Supply chain models

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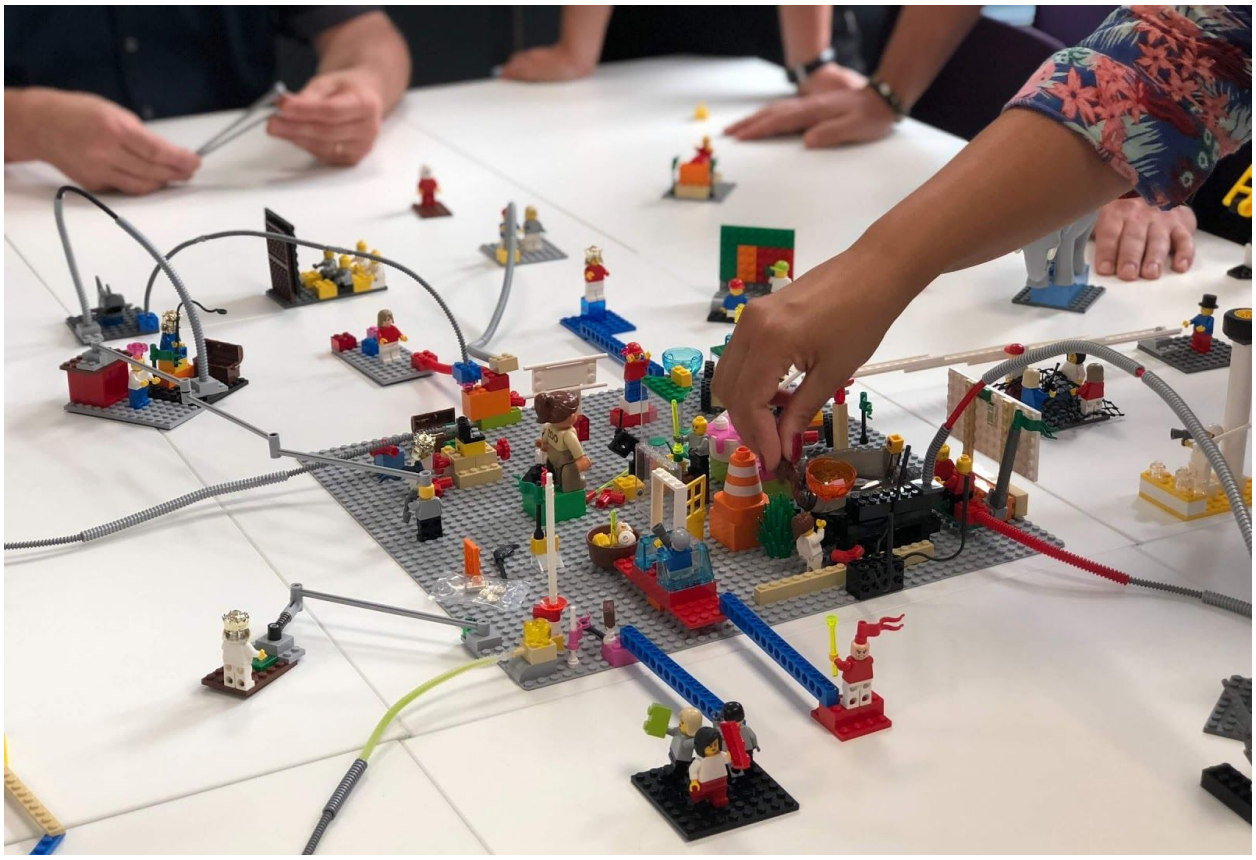

Supply chains are complex structures, and their best practice can vary from industry to industry, so knowing which supply chain model best suits your business is paramount. There are six common supply chain models to choose from but largely all of these models focus on two key areas - Responsiveness and Efficiency.

Of these six, one group is oriented towards efficiency and the other towards responsiveness. The most suitable model for your business can be chosen considering your goals and constraints and evaluating each model's value proposition. Answering the following questions will help you with the evaluation process, as mentioned above.

- What is the framework of your company's industry?
- What is the value proposition your business has to offer?
- What is the key focus area of your management?

The relevant responsiveness-oriented supply chain models are preferred when customer demand is highly unpredictable. These models are subject to overlap in various areas, and they should be designed by a supply chain manager so as to fit the unique supply chain.

Why Is Supply Chain Modeling So Important?

Supply chain modeling is a conscious attempt to bring order into supply chains' complexity to achieve certain business objectives. It deals with questions such as:

- What to produce

- Market identification
- Siting of production plants
- Finding the best suppliers
- Supplier and plant locations
- Inventory and Shipping management
- Distributing finished products
- Warehouse management strategies

A supply chain's ultimate goal must be to offer satisfactory customer service because a satisfied customer is most likely to be loyal to your brand. To achieve this, a business would not only need the right supply chain model but also someone to manage it effectively and efficiently.

- Your model must be fit for the required purpose and robust.
- Your model must have the internal visibility needed to identify and rectify problems when required.
- Your model must be continually evaluated and interrogated to discover the best solution for every key decision.

Supply chain modeling provides with the tools needed to manage a business' supply lines to:

- Control inventory
- Reduce costs
- Increase efficiency
- Meet customer demand
- Respond to demand

All successful businesses must recognize that as their business grows, their technological investments, supply chain strategies, and decision-making models must also evolve to incorporate that growth.

6 Types of Supply Chain Models

Continuous Flow Model

This is one of the most traditional supply chain models and is best suited for mature industries that operate with a certain degree of stability. It offers stability in high demand situations. Manufacturers producing the same goods repeatedly, and having a customer demand profile with little variation can benefit from this model.

This model relies on the stability of supply and demand. Its processes are scheduled in such a way that a continuous flow of information and products is ensured.

Agile Model

This model of supply chain is best suited for industries that deal with unpredictable demand and products that are made to order.

This model focuses on the supply chain's ability to amp up production on a moment's notice but can remain static when the demand is low. It demands excess production capacity, and the processes are designed for the smallest possible batches of products.

Fast Chain Model

This supply chain model is best suited for industries that manufacture a trendy product and has a short life cycle, such as fashion items. In addition to that, these businesses also need to get them out fast before the trend ends. This model offers a certain degree of flexibility.

For the said industry, a business' value proposals are evaluated by how quickly and efficiently they can update their product catalog in accordance with the latest trends.

The three main capabilities of this model are:

1. From concept to market in a short time
2. Highest forecast accuracy to reduce market mediation cost
3. End-to-end efficiency to ensure affordable costs for customers.

Flexible Model

This model is best suited for industries with no unexpected demands or relatively predictable demand peaks and long periods of low workload.

The flexible model provides businesses the freedom to meet high demand peaks and manage long periods of low volume work-load. The production can be switched on and off easily.

Four main capabilities of this model are:

1. Stock-pile of critical resources
2. Rapid-response capability

3. Technical strengths in process and product engineering
4. A process flow designed to be quickly reconfigurable.

Custom Configured Model

As the name suggests, this model's primary focus is on providing custom configurations, especially for assembly and production processes. It is a hybrid combination of the agile model and the continuous flow model.

Let us understand this with the example of an automobile manufacturing process. Usually, the processes involving intricate sub-assemblies such as assembling gears in a transmission box are complicated and very time consuming because of intricate interlinking of tiny parts. But attaching these multiple sub-assemblies into a final product is as easy as plug-n-play. For example, attaching an assembled transmission box to the car's drive-train. Just like that, in cases where final assembly is simpler compared to initial assembly and the other downstream processes, the final assembly is managed under an efficient, or a continuous-flow supply chain model. The intricate sub-assembly configurations and the later downstream processes then operate in an agile model.

Efficient Chain Model

This model is best suited for businesses operating in highly competitive markets wherein pricing plays a large part and businesses are fighting for the same group of customers. Markets, where customers may not perceive major differences in the value proposals of various competitors and end-to-end efficiency, are the premium goal.

For achieving this, management must maximize the utilization of machinery and other assets at their disposal to maintain high overall equipment efficiency and a resultant reduction in cost. Inventory management and order fulfillment are prime areas of focus for the profitability of the business.

Efficiency Oriented Supply Chains

Efficiency oriented supply chain models include the following:

- The Efficient model
- The Fast chain model
- Continuous flow model.

All three of these models are oriented towards prioritizing efficiency and are geared toward certain industries such as paper, steel, cement, commodity-producing industries and budget fashion industries.

This model is well suited in markets flooded with similarly manufactured products, selling to the same type of consumers and the value proposition is speed and cost-cutting. An efficiency-focused model will ensure that the producer has sufficient inventory on hand to keep things moving quickly and with a certain rhythm and allow them to create products in bulk enabling lower costs.

Most industries that use an efficiency oriented model typically offer low-value items that are produced in very high volumes. Such companies generally do not deviate from their traditional production lines.

The efficiency-oriented supply chain models have several benefits, but they also have a few downsides, such as:

- May lead to an excess or overstocked inventory.
- This is not the most cost-effective model in all cases.

Responsive Supply Chains

The three responsive supply chain models include the following:

- The Agile model
- The Flexible model
- Custom configured model

Responsiveness driven models are ideal for “on-demand” situations when there is uncertainty in product manufacturing. These models offer flexibility for industries that require custom orders, trendy products, and for manufacturers that have the capability of often making changes in their products.

A good example of this model is a manufacturer that produces products for different industries but their supply chain is flexible enough to quickly switch raw materials and other supplies needed to meet the custom requirements of a specific client. This week they may be making spare parts for an automobile manufacturer; next week, they may be making fasteners for construction projects.

The responsiveness oriented supply chain model has several benefits, but they also have a few downsides, such as:

- These models rely heavily upon the ability of human prediction to predict trends.
- In this model an under trained staff can make some critical errors that can turn out to be very costly
- These models require quite a bit of human interaction, leaving the system prone to human error.

Conclusion

From an outsider's perspective, identifying the model of the supply chain being used may be difficult because of their similarity to one another and an extensive interconnected web-like structure, but they all serve the same common goals. Most productive supply chains choose a basic model and then heavily customize them to meet their specific needs. It usually is a blend of state-of-the-art technology and a touch of human relationships to create a model that brings them the best of both worlds.