Creating a blueprint for enhancing the port logistics chain in Brazil

Brazil is working towards an Intelligent Cargo Logistics program, and Unisys has stepped in to undertake the groundwork

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In September 2007, Brazil enacted legislation to create the Secretaria Especial de Portos (SEP) to develop policies and projects to jump-start the modernization of the maritime port sector, which is responsible for handling more than 90 percent of Brazilian trade. Brazil recognized the need to promote the modernization of its infrastructure and streamlining its operational procedures in order to facilitate the free flow of trade. At the same time, the Brazilian government recognized that it must also give consideration to the requirements of international trade facilitation and cargo security, in order to protect the world's economic lifelines from illegal actions such as human smuggling, theft and terrorist activities. To achieve these goals, the SEP and the U.S. Trade and Development Agency (USTDA) proposed the development of new procedural measures and state-of-the-art management technologies to assure the continued and responsible growth of US-Brazil trade.

Last year, the SEP selected Unisys Corp. to execute the Intelligent Cargo and Intelligent Network Port Logistics Chain Project (ICNCP). Funded by the USTDA, this project will define and evaluate procedures and cargo monitoring technologies to facilitate Brazil's movement toward an Intelligent Cargo Logistics program. Furthermore, the project will assess how enhanced business processes, technologies and best practices can be used to improve the security and efficiency of the Brazil's maritime logistics operations.

Phase 1

The first phase of the project, concluded in April 2010, was focused on establishing a baseline for representative end-to-end export, import and cabotage logistics chains related to some of Brazil's leading logistics operations. During this phase, the Unisys team collaborated with the SEP to conduct interviews with key logistics chain stakeholders, and to perform rapid analysis and site surveys of operations, information and documentation exchange within the representative logistics chains.

By way of this step-by-step approach, the Unisys team was able to gain a more complete understanding of how logistics chains work in Brazil's ports; which documents are generated and processed for moving cargo; and how the many disparate entities of the logistics chain interact with each other to achieve a common objective.

Identifying issues and trends

As part of this first baseline phase, the Unisys team identified the following issues and trends:

1. Due to current Brazilian import requirements, the import license process has to be initiated at least two months in advance. This requirement has an adverse impact on planning, denying importers the flexibility to meet the demands of customers.
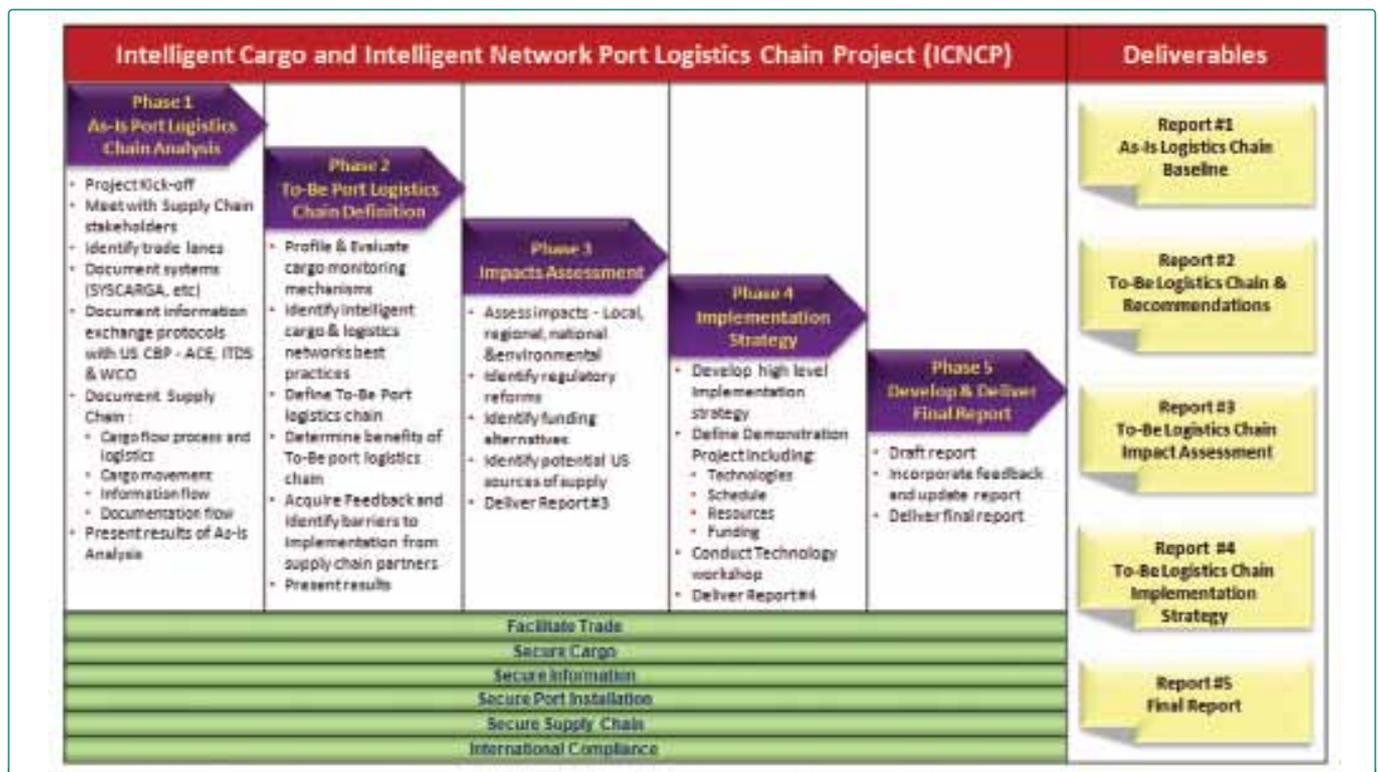
How Brazil's ICNCP project will be organized.

Diagram of the logistics chains studied by Unisys, and their stakeholders.

2. In some instances, multiple agencies are required to inspect containers. There is often very little coordination between agencies to accomplish these inspections, resulting in delays in the cargo clearance.

3. Inspection of in-transit containers can only be performed by customs officials, an added workload for an organization that is already thin on resources. As a result, container trucks may be required to remain in the terminal overnight, severely impacting the available capacity and security posture of the container discharge terminal.

4. The lack of information-sharing protocols results in the same data being submitted multiple times to multiple agencies. Such repetitive data entry creates delays in the logistics chain operations, adds business costs to all entities involved, and raises the probability of data discrepancies, further delaying logistics chain operations.

5. Significant progress has been made in optimizing existing manual and semi-automatic processes and procedures. A logical next step would be to establish sound policies and procedures for the declaration and clearance of cargo, while using technology as an enabler.

6. Logistics chain partners need to utilize many concurrent systems to move containerized cargo through the logistics chain. These systems are neither integrated nor synchronized on a single platform, which serves as a barrier to a dynamic logistics chain.

7. Brazil Customs (Receita Federal do Brasil) requires that shippers and their representatives utilize the customs clearance system called SISCOMEX to declare and clear cargo. As all four SISCOMEX systems are based on different technology platforms, the lack of a single platform not only creates confusion and inefficiency but also increases costs by requiring additional investment by the industry to ensure their personnel are trained to use and support these systems.

8. Although efforts are being made to reduce or eliminate the generation of paper documents, many examples of redundant practices remain. For example, the process for clearing cargo from the discharge terminal currently requires that six hard copies of documentation be submitted in person at different locations.

9. The impending adoption of Sistema Porto sem Papel, a Single Window System where all logistics chain data will be shared across logistics chain partners and government agencies, is being viewed with some apprehension as to whether it will constitute a step forward or simply be yet another system adding to the already crowded field.

10. REDEX, a streamlined method for cargo export declaration when physically present at a customs bonded facility, is widely regarded as a positive development. This process extends the jurisdictional borders of Receita Federal do Brasil beyond the maritime terminal facilities and assists in the capacity-building efforts of Brazilian ports like Santos that are running out of space. There appears to be no plans for provisions such as 'REDIMP' for streamlining cargo imports in the same way.

Phase 2

The second phase of the project, concluded in June 2010, focused on developing a high-level ICNCP design to enhance the current Sistema Porto Sem Papel, via a solution comprised of business process enhancements based on international best practices, current state-of-the-art cargo monitoring technologies and the integration of disparate logistics chain data sources.

In developing the ICNCP design, international best practices and mandates such as the WCO SAFE Framework of Standards, the International Trade System, and the Electronic Freight Management Initiative were reviewed, analyzed and incorporated. Information technologies such as RFID, electronic seals and container security devices were analyzed. And currently available logistics data sources such as Brazil's Nota Fiscal Electronica; Conhecimento de Transporte Eletrônico; vessel and cargo declaration information, data entry solutions like electronic forms, bar codes, and cargo and terminal EDI messages were mapped into a standards-based integration platform.

During this phase, the Unisys team identified and documented the benefits of the ICNCP design for the supply chain stakeholders as well as the possible barriers to implementing an intelligent port logistics chain in Brazil.
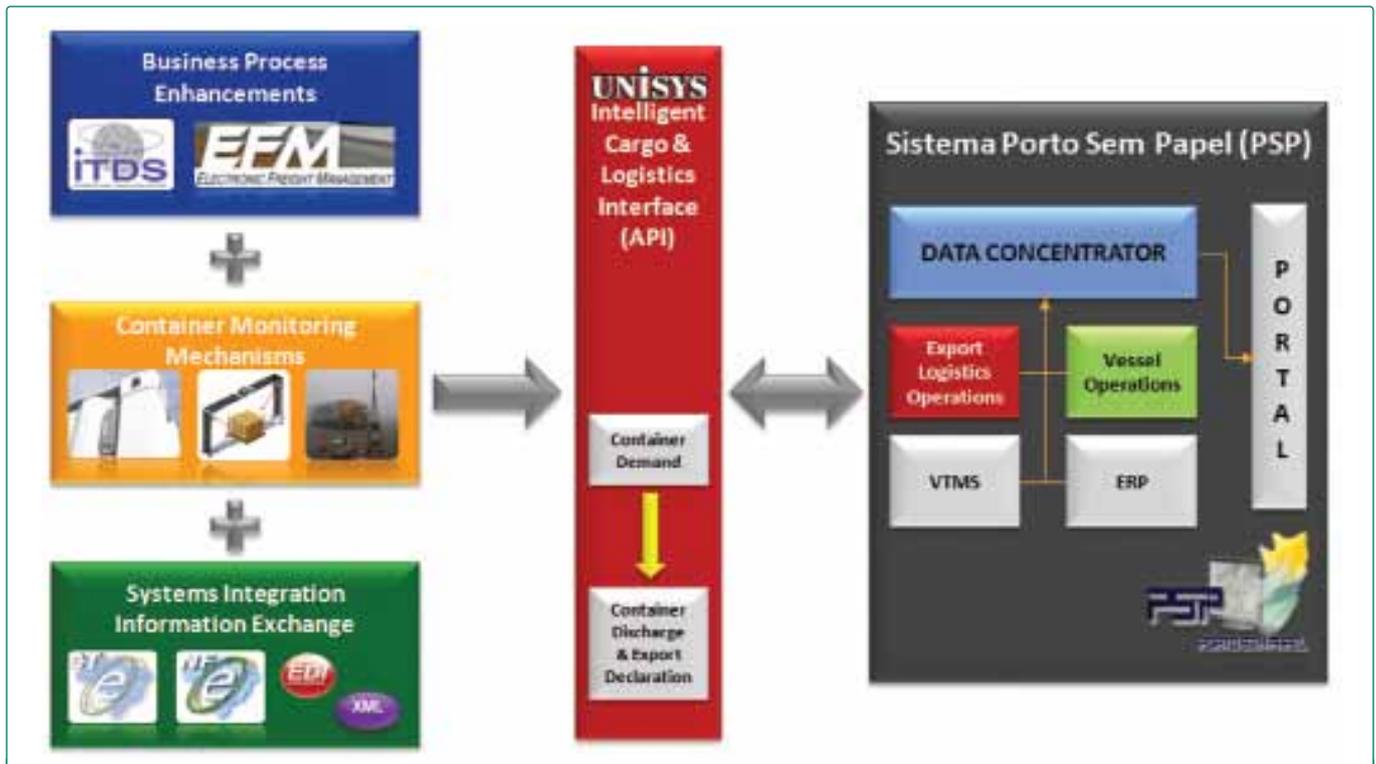
Diagram showing the different phases of the ICNCP design.

Phase 3

During the third phase, which is still in progress, Unisys is analyzing the impacts of the ICNCP design on the current export logistics chain in the areas of infrastructure, environment, security and capacity building. The Unisys team will also be analyzing port and logistics related laws and regulations as well as potential sources of funding available to Brazil to deploy the ICNCP design nationwide. In addition to the impact analysis, the Unisys team will be collaborating with key logistics chain stakeholders and SEP to execute a high-level cost or benefit analysis.

It is anticipated that an implementation strategy for the ICNCP deployment will be included in the final report of this project, scheduled for December 2010.

The ICNCP project represents a first step towards creating a single window for the sharing of data across Brazil's logistics chain operations and will streamline operations and stimulate economic activity and development in the country's interior and northern states.

Summary

In summary, the introduction of an intelligent cargo network into Brazil's logistics operations would materially improve the country's commerce by reducing transportation costs; decreasing inventory costs by providing more accurate and timely information to the shipper; and providing visibility to government agencies via near real-time information exchange. The SEP has taken a decisive first step toward obtaining these goals.

The factors that the company takes into account when making an impact assessment.

ABOUT THE AUTHOR AND COMPANY

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