A Framework for Business Process Integration to Achieve Fulfillment Excellence

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ABSTRACT

Process integration has become more and more important in today’s world where companies’ supply chains have become more complex. Companies around the world are beginning to realize the importance of integrating their supply chain business processes to achieve fulfillment excellence. Unfortunately, process integration is still somewhat a novel concept and relatively little research has been conducted in examining how companies can effectively implement successful process integration across their supply chains. To complicate matters further, many companies still confuse the concept of business process integration with that of mere data integration.

The primary motivation for this research study is to provide a framework on how best to implement process integration to achieve fulfillment excellence. The methodology employed in this particular study comprises the use of two case studies with real-life companies, which provide real-world examples of how companies try to “integrate” their complex supply chain processes. A deep and thorough analysis is then conducted to identify the challenges presented by the firm’s current practices from a business process integration perspective. Further analysis then provides an overall view of what is done right and what could have been improved. Last but not least, a generalized framework of best practices and a prescription of how best to implement successful process integration to achieve fulfillment excellence are presented.

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Executive Summary

Business Process Integration (BPI) to achieve fulfillment excellence is the focus of this thesis. Business Process Integration is the ability to link two or more processes, so that they present a common face to the customers even though the processes are separated. One might separate a single process into several processes to simplify it or to complete one of the processes at a lower cost by aggregating it with other like-processes. Once processes are separated, communication must take place among them to enable the complete delivery of a product or service. With the advancement of information technology, this communication has increasingly taken the form of electronic transactions.

In addition to discussing BPI, this thesis also discusses the application of BPI to order management and shows how this application assists companies in delivering the highest standards in customer satisfaction. In essence, business process integration enables a company to have a better order management system, which in turn, results in the ability to deliver customers’ orders perfectly (fulfillment excellence). In today’s world, fulfillment excellence can only be achieved through successful business process integration within and outside a company’s walls.

The thesis has three main components that are worth noting. The first two components are two business cases -- a big ticket retailer (i.e. one who sells furniture, carpets, window treatments, etc.), and a wireless technology logistics provider. The third component is the key insights and general applications of BPI.

The big ticket retailer case is a good example of a channel where the retailer is serviced by numerous vendors. Some of these vendors are small and thus, BPI is not a big
priority to the retailer because it derives little revenue from these companies. The retailer is also faced with two distinct barriers -- visibility, and order brokerage. Each one of these barriers is applicable primarily to one of the forms of fulfillment. Respectively, barrier 1 applies to fulfillment from inventory and barrier 2 to fulfillment from make-to-order processes; with the fulfillment breakout as follows:

- **Fulfillment from Inventory (70% of Sales):**
  - In Stock (11%), Vendor Warehouse (79%), On Order (3%), and Vendor Warehouse Next Available (VWNA) (7%)

- **Make-to-order (30% of Sales):**
  - Special Orders

Within fulfillment from inventory, 90% of sales (11% + 79%) are drawn from finished goods, hence suggesting that obsolescence costs are high and that the retailer is highly dependent on good forecasting. BPI reduces lead times by bringing vendors and retailers closer together, not necessarily physically, but at least process-wise. Herein we extensively discuss that BPI achievements should lead to sales increases from the On Order and VWNA fulfillment processes, leading to reductions in forecast reliance and obsolescence costs.

Fulfillment from Make-to-Order incurs very long lead times, extending up to six months. Herein we extensively discuss that BPI achievements should result in lead time reductions, which in turn, improve service levels. In addition, BPI should significantly diminish the recurring problem of manufacturing the wrong product, and then having to sell it at a discount. Imagine a scenario where a couch is manufactured per customer specifications and an XML transaction that includes a high definition picture of that
couch captures these specifications exactly as the customer sees them at the store. Imagine if this scenario is **scalable** and enables all retail outlets to communicate this picture across vendors.

The wireless technology logistics provider (LogiCell) case studies reverse logistics to fulfill orders from customers who have insured their wireless phones. The process can be summarized as follows:

- The customer contacts the insurance company
- The insurance company sends an EDI transaction to LogiCell with customer information
- LogiCell sends a phone to the customer **from inventory**
- LogiCell receives the phone from the customer, repairs it (at its domestic or off-shore facility), and stores it in inventory for future disposition

LogiCell is not interested in doing repair in-house, but has built this capability in order to be able to offer reverse logistics services and maintain low inventory levels. If it did not repair the product in-house, product turnaround would be so slow that inventory would need to be much higher than it is now that it conducts the repair operation in-house. The thesis explores the fact that BPI achievements facilitate visibility into the off-shore repair operation as well, thus allowing LogiCell to reduce inventory levels. BPI achievements also allow close coordination with a third party vendor that can provide the repair service with better economies of scale. If LogiCell was able to turn the phone around quickly, it would be well positioned to also offer other value-added services such as returning the same phone to a business user who may have important contact information stored in it.
Lastly, the LogiCell case draws a distinction between batch and single flow of both product and information. Batch flow of information does not allow granular visibility and hampers LogiCell’s ability to make decisions based on more accurate inventory positions across its network.

These two cases lead us to a generalized view of BPI. BPI requires selecting the right partners, and then pursuing BPI based on both the human and the technology factors. Failure to align these two and their internal workings would likely lead to BPI failure. In the realm of order fulfillment, it appears that the best way to conceptualize BPI is by introducing the concept of a Full Circle Process (FCP) view. Order fulfillment begins with a customer order and ends with the delivery of items or services to the customer. Once we lose sight of this paradigm we lose knowledge of customer requirements and therefore, cannot offer an integrated service 100% of the time.

The way to accomplish an FCP view is by implementing the Single Platform Model. This is the equivalent of the one point-person model commonly used in business practices to assign responsibility. A single platform across enterprises or processes brings separate processes closer together. Such a model is not at all futuristic – it is in fact, pragmatic – some software vendors have embraced this model and claim it as the basis of their value proposition.