Protection of Semiconductor Integrated Circuits', 19 *International Review of Industrial Property and Copyright Law (IIC)* 427 (1988).
123. Moir H. V. J, (2008). What are the costs and benefits of patent systems?
CENTER FOR GOVERNANCE OF KNOWLEDGE AND DEVELOPMENT
WORKING PAPER.
124. Monya N., (1994). *Revision of the Japanese Patent and Utility Model System*
125. Muris T. J., Chairman, Fed. Trade Comm'n, *Improving the Economic Foundations of Competition Policy* (Jan. 15, 2013), available at

<https://www.ftc.gov/public-statements/2003/01/improving-economic-foundations-competition-policy>.

126. Nathan S. S., Antitrust Law of the European Economic Community - An Interpretation of Articles 85 and 86 of the Treaty of Rome, 4 Md. J. Int'l L. 251 (1979). Available at: <http://digitalcommons.law.umaryland.edu/mjil/vol4/iss2/7>
127. Newman, Jr., Important Computer Terms and Concepts at A2, AIPLA, The Law of Computer-Related Technology [hereinafter cited as Newman]; Newman, Jr., A Tutorial of Important Computer and Communication Terms and Concepts from the Barrier to die State-of-the-Art, The Law of Computer Related Technology at A.2 (AIPLA 1992) [hereinafter cited as Newman 11].
128. Nimmer, The Law of Computer Technology, ^ 1.03[5][b] (1985 Supp. 1990).
129. Nobes J., "Definition of taxes." Universitas varsoviensis (1998).
130. O'Brien J. A., Taking Invention Disclosures: Practical and Ethical Considerations, in Fundamentals of Patent Prosecution 2008: A Boot Camp for Claim Drafting & Amendment Writing 11, 43 (2008), available at 936 PLI/Pat 11 (Westlaw).
131. O'Donnell, R.W.: O'Malley, J.J.: Huis, R.J.: Halt, G.B. 2008, XVIII, 150 p. 6 illus., softcover. ISBN: 978-0-387-77388-9. Intellectual property in the food technology industry, protecting your innovation.
132. O'Donoghue C., The Evolving Interface Between European Competition Law and Intellectual Property Rights: Is There a Balance to Be Achieved? Plymouth Law and Criminal Justice Review (2016) P. 156.
133. Olive & Olive, P.A. Intellectual Property Law. (1957), Trade Secrets. Durham, North Carolina 27702-2049.

134. Ostergard R. L., "Intellectual Property: A Universal Human Right?" *Human Rights Quarterly* 21.1 (1999): 167.
135. Parać Z.: Autorskopravna zaštita kompjutorskih programanakonizmjene Zakona o autorskom pravu, dioprvi, *Privreda i pravo*, Vol. 29, No. 9-10, 1990, pp. 645 – 661; id.: Autorskopravna zaštita kompjutorskih programanakonizmjene Zakona o autorskom pravu, diodrugii, *Privreda i pravo*, Vol. 29, No. 11-12, 1990, pp. 793 – 807.
136. Parać Z.: Imovinskopravna zaštita iprijenos kompjutorskog softwarea, doctoral dissertation, University of Zagreb, Faculty of Law, Zagreb, 1990; id.: Autorskopravna zaštita kompjutorskih programa, in: I. Henneberg (ed.): *Novetehnologije i autorsko pravo*, Autorska agencija za SR Hrvatsku, Zagreb, 1989.
137. Parker, Xerox Gets Patents for Viewpoint Icons, *Infoworld* (Aug. 22, 1988).
138. Patrick H. & Rosovsky H., *Caves & Uekusa*, *Industrial Organization*, In *Asia's New Giant: How The Japanese Economy Works* 518 (1976).
139. Paul R., "Are Nonconvexities Important for Understanding Growth?" *The American Economic Review (Papers and Proceedings)* 80 (1990): 97-103.
140. Paul T. V., Wirtz J. J., Fortmann F. (2005). "Great+Power" Balance of Power. United States of America: State University Of New York Press, 2005. Pp. 59, 282. Isbn 0-7914-6401-6. Accordingly, The Great Powers After the Cold War Are Britain, China, France, Germany, Japan, Russia, And The United States P.59
141. Pedro A. de Miguel Asensio, "The law governing international intellectual property licensing agreements (a conflict of laws analysis)," *Research Handbook on Intellectual Property Licensing*. Cheltenham, Edward Elgar Publishing, 2013, pp. 312-336.

142. Pentcheva D. P., Issac R. P., and Alden F. Abbott, "Antitrust Treatment of Intellectual Property Transactions: Economic Analysis and Recent Developments."
143. Petersmann E. U., Constitutionalism and International Organizations, 17 NW. J. INT'L L. and Bus. 398, 442 (1996-97) (characterizing agreements relating to services and intellectual properties as part of "global package deals" negotiated within the GATT/WTO).
144. Pitkethly R., (1999). The European Patent System: Implementing Patent Law Harmonization. Said Business School Oxford University 59 George Street Oxford OX1 2BE
145. Porat, Marc, U. (1974) "Defining an Information Sector in the U.S. Economy," Institute for Communication Research, Stanford University.
146. Posner R. A., Antitrust in the New Economy, 68 ANTITRUST L.J. 925, 930-31 (2001).
147. Posner R. A., Economics of Justice 4 (1983); Richard A. Posner, Foreword to 1 Encyclopedia of Law and Economics, At Xii (Boudewijn Bouckaert & Gerrit De Geest Eds., 2000).
148. Posner R. A., Cf. R. BORK, THE ANTITRUST PARADOX 288 (1978); Bork, supra note 5, at 187; Donald F. Turner, Les Restrictions Verticales dans la Distribution aux Etats-Unis, Speech delivered at an international seminar on distribution problems, jointly organized by the French Government and the Commission, in Strasbourg (December 5-6, 1983), reprinted in REVUE DE LA CONCURRENCE ET DE LA CONSOMMATION, 21, 25-27, Numero Special (Supp. No. 25 1984).

149. Posner R. A., The Chicago School of Antitrust Analysis, 127 U. PA. L. REV. 925 (1979).
150. Rastegar H. & Omidvar A., Iran Privatization Performance Report (2011).
151. Reddy, N. M., & Zhao, L. (1990). International Technology Transfer: A Review. *Research Policy*, 19, 285-307. [http://dx.doi.org/10.1016/0048-7333\(90\)90015-X](http://dx.doi.org/10.1016/0048-7333(90)90015-X)
152. Reichman J. H. & Lange D., Bargaining Around the TRIPs Agreement: The Case for Ongoing Public-Private Initiatives to Facilitate Worldwide Intellectual Property Transactions, 9 DUKE J. COMP. & INT'L L. 11, 13 (1998).
153. Reichman J. H., the TRIPs agreement comes of age: conflict or cooperation with the developing countries? 32 case W. RES. J. INT'L L. 441, 450 (2000) (stating that TRIPs enters into force for most developing countries in 2000) [hereinafter Reichman, TRIPs agreement].
154. Reichman J. H., Universal Minimum Standards of Intellectual Property Protection Under the TRIPs Component of the WTO Agreement, 29 INT'L LAW 345 (1995).
155. Reinsdorf M. and Slaughter M. J., "International Trade in Services and Intangibles in the Era of Globalization." University of Chicago Press, 2009.
156. Rezapour M., Bagheri S.K., Rashtchi M. & Bakhtiari M.R., "The Iranian patenting system: an introduction", 29 World Patent Information 250 (2007).
157. Roberts E. B., "New Ventures for Corporate Growth," *Harvard Business Review*, 80 (July/August 1980).
158. Robertson A., "Technology and Cultural Values: Technological Innovations and Their Social Impacts". (1981)

159. Rostow W. W., "The Economic History Review". Blackwell Publishing on behalf of the Economic History Society. Vol. 12, No. 1 (1959), pp. 1-16
160. Samuel D., "Intellectual Property Valuation: A Finance Perspective" The Ohio State University (1997).
161. Samuelson P., The US. Digital Agenda at WIPO, 37 VA. J. INT'L L. 369, 388-90 & 388 n.108 (1997) (discussing the influence of African bloc of states at the diplomatic conference that adopted the WIPO Copyright Treaty); see also Marney L. Cheek, The Limits of Informal Regulatory Cooperation in International Affairs: A Review of the Global Intellectual Property Regime, 33 GEO. WASH. INT'L L. REv. 277, 314-15 (2001).
162. Samuelson, "CO NTV Revisited: The Case Against Copyright Protection for Computer Programs in Machine-Readable Form," 1984 Duke LJ. 663,6T7.
163. Sarkissian A., "Intellectual property rights for developing countries: Lessons from Iran", Technovation (2008), doi: 10.1016/j. technovation.2008. 04. 001.
164. Sarkissian A., "Intellectual property rights for developing countries: Lessons from Iran", Technovation (2008), doi:10.1016/ j. technovation.2008.04.001.
165. Schickl, L. (2013), "Protection of Industrial Design in the United States and in the EU: Different Concepts or Different Labels?", INTERNATIONAL ASSOCIATION FOR THE ADVANCEMENT OF TEACHING AND RESEARCH IN INTELLECTUAL PROPERTY, <http://atrip.org/wp-content/uploads/2016/12/2012-2Lena-Schickl.pdf>
166. Schumpeter J. (1942). 'Capitalism, Socialism and Democracy', Harper and Row.

167. Shafi O., (Assistant Professor) Budgam Department of Computer Applications, Sheikh Ul Alam Memorial Degree College. B.G III Comp Applications (IV Unit) (2017).
168. Shamah D., (February 4, 2015). "Bloomberg: Israel Is World's 5th Most Innovative Country, Ahead of Us, Uk". No Camels. Retrieved October 29, 2016.
169. Shapiro C., *id.* at 181 (Mackie-Mason); *id.* at 229-30 (Whitener); R. Hewitt Pate, Acting Assistant Attorney Gen., U.S. Dep't of Justice, Antitrust and Intellectual Property, Remarks at the American Intellectual Property Law Association 2003 Mid-Winter Institute 14 (Jan. 24, 2003) (criticizing the Ninth Circuit's decision to permit subjective inquiry into the intellectual property holder's motivations for refusing to deal), available at <http://www.usdoj.gov/atr/public/speeches/200701.pdf>. But see May 1 Tr. at 133-35 (Kirsch) (endorsing Ninth Circuit's intent test).
170. Sherman, C., Eight streetwise clues for publishing a successful e-newsletter. *EContent*, 2001. 24(9): p. 34-39.
171. Sherwood, 613 F.2d 809, 204 U.S.P.Q. 537 (CC PA 1980), cert. denied, 450 US 994 (1981).
172. Shōj Y., (2010) Changes in Japanese Copyright Law Post-1990s: US/Corporate Interest vs. User Demand
173. Silveira, P., Rodriguez, C., Birukou, A., Casati, F., Daniel, F., D'Andrea, V., Worledge & C., Zouhair, T. (2012), Aiding Compliance Governance in Service-Based Business Processes, IGI Global, pp. 524–548
174. Singla A., "Valuation of Intellectual Property," National Law School of India University, Bangalore. (2010).

175. Slaughter A. M., A Liberal Theory of International Law, 94 AM. Soc'Y INT'L L. PROC. 240, 241 (2000).
176. Smith G. V. & Parr R. L., Intellectual Property: Valuation, Exploitation, and Infringement Damages 259 (2005).
177. Smith G. V. and Parr R. L., "Valuation of Intellectual Property and Intangible Assets". (1994).
178. Solomon, D. L. (2000). Toward a post-modern agenda in Instructional Technology. Educational Technology Research and Development, 48 (4), 5-20.
179. Stephan P., is the leading proponent of a public choice analysis of international institutions. See, e.g., Paul B. Stephan, Accountability and International Lawmaking: Rules, Rents and Legitimacy, 17 Nw. J. INT'L L. & Bus. 681 (1996-1997) [hereinafter Stephan, Accountability and International Lawmaking]; Paul B. Stephan, The Futility of Unification and Harmonization in International Commercial Law, 39 VA. J. INT'L L. 743 (1999). See also Jeffrey L. Dunoff & Joel P. Trachtman, The Law and Economics of Humanitarian Law Violations in Internal Conflict, 93 AM. J. INT'L L. 394, 396 (1999) ("Public choice can be used to analyze treaties, as well as the creation and interaction of international institutions.").
180. Stevens & Bolton LLP, "Technology Transfer Block Exemption and Guidelines", 2016.
181. Syou T. San Gyou Syou (MITI) (1964) Syou Kou Seisaku Shi - Vol.14 - Tokkyo, Tokyo
182. United States v. Seidlitz, 589 F.2d 152,154 n.3 (4th Cir. 1978), cert denied, 441 VS. 922 (1979).

183. Takenaka T., Success or Failure? Japan 's National Strategy on Intellectual Property and Evaluation of Its Impact from the Comparative Law Perspective Washington University Global Studies Law Review. P.381 (January 2009).
184. Taphor, Software Protection in the International Marketplace, 10 N.C.J. OF INT'L LAW AND COM. REG. 617, 623 (1985).
185. Ter Heide M., "EC Competition Law: A Revolution?" International and European Law, University of Tilburg. (2005).
186. Triaille J. P., ALAI-Report Belgium, in: ALAI Canada (ed.), L'informatique ET le droit d'auteur, Quebec 1990, 97.
187. Tuckett R., "Controlling Infringement of Copyright in Computer Software" Jan. 1985.
188. Watal J., Intellectual Property Rights in WTO and Developing Countries, 2001 (Oxford University Press), at 1-5.
189. Watanabe Y., J.D., 2009, University of Houston Law Center, PATENT LICENSING AND THE EMERGENCE OF A NEW PATENT MARKET. <https://oshaliang.com/wp-content/uploads/2014/12/Patent-Licensing.pdf>
190. Weiler. J, 'The Transformation of Europe', (1991), 100 Yale LJ 2458.
191. Whitener M. D., Statement (May 1, 2002 Hr'g R.) at 6, <http://www.ftc.gov/opp/intellect/020501whitener.pdf> [hereinafter Whitener Submission].
192. Wild J., IV's Detkin Explores the Role of Aggregators in a Changing Patent World, IAM MAGAZINE, Sept. 22, 2007, available at <http://www.iammagazine.com/blog/detail.aspx?g=6514d2f4-5426-4ab9-9864-071ef26c87b9> (critiquing Detkin, supra note 1).

193. Williams D. F, "Direct Taxes or Indirect Taxes?" A consideration of the relative merits of the two approaches, A discussion paper of KPMG's Tax Business School® in the U.K., (2009).
194. Wilson C. and Grubler A., "Energy Technology Innovation". International Institute for Applied Systems Analysis, Austria, Charlie Wilson, University of East Anglia. (18 December 2013, pp 332-346)
195. Woensel L. V. and Geoff Archer, "Ten Technologies Which Could Change Our Lives: Potential Impacts and Policy Implications". (January 2015)
196. Yamaguchi E., "Recent Characteristics of Royalties and License Fees in Japan's Balance of Payments." Bank of Japan Working Paper Series, 2004.
197. Young M. K. & Hamilton C. C., Introduction to Japanese Law, 1 Japan Business Law Guide 7–550 (1988), Reprinted in Yukio Yanagida Et Al., Law and Investment in Japan: Cases and Materials 63, 64 (1995).
198. Yu P. K. Toward a non-zero sum Approach to resolving global intellectual property disputes: what we can learn from mediators, business strategies, and international relations theorists, 70 U. Cin L Rev 569 635 (2001).
199. Zenhäusern, Urs (1), Der Internationale Lizenzvertrag, Fribourg: Universitätsverlag (1993)

CBSE

1. CBSE. "Supplementary Material for Legal Studies Citation: Nature and Sources of Laws." Available at http://cbseacademic.in/web_material/doc/Legal_Studies/XI_U2_Legal_Studies.pdf (accessed 15 October 2017)

CIA FACT-BOOK

1. "The CIA World Factbook – GDP (PPP)". CIA. Retrieved March 2020.

COMM. ON THE JUDICIARY

1. REP. COMM.JUDICIARY, S. REP. NO. 93-983, at 165 (1974) (“The declaration of [the preemption] principle in section 301 is intended to be stated in the clearest and most unequivocal language possible. . .”).
2. REP. COMM. JUDICIARY, S. REP. NO. 94-473 (1975), at 114.
3. REP. COMM. JUDICIARY, S. REP. NO. 91-1219, at 4 (1970).

COMMON MARKET AND INTERNATIONAL ANTITRUST

1. The Commission is established under article 155 of the EEC Treaty. Id. art. 155. The Commission is "the administrative or the executive arm" of the EEC. B. HAWK, UNITED STATES, COMMON MARKET AND INTERNATIONAL ANTITRUST: A COMPARATIVE GUIDE 412 (1979 & Supp. 1983).
2. Polistil/Arbois, 27 O.J. EUR. COMM. (No. L 136) 9 (1984), 3 COMMON MKT. REP. (CCH) 10,587; IBM personal computer, 27 O.J. EUR. COMM. (No. L 118) 24 (1984).
3. O.J. EUR. COMM. (No. L 173) 1 (1983), 1 COMMON MKT. REP. (CCH) 1 2730 (corrigenda at 26 O.J. EUR. COMM. (No. L 281) 24 (1983))
4. O.J. EUR. COMM. (No. L 173) 5 (1983), 1 COMMON MKT. REP. (CCH) 2733 (corrigenda at 26 O.J. EUR. COMM. (No. L 281) 24-25 (1983)).
5. Established in Rewe-Zentral AG v Bundesmonopolverwaltung fuer Branntwein (Cassis de Dijon) [1979] ECR 649, which is laid out more thoroughly in The implementation of the New Approach Directives, COM (2003) 240.

DECISIONS

1. Decision on April 30, 1953 by the first petty court of the Supreme Court (vol.7, No.4, Minshyû 461; vol.4; No.4, Gyôshyû, 910)

2. Decision on December 25, 1956 by the Tokyo High Court (vol.7, No.12, Gyōshyū, 3157,)

DIAMOND V. DIEHR

1. Diamond V. Diehr, 450 U.S. 175 (1981). For discussion of implications of granting patent protection to computer software inventions, see Note, "The Policy Implications of Granting Patent Protection to Computer Software. An Economic Analysis" 37 Vand L. Rev. 147, 153 (19&4).
2. Diamond v. Diehr, 450 U.S. 175 (1981), Gottschalk v Benson, 409 U.S. 63 (1972); Parker V. Flook, 437 U.S. 584 (1978). See also Chisum, "The Patentability of Algorithms," 47 U. Pitt. L. Rev. 959 (1986); Samuelson, "Benson Revisited. The Case Against Patent Protection for Algorithms and Other Computer-Program Related Inventions," 39 Emory L.J 1U25 (1990)

EUROPEAN LEGISLATION

1. Cf. Press Release of the EC Commission of May 28, 1990 - IP (90) 416.
2. EU copyright protection of works created by artificial intelligence systems. UNIVERSITY OF BERGEN, Faculty of Law, (2017).
3. European Commission - http://ec.europa.eu/index_en.htm
4. European Council - <http://www.european-council.europa.eu/home-page?lang=en>
5. European Parliament - <http://www.europarl.europa.eu/>
6. European Union - IP & Antitrust 2016 Know-How - GCR CHAPTER 18 Licensing and Antitrust in the European Communities.
7. Official Journal of the European Communities (OJ) C 189/5-7 of July 28, 1986

FRENCH LEGISLATION

1. For detailed discussions of the Paris Convention diplomatic conference, see SELL, POWER AND IDEAS, supra note 71, at 107-30.
2. Individual Taxation of France, January 1, 2018.
3. International Tax, France Highlight 2018, Deloitte.
4. Licensing Operation in France, § 19.03[29].
5. Paris Convention for the Protection of Industrial Property, Mar. 20, 1883 (as revised at Stockholm, July 14, 1967), 21 U.S.T. 1583, 828 U.N.T.S. 305 [hereinafter Paris Convention].

GATT

1. GATT Ministerial Declaration on the Uruguay Round of Multilateral Trade Negotiations, Sept. 20, 1986, 25 I.L.M. 1623 (1986); United States Proposal for Negotiations on Trade Related Aspects of Intellectual Property Rights, GATT Doc. MTN.GNG/NG1 I/W/14 (Oct. 20, 1987), reprinted in GATT OR WIPO?, supra note 71, at 179-86; see also SELL, POWER AND IDEAS, supra note 71, at 132-38 (discussing United States' linking of trade and intellectual property protection in bilateral negotiations and the evolution of a multilateral linkage strategy within GATT supported by American intellectual property industries).
2. GATT Panel Report on United States-Section 337 of the Tariff Act of 1930, L/6439-36S/345 (Nov. 7, 1989) [hereinafter Panel Report on United States-Section 337]; Appellate Body Report on United States-Section 211 Omnibus Appropriations Act of 1998, WT/DS176/AB/R (Jan. 2, 2002) [hereinafter Appellate Body Report on United StatesSection 221].
3. Guidelines Proposed by the European Community for the Negotiations on Trade-Related Aspects of Intellectual Property Rights, GATT Doc. MTN.GNG/NG1 I/W/16 (Nov. 20, 1987), reprinted in GATT OR WIPO? supra note 71, at 203-10.

4. SELL, POWER AND IDEAS, supra note 71, at 132 (identifying advantages for the United States of negotiations in GATT); Joos & Moufang, supra note 80, at 25 (discussing advantages of negotiating intellectual property issues in GATT).
5. Steinberg, supra note 69, at 341 (noting that "the EC and the United States have dominated bargaining and outcomes at the GATT/WTO from its early years"); Richard H. Steinberg, Trade-Environment Negotiations in the EU, NAFTA, and WTO: Regional Trajectories of Rule Development, 91 AM. J. INT'L L. 231, 232 (1997) ("richer countries tend to be more powerful in trade negotiations than poorer countries since, in the international trade context, 'power' may be seen as a function of relative market size").

INDIAN LEGISLATION

1. "DIRECT AND INDIRECT TAXES," Statistical Yearbook of India (2017). The Government of India, Ministry of Statistics and Programme Implementations.
2. Income Tax Department, Department of Revenue, Ministry of Finance, Government of India. Amended by Finance Tax 2018.
3. Raju KD, Interface between Competition Law and Intellectual Property Rights: A Comparative Study of the US, EU and India, International Law at Rajiv Gandhi School of IP Law, IIT Kharagpur and Life Member, Indian Society of International Law, New Delhi, India, 2014. P. 1.

INTELLECTUAL PROPERTY

1. Agreement on Trade-Related Aspects of Intellectual Property Rights, art. 1(1), Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization [hereinafter WTO Agreement], Annex IC, 33 I.L.M. 1197, 1198 (1994) [hereinafter TRIPS Agreement].

2. Agreement on Trade-Related Aspects of Intellectual Property Rights, Including Trade in Counterfeit Goods
3. Agreement on trade-related aspects of intellectual property rights. Dec, 15 1993. Marrakesh Agreement Establishing the world trade organization, Annex 1C legal instruments results of the Uruguay Round 1, 31 33 I.L.M. 81 (1994) [hereinafter TRIPs].
4. Approaches to The Protection of Trade Secrets, Chapter 3. Approaches to The Protection of Trade Secrets, (2015), Enquiries into Intellectual Property's Economic Impact.
5. Basic Law on Intellectual Property Law No. 122 of 2002. An English translation is available at http://www.kantei.go.jp/foreign/policy/titeki/hourei/021204kihon_e.pdf.
6. Commission on intellectual property rights, integrating intellectual property rights and development policy 5-6 (2002). http://www.iprcommission.org/graphic/documents/final_report.htm
7. Differences may exist among countries' IP statutes, interpretation of the statutes, procedural norms, and other aspects of national law and practice.
8. English translations of all programs are available at http://www.ipr.go.jp/e_materials.html (follow hyperlinks under the "Intellectual Property Strategic Program" heading) (last visited Feb. 7, 2009).
9. Fact Sheet, "Intellectual Property Valuation," European IPR Helpdesk. (June 2015)
10. For a discussion of an IP-related provision in the Nevada Constitution, see *infra* notes 113-115 and accompanying text.

11. INTELLECTUAL PROP. POLICY HEADQUARTERS, STRATEGIC PROGRAM FOR CREATION, PROTECTION AND EXPLOITATION OF INTELLECTUAL PROPERTY (2003), available at http://www.kantei.go.jp/foreign/policy/titeki/kettei/030708f_e.html [hereinafter 2003 STRATEGIC PROGRAM].
12. Intellectual property rights for developing countries: Lessons from Iran." Alfred Sarkissian, Management and Accounting Faculty, Allame Tabataba'ee University, Nezami Ganjavi Street, Tavanir Street, Vali Asr Avenue, Tehran 1434863111, Iran.
13. IP4inno Study, Valuation of Intellectual Property
14. Lemelson-MIT Program, 2003. Intellectual property workshop. School of Engineering, Massachusetts Institute of Technology. Available at: <http://web.mit.edu/invent/n-pressreleases/downloads/ip.pdf>.
15. Lexglobe LLP, A Short Guide to Copyright Law in Tanzania, available at www.lexglobelaw.com/assets/guide_copyright2.pdf - Retrieved on 21st July 2013.
16. National White Collar Crime Center, (2004). Intellectual Property and White-collar Crime: Report of Issues, Trends, and Problems for Future Research. NCJRS has made this Federally funded contract report available electronically in addition to traditional paper copies. <https://www.ncjrs.gov/pdffiles1/nij/grants/208135.pdf>
17. National White Collar Crime Center, Intellectual Property and White-collar Crime: Report of Issues, Trends, and Problems for Future Research, Date Received: December 2004, <https://www.ncjrs.gov/pdffiles1/nij/grants/208135.pdf>

18. National White Collar Crime Center, Intellectual Property and White-collar Crime: Report of Issues, Trends, and Problems for Future Research, Date Received: December 2004, <https://www.ncjrs.gov/pdffiles1/nij/grants/208135.pdf>
19. National White Collar Crime Center, Intellectual Property and White-collar Crime: Report of Issues, Trends, and Problems for Future Research, Date Received: December 2004, <https://www.ncjrs.gov/pdffiles1/nij/grants/208135.pdf>
20. NW3C, Responses to Interviews and Questionnaires on White-collar Crime and Intellectual Property, (NW3C Suvey), 2003–04
21. On international law and intellectual property, see *infra* Part I, Section C.
22. Proposal of the Commission (COM) (85) 775 final 12 (85/c360/02); cf. [1985] 11 European Intellectual Property Review (EIPR) 331-335.
23. TRIPs, *supra* note 1, arts. 41-46, 33 I.L.M. at 99-101 (establishing procedures for domestic enforcement of intellectual property rights).
24. U.N. Development Programme, making global trade work for people 221, 222 (2003), <http://www.undp.org/dpa/publications/globaltrade.pdf>.
25. UNCTAD-ICTSD, 2003. Intellectual property rights: implications for development. Policy Discussion Paper, UNCTAD-ICTSD Project on IPRs and Sustainable Development.

JAPAN

1. For information on the Strategic Council on Intellectual Property, see Prime Minister of Japan & His Cabinet, Concerning the Strategic Council of Intellectual Property (Provisional Translation) (Feb. 25, 2002), http://www.kantei.go.jp/foreign/policy/titeki/konkyo_e.html.
2. "Statistics – IFR International Federation of Robotics". "Why Japan leads industrial robot production, The Japanese robot industry – the past and the

future". <https://web.archive.org/web/20190728042350/https://ifr.org/post/why-japan-leads-industrial-robot-production>. Visited March 5, 2020.

3. "The Act was originally drafted by the Supreme Commander Allied Powers (SCAP) . . . to introduce American free market principles, including those embodied in its antitrust laws, into the Japanese economy." See also HADLEY, ANTITRUST IN JAPAN 4 (1970).
4. 624 HANJI 78 (Nara Dist. Ct. Oct. 23, 1970). This case is also discussed in Professor Kitagawa's treatise on doing business in Japan. See Know-How, *supra* note 127, § 5.05[4] at V15-7 to -8. I am indebted to Professor Junichi Eguchi, of Osaka University, for providing English summaries of all the Japanese cases discussed in this article. A native Japanese speaker also checked case discussions in this article against reports of the decisions in Japanese periodicals,
5. A good example is the issue relating to computer software protection; it is well known that the Ministry of Economy, Trade and Industry ("METI") and the Ministry of Education, Culture, Sports, Science and Technology ("MEXT") compete over how to reform the Copyright Act to protect computer software. See NOBUHIRO NAKAYAMA, LEGAL PROTECTION OF COMPUTER SOFTWARE 11–17 (1986).
6. Antimonopoly Act Guidelines for International Licensing Agreements, May 24, 1968, reprinted in H. Iyori, An Monopoly Legislation in Japan 199-202 (1969).
7. Davidow, *supra* note 143, at 600; see also Note, The Administrative Regulation of Technology Induction Contracts in Japan, 8 N.W.J. OF INT'L L. & BUS. 197, 232 & n.216 (1987).
8. Davidow, The New Japanese Guidelines on Unfair Practices in Patent and Know-How Licenses: An American View, in PATENT ANTITRUST 1989, at

- 600 (1989); Shibuya, The Administrative Regulation of Transfer of Technology in Japan, 1 Eur. INTELL. PROP. REV. 18, 22, (1982).
9. DOING BUSINESS IN JAPAN, supra note 127, app. 4A-167.
 10. For example, see the Key Industries Control Law of 1931, discussed in HADLEY, supra note 5, at 1-4.
 11. FTC Notification No. 15, June 18, 1982 [hereinafter General Designation]. Notification No. 15 replaced the older set of prohibitions issued under FTC Notification No. 11 of 1953. New Designations were seen as desirable due to the allegedly vague content of the Old Designation. See Uesugi, supra note 22, at § 6.03. There is also a set of Specific Designations that cover certain industries in Japan. See id. at § 6.04.
 12. INT'L INST. FOR MGMT. DEV., IMD WORLD COMPETITIVENESS YEARBOOK (on file with author); see also MINISTRY OF FINANCE, TRANSITION OF JAPAN'S INTERNATIONAL COMPETITION POWER, available at http://web.archive.org/web/20051217091651/http://www.mof.go.jp/singikai/sanyokanze/tosin/sk1406mt_37.pdf (last visited Feb. 7, 2009).
 13. Japan Patent Office, Examination Guidelines Part II, Capt.1, “Industrially Applicable Inventions”,
 14. Japan Patent Office, Examination Guidelines, Part VII, Capt.1, Computer Software-related Inventions
 15. Japan Patent Office, Kogyo- shoyûken- houchikujo-kaisetsu [Article-by article Commentary for industrial property right], 22 (Hatsumei-kyokai 16th ed., 2000)

16. JPO - Japan Patent Office (2013). Japan Patent Office: Leading the Way in the Intellectual Creation Era. Retrieved from <https://www.jpo.go.jp/shiryousonota/pdf/panhu/panhu02.pdf>.
17. JPO-Outline of Accelerated Examination and Accelerated Appeal Examination. Available at https://www.jpo.go.jp/torikumi_e/t_torikumi_e/outline_accelerated.htm
18. L. SCHWARTZ, J. FLYNN & H. FIRST, FREE ENTERPRISE AND ECONOMIC ORGANIZATION: ANTITRUST 338 (1983); Flynn, Rethinking Sherman Act Section 1 Analysis: Three Proposals for Reducing the Chaos, 49 ANTITRUST L. J. 1593 (1964).
19. Niigata Tekko, 1190 HANJI 143 (Tokyo High Ct. Dec. 4, 1985) (convicting data processing division manager of embezzlement or conspiracy to embezzle for conspiring with the head of trading company to misappropriate company software for new business); Kanegafuji-Kagaku-Kogyo, 494 HANJI 74 (Osaka Dist. Ct. May 31, 1967).
20. Presentations at the “International Symposium on Innovation and Patents,” Hitotsubashi University, Tokyo, Japan, Feb. 12-13, 1999, and the National Research Council’s conference on “Intellectual Property Rights,” Washington, D.C., Feb. 3, 2000. We are grateful to participants in both conferences and to Rosemarie Ziedonis for comments on the paper. We also appreciate assistance with our analysis of patenting data from Arvids Ziedonis.
21. The first group of software committee of JPAA, Current issues on the present patent act regarding the protection of software-related inventions, vol.56, No.2 Patent, 4-16,

22. Uesugi, Japanese Antimonopoly Policy-Its Past and Future, 50 ANTITRUST L.J. 709, 718 (1981).
23. Uesugi, Unfair Business Practices, in 5 DoiNG Busn, ss iN JAPAN § 6.02(1), n.2 (Z. Kitagawa, ed. 1989) [hereinafter UEsuGi].

JOURNAL ARTICLES

1. Akers R. L. "Toward a Comparative Definition of Law", Journal of Criminal Law and Criminology (Volume 56, Issue 3, 1965, Article 5) Davis, Society and the Law 39-61 (1962).
2. Bani Younes M. and Al-Zoubi S., "The Impact of Technologies on Society: A Review". IOSR Journal of Humanities and Social Science (IOSR-JHSS), Volume 20, Issue 2, Ver. V (Feb. 2015), PP 82-86
3. Berger A. N., "The Economic Effects of Technological Progress: Evidence from the Banking Industry". Forthcoming, Journal of Money, Credit, and Banking, Volume 35, 2003
4. Blomstrom, M., & Kokko, A. (1998). Multinational Corporations and Spillovers. Journal of Economic Surveys, 12(3), 247-77. <http://dx.doi.org/10.1111/1467-6419.00056>
5. Brady, M., M.R. Fellenz, and R. Brookes, Researching the role of information and communications technology (ICT) in contemporary marketing practices. Journal of Business & Industrial Marketing, 2008. 23(2): p. 108-114.
6. Capon N. and Glazer R., "Marketing and Technology: A Strategic Coalignment." Journal of Marketing. Vol. 51. (July 1987).
7. Deptt R., "ROLE OF DIRECT AND INDIRECT TAX IN DEVELOPMENT OF INDIAN ECONOMY." Commerce, J.C.D. Memorial College, Sirsa. (December

- 2015) International Journal of Research in Finance and Marketing (IMPACT FACTOR – 5.230).
8. Dunska A., "INTERNATIONAL TECHNOLOGY TRANSFER AS A FORM OF INNOVATIVE DEVELOPMENT OF ENTERPRISE" International Marketing and Management of Innovations: International Scientific E-Journal. 2017. № 2. P. 47.
 9. Ghazinoory S. S., Abdi M. & Bagheri S. K., ``Promoting nanotechnology patenting: Anew experience in the National Innovation System of Iran", 12 Journal of Intellectual Property Rights 464 (2010).
 10. Griffin J. P., Valentine Korah, An Introductory Guide to EEC Competition Law and Practice, Fordham International Law Journal, 1991 - P. 6.
 11. Hart R. J., Legally Protecting Semiconductor Chips in the UK, [1985] 9 EIPR, 258; Oxman, 'Intellectual Property Protection and Integrated Circuit Masks', 20 Jurimetrics Journal (fur. J.) 405 (1980).
 12. Holm, O., Integrated marketing communication: from tactics to strategy. Corporate Communications: An International Journal, 2006. 11(1): p. 23-33
 13. Jones A., (1997). Recent Research in Learning Technological Concepts and Processes, International Journal of Technology and Design Education. Vol.7 (1-2).
 14. Kuhlen R., Copyright Issues in the European Union – Towards a science- and education-friendly copyright, submitted for publication to an OA-journal – in reviewing status (05/03/2013)
 15. Larréché J. C. and Srinivasan V., "Start-Port: A Decision Support System for Strategic Planning", Journal of Marketing. (1981)

16. Nelson, R. (1959). 'The Simple Economics of Basic Scientific Research', Journal of Political Economy, V. 67, 297-306.
17. Nicholson B. J., "Japanese Fair Trade Commission Guidelines for Licensing Agreements: An Overview and A Critique." Georgia Journal of International and Comparative Law, 1991.
18. Patel A., Panda A., Deo A. Khettry S. and Mathew S. P., Intellectual Property Law & Competition Law, Journal of International Commercial Law and Technology Vol. 6, Issue 2 (2011). P. 120.
19. Schroter H. R. B., The Application of Article 85 Of The EEC Treaty to Exclusive Distribution Agreements, Fordham International Law Journal, 1984 - P. 1.
20. Warner, Mark A. A., Esq., "Restrictive Trade Practices and the Extraterritorial Application of U.S. Antitrust and Trade Legislation," Northwestern School of Law Journal of International Law and Business (Winter 1999).

NOTICES

1. Commission Notice Concerning Commission Regulations (EEC) No. 1983/83 and No. (EEC) 1984/83 of 22 June 1983 on the Application of Article 85(3) of the Treaty to categories of exclusive distribution agreements and exclusive purchasing agreements, 26 O.J. EUR. COMM. (No. C 355) 7 (1983), 3 COMMON MKT. REP. (CCH) 10,548, amended by 27 O.J. EUR. COMM. (No. C 101) 2 (1984), 3 ComMON MET. REP. (CCH) 10,583 [hereinafter cited as 1983 Notice].
2. COMMISSION NOTICE, Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements, 2004 - P. 6.
3. Communication from the Commission — Notice — Guidelines on the application of Article 81(3) of the Treaty (Text with EEA relevance), at 34, [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52004XC0427\(07\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52004XC0427(07))

4. Guidance on the issue of appreciably can be found in Commission notice on agreements of minor importance which do not appreciably restrict competition under Article 81(1) of the Treaty (OJ C 368, 22.12.2001, p. 13). The notice defines appreciably in a negative way. Agreements, which fall outside the scope of the de minimis notice, do not necessarily have appreciable restrictive effects. An individual assessment is required.
5. The Commission from time to time may issue Notices giving guidance as to its view of the law in the Community. C.S. KERSE, EEC ANTITRUST PROCEDURE 3 (1981).

TABLE OF CASES

1. "Science, Technology and Innovation in the New Economy". (September 2000).
2. "Intellectual Property as an Economic Asset: Key Issues in Valuation and Exploitation - Background and Issues", Organisation for Economic Co-operation and Development (2005), available on www.oecd.org (visited on 10th Nov. 2005).
3. 126 S. Ct. at 1290-91; Scheiber v. Dolby Labs., Inc., 293 F.3d 1014, 1019 (7th Cir. 2002) (Posner, C.J.) (construing language of section 271(d) to govern only actions based on infringement); Kodak, 125 F.3d at 1214 n.7 ("[The provision at best] indicate[s] congressional intent to protect the core patent right of exclusion."); see also Brief for the United States as Amicus Curiae at 12 n.6, C.S.U., 531 U.S. 1143 (2001) (No. 00-62) ("On its face [section 271(d)] does not address antitrust liability for monopolization or attempted monopolization by refusal to deal."), denying cert. to 203 F.3d 1322, available at

<http://www.usdoj.gov/osg/briefs/2000/2pet/6invt/2000-0062.pet.ami.inv.pdf>.

But cf. CSU, 203 F.3d at 1326 (citing section 271(d) as support for a “patentee’s right to exclude”); Intergraph Corp. v. Intel Corp., 195 F.3d 1346, 1362 (Fed. Cir. 1999) (citing section 271(d)(4)).

4. 21 STAN. TECH. L. REV. 66 (2017)
5. According to Business Software Alliance (BSA), unlicensed software in BRIC countries amounted to 67% in the year 2013. See http://globalstudy.bsa.org/2013/downloads/studies/2013GlobalSurvey_Study_en.pdf, last accessed on January 12, 2015.
6. Altschuler, Sylvania, vertical restraints and dual distribution, 25 ANTITRUST BULL. 1 (1980); Bohling, A Simplified Rule of Reason for Vertical Restraints: Integrating Social Goals, Economic Analysis and Sylvania, 64 IOWA L. REV. 461 (1979); Bork, Vertical Restraints: Schwinn Overruled, 1977 SuP. CT. REV. 171; Handler, Changing Trends in Antitrust Doctrines: An Unprecedented Supreme Court Term-1977, 77 COLUM. L. REV. 979 (1977); Louis, Vertical Distribution Restraints after Sylvania: A Postscript and Comment, 76 MicH. L. REV. 265 (1977); Pitofsky, The Sylvania Case: Antitrust Law Analysis of Von-Price Vertical Restrictions, 78 COLUM. L. REV. 1 (1978); Posner, The Rule of Reason and the Economic Approach: Reflections on the Sylvania Decision, 45 U. CHI. L. REV. 1 (1977); Redlich, The Burger Court and the Per Se Rule, 44 ALB. L. REV. 1 (1979); Steuner, Beyond Sylvania. Reason Returns to Vertical Restraints, 47 ANTITRUST L.J. 1007 (1978); Note, Advent of the New Industrial State: Continental T. V v. GTE Sylvania, 14 CAL. W.L. REV. 632 (1979); Comment, A Proposed Rule

of Reason, Analysis for Restrictions on Distribution, 47 FORDHAM L. REV. 527 (1979); Comment, Franchising and Vertical Customer-Territorial Restrictions: GTE, Sylvania and the Demise of the Social Goals of the Sherman Act, 9 TEX. TECH. L. REV. 267 (1977).

7. America Online, Inc. v. AT&T Corp., 243 F.3d 812, 57 U.S.P.Q. 2d (BNA) 1902, 56 Fed R Evid Serv 738 (4th Cir 2001).
8. AMP, Inc V Fleischhacker, 823 F.2d 1199 (7th Cir. 1987).
9. Apple Computer V. Franklin Corp., 714 F.2d 1240, 219 U.S.P.Q. 113 (3d Cir. 1983), cert dismissed, 464 U.S. 1033 (1984).
10. Apple Computer, Inc. v. Formula Inti, Inc., 725 F.2d 521, 221 U.S.P.Q. 762 (9th Cir. 1984). See Sony Computer Entertainment, Inc. v. Connectix Corp., 48 F. Supp 2d 1212 (N.D. Cal. 1999).
11. Apple Computer, Inc. v. Franklin Computer Corp, 714 F.2d 1240, 1243, 219 U.S.P Q 113 (3d Cir. 1983), cert denied, 46-1 U.S. 1053 (1984), CCA Corp v. Chance, 217 U.S.P Q, 718, 720 (N.D Cal 1982), Midway Mfg. Co v Strohon, 564 F. Supp. 741, 750, 219 U.S.P Q. 42 (N.D. 111. 1983), Digital Communications Assocs, Inc. v Softklone Distrib. Corp, 659 F. Supp. 449, 454, 2 U S P Q 2d 1385 (N D Ca. 1987) Cf Sony Computer Entertainment, Inc. V. Connectix Corp. an F.3d 596, 2000 WL 144399 *2 (9th Cir 2000).
12. Apple, Inc. v Samsung Electronics. Co., [2011] No. 11-cv-1846 (N.D. Cal. Dec. 2, 2011); The US Court of Appeals for the Federal Circuit, however, recently declared that the District Court erred in its analysis of the validity issue. The court remanded for findings on the balance of hardships and the

- public interest; *Apple, Inc. v Samsung Electronics Co., Ltd.*, F.3d, 2012 WL 1662048 (Fed. Cir.).
13. *Apple, Inc. v. Samsung Electronics Co., Ltd.*, [2011] 14c O 194/11 (District Court of Düsseldorf 2011). The injunction did not include the Netherlands since, at the time, there were separate proceedings underway.
 14. *Aspen Skiing Co. V. Aspen Highlands Skiing Corp.*, 472U.S. 585, 601 (1985).
 15. *AT&T Corp v Excel Communications, Inc.*, 172 F.3d at 1357.
 16. *AT&T Corp v Excel Communications, Inc.*, 172 F3d at 1358.
 17. *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d at 1356.
 18. *AT&T Corp. v. Excel Communications. Inc.*, 172 F.3d 1352,50 U.S P.Q. 2d 14J7 (Fed. Cir. 1999).
 19. *Atari v. North American*, 672 F.2d 607,614 (7th Cir.), cert denied, 459 U.S. 880 (1982); *Warner Bros. V. American Broadcasting Ca*, 654 F.2d 204, 208 (2d Cir. 1981).
 20. *AVM Computer system Vertriebs GmbH v Cybits AG*, Landgericht Berlin 16 O 255/10.
 21. *Bement E. & Sons v. National Harrow Co.*, 186 U.S. 70, 92 (1902).
 22. *Blancco Technology Group, End User License Agreement. End User License Agreement. Version 2.3 – Effective: 01 July. Available at:*
<https://www.blancco.com/blog-data-erasure-certifications-3rd-party-validations-important/09/10/2019>
 23. *Bonito Boats, Inc. v. Thunder Craft*, -189 US 141 (1989)

24. Brookfield Communications Inc. v. West Coast Entertainment Corp, 174 F.3d 1036 (9th Cir. 1999)
25. Brooks, contracting for Computer Software, Protecting, Acquiring and Marketing Computer Software for the Mass Market (1982) at 12-13 (hereinafter Brooks); Kutten, Computer Software at xii; Gage, "New Thinking Regarding Software Protection," 13 Licensing L. O Bus Rep 157 (1990) (hereinafter Cage).
26. Brooks, contracting for Computer Software, Protecting, Acquiring and Marketing Computer Software for the Mass Market at 9 (Brooks ed. 1982).
27. Brooks, contracting for Computer Software, Protecting, Acquiring and Marketing. Computer Software for the Mass Market at S-9 (D. Brooks ed. 1982).
28. Brooktree Corp. V. Advanced Micro Devices, Inc., 757 F. Supp. 1088, 18 U.S.P.Q.2d 1692 (S.D. Cal. 1990).
29. CEAS CONSULTANTS (WYE) LTD. ET AL., DG TRADE EUROPEAN COMMISSION, STUDY ON THE RELATIONSHIP BETWEEN THE AGREEMENT ON TRIPS AND BIODIVERSITY RELATED ISSUES: FINAL REPORT 50-51, 125 (2000) [hereinafter CEAS CONSULTANTS] (identifying a dozen civil society organizations whose shared objectives included "opposing trends in intellectual property and international trade law, especially the patenting of life-forms," encouraging benefit sharing, and protecting the knowledge and rights of indigenous communities); see also South Centre, NGOs Demand 'Re-Thinking' on TRIPs, <http://www.southcentre.org/info/southbulletin/bultetin21/bulletin21-01.htm> (last

- visited Nov. 23, 2003) (noting creation of "TRIPs Action Network" of 130 NGOs which called for "a fundamental re-thinking of TRIPS in the WTO").
30. CentraFann BV v. Winthrop BV [1974] 2 Comm. Mkt. UR. 480 (E.CJ.).
 31. Cf. Goldstein V. California, 412 U.S. 546, 560-61 (1973). On Congress' decision not to permit perpetual copyright for pre1972 sound recordings see H.R. REP. NO. 94-1476, at 133 (1976).
 32. Cf. Ill. Tool, 126 S. Ct. at 1290 (recognizing that "[35U.S.C. § 271(d)(5)] does not expressly refer to the antitrust laws").
 33. Cf. Scheiber, 293 F.3d at 1019-21 (construing another provision of section 271(d) in light of this principle).
 34. Chi. Bd. of Trade V. United States, 246 U.S. 231, 238(1918).
 35. Clinton v. City of New York, 524 U.S. 417, 434 & 451 (1998) (Kennedy, J., concurring).
 36. Cochrane v Deener, 94 U S 7B0 (1876), 1 Robinson, The Law of Patents for Useful Invention § 166 (1890).
 37. Compare Adams v. Burke, 84 U.S. (17 Wall.) 453 (1873); United States v. Univis Lens Co., 316 U.S. 241 (1942).
 38. Computer Associates International, Inc. v. Altai, Inc., 982 F.2d 693,706 (2d Cir. 1992).
 39. Computer Assoes Inti, Inc. v. Altai, Inc, 982 F 2d at 703.
 40. Computer Assoes Inti, Inc. v. Altai, Inc, 982 F2d at 702-703.

41. Computer Assocs Int'l, Inc. v. Altai, Inc., 982 F.2d 693 (C.A.2d, 1992). See Lotus Dev. Corp. V. Paperback Software Int'l, 740 F. Supp 37, 15 U.S.P.Q.2d 1577, 1591-99 (D Mass. 1990). See also Digital Communications Assoc, Inc v. Softklone Distrib. Corp, 659 F. Supp. 449, 2 USPQ2d 1407 (N D Ga 1987), Manufacturers Techs, Inc. v. CAMS, Inc., 706 F. Supp. 984, 10 U.S.P.Q.2d 1321 (D. Conn. 1989), Telemarketing Resources v. Symantec Corp., 12 U.S.P.Q.2d 1991 (N D. Cal 1989).
42. Contracts and the international IP regime, 4 J. INTELLECT. PROP. LAW PRACT. 559, 564, (2009).
43. Corn-Share, Inc. V Computer Complex, Inc, 338 F. Supp 1229 (ED Mich. 1971), off'd 458 F.2d 1341 (6th Cir. 1972).
44. Cybertek Computer Prods., Inc. v. Whitefield, 203 U.S.P.Q. 1020 (1977), Corn-Share, Inc V Computer Complex, Inc., 338 F. Supp 1229 (E D. Mich. 1971).
45. D.L. Auld Co. V. Chroma Graphics Corp., 714 F.2d 1144, 219 U.S.P.Q. 13 (Fed. Cir. 1983), cert denied. 474 US 825 (1985); Palmer v. Dudzik, 481 F.2d 1377, 178 U.S.J.Q. 608 (CCPA 1973).
46. Data Gen. Corp. v Digital Computer Controls, Inc, 297 A.2d 433 (Del Ch), off'd, 297 A.2d 437, 175 U.S.P.Q. 486 (Del.1972) (confidential distribution of 6,000 manuals did not destroy trade secret protection). Management Science of Am, Inc v. Cyborg, 6 Comp L. Serv. Rep 921 (N D. Ill 1978) (confidential distribution of software to MX) licensees did not destroy trade secrets)
47. Data Gen. Corp. v. Grumman Sys.Support Corp., 36F.3d 1147, 1185 (1st Cir. 1994).

48. Data Prods., Inc. v. Repparz, 18 U.S.P.Q.2d 1058,1063 (D. Kan. 1990) ("§ 177 is designed to protect software purchasers who make modifications or enhancements to the software for their own use only"); Foresight Resources Corp. v. Pfortmiller, 719 F. Supp. 1006, 13 U.S.P.Q.2d 1721 (D. Kan. 1989).
49. De Forest Radio Telephone & Telegraph Co. V. United States,
50. Decision and Order, In re Dell, 121 F.T.C. at 618-23.
51. Defiance Button Mach. Co. v. C&C Metal Prods Corp, 759 F 2d 1053, 1063 (2d Cir. 1985) ("the company failed, upon selling most of its tangible assets (including its computer), to take reasonable steps to protect the list [of its customers]")
52. E F. Johnson Co. v. Uniden Corp. of Am., 623 F. Supp 1485, 228 U S.P Q. 891 (D. Minn 1985); Sega Enters. Ltd. v. Accolade, Inc., 977 F.2d 1510, 24 U.S.P.Q 2d 1561 (9th Cir. 1992).
53. ECJ Cases C-393/09, Bezpečnostn. softwarov. asociace v. Ministerstvokultury, [2010] ECR I-13971, paragraph 45 and Murphy, paragraph 97.
54. Feist Publ'ns, Inc. v. Rural Telephone Serv. Co., 499 U.S. 340 (1991).
55. Foley Bros., Inc. v. Filardo, 336 U.S. 281, 285, 93 L. Ed. 680, 69 S. Ct. 575 (1949).
56. Funk Bros. Seed Co. v. Kalo Inoculant Co., 333 U.S. 127 (1948), In re Meyer, 688 F 2d 789, 794-95 (C. C. P. A. 1981); Leroy v. Totham, 55 U.S. 155 (1852), O'Reilly v. Morse, 56 U.S. 61, 132-33 (1853).
57. Gartner report: www.gartner.com/newsroom/id/2696317, last accessed on January 12, 2015.

58. Goldstein v. California, 412 U.S. 546 (1973); Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470 (1974). For a definition of field preemption see Caleb Nelson, Preemption, 83 VA. L. REV. 225, 227 (2000).
59. Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 608 (1950), Elmer Corp V. Computer vision Corp., 732 F.2d 888,401-02, 221 U.S P Q 669 (Fed Cir), cert denied, 469 US 857(1984).
60. Grid Sys. Corp. v. Tex. Instruments Inc., 771 F. Supp. 1033, 1037 n.2 (N.D.Cal. 1991).
61. H.R. REP. NO. 94-1476, at 129-33 (1976).
62. Harper & Row, Inc. v. Nation Enters., 723 F.2d 195, 200 (2d Cir. 1983), rev'd on other grounds 471 U.S. 539 (1985). See also National Basketball Assoc. v. Motorola, Inc., 105 F.3d 841, 848-49 (2d Cir. 1997) (rejecting the “partial preemption” doctrine).
63. Hartford Fire Ins. Co. v. California, 509 U.S. 764 (1993).
64. IDC Adriatic market research for 2013 shows that software exports from Croatia have amounted to 1.22 billion kunas and that the sector employs a little over ten thousand developers, mostly in small and medium enterprises. According to Poslovni.hr, available at: <http://www.poslovni.hr/tehnologija/hrvatska-softverska-industrija-lani-zaposlila-1066-radnika-273543>, last accessed on January 12, 2015.
65. In re Rambus, Inc., No. 9302, slip op. at 67.
66. Ing. V. Mokřý, “TAXES, TAXATION AND THE TAX SYSTEM,” University of Economics in Bratislava, (2006).

67. Innovation Data Processing V. International Bus. Mach., 585 F. Supp. 1470,1472 (D.N.J. 1984) on reconsideration summary judgment granted, 603 F. Supp. 646 (D.N.J. 1984): Gordon, Computer Software: Contracting for Development and Distribution at 25 (1986): Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240 (3d Cir. 1983). Harmon, Patents and the Federal Circuit 23-24 (1988).
68. Intel Corp. V. Advanced Micro Devices, Inc., 75(i F. Supp 1291 (N.D Cal. 1991).
69. JHM van Binsberger v. Beshrir van de Bedryfsverenigurg Voor de Metaalry-verheid [1974] 1 Comm. Mkt. UR. 298. [1974] E.CR 1299.
70. Joined Cases C-403/08 and C-429/08, Football Association Premier League v. QC Leisure and Karen Murphy v. Media Protection Services, [2011] ECR I-10909, ECJ Case 145/10, Painer v. Standard VerlagsGmbH and others, [2011] ECR I-0000. Hereafter referred to as Murphy and Painer.
71. Kewanee Oil Co. v. BicTon Corp., 416 U.S. 470,475 (1974) ("The subject of a trade secret must not be of public knowledge or of general knowledge in the trade or business.").
72. Kluth & Lundberg, "Design Patents: A New Form of Intellectual Property Protection for Computer Software," 5 The Computer Lawyer 1 (1988); 1 Kuttan. Computer Software§3.06 (West Croup).
73. Kodak, 125 F.3d at 1219.

74. Kutten, Computer Software § 2.09[2][a] (West Croup), Note. "Copyright for Integrated Circuit Designs. Will the 1976 Act Protect Against Chip Pirates?" 24 S. Tex. L.J. 817 (1983).
75. Kutten, Computer Software § 20 03[4][a]
76. Laws v. Sony Music Entm't, Inc., 448 F.3d 1134, 1137-38 (9th Cir. 2006); Kodadek v. MTV Networks, Inc., 152 F.3d 1209, 1212 (9th Cir. 1998).
77. Lotus Dev. Corp. v. Paperback Software Int'l, 740 F. Supp. 37,15 U.S.P.Q.2d
78. Lotus Dev. Corp. v. Paperback Software Int'l, 740 F. Supp. 37,15 U.S.P.Q.2d 1577,1579 (D. Mass. 1990).
79. Lotus Dev. Corp. v. Paperback Software Int'l, 15U.S.P.Q.2d 1577,1579 (D. Mass. 1990).
80. Lotus Dev., 15 U.S.P.Q.2d at 1579. Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240 (3d Cir. 1983).
81. M. Rev. Stat. Ch. 140 ^ 352(^. See ISC-Bunker Ramo Corp. v. Altech, Inc., 765 F. Supp. 1310 (N.D. III. 1990), for application of this statute to protect the source code.
82. Mackay Radio Corp. & Tel Co v Radio Corp of Am., 306 US 86, 94 (1939)
83. MacLaren, Joint Ventures JA-31 to JA-35 (West Group).
84. Maloney v. E I. du Pont de Nemours Co., 352 F.2d 936, 938 n.4 (D C. Cir 1965), cert, denied, 383 U.S. 948 (1966).
85. May 1 Tr. at 51-52 (Sprigman); Melamed & Stoepelwerth, 10 GEO. MASON L. R.E.V. at 410-12.

86. Mercoïd Corp. V. Mid-Continent Inv. Co., 320 U.S.661, 665 (1944).
87. Met-Coil Sys. Corp. v. Korner's Unlimited, Inc., 803 F.2d 684, 687, 231 USPQ 474, 476 (Fed.Cir.1986).
88. Microsoft Corp. V. Harmony Computers & Electronics, Inc., 846 F. Supp. 208 (E.D.N.Y. 1994).
89. Midway Mfg Co. v. Dirkschneider, 543 F. Supp. 466 (D. Neb. 1981).
90. Midway Mfg Co. v. Strohon, 564 F Supp 741 (N D III 1983)
91. Midway Mfg. Co v. Strohon. 564 F. Supp 741 (N D III 1983).
92. Midway Mfg. Co. v. Strohon, 564 F Supp 741 (N.D III 1983) ("the cartoon figures themselves ore associated in the public mind with Midway's PAC-MAN game"); Comment, "Consumer Meets Computer" An Argument for Liberal Trademark Protection of Computer Hardware Configuration Under § 43(a) of the Lanham Trademark Act," 41 Wash & Lee L. Rev. 283 (1987). Cf Digital Equipment Corp v. C. Itoh & Co., 229 U.S P Q 598 (D N J 1985) (layout and general appearance not protectable because they are functional)
93. Mitek Holdings, Inc. v. Arce Eng'g Co, 89 F.3d 1548 (11th Cir 1996).
94. Modem Controls v. Andreadakis, 578 F.2d 12H-I (8th Cir. 1978)
95. Modem Controls, Inc. v. Andreadakis, 578 F.2d 1264, 1268 (8th Cir. 1978); Electronic Data Sys. Corp. v. Powell. 524 S.W 2d 393, 398 (Tex. Civ. App. 1975).
96. NEC Corp. v. Intel Corp, 10 U S P.Q 2d 1177 (N.D Cal 1989).

97. Northern Telecom, Inc v. Datapoint Corp, 908 F.2d 931, 15 U.S P Q 2d 1321 (Fed. Cir), cert, denied, 498 U.S. 920, 111 S Ct 296 (1990)
98. Northern Telecom, Inc v. Datapoint Corp, 908 F.2d 931, 15 U.S.P.Q 2d 1321 (Fed Cir.), cert denied. 498 U.S. 120, 111 S Ct 296 (1990)
99. On Davis v. Gap, Inc., 246 F.3d 152, 172 (2d Cir. 2001).
100. Panavision Inti, L.P. v Toeppen, 141 F.3d 1316 (9th Cir 1998)
101. Penwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931 (Fed Cir 1987)
102. Polydor Ltd. A RSO Records V. Harlequin Record Shops Ltd (1982) 1 Comm Mkt. LR 664 (E.CJ.).
103. Pooley, "Guiding the Software Startup through the Tradesecret Minefield," in 2 The Law of Computer Related Technology J-1 (AIPLA 1992).
104. PPX Enters., Inc. v. Audiofidelity. Inc., 746 F.2d 120. 124, 224 U S.P Q 340 (2d Cir. 1984); Princeton Graphics Operating, L.P. v. NEC Home Elecs. (USA), Inc, 732 F. Supp. 1258 (S D N Y. 1990); Tripleledge Prods., Inc v. Whitney Resources, Ltd., 735 F. Supp 1154, 15 U S P.Q.2d 14.34 (E.D N.Y. 1990).
105. Princeton Graphics Operating, LP. v. NEC Home Elecs. (U.S A.), Inc, 732 F. Supp. 1258 (SONY. 1990).
106. Prof'l Real Estate Investors, Inc. v. Columbia Pictures Indus., Inc., 508 U.S. 49 (1993) (construing E.R.R. Presidents Conference v. Noerr Motor Freight, Inc.,365 U.S. 127 (1961))

107. Rambus, Inc. v. Infineon Techs. AG, 164 F. Supp. 2d 743, 750-58 (E.D. Va. 2001). Mark A. Lemley, Intellectual Property Rights and Standard Setting Organizations (Apr. 18, 2002 Hr'g R.) at 38-42, <http://www.ftc.gov/opp/intellect/020418lemley.pdf>. [hereinafter Lemley Submission]. Some have used the doctrine of equitable estoppel to enforce disclosure policies. See Symbol Techs., Inc. v. Proxim Inc., No. Civ. 01-801-SLR, 2004 WL 1770290 (D. Del. July 28, 2004). Lemley Submission at 51-56; David R. Steinman & Danielle S. Fitzpatrick, Antitrust Counterclaims in Patent Infringement Cases: A Guide to Walker Process and Sham-Litigation Claims, 10 TEX. INTELL. PROP. L.J. 95, 96 & n.2, 106 (2001).
108. Reyners V. The Belgian State [1974] 2 Comm. Mkt. UR. 305 (E.C.).
109. Rubber-Tip Pencil Co. v. Howard, 87 U.S. 498, 507 (1874) ("[a]n idea of Itself is not patentable, but a new device by which it may be made practically use hit is"), Gottschalk v. Benson, 409 U S 63(1972), Parker V. Flook,437U S 584(1978) See generally Mc-Claskey, "The Menial Process Doctrine- Its Origin, Legal Basis & Scope," 55 Iowa L. Rev. 1148 (1970); Ambrose, "The Mental Steps Doctrine," 48 Temi. L. Rev. 903 (1981); 1 Chisum, Patents § 103[6] (Supp. 1989).
110. S. R. E. P. No. 100-492, at 19 (1988). (No committee report on the 1988 amendment exists. The cited report describes an earlier bill containing the "illegal extension" language now appearing in section 271(d)(4)). See also U.S.M. Corp. v. S.P.S. Techs., Inc., 694 F.2d 505, 510-12 (7th Cir. 1982) (discussing how the patent misuse doctrine could go beyond the specific practices thought to extend the patent right).

111. Sanitary Refrigerator Co. v. Winters, 280 U S. 30, 42 (1929). See also Machine Co. v. Murphy, 97 U.S. 120, 125 (1878); Winans v. Denmead, 56 US 330 (1853)
112. SAS Institute Inc v World Programming Ltd, ECJ C-406/10.
113. Scharmer v. Carrollton Mfg. Co, 525 F.2d 95, 187 U S P Q. 736 (6th Gr. 1975). See Jager, Trade Secrets Law § 6.03[3]
114. Scotland. Curriculum for Excellence, "Curriculum for Excellence: Technologies: Principles and Practice". (2009)
115. see Canadian Admiral Corporation v. Rediffusion, Inc., (1954), [1954] Ex. C.R. 382 (Ex. Ct.) Cameron J., at p. 390, i.e., a literary, dramatic, artistic or musical work, a performer's performance, a sound recording or a communication signal.
116. Shelcore. Inc. v. Durham Indus, 745 F.2d 621, 223 U S P.Q. 5&1 (Fed. Cir. 1984).
117. Sony Computer Entertainment, Inc. v. Connectix Corp, 203 F.3d 596, 2000 WL 144399, at *2 (9th Cir. 2000).
118. Sony Computer Entertainment, Inc. v. Connectix Corp, 203 FJ3d 596, 2000 WL 144399, at *2 (9th Cir. 2000)
119. SSO. E.g., Samsung Elecs. Co. v. Rambus, Inc., 439 F. Supp. 2d 524(E.D. Va. 2006); Hynix Semiconductor Inc. v. Rambus Inc., 441 F. Supp. 2d 1066 (N.D. Cal. 2006); Micron Tech., Inc. v. Rambus Inc., 189 F. Supp. 2d 201 (D. Del.2002); Infineon, 164 F. Supp. 2d 743, rev'd in part, 318F.3d 1081 (Fed. Cir. 2003).

120. STAN. TECH. L. REV. 66 (2017), https://law.stanford.edu/wp-content/uploads/2017/11/Trimble_FINAL_TO-PUBLISH.pdf
121. State Street Bank & Trust Co v. Signature Fin Croup, Inc, 149 F.3d 1368, 47 U.S.P Q 2d 1596 (Fed Cir 1998).
122. Stenograph LLC, v. Bossard Associates, Inc., 144 F.3d 96 (D.C Cir. 1998).
123. Structured Dynamics Research Corp. V. Engineering Mechanics Research Corp., 401 F Supp 1102, 1117 (E.D Mich. 1975)
124. Study Material Executive Program, "Tax Laws and Practice" The Institute of Company Secretaries of India, (2014).
125. Telex Corp. v. IBM Corp., 367 F. Supp. 258,179 U.S.P.Q. 777 (N.D. Okla. 1973), off'd in part and rev'd in part, 510 F.2d 894.184 U.S.P.Q. 521 (10th Or.), cert dismissed, 423 U.S. 802 (1975).
126. Telex Corp. V. International Business Machines Corp., 510 F.2d 894, 184 U.S.P.Q. 521 (10th Cir.), cert denied, 423 U.S. 802 (1975) (hardware); Data Gen. Corp. V. Digital Computer Controls, Inc., 188 U.S.P.Q. 276 (Del. Ch. 1975) (hardware); Com- Share, Inc. V. Computer Complex, Inc., 338 F. Supp. 1229 (E.D. Mich.), off'd, 458 F.2d 1341 (6th Cir. 1972) (software); University Computer Co. v. Lykes-Youngstown Corp., 504 F.2d 518,183 U.S.P.Q. 705 (5th Or. 1974) (software).
127. The court relied on Sony of Am. v. Universal City Studios. 464 U S. 417,434-42 (1984).
128. United States law is in accord. See Brulotte v. Thys Co., 379 U.S. 29, 31 (1964).

129. United States v. Arnold, Schwinn & Co., 388 U.S. 365 (1967).
130. United States V. General Elec. Co., 272 U.S. 476 (1926). According to Continental T.V., Inc. v. GTE Sylvania Inc., 433 U.S. 36 (1977)).
131. United States V. Line Material Co., 333 U.S. 287, 308, 76 U.S.P.Q. (BNA) 399, 408 (1948) (patent pool struck down on price fixing grounds apparently without examination of pro-competitive effects of the pool on innovation and consumer welfare).
132. United States V. Line Material Co., 333 U.S. 287,308-15 (1948) (price fixing); Int'l Salt Co. v. UnitedStates, 332 U.S. 392, 395-96 (1947) (tying); United States v. Masonite Corp., 316 U.S. 265, 274-80 (1942) (pricefixing); United States v. Univis Lens Co., 316 U.S. 241,250-54 (1942) (price fixing); Ethyl Gasoline Corp. V. United States, 309 U.S. 436, 452-59 (1940) (price fixing).
133. United States v. Microsoft Corp., 253 F.3d 34, 59 (D.C. Cir. 2001) (en banc); see also R. Hewitt Pate, Refusals to Deal and Intellectual Property Rights, 10 GEO. MASON L. R.E.V. 429, 440 (2002).
134. United States v. Nippon Paper Industries, Co., 109 F.3d.1 (1st Cir. 1997).
135. United States v. Seidlitz. 589 F.2d 152 (4th Or. 1978), cert. denied, 441 U.S. 922 (1979). For a brief description of how computers operate see W. Bennett and C Evert, Jr., What Every Engineer Should Know About Microcomputers (1980).
136. Vault Corp. v Quaid Software, Ltd. &47 F 2d 255, 7 U S P.Q 2d 1281 (5th Cir 1988)

137. Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, L.L.P., 540 U.S. 398, 407 (2004).
138. Vermaat, Misty E. Microsoft Office 2013 Introductory. Cengage Learning, p.IT3. 2014.
139. Walker Process Equip., Inc. v. Food Mach. & Chem. Corp., 382 U.S. 172, 177-80 (1965).
140. Whelan Assocs. v. Jaslow Dental Laboratory, Inc., 797 F.2d 1222,1246 (3d Cir 1986), cert denied, 479 U.S. 1031 (1987) (Took and feel" test); Russo and Derwin, "Copyright in the 'Look and Feel' of Computer Software," 1 The Computer Lawyer 1 (1985), Pinheiro and Lacroix, "Protecting the 'Look and Feel' of Computer Software," 1 High Tech. L.J. 411 (1987); Conley, "Look and Feel, In Defense of the Current Case Law," 5 The Computer Lawyer 1 (1988); Lundberg Michelle and Sumner, The Copyright/Perfect Interface: Why Utilitarian "Look and Feel" Is Un-copyrightable Subject Matter," 6 The Computer Lawyer 5 (1989), Moreno, "Look and Feel as a Copyrightable Element: The Legacy of Whelan and Jaslow? Or Can Equity in Computer Infringement Cases Be Found Instead by the Proper Allocation of Burden of Persuasion?" 51 La. L. Rev. 177 (1990). See also Soft Computer Consultants, Inc. v. Shahram Lalehzarzadeh Comtron, Inc., 1 CCH Computer Cases 1 46,087 (E.D.N.Y. 1968).
141. Whelan Assocs., Inc v. Jaslow Dental Lah, Inc, 797 F 2d 1222, 1241, 230 U S P Q. 481 (3d Cir. 1980), cert denied. 479 U.S. 1031 (1987); Data Cash Sys., Inc v JS&A Group, Inc. 480 F. Supp 1063, 1067 n.4, 203 U S P Q. 735 (N D.

- III 1979), aff'd on other grounds. 628 F.2d 1038, 208 U.S PQ 197 (7th Cir. 1980).
142. White Consol Indus v. Vega Servo-Control, Inc., 713 F.2d 788 (Fed. Cir. 1983) ("The sine qua none of a valid patent is a full, clear, enabling description of die invention")
143. White Consol Indus. v. Vega Servo-Control, Inc, 713 F.2d 788, 791 (Fed. Cir. 1983)
144. White, 713 F.2d at 792, 35 US CA. § 285.
145. Williams Elecs, Inc. v. Arctic Int'l, Inc., 685 F.2d 870, 876-77, 215 USPQ 405 (3d Cir 1982), Hubeo Data Prods. Corp v. Management Assistance, Inc., 219 USPQ 450 (D. Idaho 1983).
146. Williams Electronics, Inc. v. Artic Int'l Inc., 685 F.2d 870, 876 n 6 (3d Cir. 1982).
147. Wilson. V. Simpson. 50 U.S. 109 (9 Howard) (1850); Aro Mfg. Co. V. Convertible Top Replacement Co., 365 U.S. 336 (1961).

TABLE OF ACTs

1. "SERVICE TAX ACT," Chapter V of the Finance Act, 1994.
2. Act Concerning Prohibition of Private Monopoly and Maintenance of Fair Trade, Act No. 54 of 1947 (amended 1982), reprinted in H. Iyosu A A. Uesugi, THE AN MONOPOLY LAWS OF JAPAN 213-264 (1983) [hereinafter Antimonopoly Act].
3. Australian Copyright Act of 1968, sec. 10 (1)

4. Beutel, "Trade Dress Protection for 'Look and Feel' of Software: The Lanham Act as an Emerging Source of Proprietary Rights Protection for Software Developers," 71J. Pat & Trademark Office Soc'y 974 (1989).
5. Federal taxation of licensing agreement, § 9.02[2] [b].
6. Final Act Embodying Results of the Uruguay Round of Multilateral Trade Negotiations, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, LEGAL INSTRUMENTS-RESULTS OF THE URUGUAY ROUND vol. 1, 33 I.L.M. 1140 (1994).
7. Guidelines for Patent and Know-how Licensing Agreements under the Antimonopoly Act, at Pt. 4(3X2).
8. Know-How, supra note 127, § 5.04 at VI5-5 (Japanese law recognizes both express and implied agreements to keep "know-how" confidential).
9. Section 4 of the Copyright and Neighboring Rights Act of 1999, Cap 218.
10. See STRATEGIC COUNSEL ON INTELLECTUAL PROP., supra note 2.
11. The Excise Duty Act, February 6 1942.
12. The first Interim Order has been issued on September 12, 1985 (51 Fed. Reg. 30690).
13. The fourth economic, social and cultural development plan of Iran (2005–2010), enacted 3 September 2004. Available at: /http://www.mim.gov.ir/uploads/lawssys/laws_sys/main/root/upload/law/9ec32abe-56b8-4bda-95e0-139e026329c0/related doc/LAW-four. Doc S (in Farsi).

TABLE OF CASES

1. 15 U.S C.A. § 1025(d).
2. 15 U.S C.A. § 1025(d)(1)(A).
3. 15 U.S C.A. § 1025(d)(1)(D).

4. 15 U.S.C.A. § 1025(d)(1)(A).
5. 15 U.S.C.A. § 1025(d)(1)(A)(ii).
6. 15 U.S.C.A. § 1025(d)(1)(D).
7. 15 U.S.C.A. § 1025(d)(1)(C).
8. 15 U.S.C.A. § 1025(d)(2).
9. Section 2, 15 U.S.C. § 2 (2000); Monopolizing trade a felony; penalty
10. 15 U.S.C. § 1 (2000); Trusts, etc., in restraint of trade illegal; penalty
11. 17 U.S.C. § 504(a) (2000).
12. 17 U.S.C. § 504(b).
13. 17 U.S.C. § 102(a) (2000).
14. 17 U.S.C. §§ 302–305 (2015).
15. 17 US Code on copyrights, § 101.
16. 17 U.S.C. § 301(a) (2015).
17. Protectable subject matter is defined in 17 U.S.C. §§ 102-103 (2015).
18. 17 U.S.C. §§ 102-103 (2015).
19. 17 U.S.C. § 102 (2015).
20. 17 U.S.C A § 101.
21. 17 U.S.C.A. § 102(a); *Stem Elecs. Inc. v Kaufman*. 669 F.2d 8.52, 855 n 3. 213
U.S.P.Q. 443 (2d Cir. 1982)
22. 17 U.S.C.A. § 407.
23. 17 U.S.C.A. § 408(a). Failure to register results in the forfeiture of statutory damages, attorneys' fees and the prima facie evidence of the validity of the copyright 17 U.S.C.A. §§ 412(2) and § 410(c).
24. 17 U.S.C. § 301(c) (2015). Sound Recordings Act, Pub. L. No. 92-140, 85 Stat. 39 (Oct. 15, 1971). See also *Goldstein v. California*, 412 U.S. 546 (1973); COMM.

ON THE JUDICIARY, S. REP. NO. 91-1219, at 4 (1970); COMM. ON THE
JUDICIARY, S. REP. NO. 93-983, at 166 (1974).

25. 17 U.S.C.A. § 117.
26. 17 U.S.C.A. § 117.
27. 17 U.S.C.A. §§ 901-914.
28. 17 U.S.C.A. § 117(1).
29. 17 U.S.C. § 301 (2015).
30. 32 U.S.C.A. § 102.
31. 35 U.S.C.A. § 292.
32. 35 U.S.C. § 102.
33. 35 U.S.C. § 102(a).
34. 35 U.S.C. § 102(b) (die prior art invention must be "patented or described in a
printed publication ... or in public use or on sale").
35. 35 U.S.C. § 102(g).
36. 35 U S C A. § 271(d).
37. 35 U S C A. § 112.
38. Under U S. patent laws, a patent application remains confidential 35 U S C. § 122.
39. 35 US C A §122
40. 35 U.S.C. § 101 (1952).
41. 35 U.S.C. § 271(d) (2000).
42. 37 C.F.R. 5 202.19© (5).
43. 37 C F.R. § 202.20©(3)(vii)(A)(1).
44. 37 C F.R. § 202.20©(3)(vii)(A)(2).
45. 37 C F.R. § 202.20©(vii)©
46. 37 C.F.R. § 202.20©(ii)(D).

47. 37 C.F.R. § 202.20©(ii)(D)(1).

48. 37 C.F.R. § 202 20©(ii)(D)(a) and (5).

U.S. LEGISLATION

1. American Patent Law Association, *The Law Computer-Related Technology—Computer Primer and Glossary* at 50 (1984).
2. *Restatement of the Law, Third, Foreign Relations Law of the United States*. Philadelphia, PA: The American Law Institute, 1987: Sec. 403.
3. *Restatement of the Law: Sec. 402*.
4. *Restatement of the Law: Sec. 403*.
5. U.S. Design Patent Nos. 296,218; 295.631; 295.632; 295,762,295,764,296,218; 296,339.
6. *United States Golf Ass'n v. St Andrews Sys*, 749 F 2d 1028 (3d Cir. 1984) (trade dress protection denied because of failure to satisfy the non-functionality requirement).
7. US Congress, Committee on Science and Technology, 1985, p. 12

WEBS

1. "Archived copy". Archived from the original on May 9, 2013. Retrieved March 18, 2013.
2. According to Economy Watch: <http://www.economywatch.com/world-industries/software/>, last accessed on January 12, 2015.
3. Available at <http://www.wipo.int/portal/en/index.html>. (13/03/2019).
4. Available at https://www.komprise.com/glossary_terms/secondary-storage/. (12/03/2019).
5. Available at: http://fita.org/countries/iran.html?ma_rubrique=business_environment 09/10/2019

6. Available at: <https://www.blancco.com/about-us/> 09/10/2019
7. Available at: <https://www.tcii.co.uk/2012/10/26/licensing-arrangements-the-pros-and-cons/>10/13/2019
8. Available on <https://www.linklaters.com/en/insights/data-protected/data-protected---japan>.
9. In October 2003, the F.T.C. issued a report based on a portion of the Hearings record, which made a series of recommendations for reform of the patent system designed to maintain a proper balance between competition and intellectual property policies. FEDERAL TRADE COMM'N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY Executive Summary, at I-V (2003), available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>.
10. Is an electrical or mechanical inscription and recreation of sound waves, such as spoken voice, singing, instrumental music, or sound effects. The two main classes of sound recording technology are analog recording and digital recording. See www.sound2record.com/sound-recording.html -Retrieved 8th September 2013.
11. Is the work of a writer; anything expressed in letters of the alphabet (especially when considered from the point of view of style and effect). Available at <http://www.thefreedictionary.com/literary+work>-Retrieved on 8th September 2013.
12. Market Research Reports, Pest Analysis of Europe, <https://www.marketresearchreports.com/countries/europe>, Retrieved August 2019.
13. Microsoft Subcontractors' list. Available at: <http://download.microsoft.com/download/7/b/9/7b9cb6a6-c8ed-4f65-98f9-e715d1ba8615/subcontractor%20list.pdf>.

1. WIPO, "Licensing of Intellectual Property Assets; Advantages and Disadvantages." Available online:
<http://www.wipo.int/export/sites/www/sme/en/documents/pdf/licensing.pdf>
(accessed 9 October 2017)
2. WIPO, "Successful Technology Licensing." Available online:
<http://uncw.edu/oic/documents/WIPOTechnologyLicensinghandbook.pdf>
(accessed 9 October 2017)
3. WIPO, "Licensing of Intellectual Property Assets; Advantages and Disadvantages." Available online:
<http://www.wipo.int/export/sites/www/sme/en/documents/pdf/licensing.pdf>
(accessed 12 October 2017)
4. WIPO - World Intellectual Property Organization (1967, July 14). What is Intellectual Property? Retrieved from
http://www.wipo.int/edocs/pubdocs/en/intproperty/450/wipo_pub_450.pdf.
5. WIPO Intellectual Property Handbook: Policy, Law and Use (2004). Paragraph 5.171 et seq
6. The three basic protected elements of the software (object code, source code and documentation) were first introduced in the 1977 model law of the WIPO.
7. A few recent intellectual property initiatives include TRIPs as part of a broader effort to revise intellectual property protection standards to take into account the needs of developing country governments and their nationals. See COMMISSION ON IPRS, *supra* note 6, at 172, 178-86 (discussing the "international architecture" of intellectual property protection, including WTO, WIPO, and regional and bilateral agreements); Press Release, The Rockefeller Foundation Initiative to Promote Intellectual Property (IP) Policies Fairer to Poor

- People (Nov. 4, 2002), <http://www.rockfound.org>. [hereinafter Rockefeller IP Initiative] (discussing the launch of a "multi-year initiative to support the emergence of fairer, development-oriented IP policies").
8. WIPO Copyright Treaty, Dec. 20, 1996, 36 I.L.M. 65; WIPO Performances and Phonograms Treaty, Dec. 20, 1996, 36 I.L.M. 76.
 9. Assemblies of the Member States of WIPO, Joint Resolution Concerning Provisions on the Protection of Well-Known Marks, Thirty-Fourth Series of Meetings, Sept. 1999, at 3, para. 9, WIPO Doc. No. A/34/13 (Aug. 4, 1999) ("[T]his creates no legal obligation for any country, but following such a recommendation would produce practical benefits."), <http://www.wipo.int/eng/document/govbody/wogbab/pdf/a34113.pdf>.
 10. A list of the primary international IP treaties administered by the World Intellectual Property Organisation (WIPO) is available at <http://www.wipo.int/treaties/en/index.html>. For commentary on these
 11. WIPO. SUCCESSFUL TECHNOLOGY LICENSING GUIDE. (http://www.wipo.int/edocs/pubdocs/en/licensing/903/wipo_pub_903.pdf).
 12. Successful Technology Licensing, IP Assets Management Series. Available at WIPO

WORLD ECONOMIC FORUM

1. "Country/Economy Profiles: Japan". World Economic Forum. Retrieved February 24, 2016.
2. "Competitiveness Rankings". World Economic Forum. Retrieved February 24, 2016.

WTO

1. Ministerial Declaration, WTO Doha Ministerial Conference, 4th Sess., WTO Doc. WT/MIN (01)/DEC/W/I (Nov. 14, 2001) (hereinafter Doha Ministerial Declaration] (declaration setting forth negotiating agenda for new trade talks).
2. Public Health Declaration, supra note 12, para. 7 (extending until 2016 the transitional period for least developed WTO members to implement provisions of TRIPs governing patents and undisclosed information relating to pharmaceutical products).
3. The Declaration states that TRIPs "can and should be interpreted and implemented in a manner supportive of WTO Members' right to protect public health and, in particular, to promote access to medicines for all," and it reaffirms "the right of WTO Members to use, to the full, the provisions in the TRIPS Agreement, which provide flexibility for this purpose." Id. para. 4. For a more detailed discussion of the Public Health Declaration and the negotiations it has spawned, see infra Section V.B.
4. WTO Dispute Panel Report on United States-Section 110(5) of the U.S. Copyright Act, para. 6.70, WTO Doc. WT/DS160/R (June 15, 2000) [hereinafter United States-Section 110(5) Dispute Panel Report) (stating that when interpreting the provisions of the TRIPs Agreement and the Bere Convention, it is appropriate to "seek contextual guidance" in the WIPO Copyright Treaty so as to "develop[] interpretations that avoid conflicts" within the "overall framework for multilateral copyright protection"); Neil W. Netanel, The Next Round: The Impact of the WIPO Copyright Treaty on TRIPs Dispute Settlement, 37 VA. J. INT'L L. 441, 488-96 (1997) (predicting the influence of WIPO Copyright Treaty and its Agreed Statement on the adjudication of digital copyright issues in TRIPs dispute settlement cases).