Capgemini

Making Maquiladoras more efficient in automotive manufacturing

Capgemini paves the road to SAP-compliance with US and Mexico trade agreements

Trading places: a global SAP system makes all the difference

As automobile manufacturers increasingly focus on making the most of international trading relationships, they are exploring how best to leverage tax treaties between the United States and Mexico to establish "Maquiladoras" (Mexican assembly plants that import raw materials on a tariff-free basis for assembly or manufacturing for export).

These assembly plants need to meet the complex set of regulatory requirements laid out in the US-Mexico Trade Agreement and follow the Maquiladora process. The basics of the process are that:

- Companies usually get raw materials on a duty-free basis from the US (meaning that no tax is paid when those raw materials enter Mexico)
- Manufacturing (of parts, semi-finished and finished products) takes place in Mexico
- The manufactured goods then go back to the country of origin

- Moving the materials from one place to another and finally completing the shipment to the customer involves a number of transactions. All of those transactions must be tracked and managed, which can be both challenging and complex.

Companies involved in this process need strong digital solutions to help them manage it. Cooper Standard, a Novi, Michigan-based global supplier of systems and components for the automotive industry, provides a great example of how a global SAP implementation can provide a solution that helps meet the stringent standards of both US-Mexico Trade Agreement and European Union trading agreements relating to how the movement of goods and materials is tracked. Cooper Standard created the solution in partnership with Capgemini.

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What does it take to implement the SAP Maquiladora process?

Careful planning is the key to implementing the SAP Maquiladora process, not just on the technology front, but also in really understanding the dynamics of the business. It is important, for example, to keep the system in alignment with the MRP (Material Requirements Planning) demand and the stock movements within different plants in a company.

Companies first need to understand and map the customer demand at distribution plants, typically located along the US-Mexico border.

The goal is then to transfer that demand to manufacturing plants in the most streamlined manner possible, so that the right materials are going to the right automotive manufacturing operations in a way that limits the time taken and the resources involved in moving materials and finished goods, and minimizes the number of transactions involved.

Capgemini offers comprehensive, scalable implementations

Implementing SAP to meet the exacting demands of both the Maquiladora/US-Mexico Trade Agreement process and the European Union trading agreement requires experience and a deep understanding of the automotive market and its dynamics.

Capgemini, a global leader in consulting, technology services and digital transformation with more than US$14.4 billion in annual revenue, has a long history of serving the needs of the automotive industry and a broad range of clients.

Capgemini offers a tailor-made, "plug and play" process for automotive industry adoption of SAP that covers the requirements of both the US-Mexico Trade Agreement and European agreements.

It automates Maquiladora transactions so that the manufacturing plant can focus on satisfying customer demand, rather than putting effort or time into the Maquiladora transactions. Capgemini's SAP Maquiladora implementation is a custom development on top of a standard SAP process.

Our experience in the automotive industry Spans the entire value chain

Research and development	Manufacturing	Supply chain and logistics	Marketing, sales, and service	Rental, fleet, and sharing	Financial services
BMW	DAIMLER	ASHOK LEYLAND	BMW	Europcar	DAIMLER
DAIMLER	faurecia	BMW	DAIMLER	DAIMLER	VOLKSWAGEN FINANCIAL SERVICES THE KEY TO MOBILITY
DENSO	FCA FIAT CHRYSLER AUTOMOBILES	brembo	FCA FIAT CHRYSLER AUTOMOBILES	CAR2GO	BMW Group
GM	GM	FCA FIAT CHRYSLER AUTOMOBILES	GM	BMW	
JOHN DEERE	Johnson Controls	Ford	Manheim	DriveNow	TOYOTA
ZF TRW	Visteon	MICHELIN A better way forward	PSA GROUPE	Mov'InBlue™	
RENAULT NISSAN	VW	TAFE	RENAULT NISSAN	PENSKE	
Panasonic	VOLVO	Valeo	TOYOTA		
			VOLVO		

Implementation challenges faced by using standard SAP for the Maquiladora process

Automotive manufacturers face many challenges when implementing the Maquiladora process. The challenges include:

- Material movements within the company before reaching the final customer. The big challenge is to keep the system in alignment with the MRP demand and the stock movements within different plants in a company. To provide optimal benefit, the standard SAP system implementation for integrating customer demand needs to be customized according to the way the customer sends the demand. Doing this streamlines the demand flow for MRP and provides the correct requirements for production scheduling.

- End-user training. Because users must manually perform more transactions in the system for a Maquiladora, training for end users is always challenging. The sequence of transactions and processes involved needs to be thoroughly researched with the business, so that it is both streamlined and optimized.

- Inventory mismatch. Avoiding inventory mismatches during the Maquiladora rollout is one of the toughest challenges. In a Maquiladora, several transactions are used for movement of material from one plant to another, so matching the inventory across plants can be a challenge. The best practice to overcome this is to do a cycle count (the counting of fast-moving items more frequently than slow-moving items as part of a physical inventory) twice per month during the initial one-month period, also known as the "hyper-care" period of the rollout. After this, it should be done once a month.

- High Cost of Goods Issue (COGI). A dedicated COGI resource should be deployed during the initial rollout and provided with training sessions on COGIs. Given the nature of the compliance work needed to meet Maquiladora requirements, so-called "backflush transactions" (which typically involve combining several transactions) involving mass movement of materials from the production floor to warehouse should be avoided. This will help reduce COGI values and human errors.

Capgemini offers continuous improvement to the Maquiladora process implementation

Capgemini's extensive experience in implementing SAP for the Maquiladora process unlocks unique ways to leverage standard SAP functionality to achieve optimal results.

Doing this reduces the errors in SAP system processes as standard functionality has been used. The only drawback of this process is the number of transactions the end users must perform to ship the materials to customers.

To address this issue, part of the Maquiladora process can be customized by automating the material transfer process between plants before shipping finished products to customers. The automation lies in having the SAP system auto-create the documents needed for the transfer process until the customer delivery.

The end user then only needs to complete the shipment to the customer, rather than worrying about moving the parts from one plant to another.

Why Capgemini?

Capgemini is the best choice for implementing the SAP Standard Maquiladora process because we have a nailed-down and ready-made solution with which automotive customers can get started right away. We begin by analyzing an organization's existing processes and systems and then make recommendations on one of two possible implementations:

- A straight out-of-the-box implementation of SAP Maquiladora using the ready-made capabilities in the product and leveraging our experience in such deployments, with no customizations.
- A heavily customized implementation tailored to the specific requirements of the organization, the number of end users it has, the key performance indicators used to measure success,

the number of transactions that will move through the system and the criticality of the shipping process to the overall business. With the kind of "just-in-time" manufacturing typical in the automotive sector, it is vital that we offer customers a solution that ensures the smooth flow of key supplies to keep the manufacturing line moving.

It's also important to know that Capgemini offers its own S/4HANA pre-built AUTOPath solution for the digital enterprise with support for SAP ERP Central Component (ECC 6) Technology, S/4HANA's embedded machine learning (which builds insight from sensors reading data and the system using that data to calculate the effort and time needed for particular tasks) and data exchange via EDI.

About Capgemini

A global leader in consulting, technology services and digital transformation, Capgemini is at the forefront of innovation to address the entire breadth of clients' opportunities in the evolving world of cloud, digital and platforms. Building on its strong 50-year heritage and deep industry-specific expertise, Capgemini enables organizations to realize their business ambitions through an array of services from strategy to operations. Capgemini is driven by the conviction that the business value of technology comes from and through people. It is a multicultural company of 200,000 team members in over 40 countries. The Group reported 2017 global revenues of EUR 12.8 billion (about $14.4 billion USD at 2017 average rate).

Learn more about us at

www.capgemini.com

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People matter, results count.