



Reading Sample

In this sample chapter, you'll learn how to prepare a third-party logistics (3PL) strategy for your business. This chapter offers guidance for selecting and onboarding third-party service providers based on your unique business objectives, growth plans, and customer service culture. You'll begin by determining your business needs for order fulfillment, storage, warehousing, distribution, transportation, and value-added services. Then, you'll assess the current state of your business and evaluate the future challenges you may encounter. The chapter will guide you through tips for creating a cross-functional team, finalizing the scope of services, assessing the IT landscape, and evaluating 3PL capabilities. Finally, you'll review integration options and see a sample use case for integrating SAP S/4HANA with external 3PL warehouse management systems.

-  **"Design and Implementation Criteria"**
-  **Contents**
-  **Index**
-  **The Authors**

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Chapter 2

Design and Implementation Criteria

The global business environment, with its constantly advancing technology, evolving world markets, and greatly expanded supply chains, makes it increasingly complex and demanding on supply chain professionals to make crucial decisions affecting profitability. With the globalization of the economy, challenges of providing seamless supply chain solutions across geographical and cultural boundaries have increased exponentially.

In the recent past, we've seen how natural calamities and global pandemics can quickly disrupt established supply chains, compelling businesses to rethink their supply chain strategies. In such a demanding situation, selecting the right third-party logistics service provider can be a challenge. There is increased focus on business continuity planning, technology and automation, supplier diversity, and logistics service provider reliability. After all, third-party logistics will be an integral part of the logistic process, and its success will enhance brand reputation as well as customer satisfaction.

With all of this in mind, you need to consider your options carefully before committing to a third-party logistics relationship. Third-party logistics must have proper alignment with your business objectives, growth plans, and customer service culture. This is in view of the tenure of relationship specific to services such as third-party warehousing contracts, which are generally executed on a long-term basis. Consider all selection aspects carefully and thoroughly because it's very difficult to disengage once third-party logistics is onboarded. There should be mutual trust and respect between the business and the logistics service provider, and third-party logistics service provider should be expected to act as a solutions provider and a trusted adviser. They should foster the culture of innovation in the supply chain process and ensure that your products are brought to market quicker and in a cost-effective way. To do so, they should have complete visibility of your present and future fulfillment plans and needs.

Before embarking on plans to onboard a third-party logistics service provider, businesses should prepare a solid third-party logistics strategy to make sure that the chosen third-party logistics service provider is the right fit for their business. Some of the starting considerations are explained in following sections.

2.1 Determine Business Needs

Each business has its own unique process-specific key performance indicators (KPIs) and long-term objectives. Each process area that is relevant for outsourcing to third-party logistics may need to be scrutinized and detailed cost benefit analysis performed before any conclusion is reached in favor of outsourcing. The process areas impacted by such decision are detailed in the following sections.

2.1.1 Order Fulfillment

Figure 2.1 shows the sales and distribution-specific processes covered by logistics service provider integration.



Figure 2.1 Third-Party Logistics Order Fulfillment Process

To measure the performance of third-party logistics, businesses may consider following KPIs for order fulfillment, which can be included as part of a Service-Level Agreement (SLA) to monitor third-party logistics performance:

- **Order accuracy**
The shipment contains the right items and batches per sales order.
- **On-time shipping**
Packages are shipped and delivered on time.
- **Shipment accuracy**
Shipment is made to the correct destination or end customer.
- **Delivery time**
Times are correct for order pickup from the warehouse or distribution center and for delivery to the end customer.
- **Delivery cost**
Indicator is used to contain cost, referring to the total cost of shipment divided by the number of packages shipped. Of course, there is a subjectivity as there may be high-value items delivered to customers in distant locations.

2.1.2 Storage and Warehousing

Inventory management and warehousing are important functions to control the cost of acquisition and holding. If stock is kept for long or if you have nonmoving stock, additional cost factors may crop up, such as holding, depreciation, spoilage, and so on. For any third-party logistics partner, this is one area they want to streamline through automation, best practices, and innovations.

Figure 2.2 depicts the common activities for third-party logistics under inventory management and warehouse management (WM).

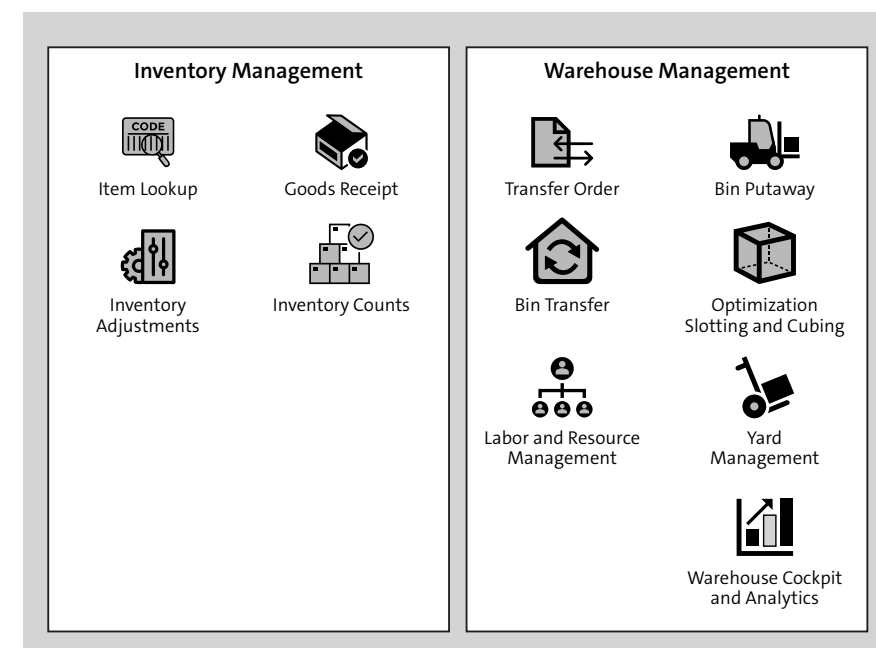


Figure 2.2 Third-Party Logistics Inventory Management and Warehousing Function

Some of the KPIs are listed here:

- **Inventory accuracy**
This is the percentage of counted inventory against book inventory.
- **Inbound receipt**
This refers to the time to move the inbound receipt items from the receiving dock to stock. More time means a shortage of stock for the outbound shipment, resulting in lost sales.
- **Inventory turnover**
If the product sits in inventory for a longer period, it may incur the additional cost of carrying as well as storage conditions and policies around storing the product.
- **Inventory carrying cost**
These are the costs of storing and holding that inventory, which may include storage

cost, handling, labor, insurance and taxes, transportation, loss or shrinkage, and depreciation.

Other warehousing requirements that may determine the selection of third-party logistics include the following:

- **Public vs. contract warehouse**

Contracted space may have certain benefits over public space due to the fact that the warehouse space is always available and sometimes comes along with better picking and packing facilities. Third-party logistics agencies may offer both, however, a cost-benefit analysis may need to be performed before making such a decision.

- **Specialty storage**

Special storage conditions may be required for high-value perishable items such as from the pharmaceutical and food industries. Not all third-party logistics service providers have capacities such as cold storage, hazardous storage, wet bonded storage, and so on.

- **Warehouse monitoring and audit**

Third-party logistics service providers may have their own IT setup with warehouse management systems (WMSs) for warehouse operations and monitoring. However, a careful consideration may be required to evaluate their capabilities to control, monitor, and audit warehouse activities for accurate receipts, distribution, and stock level management.

2.1.3 Distribution and Transportation

Many logistics service providers are asset-based and have their own fleet of transports. However, for certain legs of shipment, such as ocean or air shipment or even for intermodal transports such as rail, they may have to depend on carriers for execution of shipment. They may reserve space or act as a freight forwarder in such cases and have payment liability to the carrier.

Logistics service providers may use their own SAP or non-SAP transport management systems for planning, execution, and monitoring of transports. Figure 2.3 provides a snapshot of transportation management features and functions.

Capabilities of third-party logistics providers may be assessed for distribution services; some of these are listed here:

- **Distribution methods**

Drayage, customs brokerage, full container load (FCL), less than container load (LCL), less than truckload (LTL), and truckload (TL).

- **Fleet optimization**

Efficient delivery of goods based on artificial intelligence (AI) mapping and modeling.

- **Tracking of goods**

Using GPS and Internet of Things (IoT) devices.

- **Intermodal transport**

Arranging intermediate movement of goods between different methods of transports.

- **Freight forwarding**

Organizing and managing transportation by liaising with carrier companies, transport documentation, renting out space in a distribution fleet, and so on.

- **Freight payment and accounting**

Payment to carrier and relevant accounting

- **IT capabilities of third-party logistics**

Use of transport management systems and ease of integration with your business.

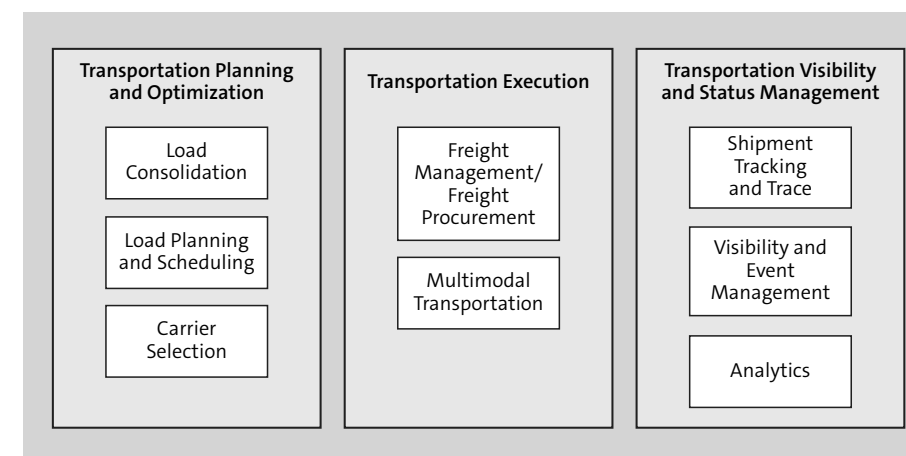


Figure 2.3 Transport Management Functions

2.1.4 Value-Added Services

Value-added services may be a key factor in selecting the right third-party logistics provider for your business. Common value-added services provided by third-party logistics players are as follows:

- **Packaging and assembly**

Packaging the products in handling units per shipment specifications. Assembling the products when the transport of parts being assembled is convenient and cheaper. Packaging also provides protection against damage and improves product appearance.

- **Kitting**

Combining related products and putting them in one kit to be sold as a unit or SKU.

- **Customer returns/reverse logistics**

Inspecting, reworking for minor issues, or sending back customer returns to the manufacturer for replacement.

- **Export/import management**

Ensuring transport documentation, compliance with international regulations, and cost-effective shipment of goods.

- **Cross-docking**

Consolidating and deconsolidating goods.

There are other value-added services provided by different third-party logistics providers depending on the nature and extent of their operations. Figure 2.4 provides a glimpse of the value-added services provided by third-party logistics.

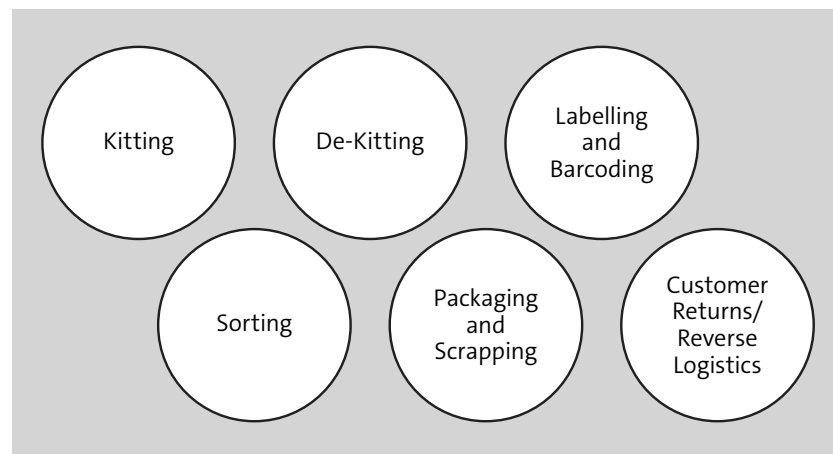


Figure 2.4 Value-Added Service Options from Third-Party Logistics Service Providers

Having understood the options provided by logistics service providers, it's essential to understand the challenges presented by a typical third-party logistics implementation initiative.

2.2 Assess Current State and Future Challenges

A strategy is required for selecting a third-party logistics partner that is based on an assessment of business requirements, the current state of the business, and future business objectives. The following section describes the various action points for an organization or company contemplating outsourcing their logistics services to a third-party logistics partner and important techno-commercial attributes a third-party logistics partner should be evaluated against for qualification.

2.2.1 Create a Cross-Functional Team for Regular Interactions

To start with, businesses can choose a project team consisting of different supply chain functional areas. This team must be led by a third-party logistics project leader, preferably a supply chain or logistics function lead. Selection of team members is critical because key teams need to be involved, such as the following:

- IT (for current IT landscape, cross-system integration, and management reporting requirements)
- Finance and costing (for evaluation of internal costs versus third-party logistics implementation and running costs)
- Shipping and warehousing
- Supply chain
- Procurement
- Sales and marketing
- Customer service
- Quality

2.2.2 Finalize Scope of Services and Future Road Map

Prepare a detailed list of services with key performance measures. Include a future road map like you would for any planned scaling up or expansion in business. This may also include assessing the customer base, market geography, and current strengths and weaknesses of the in-house logistical services (may be measured by a current set of KPIs). Any need for local distribution centers or warehouses close to the customer base, setting up warehouse/distribution center versus hiring warehouse services, and so on can be major cost-saving factors. Another major aspect is distribution and transportation because most third-party logistics carriers are either asset-based or freight forwarders, so they possess knowledge and expertise to deal with international regulations and sophisticated transport facilities.

2.2.3 Assessment of the Current IT Landscape

A detailed study and assessment is required of the current system's effectiveness and accessibility. The following set of data points may reflect the status:

- Age of the current system
- Current number of user licenses and limitations
- Capability of the current system to adapt to business expansion and global reach
- Connectivity to third-party or cloud-based systems
- Reporting and visibility into KPIs, financials, and processes

- Visibility into the supply chain, including operations, production, order status, and shipping

This kind of study helps identify gaps in efficiencies and uncovers bottlenecks in processes and technology.

2.2.4 Evaluation of Third-Party Logistics Capabilities

After due deliberation of all the preceding factors, it may boil down to the crucial and most important step of evaluating possible third-party logistics partners for your business. Following are a few pointers to selecting the right third-party logistics partner:

- **Technological capabilities**

To boost supply chain visibility and keep track of all operations, a top-notch third-party logistics provider has access to a number of technical solutions, including cloud-based systems, for example, WMS, inventory management system, transport management system, and others. This increases efficiency by assisting logistics providers in obtaining real-time data and reducing supply chain faults. Businesses should ensure that the capabilities of the third-party logistics system are compatible with their automation and growth requirements.

- **Scalability**

The imminent question is, can third-party logistics demonstrate proven reliability during unplanned spikes in business? The logistics service provider should be able to meet both your present needs and any future needs your company may have as it expands. Ideally, you should pick a third-party logistics services provider that has solid networks and can quickly handle more inventory to meet changing customer demands. On the contrary, they may also need to scale down when demands are low, while remaining equally cost efficient.

- **Financial health**

Your ideal third-party logistics provider should have the financial stability to deal with significant disruptions and be in a solid position to employ the best practices and take advantage of innovations that will protect and flourish your business.

- **Cost of service**

Before choosing a third-party logistics supplier, it's vital to examine the prices and services of each potential provider. Select a third-party logistics company that is within your budget without sacrificing service quality, as doing so could harm your company in the long term. A trustworthy third-party logistics partner is transparent in its pricing and level of service.

- **Expertise in business**

Ask providers if they have expertise in your business vertical. Some third-party logistics providers may have the right business expertise and capabilities to match

your requirements. For example, your business may need intercontinental shipment of hazardous goods in a specific temperature condition. This may require understanding of international regulations pertaining to hazardous goods along with the means to transport such goods.

- **Management and culture**

Third-party logistics partners should be able to employ best practices, support sustainable processes, and be open to the culture of innovations in technology and business trends.

2.2.5 Integration Approach

A business may need to integrate one of multiple third-party logistics partners. Based on the situation, the following design factors may provide leads to the design of future integration solutions:

- Business case for selection of the probable third-party logistics partner
- The scope and cost of services
- Geographical coverage in terms of location, proximity to customer base, accessibility to nearest production or distribution centers, and so on
- Communication standards and protocols at third-party logistics
- Volume of data and key transactions to be handled
- Technical landscape of the third-party logistics partner systems
- Integration mechanism, for example, electronic data interchange (EDI)/IDoc, XML/IDoc or application programming interface (API), and so on
- Master data upload and synchronization requirements (vendor, customer, material, and any other master data)
- Inventory reconciliation between the business and third-party logistics systems
- System security considerations
- System monitoring requirements, error handling, and escalation matrix
- Third-party logistics requirements documentation
- Readiness of the third-party logistics provider for technical changes and availability

Once the approach is finalized and approved, it may need a multidimensional or techno-functional approach to realize the solution. The following sections highlight some areas that require a dedicated effort to implement the solution.

Mapping Key Business Processes

Functional specification documents are prepared that contain detailed process maps in key areas of order fulfillment, inventory management, WM, transportation, and other related areas. Each of the functional specifications usually contains the following:

- Business process flow/maps
- Assumptions and constraint
- Sample maps from third-party logistics (XML, EDI, or any other format)
- Data maps between IDoc fields and logistics service provider-specific maps
- Data conversion requirements for specific fields of the transaction
- SAP HANA field value-specific limitations, changes, or alternatives to overcome those
- Technical change requirements
- Basis requirements
- Security requirements
- Data dependencies

Use Case: SAP S/4HANA Integration with External Third-Party Logistics Warehouse Management Systems

Some of the use cases for process mapping with third-party logistics systems you may consider include master data replication, inbound delivery processing, outbound delivery processing, and stock category adjustments. Key master data may need to be uploaded to the logistics service provider system for successful processing of transactional IDocs (Figure 2.5).

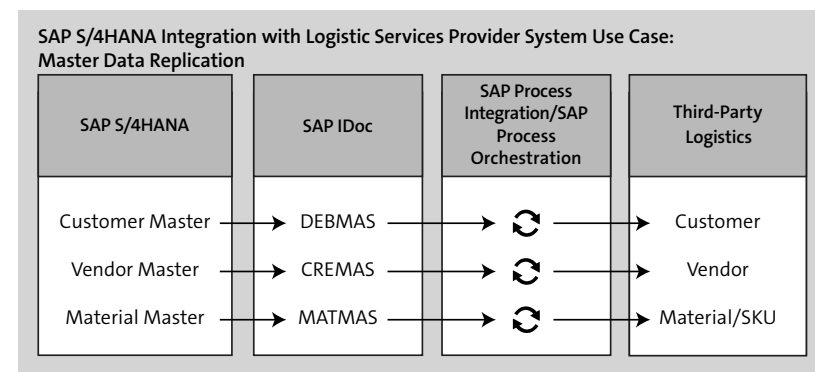


Figure 2.5 Master Data Replication to Third-Party Logistics Systems

Inbound delivery processing may involve delivery notifications to the logistics service provider and, once the material is physically received, confirmation from the logistics service provider regarding goods receipt (Figure 2.6).

Outbound delivery processing may involve delivery notifications to the logistics service provider and, once the material is physically issued and shipped to the customer, confirmation from the logistics service provider regarding delivery confirmation (Figure 2.7).

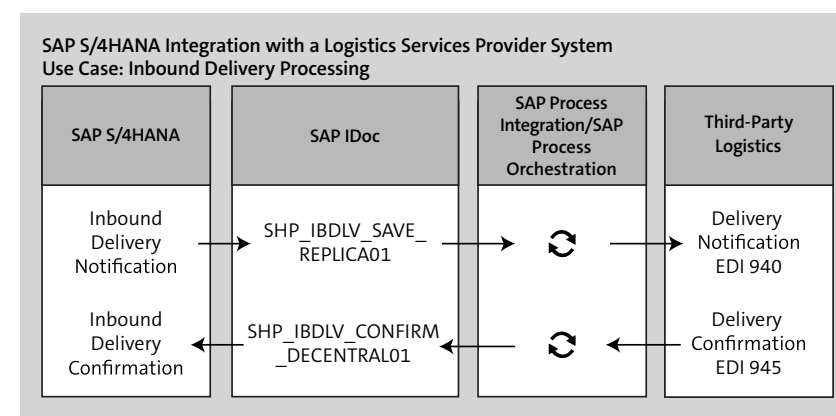


Figure 2.6 Inbound Delivery Processing Using a Third-Party Logistics WMS System

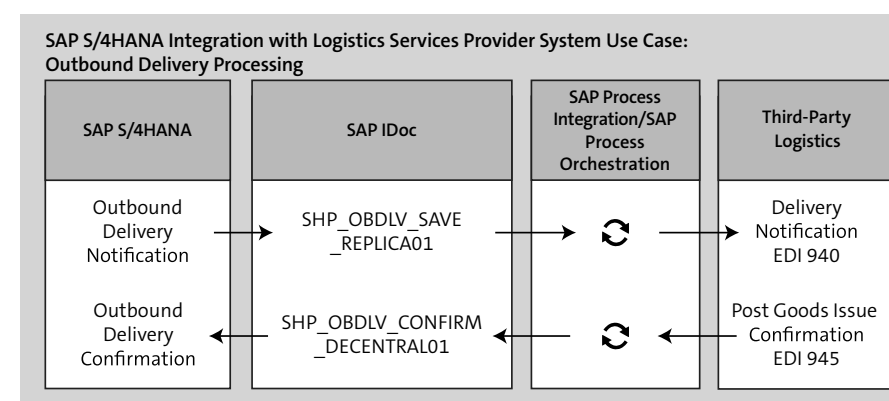


Figure 2.7 Outbound Delivery Processing Using a Third-Party Logistics WMS System

Any adjustments in stocks at the third-party logistics warehouse needs to be recorded to the SAP S/4HANA system immediately to keep the system stocks in sync at both ends (Figure 2.8).

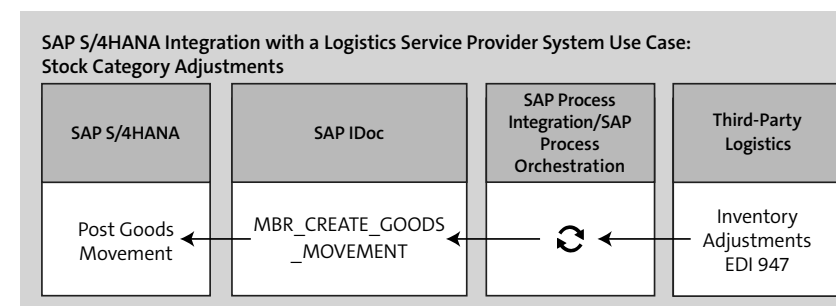


Figure 2.8 Stock Category Adjustments in a Third-Party Logistics WMS System

2.2.6 Design System Landscape for Integration

System landscape design requirements are of vital importance and may need to be vetted by technical experts from all relevant areas. A typical system landscape from third-party logistics integration may look like the one in Figure 2.9.

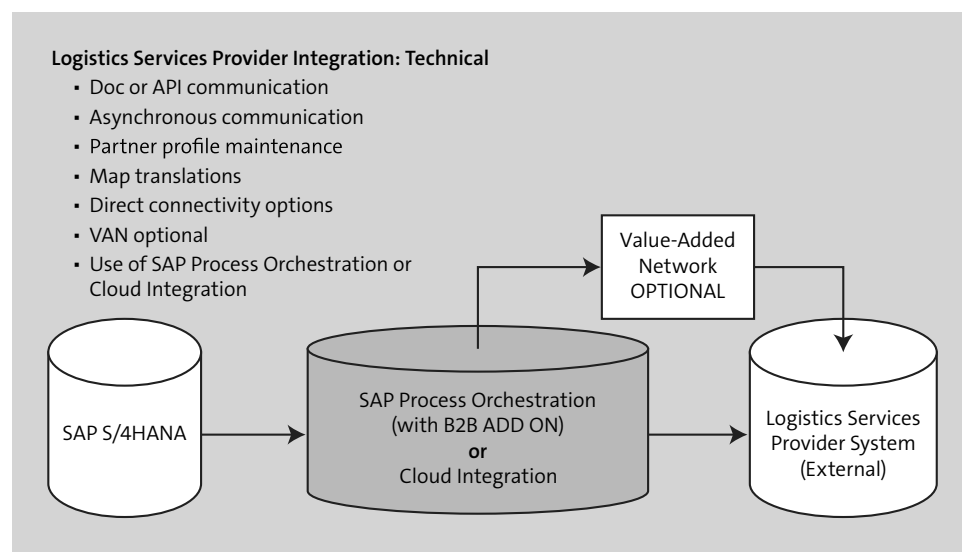


Figure 2.9 Schematic System Landscape for Third-Party Logistics Integration

More details about connectivity options and system landscape can be found in Chapter 10.

2.3 Summary

Implementing third-party logistics integration solutions requires a very meticulous approach to carefully inspect and evaluate every detail of transactional field logics, platform integration considerations, and the extent of technical changes the third-party logistics partners are willing to accommodate. These factors may affect the technical design at your end, as well as increase the timeline of implementation.

Contents

Preface	15
1 Introduction to Third-Party Logistics	21
1.1 Supply Chain Integration	22
1.1.1 What Is Third-Party Logistics Integration?	22
1.1.2 Key Benefits and Features	24
1.1.3 First-Party Logistics to Fifth-Party Logistics	25
1.2 Business Case for Third-Party Logistics Integration	27
1.2.1 Value Drivers	27
1.2.2 Pros and Cons of Third-Party Logistics	28
1.3 Integrated Business Processes	29
1.3.1 Order-to-Cash	30
1.3.2 Procure-to-Pay	31
1.3.3 Inventory Management	32
1.4 Summary	33
2 Design and Implementation Criteria	35
2.1 Determine Business Needs	36
2.1.1 Order Fulfillment	36
2.1.2 Storage and Warehousing	37
2.1.3 Distribution and Transportation	38
2.1.4 Value-Added Services	39
2.2 Assess Current State and Future Challenges	40
2.2.1 Create a Cross-Functional Team for Regular Interactions	41
2.2.2 Finalize Scope of Services and Future Road Map	41
2.2.3 Assessment of the Current IT Landscape	41
2.2.4 Evaluation of Third-Party Logistics Capabilities	42
2.2.5 Integration Approach	43
2.2.6 Design System Landscape for Integration	46
2.3 Summary	46

3	Organizational Entities and Master Data	47
3.1	Organizational Entities	48
3.1.1	Purchasing Organization and Groups	48
3.1.2	Sales Organization and Sales Area	52
3.1.3	Plants, Storage Locations, and Shipping Points	57
3.2	Business Partners	61
3.2.1	Characteristics and Classification of Business Partners	61
3.2.2	Business Partner Identification	64
3.2.3	Customer-Vendor Integration	66
3.3	Master Data	75
3.3.1	Material Master	75
3.3.2	Procurement-Specific Master Data	77
3.3.3	Sales-Specific Master Data	78
3.3.4	Other Supply Chain-Relevant Master Data	81
3.4	Summary	86
4	Packaging and Traceability	87
4.1	Batch Management	88
4.1.1	Benefits and Integration Points	88
4.1.2	Define Batch Level and Batch Status Management	89
4.1.3	Specify Batch Management Default by Plant	92
4.1.4	Batch Number and Assignments	92
4.1.5	Creation of New Batches	94
4.1.6	Batch Valuation	96
4.1.7	Batch Determination and Batch Check	97
4.1.8	Batch Where-Used List	104
4.1.9	Shelf-Life Expiration Date	106
4.1.10	Batch Management in a Third-Party Logistics Scenario	108
4.2	Handling Unit Management	108
4.2.1	Overview	108
4.2.2	Define Number Ranges for Handling Units	111
4.2.3	Settings for Packaging Materials	115
4.2.4	Handling Units with Extended Warehouse Management	121
4.3	Summary	123

5	Shipping and Delivery	125
5.1	Shipping and Logistics Processes	125
5.2	Logistics Execution	128
5.2.1	Mapping Logistics Execution Processes	129
5.2.2	SAP ERP versus SAP S/4HANA	130
5.2.3	Logistics Execution Organization Structure	130
5.2.4	Shipping-Specific Configurations	132
5.2.5	Route Determination in Sales Order and Delivery	138
5.2.6	Inbound and Outbound Deliveries	145
5.2.7	Picking	152
5.2.8	Incompletion Control for Deliveries	156
5.3	Availability Check and Transfer of Requirements	160
5.3.1	Basic Criteria for Availability Check	161
5.3.2	Configuration Steps for Availability Check	163
5.4	Output Control in Shipping	170
5.4.1	Disabling Business Rule Framework Plus-Based Output Management	171
5.4.2	Customizing Output Determination in Shipping	172
5.4.3	Message Control	178
5.4.4	Automatic Inbound Delivery Creation during Two-Step Stock Transfers	179
5.5	Summary	184
6	Inventory Management and Reconciliations	185
6.1	Goods Movement	186
6.1.1	Field Selection for Goods Movement	187
6.1.2	Settings for Goods Movement (Transaction MIGO)	190
6.1.3	Goods Issue and Transfer Postings	194
6.1.4	Goods Receipt	198
6.1.5	Automatic Movements	203
6.2	Movement Types	204
6.3	Output Determination	207
6.3.1	Output Control in SAP S/4HANA	207
6.3.2	Maintain Condition Tables	209
6.3.3	Maintain Access Sequences	210
6.3.4	Maintain Output Types	211
6.3.5	Maintain Output Determination Procedure	211

6.4	Inventory Reconciliation	212
6.5	Summary	215
7	Warehousing	217
7.1	Deployment Scenarios for Third-Party Logistics	218
7.1.1	Warehouse Management Systems	218
7.1.2	Extended Warehouse Management with SAP S/4HANA	225
7.2	System Landscapes	230
7.2.1	Embedded Extended Warehouse Management in SAP S/4HANA	230
7.2.2	Decentralized Extended Warehouse Management in SAP S/4HANA	231
7.3	Integration between SAP S/4HANA and SAP Extended Warehouse Management	233
7.3.1	System Landscape Integration between SAP S/4HANA and SAP Extended Warehouse Management	233
7.3.2	Organizational Structure Integration	238
7.3.3	Business Process Integration	247
7.4	Master Data in Extended Warehouse Management	253
7.5	Summary	259
8	Transportation	261
8.1	Third-Party Logistics Providers and Transportation	261
8.2	Deployment Scenarios for Third-Party Logistics	263
8.2.1	Business Partners and Their Roles	263
8.2.2	Integration Options	266
8.3	Master Data and Organizational Structure	271
8.3.1	Organizational Units in Embedded SAP Transportation Management	271
8.3.2	Master Data in SAP Transportation Management	274
8.4	Basic Configuration Setups	277
8.4.1	Logistics Integration in SAP Transportation Management	277
8.4.2	Financial Processes in SAP Transportation Management	292
8.5	Summary	303

9	Application Link Enabling and IDocs	305
9.1	IDoc Interface and Application Link Enabling	305
9.1.1	Logical Systems and Assignments	306
9.1.2	Target Systems for Remote Function Calls	308
9.1.3	Remote Function Call Destinations for Method Calls	310
9.1.4	Distribution Model and Distributing Views	312
9.2	IDoc Basics for Functional Consultants	316
9.2.1	Overview	317
9.2.2	IDoc Types and Segments	317
9.2.3	IDoc Extension	319
9.2.4	IDoc Structure	320
9.2.5	Message Type	321
9.2.6	Partner Profiles	323
9.2.7	Ports	326
9.2.8	Inbound and Outbound Processing	327
9.3	Technical Integration Features	330
9.3.1	Integration Strategy	330
9.3.2	Electronic Data Interchange	333
9.4	Summary	342
10	Direct Connectivity and Middleware	343
10.1	Direct Connectivity Options	344
10.1.1	Synchronous versus Asynchronous Communication	344
10.1.2	Connectors	345
10.1.3	Remote Function Call/Web Service	352
10.1.4	Cloud Integration	365
10.2	Integration through SAP Middleware	366
10.2.1	Overview of SAP Process Integration and SAP Process Orchestration	367
10.2.2	Integration Approach and Methodology	369
10.2.3	IDoc Interface/Application Link Enabling	378
10.2.4	Batch Processing Jobs	379
10.3	Connection to a Business-to-Business/Electronic Data Interchange Solution via Application Programming Interfaces	379
10.3.1	Logistics Service Provider-EDI Integration	381

10.3.2	Application Programming Interface Management Using SAP Business Technology Platform	388
10.4	Summary	391
11	Business Rule Framework Plus	393
<hr/>		
11.1	Overview	394
11.2	Business Rule Framework Plus User Interface	395
11.3	Business Rule Framework Plus Applications	396
11.4	Business Rule Framework Plus Data Objects	399
11.4.1	Element	399
11.4.2	Structure	401
11.4.3	Table	402
11.5	Expressions	403
11.5.1	Boolean Expression	404
11.5.2	Constant Expression	404
11.5.3	Formula Expression	405
11.5.4	Decision Table	405
11.5.5	Function Call Expression	408
11.5.6	Procedure Call Expression	408
11.6	Actions	408
11.7	Function	410
11.7.1	Mode of Operation	411
11.7.2	Signature	413
11.7.3	BRFplus Tools	414
11.7.4	Assigned Ruleset	415
11.7.5	Rules	416
11.8	Business Rule Framework Plus in Output Management	417
11.8.1	SAP S/4HANA Output Control	417
11.8.2	Limitations of SAP S/4HANA Output Management	419
11.9	Managing Custom Rules with Business Rule Framework Plus	421
11.10	Summary	422

12	Monitoring and Control	423
<hr/>		
12.1	IDoc Monitoring and Dashboard	423
12.2	SAP Application Interface Framework	429
12.2.1	SAP Application Interface Framework: Monitoring Categories	430
12.2.2	Monitoring and Error Handling	431
12.2.3	Customizing SAP Application Interface Framework	433
12.2.4	SAP Application Interface Framework License in SAP S/4HANA	434
12.3	Inventory Reports	434
12.3.1	Inventory Analysis Overview (SAP Fiori App ID F3366)	434
12.3.2	Inventory KPI Analysis (SAP Fiori App ID F3749)	435
12.3.3	Analyze Stock in Date Range (SAP Fiori App ID F6185)	437
12.3.4	Dead Stock Analysis (SAP Fiori App ID F2899)	437
12.3.5	Inventory Turnover Analysis (SAP Fiori App ID F1956)	438
12.3.6	Goods Movement Analysis (SAP Fiori App ID W0055)	439
12.3.7	Slow or Non-Moving Materials (SAP Fiori App ID F2137)	440
12.3.8	Custom Inventory Reports	441
12.4	Summary	443
	The Authors	445
	Index	447

Index

.NET program	351	Batch (Cont.)	
A		<i>where-used list</i>	104
ABAP	346, 354, 355, 421	Batch determination	97
ABAP Data Dictionary (DDIC)	400, 402	<i>access sequence</i>	99
ABAP web services	359	<i>automatic</i>	103
Access sequence	175, 210	Batch management	87, 88
Account group	68	<i>default</i>	92
Action	408	<i>third-party logistics</i>	108
Advance billing	219	Batch status	89
Allowed transportation mode	285	Bill of lading	127
Analytical mode	412	Boolean expression	404
Analyze Stock in Date Range app	437	Business Application Programming	
ANSI ASC X12	317	Interface (BAPI)	346
API	379	Business needs	36
<i>eDocument Framework</i>	366	Business Object Processing	
<i>management</i>	388	Framework (BOPF)	208
Application Link Enabling (ALE)	180,	Business partner	61, 263, 275
305, 378		<i>customer/vendor link</i>	74
Assessing future challenges	40	<i>entities</i>	62
Asynchronous RFC (aRFC)	352	<i>identification</i>	64
Automatic movement	203	<i>number range and grouping</i>	70
Availability check	160, 161	Business process area	423
<i>configuration</i>	163	Business process integration	247
<i>delivery item categories</i>	167	Business Rule Framework plus	
<i>material master</i>	168	(BRFplus)	208, 393
<i>scope</i>	166, 196	<i>applications</i>	396
Availability group	245	<i>custom rules</i>	421
Available-to-promise (ATP)	161	<i>data objects</i>	399
		<i>output management</i>	171, 417
		<i>overview</i>	394
		<i>tools</i>	414
		<i>user interface</i>	395
		Business-government (B2G)	
		communication	366
B		C	
B2B		Calculation base	300
<i>communication</i>	382	Calculation sheet	294
<i>infrastructure services</i>	383	Carrier	125, 264
<i>protocol adapters</i>	382	Centralized purchasing	48
Background RFC (bgRFC)	353	Charge management master data	292
Backorder processing	161	Charge type	294
Basic shipping	128	Checking group	163
Basic warehouse management	231	<i>default values</i>	165
Batch		Checking rule	165
<i>creation</i>	94, 148	Client level	90
<i>level</i>	89	Cloud Foundry	365
<i>number range</i>	92		
<i>processing jobs</i>	379		
<i>search procedure</i>	102		
<i>valuation</i>	96		

Cloud Integration 365, 366
 Company-specific purchasing 50
 Condition table 98, 174, 209
 Connector 345
 Consignee 127, 271
 Constant expression 404
 Context 413
 Contract warehousing 217
 Control key 279
 Control record 320
 Converter module 383
 Cost of service 42
 Country 142
 Cross-functional team 41
 Cross-plant purchasing 50
 Customer 263
 Customer function call (CFC) 97
 Customer return 224
 Customer-vendor integration (CVI) 66
 configuration 67
 Customs clearance 23

D

Data record 320
 Data Replication Framework (DRF) 253
 Data transformation 330
 Dead Stock Analysis app 437
 Decentralized EWM 231
 Decentralized purchasing 48
 Decision table 405
 Declaration 23
 Default partner agreement 282
 Delivery
 completed indicator 200
 cost 36
 integration 281
 item category 146, 147
 time 36
 type 118, 145
 Direct connectivity 344
 Distribution 38
 Distribution channel 53
 Distribution model 247, 312
 add message type 313
 create 312
 generate partner profile 315
 Division 54
 Document integration 279
 Document transportation relevance 280
 Document type 250
 Dynamic availability check 200

E

EDIFACT 317, 338
 Electronic data interchange (EDI) 178,
 317, 333
 benefits and limitations 341
 file format 333
 file structure 334
 integration 381
 transmission 334
 Element 399
 Embedded EWM 230
 Enterprise application integration (EAI) 331
 ERP integration 219
 Error handling 431
 Event mode 411
 Expert mode 396
 Expertise in business 42
 Expiration date check 201
 Expression 403
 Extended warehouse management
 (EWM) 218, 225, 231
 configuration settings 242, 250
 integration settings 235
 integration with SAP S/4HANA 233
 master data 253
 Extensibility 330

F

Fifth-party logistics 26
 Financial health 42
 Finished product 76
 First-party logistics 25
 Formula expression 405
 Forwarding order (FWO) 266
 configuration 281
 key field attributes 268
 types 288, 290
 Forwarding quotation (FWQ) 266
 Forwarding settlement 267
 Fourth-party logistics 25
 Freight costs 128
 Freight forwarding 23
 Freight settlement 267
 Full container load (FCL) 128
 Full truckload (FTL) 128
 Function 410
 Function call expression 408
 Functional group 336
 Functional group header 336
 Functional group trailer 336

Functional mode 411
 Future road map 41

G

Global data type (GDT) 400
 Goods issue 194
 Goods movement 186
 field selection 187
 settings 190
 Goods Movement Analysis app 439
 Goods receipt 198

H

Handling unit (HU) 109
 define number range 111
 define type 123
 number range maintenance 113
 requirements 120
 transactions 110
 unique external identification 112
 with EWM 121
 Handling unit management (HUM) 87, 108
 Hard block 164
 Hybrid integration platform 374

I

IDoc 180, 220, 255, 305, 308, 316, 346, 425
 classification 423
 extensions 319
 inbound and outbound processing 327
 interface 378
 message type 321
 monitoring 423
 statistics 423
 structure 320
 third-party logistics 332
 types 317
 IDoc Processing app 424
 Importer of record 127
 Inbound delivery 145
 automatic creation 179
 integration 384
 Inbound logistics 126
 Incompleteness procedure 158, 160
 Incompletion control 156
 Incoterms 127
 Integrated business processes 29
 Integration
 approach 43
 best practices 377

Integration (Cont.)
 competency center 377
 strategy 330, 369, 370
 style 371
 use-case pattern 373
 Interchange control header 335
 Interchange control trailer 335
 Interchange envelope 335
 Internet Communication
 Framework (ICF) 359
 Internet Communication Manger (ICM) 359
 Inventory adjustment 387
 Inventory Analysis Overview app 434
 Inventory KPI Analysis app 435
 Inventory management 22, 32, 185, 218
 Inventory reconciliation 185, 212, 387
 Inventory report 434, 441
 Inventory Turnover Analysis app 438
 Item category 152
 Item type 252, 282

J

Java 346, 355, 365
 JavaScript 365
 JavaScript Object Notation (JSON) 360

L

Labor management 220
 Less than container load (LCL) 128
 Less than truckload (LTL) 128
 Letter of indemnity (LOI) 127
 Loading group 133
 Local Data Queue (LDQ) 353
 Location 276
 Logical system 306
 assign to client 306
 define 306
 Logistics 219
 Logistics execution 128
 map processes 129
 organization structure 130
 SAP ERP vs. SAP S/4HANA 130
 Logistics integration profile 278
 Logistics service provider 264, 266, 271

M

MALA 154
 Management and culture 43
 Map key business processes 43
 MARE 154

Master data 75
procurement-specific 77
replication 254
sales-specific 78
supply-chain relevant 81
synchronization 71
Master data governance (MDG) 254
Material level 90
Material master 75, 119
Material procurement 23
Message control 178
Microservices 330
Microsoft Visual Studio 350
Middleware 343
Middleware integration 366
Minimum remaining shelf life 106
Mode of operation 411
Modes of transport 138
Monitoring 423, 431
Monitoring tools 424
Movement type 192, 204, 284
MSRE 154
Multiple device support 219

N

Node.js 365
Number assignment 114
Number range 152
assign 69
create 68

O

On-time shipping 36
Order accuracy 36
Order confirmation 149
Order fulfillment 23, 36
Order integration 280
Order-to-cash 30
Organizational entities 48
Organization-level integration 235, 238
Outbound delivery 145
Outbound delivery integration 384
Outbound logistics 126
Output control 170
Output determination 172, 207
condition technique 173
maintain procedure 176
procedure 211
Output type 175, 211

P

Packaging material 115
define allowed 117
define material group 116
define type 122
Partner profile 323
Party entitled to dispose (PETD) 240, 243
Physical inventory document 197, 204
Picking 152
Picking location 153
assign 156
rules 154
Plant 57
Plant level 89
Plant-specific purchasing 50
Point-to-point connections 334
Port 326
Port of discharge 128
Port of loading 127
Procedure call expression 408
Procurement with inbound delivery 220
Procure-to-pay 31
Public warehousing 217
Purchasing group 52
Purchasing organization 48

Q

Queued RFC (qRFC) 237, 238, 353

R

Rate 295
Rate table 296
Raw material 76
Reference document settings 193
Remote Function Call (RFC) 346, 352
connection 310
destinations 310
HTTP destination 356
overview 352
target system 308
Replenishment lead time (RLT) 161
Reporting and analytics 220
Rescheduling 161
Result data object 413
RETA 154
Reverse logistics 126
Route 139
Route determination 138, 140, 143

Rule 416
Ruleset 415

S

Sales area 55
Sales organization 52
Sales with outbound delivery 221
SAP Advanced Planner and Optimization .. 353
SAP Application Interface Framework 431, 433, 434
SAP Business Accelerator Hub 331, 388
SAP Business Connector 345
SAP Business Intelligence Java Software
Development Kit 349
SAP Business Rules Management
(SAP BRM) 421
SAP Business Suite 421
SAP Business Technology
Platform (SAP BTP) 344, 388
SAP Business Warehouse (SAP BW) 379
SAP Connector for Microsoft .NET 349, 351
SAP Customer Relationship
Management (SAP CRM) 344
SAP Fiori 207, 208
SAP Gateway 208, 309
SAP GUI 207, 208
SAP Integration Solution Advisory
Methodology 370, 373, 375
SAP Java Connector 346, 348
SAP Java Resource Adapter 348
SAP NetWeaver 232
SAP NetWeaver Application Server 346, 348, 355
SAP NetWeaver RFC Software
Development Kit 351
SAP Process Integration 330, 366, 367
SAP Process Orchestration 330, 366, 367, 380
SAP S/4HANA
configuration settings 239, 247
delivery 248
integration settings 233
output control 207
output management 417, 419
SAP Solution Manager 331
SAP Supplier Relationship
Management (SAP SRM) 344
SAP Supply Chain
Management (SAP SCM) 232, 353

SAP Transportation
Management (SAP TM) 261, 262, 264
deployment 263
embedded 270
financial processes 292
integration options 266
logistics integration 277
master data 274
master data elements 275
organizational structure 271
Scalability 42, 330
Scale 297
Scale base 299
Scope of services 41
Second-party logistics 25
Semifinished product 76
Service consumer 359
Service-Oriented Architecture (SOA) 330
Manager 361
Services registry 359
Shelf life 106
Shipment accuracy 36
Shipper 125, 263, 271
Shipping 125, 130
block 150
condition 133
configuration 132
type 139, 286
Shipping point 60, 131
assign to plant 131
determination 137
determine 134
inbound delivery 137
Signature 413
Simple mode 396
Slotting capabilities 219
Slow or Non-Moving Materials app 440
SOAP 350
SOAP-based WSDL 361
Soft block 164
SPED 179–182
Stage profile 286, 287
Stage type 283
Stage type sequence 284
Standard charge calculation 301
Standard format 333
Status group 157
Status record 321
Stock reconciliation 185
Stocks status change 386
Storage 37
Storage conditions 155

Storage location	59, 137, 194, 199, 203
Strategy type	100
Structure	401
Supply chain integration	22
Synchronous communication	344, 345
Synchronous RFC (sRFC)	352
System landscape design	46

T

Table	402
A816	402
BUTOOO	74
CHVW	106
CVI_CUST_LINK	74
CVI_VEND_LINK	74
LGNUM	84
MARA-BRGEW	77
MARA-BSTME	77
MARA-MEINS	76
MARA-MHDHB	84
MARA-MHDRZ	84
MARA-MTPOS_MARA	76, 80
MARA-NTGEW	77
MARA-QMPUR	85
MARA-RAUBE	84
MARA-SPART	79
MARA-TEMPB	84
MARA-TRAGR	81
MARC	442
MARC-BESKZ	82
MARC-DISLS	82
MARC-DISMM	82
MARC-DISPO	82
MARC-DWERK	81
MARC-EKGRP	77
MARC-LGFSB	83
MARC-LGPRO	83
MARC-MTVPF	80
MARC-PRCTR	81
MARC-QMATV	85
MARC-SOBSL	83
MARC-SSQSS	86
MARC-WEBAZ	77
MARD	442
MARD_LGORT	442
MCHI	442
MCHA	442
MCHB	442
MCHB_CHARG	442
MCHBH	442
MLGN-LTKZA	85

Table (Cont.)

MLGN-LTKZE	85
MLGN-LVSME	85
MVKE-DWERK	79
MVKE-KTGRM	80
MVKE-MTPOS	80
NACH	177
NAST	171, 420
PARTNER_GUID	74
QPART	86
TOOIW	401
TATYP	79
TPTM	76
TVLS	150
TVLSP	151
TVSTZ	134
TWLVZ	138
VBBE	164
VBBS	164
VKORG	79
VTWEG	79
Technical integration	330
Technological capabilities	42
Third-party logistics	21, 25
<i>business case</i>	27
<i>evolution of capabilities</i>	42
<i>key benefits</i>	24
<i>overview</i>	22
<i>pros and cons</i>	28
<i>service providers</i>	126
<i>strategy</i>	35
<i>systems</i>	44
Tolerance limits	198
Total shelf life	106
Track and trace	219
Transaction	
/N/AIF/CUST	433
/N/AIF/ERR	430
/N/AIF/IFMON	430
/n/AIF/IFMON	432
/N/AIFX/ERR_WEB	432
/SCWM/GWL	256
/SCWM/LSO1	256
/SCWM/LS11	256
/SCWM/MAT1	256
/SCWM/MON	256
/SCWM/PACKSPEC	256
/SCWM/PRDI	256
/SCWM/PROD	256
/SCWM/RFUI	256
/SCWM/TO_CONF	256
/SCWM/TODLV_O	256

Transaction (Cont.)

O184	148
OVLK	146
OVLQ	147
OVRP	143
OVTA	139
OVTB	138
OVTC	140
BD53	255
BD64	313
BD87	426
BD97	311
BMC1	100
BMC2	100
BMC3	100
BUCF	70
CFM1	256
CO06	161
CO09	161, 164, 169
COP1	110
COP2	110
CU70	100
CU71	100
CU72	100
ECO2	58
EMASN	427
EMFOR	427
EMINV	427, 428
EMORD	427, 428
EMTRA	427
HU01	110
HU02	110
HU03	110
HUCOWA	110
HUCOWE	110
HUIBD	110
HUMO	110
HUOBD	110
HUPAST	110
HUTRA	110
LTO9	110
M703	209
M706	211
M708	212
M710	210
MB57	105
MDO4	164
MIGO	190, 191, 193, 205
MIGO_GI	193
MIGO_GO	193
MIGO_GR	193
MSC2N	91

Transaction (Cont.)

NACE	177, 182
OM54	92, 93
OMAI	98
OMAD	93
OMB2	195
OMB3	195, 200
OMBB	104
OMBC	200
OMCO	199
OMCC	198
OMCE	90
OMCG	103
OMCP	196
OMCV	96
OMCW	101
OMCX	99
OME4	52
OMJ5	107, 202
OMJ8	204
OMJC	204
OMJJ	205
OMJX	191
OMK1	103
OMK4	98
OMKT	101
OMKU	99
OMS6	155
OPJL	165
OPL8	103
OPLB	98
OPLC	101
OPLF	99
OVA0	158
OVA2	158
OVL2	134
OVL3	156
OVL7	142
OVLQ	155
OVR1	142
OVSF	133
OVSX	134
OVSY	143
OVTO	173
OVX5	52
OVXC	61, 131
OVXD	60, 131
OVXGN	57
OVXI	54
OVZ1	164
OVZ2	163, 164
OVZ3	165

Transaction (Cont.)

OVZ9	166, 200
OVZK	167
OX08	49
OX09	59
OX10	58
OX17	50
S_ALR_87003103	69
S_ALR_87003126	68
S_ALR_87003201	69
S_ALR_87003428	69
S_ALR_87003434	68
S_ALR_87006706	152
SALE	306, 327, 378
SCPR20	182
SE24	359
SE80	359
SE84	362
SICF	359, 360
SLG1	208
SM59	308, 327, 356, 379
SOAMANAGER	362
SPRO	312, 378
V_R2	161
V_RA	161
V_UC	157
V_UC_7	157
V_V2	161
V/34	175, 181
V/37	172
V/44	172
V/46	172
V/60	174
V/C1	101
V/C2	99
V/C5	103
V/C7	98
V/CA	103
VEGR	116
VHAR	116
VHZU	117
VL34	149
VLMOVE	110
VNKP	111
VUA4	160
VV21	182
VV22	182
VV23	182
WE09	425
WE20	323
WE21	326
WE30	318

Transaction (Cont.)

WE41	328
WE42	328
WE60	322
WE8	321
WE81	314
WLF_IDoc	424, 425
XDNI	68
XKNI	69
Transaction set header	337
Transaction set trailer	337
Transaction settings	193
Transactional RFC (tRFC)	308, 326, 353
Transfer of requirements	160
Transfer postings	194
Transportation	23, 38, 261
Transportation group	142
Transportation management	130
Transportation network	275
Transportation zone	141, 142
Two-step stock transfer	223

U

United Nations Trade Data

Interchange (UNTDI)	317
---------------------------	-----

V

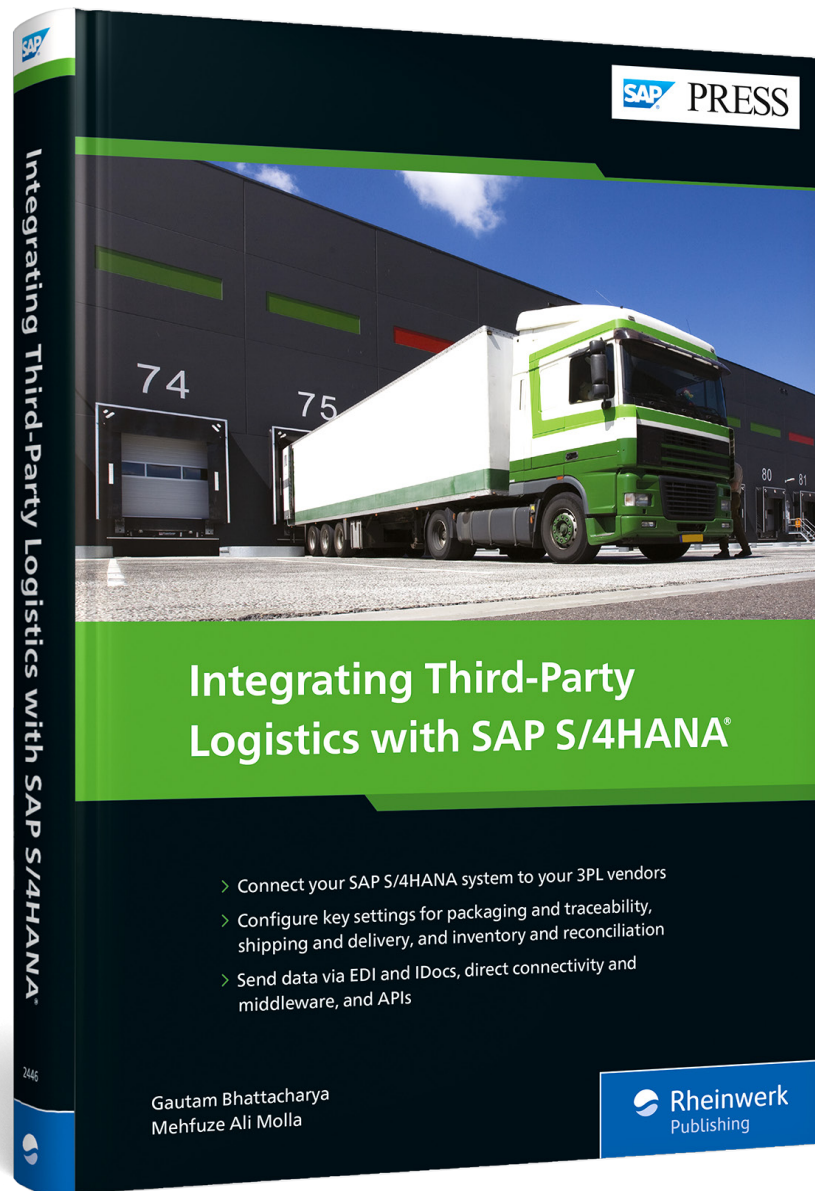
Value drivers	27
Value-added network (VAN)	334
Value-added services	23, 39
Vendor return	224

W

Warehouse inbound processing	226
Warehouse management	130
Warehouse management systems	218, 220
Warehouse order	230
Warehouse outbound processing	
<i>advanced</i>	228
<i>basic</i>	227
Warehouse request	229
Warehouse task	229
Warehousing	22, 37, 217
<i>deployment</i>	218
<i>system landscapes</i>	230
Web Dynpro	208
Web Service Description	
Language (WSDL)	358
Web services	352, 358

X

X12	335, 338
XML messages	345



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