

# Supply Chain Agility

**Agile corporations require agile supply chain.**

Pharmaceutical and Consumer Goods industries have embraced lean methodology to progress. However, global markets are more volatile and there is a need to go beyond. In this paper I present agility as the proper respond for those companies that want to exploit the opportunities that appear in this new rapid changing world.

## 1. What's agility?

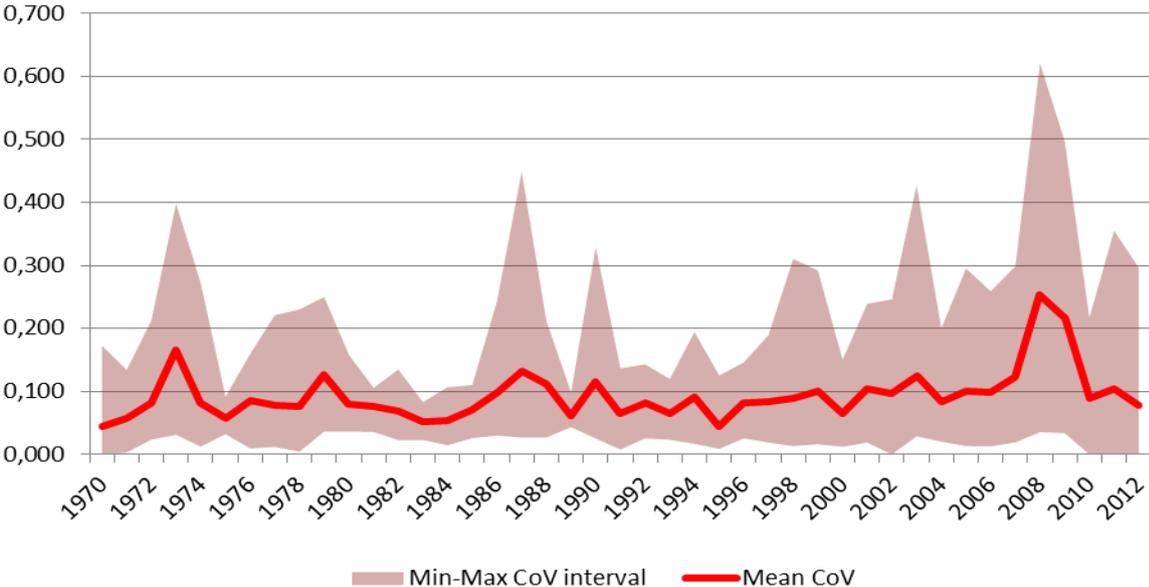
The capability to adapt quickly to uncontrolled changes in the environment. In the business world, it can be defined as the capacity to identify and capture opportunities more quickly than competitors do.

The highest level of agility is that of corporations that are able to change the rules of the game in the industry they are in, or even create completely new ones (Strategic Agility). Google is an example. Other companies succeed entering in new businesses as the opportunity to make benefit in each of them changes. (*Portfolio Agilty*). This requires the courage to shift resources quickly and effectively out of the less promising business areas into more attractive ones. *Operational Agility* involves exploiting opportunities within a focus business model (Zara-Inditex). The support of an agile Supply Chain is essential and it is in this last type of agility where we are going to focus in this article.

## 2. Today more needed than ever.

The environment and business conditions have never been stable. In fact, different industries are exposed to changes at more or less rapid pace, which determines the "clock speed" of that industry (i.e mobile telecoms vs commercial aircraft manufacturing). What it is changing is the speed and depth of those changes. A very promising and profitable business can vanish in two years (i.e. paper photography and **Kodak**).

Martin Christopher and the Cranfield University have developed and index in an attempt to quantify the level of volatility and its evolution: "The Supply Chain Volatility index". They have selected a set of indicators and prices of reference, of which data exist for the last forty, and combine them to analyze the evolution of their covariance factor.



Key conclusion is that the level of stability has been relatively high, only disrupted by isolated events or shock crisis. However, since 2008 this has fundamentally changed, and we are entering a period of increased turbulence.

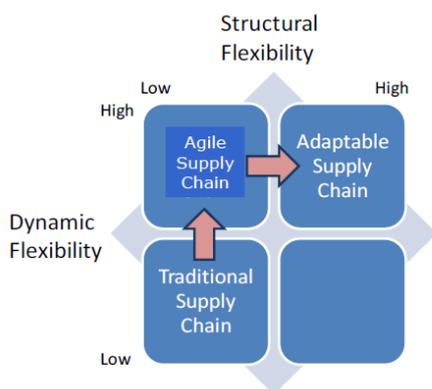
According to the concept of “Strategic Leverage”, (Ph. Milind Lele, Chicago Booth), the Opportunity to materialize profit in a given business is equal to the Capability (internal firm skills and resources) x Leverage (external market situation that has potential). What is happening now is that the “leverage” is changing faster and faster or even disappearing. Example: Technological changes made paper photography irrelevant for consumers and, although Kodak had an excellent capability to operate in that business, the “leverage” vanished. Kodak was not agile enough and bankrupted.

But at the same time new areas of opportunity arise, that will last short before they mature and reach a level of rivalry that will make them unprofitable. Those companies agile enough to develop capabilities that fit the new opportunities, before competitors do, will maximize profits.

### 3. Agility in Supply Chain.

Companies that manufacture or distribute products and capital goods need a strong supply chain that accompanies, support and maximize the organizational agility of the corporation as a whole. It is within the operational agility where the supply chain function can contribute well.

The first concept we tend to think of is *Demand Agility*, how quick we can respond to sudden changes in demand, maintaining high service levels. Of vital importance is also *Product Cycle Agility*, or how quickly we can develop, make and launch breakthrough innovation, while discontinue declining products without incurring in obsolescence write-off or significant loses of sales. There exist also a trend to adapt products and services to the specific needs of certain customers and channels, which leads to the concept of *Customization Agility*. All these types of responses can be done with the current network and can be grouped as **Dynamic Flexibility**.



This should be a first step. But those companies that want to be competitive for many years have to go beyond. Demographic, politic, economic and technological changes can make that the center of gravity of our demand moves very quickly. Radical changes in oil prices, raw material, currency exchange, or more protectionist regulations can make producing or distributing in certain countries unprofitable versus other options. Flagship products and manufacturing processes can become obsolete within months. Shifts in consumer expectations or in the structure of the distribution channels may require a completely different go to market strategy. Here **Structural Flexibility** plays a relevant role. Let’s

say that 80% of the European demand for a company moves from France to Russia, How long would it take to that company to reduce volume in factories and distribution centers in France and have them 100% operative in Russia? Furthermore, how long would it take to top management even to consider it and make the decision? It will depend a lot on how well prepared is that firm to do it minimizing risks. And also its cost split between fix and variable, level of outsourcing, if it has strong processes that allow them to continue operating while these transitions are taking place. Talent and organization will be key: the less management layers between top executives and front line managers, the easier and faster the process will be.

#### **4. How to gain agility in Supply Chain.**

I am going to give some tips, as examples, and only with the main objective of making us reflect on the subject. The actual application to a specific company will depend on its particular situation.

##### **A) Organization Structure**

If, i.e., between the European Supply Chain VP and the manager of the single Italian distribution center there are six layers of management, agility is going to be difficult. Companies with a flatter organization structure enjoy a much better flow of information and faster decision making.

Besides, in many multinationals supply chain is no longer within the responsibility of the country commercial organization and solid reporting lines only join at top regional level or even the global CEO. That is often very efficient operationally and to maintain status quo, but there is a high risk of losing the connection with the changing commercial reality. Proper forums, committees and cross functional task forces should be established to maintain a fluid relationship between Sales and Operations. Well managed S&OP processes greatly help. And roles like the supply chain liaison for a commercial business unit.

##### **B) Lead time reduction.**

From my point of view is the biggest area of opportunity. Strong effort has to be put in making cycle time as closer as possible to process time. A key enabler is the reduction of line changeover time and set up time between two production runs. It usually requires line cleaning, packing machine adjustment and even tooling replacement. If this time is very long, we will lose much production capacity and the tendency will be to make as longer batches as possible, deviating from our agility objective. Possible solutions are the installation of automated CIP equipment (clean in place), pre-preparation of the tooling to change and anticipate to the changeover time as many activities as possible. With the right process we can achieve really quick setups. I recall how the industrial director of a Coca-cola bottling plant called the line changeover: PIT STOP, as in Formula 1, clearly communicating what he wanted it to be.

Other key elements are transportation lead time and minimum economic order quantity. In general slower transportation modes are cheaper, but it is here where we have to balance the extra cost with the advantage of a rapid response to demand changes. Quantify the latest is often difficult and the cheapest option is chosen. Other companies, like Inditex and most High Tech's make a very intensive use of airfreight. Another way to reduce minimum order quantities without incurring in extra cost is horizontal collaboration between manufacturers.

##### **C) Minimum stock-holding points and location of distribution centers.**

It is much easier to respond to sudden changes in demand with few inventory locations. A multi-market distribution center can balance its inventory as the demand of each market is fluctuating, improving product availability. If we had one DC for each country/market we may end up with the wrong quantity of stock in the wrong place, and not being able to respond to volatility. With this principle in mind, Kellogg Company changed the way to supply and distribute to the Portuguese market. There was a distributor DC, north Lisbon, which was supplied directly from factories in Manchester (UK), Bremen (Germany) and Valls (Spain). At the same time, all products were shared with Spanish market (multilingual packs). Early 2011 it was decided to supply all products from the Spain distribution center, which was supplied from the above mentioned plants. Transportation cost slightly increased, but the delivery lead time for most products was reduced from 15 to 5 days. The Euro crisis in 2011 and 2012 brought a situation of huge volatility and forecast accuracy dropped from 40% to 32% (worst in the company by far). However service level (OTIF in cases) increased from 92% to 96% (and continued

improving afterwards). Incremental sales, thanks to these improvements, clearly outweighed the additional investment in transportation.

#### **D) Postponement**

Another strategy that drives efficiency and agility is the planned use of inventories with a decoupling point at the latest possible step of the process, until where we can work with common SKU's and beyond which differentiation is required and complexity soars (postponement). I.e.: It is possible to manufacture just one product for global markets, keep it without market label and postpone the labeling process until the very last moment, when the demands of the different markets are more certain.

#### **E) Elimination of bad complexity**

Supply Chain, by definition, has to manage the complexity generated by our sales and marketing colleagues, and market dynamics. But this that is complicating our life can be essential for the company growth and part of the competitive advantage. The key is to detect and dissect which part of the complexity is not adding value, that it exists just due to lack of internal coordination or because there has not been enough simplification focus. A clear example that applies to most companies the size of line. What should be the right assortment offering? What is the value added by the tail? A way to fight non-productive sku proliferation is to agree a set of "Rules of the Road" that defines certain volume and profitability hurdles new products must meet before launching and a solid process, approved by top management, to discontinue them easily. Consider also the standardization of components, with as many as possible common ones for the manufacturing of different final products. It does not reduce a carried offering to consumers but it does a lot to the number of internal codes. That is what the automobile industry is doing, with big holdings grouping several car brands. They began sharing the same frame for cars of different brands under the same group. Now they go beyond than and they have standardized the joint positions and fixing mechanisms of major sub-structures, like frame and engine. Therefore with fewer engines and frames in the group they are able to offer more options to consumers.

#### **D) Fix assets investment decisions**

One the factors that can limit agility the most is to have done big investment in assets with long depreciation periods. Here, not following basis principles like NPV (net present value) or reasonable IRR (internal return rates) of the investment, justified as "strategic project" is very risky. The payback period must be taken into account. Not always automating until the last process is the best solution. Often "semi-automation" serves a very good balance between excellent operating costs and flexibility to adapt the installation to changing needs. The same apply to long rent facility contracts. Obviously you can get better prices if you sign for many years, but... when the conditions have changed, how much does the possibility to change location worth?

#### **E) Outsourcing decisions: "Buy" or "Make"**

They are of vital importance. Just take the case of IBM when they decided to outsource the operating systems and microprocessor of their new PC. But doing everything "in house" can be very slow too and you risk not taking advantage of the capabilities of your vendors and suppliers. The key is to choose carefully which activities to outsource, the type of control kept on them and negotiating power shifts these decisions create. When done properly, outsourcing is a very good way to gain agility, not only to enter into new activities but also to have an easier exit.

## 5. Agile vs Lean

There is much literature that helps us to identify when to use an agile or lean approach. But , both philosophies are not incompatible and complement each other very well. It can come from a misconception of the lean methodology, identifying it with the pure reduction of operating costs. In fact, its fundamental principles are: a) elimination of all waste that does not add value in the eyes of the customer and b) empower front line employees to drive continuous improvement. What creates value in the eyes of a customer is not a static concept. Therefore being able to sense and detect what our customers value now and translate it into new products and processes quickly is at the heart of both methodologies. Good front line employees, equipped with solid lean concepts and behaviors, will be of invaluable help to reassign resources quickly to the areas where more profitable opportunities arise.

## 6. Agile corporations require agile supply chain.

If we consider which are the most agile supply chains in the industry, it is easy to observe that they almost always respond to a business model need, at a higher level company strategy. Decisions often increase the cost of manufacturing or distribution versus other options, but they put the company in a scenario of superior competitiveness, they add value which consumers are ready to pay for. Sure Inditex could deploy its products to its worldwide network of shops cheaper than using airfreight. It is key to understand that this agile supply chain is designed to serve a very specific business model: have the cloth that consumers like available in each shop (due to super-fast replenishment).

Establishing a really agile operation will require to make tough decisions, with the support of the top executives. Therefore, it will be very difficult this to happen if it is not seen as a priority to drive the broader strategy of the company. It is the responsibility of the supply chain professionals to sense and detect how to create commercial value and demonstrate that operating with agility will contribute towards sales increases and profitability.

### Idea in brief:

Gaining agility in the supply chain operations is clearly a need nowadays. I have mentioned several ways and tactics to achieve it, but what is really important is that companies use it to gain competitive advantage. It has to be in the company culture and has to be embedded in the strategy set by top executives. Then, each firm has to find the best way to execute it, according to its own business reality.

Antonio Mansilla