

Original Article

Export Compliance Integration with ERP Order Management - An Overview

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Abstract - This article provides an overview of a high-level approach to integrating third-party Trade Compliance software application to the Order Management module of Enterprise Resource Planning (ERP) software application in order to fulfill global enterprises' Export compliance business process requirements. The article presents a brief overview of export compliance regulations, key aspects of export compliance, and mapping of the key aspects to relevant data entities in ERP applications. It also discusses the data integration points between ERP and trade compliance applications. The article also gives an overview of cutover considerations while implementing this business process for the first time.

Keywords - ERP integration with Third-party software, Export Compliance, Export Compliance regulations, Export license requirement, Trade Compliance Software.

1. Introduction

Trade compliance is a crucial business process that is globally relevant for organizations involved in cross-border shipments. As businesses increasingly operate globally, the need to ensure that import and export shipments adhere to various key rules and regulations, collectively called Trade Compliance, becomes more than essential. Trade Compliance encompasses both Import and Export compliance, which are related to procurement and sales order management business processes. This article not only examines the framework for integrating export compliance software applications with the Order Management module of Enterprise Resource Planning (ERP) applications such as Oracle e-Business Suite [1], SAP [2], JD Edwards [3], NetSuite [4], etc. but also provides practical insights for its implementation.

2. Business Case

Many leading Enterprise Resource Planning (ERP) [5] applications currently available do not include export compliance as a built-in feature. However, several dedicated Trade Compliance software solutions are on the market, such as TradeSphere by Livingston [6], E2Open [7], Thomson Reuters [8], OCR-INC [9], and AEB software [10], among others. As a result, organizations involved in exporting goods and services often seek external software solutions to fulfill this requirement. In such cases, effectively and seamlessly integrating these external software applications is crucial to the organization's success. This article aims to provide a high-level framework for the integration of the Export Compliance Tool with the Organization's Enterprise Resource Planning

application. The article also covers key integration points, documentation and report, and cutover considerations. Export compliance-related rules and regulations vary vastly based on the ship from the country of the product. This article primarily focuses on the export compliance regulations of the United States, even though the framework will also be applicable to other countries.

3. Export Control Regulations

The term "export controls" [11] refers to the federal laws and regulations that deal with the distribution of strategically important technology and information to, and certain financial transactions with, foreign nationals in the United States and persons and entities in foreign countries. Following are some of the key regulations applicable in the United States. EAR regulates the manufacture, sale, distribution, and export of commercial and dual-use items, technology, and information not already covered by ITAR.

Table 1. Key export control regulations in the US

Regulation	Governing Authority
Export Administration Regulations (EAR) [12]	Bureau of Industry and Security (BIS) [13] of the US Commerce Department
International Traffic in Arms Regulations (ITAR) [14]	Department of State [15]
Office of Foreign Assets Control (OFAC) [16]	Treasury Department [17]



The ITAR regulates the manufacture, sale, distribution, and export of defence-related articles and services.

4. Key Aspects

The export compliance process is primarily driven by three entities involved in export transactions, namely – Products, People and Places.

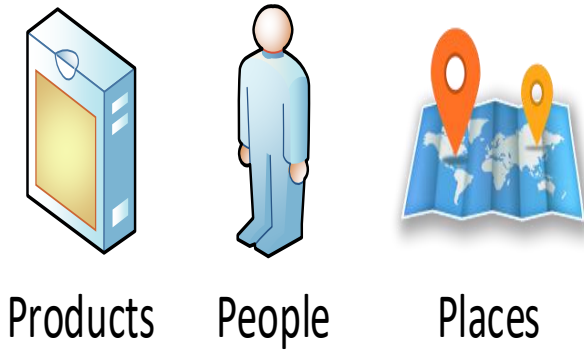


Fig. 1 Key aspects of export compliance

4.1. Product

Products can be physical goods or software involved in export transactions. Export compliance regulations are driven by the classification of the product under various categories as listed below;

Commerce Control List (CCL) [18]: This list includes categories such as nuclear materials, chemicals, electronics, computers, telecommunications, and more. ECCN (Export Control Classification Number) [19] is a five-character alphanumeric designation used on the Commerce Control List (CCL) to identify dual-use items for export control purposes. An ECCN categorizes items based on the nature of the product, i.e. type of commodity, software, or technology and its respective technical parameters.

United States Munitions List (USML) [20]: Includes categories such as firearms, ammunition, and launch vehicles. This classification is used in ITAR regulation. Depending upon the classification of the product being exported, the export may be subject to an Export license requirement.

4.2. People

This aspect covers the parties involved in export transactions, which can be individuals or companies playing the role of customer/buyer, ultimate consumer, buyer’s agent, or an intermediary party. Export compliance regulations screen parties and their addresses against lists such as; Consolidated Screening List (CSL) [21] is a list of parties for which the United States Government maintains restrictions on certain exports, re-export or transfers of items. Denied Party Screening (DPS) compares a Party information against a Restricted Party List (RPL).

4.3. Places

This aspect covers physical locations involved in export transactions, such as the ones listed below.

- Country of Origin of product
- Ship from location
- Ship to location
- Ultimate deliver-to location

Locations involved can also be subject to Embargo checks.

5. Integration Framework

The export compliance process primarily interacts with the Sales Order processing cycle in the ERP application. Customers, Items, and shipping locations involved in Sales Orders represent People, Products, and Places aspects, respectively. Typically, an ERP application acts as a source system for customer and product data. Therefore, customer and product data, also called master data, need to be sent to the Trade Compliance application via custom integrations.

5.1. Customer Data Screening

Customer data will go through various checks in the Trade Compliance application, and results will be stored locally. Business users can review the results through the multiple reports that are available. Based on the results, the data should be updated in the ERP application for re-interface, or it can be flagged (to override system-generated results) locally. The integration can be designed as synchronous (API-based) or Asynchronous (batch mode) depending on data volume, system capacity, and other factors.

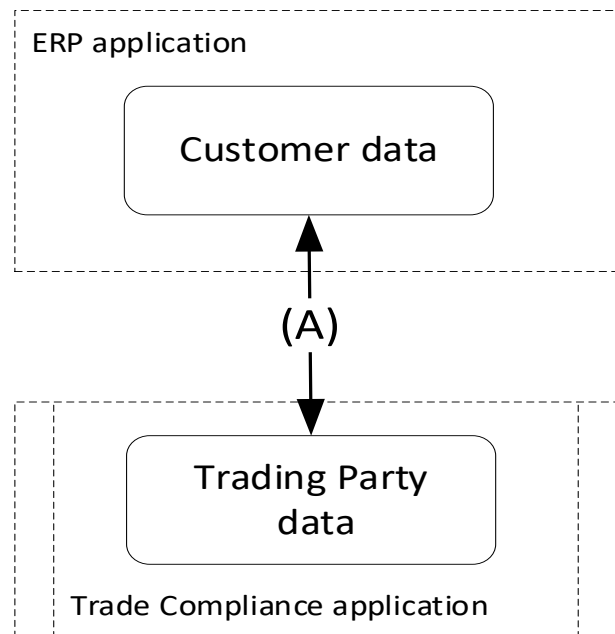


Fig. 2 Customer data integration

5.2. Product Classification and Integration

The products that are subject to Export compliance screening should be classified appropriately. ECCN, Country

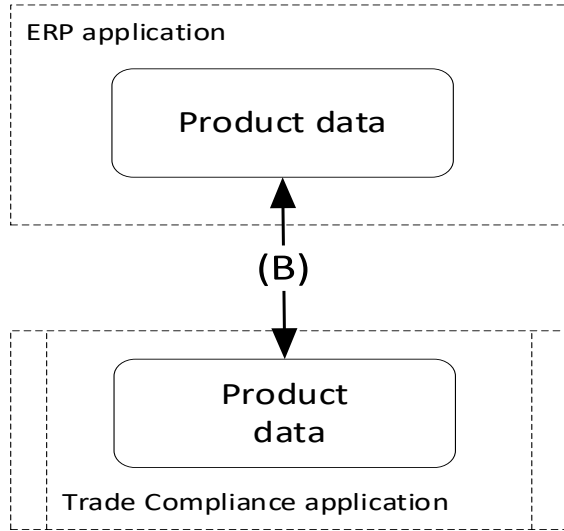


Fig. 3 Product Data Integration

- Order Entry
- Order Booking
- Picking and Packing
- Ship confirmation
- Shipping

Effective Export Compliance integration should be built during order booking and ship confirmation sub-processes. The idea is to send Sales order data to the Trade Compliance application through an integration to perform applicable export compliance checks. The results should be retrieved back into the ERP application, and depending upon the results, order confirmations and ship confirmations should be blocked or unblocked. As an example, the Export compliance screening result suggests an Export License [22] requirement for cross border shipment of a specific Order. The order should be blocked for further processing until the Export Licence (EL) will be arranged.

Of Origin, and other export control identifiers should be stored in the ERP application. Accurate classification of an organization’s shippable products is an essential step in the overall Export Compliance process. If the ERP application has an existing field available to store these details, it should be used; in case it is not available, appropriate Extensible fields (also known as Flex-fields) should be used to store these details. The Product integration will transfer product data from the ERP application to the Trade Compliance Application. Product data can be reviewed periodically by business users via appropriate reports available from the Trade Compliance application. The integration can be designed as synchronous (API-based) or Asynchronous (batch mode) depending upon data volume, system capacity and other factors.

Once the export license is available, license data is to be entered into the Trade Compliance application, followed by re-interfacing the order data to unblock the order in the ERP application. As per available data currently, about five percent of all U.S. exports require an Export License.[9] The integrations can be built for Synchronous processing or Asynchronous processing depending upon the length of the Order cycle, order data volume, system capacity, etc.

5.3. Sales Order Processing Cycle

Sales order processing cycle typically consists of the following sub-processes;

While it is recommended to perform additional export compliance checks at the time of ship confirmation for businesses with longer sales order cycles, it can be skipped for businesses with shorter sales order cycles. The implementor may choose to build an additional integration for the picking and packing sub-process to keep the order status in sync between both applications. In the absence of such integration, the pick and pack sub-process should be scheduled automatically in the Trade Compliance application.

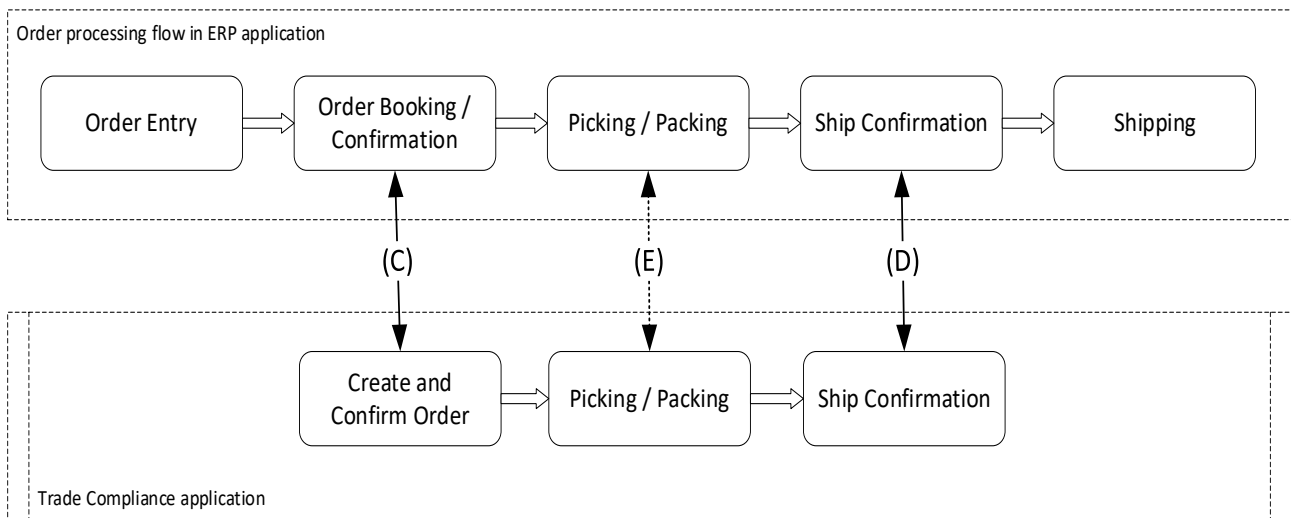


Fig. 4 Export compliance integration in the Sales order cycle

6. Cutover Considerations

When implementing an Export compliance software solution, separate considerations should be put in place for the Cutover phase and Business as Usual (BAU) phase. The cutover phase refers to one-time data transmission from legacy software applications into ERP applications at the time of implementation. During cutover, customer and product data will be loaded into the ERP application. This data volume is significantly higher than that of BAU data volume. It is recommended to load customer and item data into the ERP application and then transfer them to the Trade Compliance Application through the integration. The implementor may consider the approach of loading initial data into both applications separately without using the integrations.

7. Export Documentation and Reporting

Export compliance documentation is a crucial part of the Export Compliance process. Most leading Trade Compliance

applications offer comprehensive reporting capabilities to fulfil this requirement—appropriate end-user access to be configured for business users along with access to necessary export compliance reports. The reports available from the Trade Compliance application will be part of the Export Documentation to be submitted to legal authority; therefore, it is critical to maintain good quality data in the Trade Compliance application and address any data integration issues promptly and accurately.

8. Conclusion

Many of the leading ERP applications do not offer in-built Export Compliance capability, which is a crucial business process for a global organization dealing with cross-border shipments. However, by designing and implementing an integration framework, the capabilities of the Trade Compliance application can be leveraged effectively to fulfill this business requirement.

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