The Service Chain:
Its Impact on the Value Chain and Trading Exchanges

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Executive Overview

With the advent of the Total Quality Management (TQM) business movement of the 1980's (thanks largely to the Japanese competition in the automotive industry during the late 70's) manufacturing companies focused on, and many attained, new goals in product manufacturing quality. In fact, so many companies achieved these goals to the point that product differentiation with competitors products no longer existed. Companies had to look to new departments within their organizations to find areas of differentiation and efficiencies. In the late 80's to early 90's companies began to focus on other internal business processes (outside of product development) with the development of Business Process Re-engineering (BPR). The implementation of these new processes found a home within the Enterprise Resource Planning (ERP) systems. By the early to mid 90's, companies began to look outside the four walls of their organization to find new levels of efficiency within their supply chains. These efforts materialized in the success of Supply Chain Management (SCM) solutions. By the mid to late 90's companies began to include the demand chain side of the equation which established the Customer Relationship Management (CRM) market.

With the ubiquitous and ever expanding Internet, companies are now beginning to build integrated supply/demand chain solutions that represent new levels of efficiencies and stronger customer relationships. These supply/demand chain combinations form an efficient and tightly integrated network referred to as the **value chain**. Companies are using the value chain as a weapon against their competitors. Through the use of Internet technologies, value chains are being developed as private or public **trading exchanges** to all stakeholders in the process. These exchanges represent new, tightly integrated, business communities that provide new levels of collaboration and visibility throughout the value chain (see Figure 1).

It is the intent of this paper to focus on the impact that the service component has on the value chain today and how this will affect trading exchanges in the future.

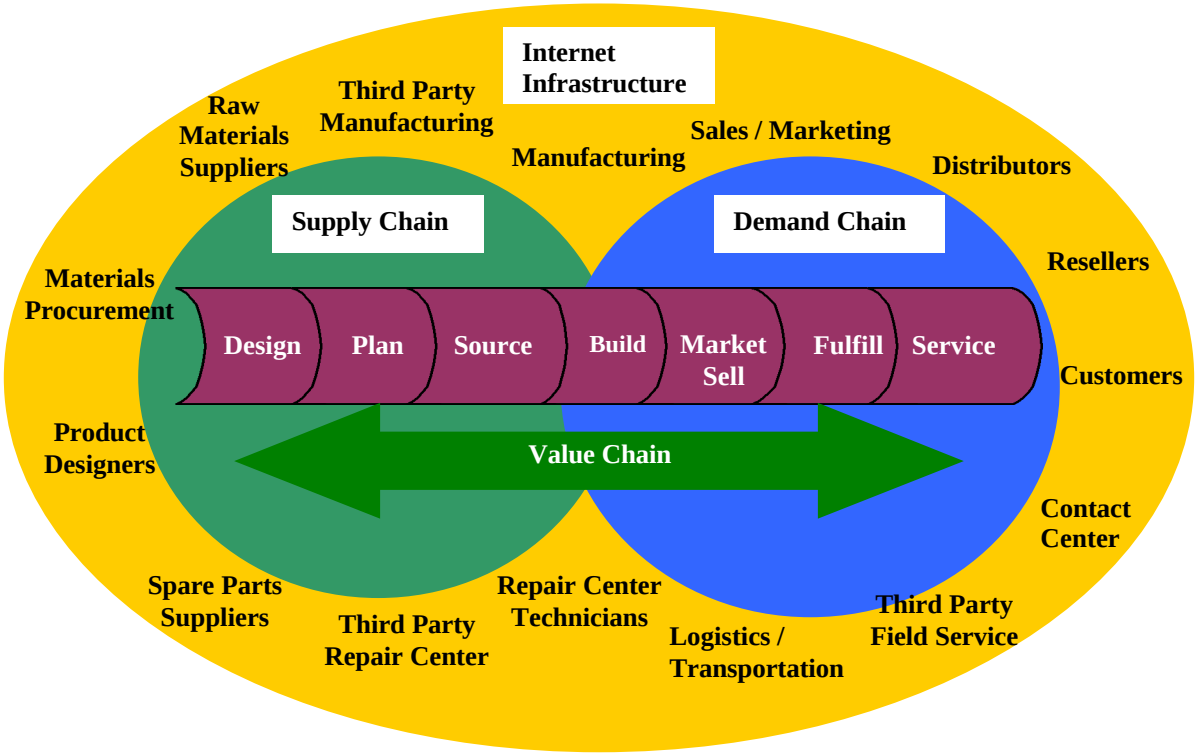

Figure 1. Trading Exchanges

The Value Chain

The traditional view of the value chain components is defined below. With new, Internet based, trading exchanges these components are now being offered in a collaborative fashion between suppliers, manufacturers, customers, and partners:

Design – Product design phase incorporating cost models, quality, and collaborative development with partners.

Plan – A detailed planning phase that optimizes manufacturing and raw materials management to meet demand forecasts.

Source – Procurement of the necessary raw materials for product manufacturing.

Build– Manufacturing execution phase. Actual manufacture of finished product based upon product design

Market / Sell – Promotion and selling of products through direct or indirect channels.

Fulfill – Management of physical flow of finished goods from manufacturer to customer.

Service – Customer relationship and product support after customer's receipt of finished goods.

The Service Chain

While service is thought of as part of the demand chain (see figure 1), for product-oriented companies it actually extends into several supply chain functions, thereby creating a service chain (see figure 2) within the larger value chain architecture.

Although many companies typically do not build service into their value chain, those that do tend to realize greater potential in creating customer loyalty and retention. Those companies know that service is the best mechanism to create long-term customer relationships. Efficient management of functions such as the Returns Process, Contracts & Warranties, Spares Management, and Support Center lead to operational efficiencies that improve customer satisfaction while reducing costs. In fact, throughout a product life cycle, these service functions typically "touch" the customer more often than any other within the organization.

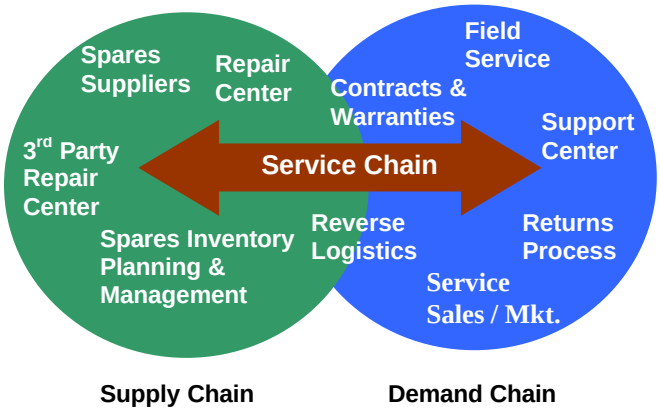

Figure 2. The Service Chain

The Service Organization's Impact on the Value Chain

Service Chain / Value Chain Touch Points

Multiple touch points exist between the service chain and the value chain (Figure 3) and runs from Product Design through Product Fulfillment. The impact from service related activities on the value chain is significant as service maintain its impact on the customer well after fulfillment of product and acts as a key differentiation component for many companies.

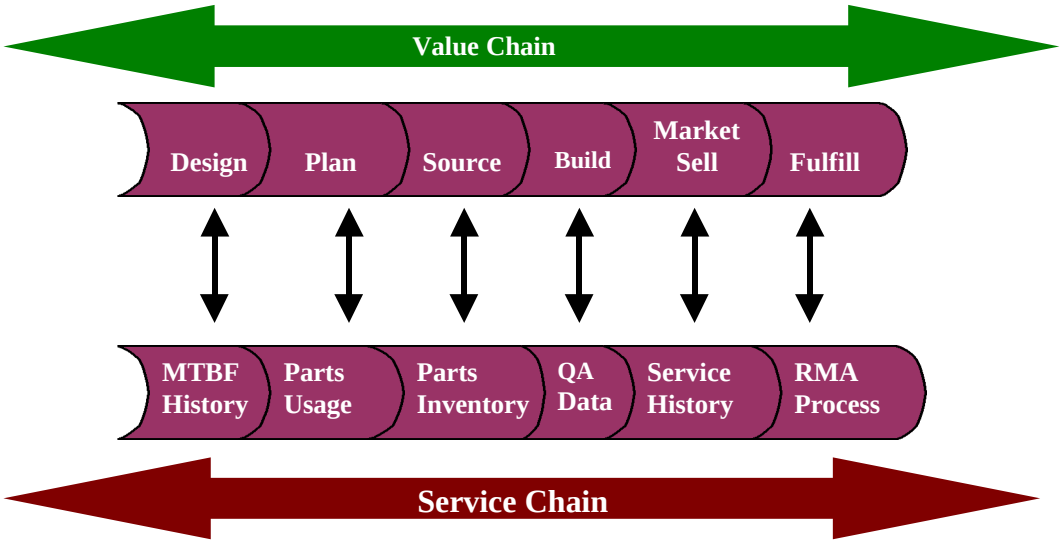

Figure 3. The Service Chain Impact on the Value Chain

Product Design, Manufacturing and Service Quality Data. Product failure codes and resolutions gathered by the field service and repair center service organizations provide feedback into design and manufacturing for higher quality products.

Advanced Planning and Service Parts Demand History. Spare parts inventory planning is based upon different criteria than in traditional raw materials manufacturing planning. Mean Time Between Failure (MTBF) and product demand history information maintained within the service organization is used to drive spare parts planning systems such as Servigistics for optimization of inventory levels. In addition, spare pools of re-manufactured or "finished" goods can be fed back to manufacturing planning systems to avoid overstocked inventories. In addition, spare parts inventory visibility provides Available-to-Promise (ATP) and Capable-to-Promise (CTP) capabilities not only for the company, but also to customers in a self-service model (see The Service Chain and Trading Exchanges below).

Parts Procurement and Inventory Visibility. Companies can realize the cost reduction advantages of a Vendor Managed Inventory (VMI) program by providing spare parts inventory and demand visibility for materials suppliers.

Service Sales/Marketing and Service History. Service systems such as Metrix, hold the customer relationship service history which can be used with other data to generate 1-to-1 marketing programs. Information such as product service history and customer profitability (from a service viewpoint) provides the marketing organization with the details needed for comprehensive personalization of marketing programs. In addition, integration with the sales organization provides notifications to the sales account manager of priority service calls as they occur. This can provide valuable customer status information before calling upon the account.

Service information, such as customer profitability by service level agreement, can be used to develop new sales programs.

Fulfillment and Reverse Logistics. Reverse logistics from the service chain provides visibility into returns processing and enables repair center planning to meet demand. In addition, federal requirements for hazardous materials management can be managed and tracked.

The Service Chain and Trading Exchanges

To date, trading exchange implementations have been primarily focused on procurement and the required financial and logistics support functions. However trading exchanges looking to differentiate and grow must now begin to add functionality:

> " A lot of marketplaces are at a stage where they know what their service portfolio needs to be. Now they have to translate and customize those service offerings into specific features and functions. Marketplaces will have phased service-rollout strategies, with most marketplaces [currently] in phase one."
>
> Drew Riegler
> PriceWaterhouseCoopers
> *ECommerce Business* , October 2000

It is the belief at Metrix that the service chain will become a significant component of the future trading exchange portfolio. Self-service models (e-Service) for returns processing, contract management, and field service scheduling will serve to differentiate between exchanges. Collaboration within the trading exchanges requires companies to open up their service organizations for suppliers and customers alike. This requires a comprehensive service and workflow engine, which enables self-service and collaboration for:

- Spare parts ordering and visibility into global inventories
- Generating and viewing service requests
- Automated returns processing and (Return Materials Authorization) RMA generation
- Visibility into repair depot operations
- Online scheduling for field service personnel
- Service level agreements and warranty management

Conclusion

As companies seek new areas of differentiation, the high velocity value chain has become a competitive weapon. Historically however, the product service component of the value chain has been an after thought for many companies. It is critical to view service as an integral part of your value chain; in fact your service organization significantly impacts the entire value chain. Those companies that integrate service with the value chain and incorporate service early on in the value chain design process will achieve significant benefits in terms of increased customer satisfaction and reduced cost due to operational efficiencies.

Trading exchanges are in the early stages of providing procurement, logistics, and the supporting financial functions for transactions within trading communities. As trading exchanges continue to mature, the service function will become an integral part of that solution. Comprehensive e-Service engines such as Metrix 4e are required to provide the product service and workflow management required for these new collaborative environments.

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