

Prof. Janet Godsell, Thriving in a Turbulent World: The Power of Supply Chain Segmentation - The basic principles that every Executive should know (2012) Cranfield School of Management

Thriving in a Turbulent World: The Power of Supply Chain Segmentation

The basic principles that every Executive should know

Prof. Janet Godsell

In their pursuit to survive the fierce competition created by the global economic down turn businesses face the apparently conflicting challenges of driving growth through innovation whilst simultaneously reducing costs. Porter's view of competing either through cost leadership or differentiation is replaced by the need for cost leadership and differentiation. This business challenge has direct impact on the supply chain (SC). Whilst it has been long recognised that 'one size does not fit all' businesses have been slow to adopt the principles of SC segmentation critical for the simultaneous delivery of cost leadership and differentiation.

The concept that has been influencing business since Fisher's seminal Harvard Business Review article in 1997 is finally coming of age. It has been a recent feature of the Gartner Supply Chain Executive summits and was cited in a recent study by Crimson & Co. as one of the top 4 challenges for the supply chain. It is also a hot topic for the strategy consultants, though McKinsey favours the terms 'splintering' to segmentation. Based on 10 years of research and consultancy, this report explains the need to build for business alignment and the role supply chain segmentation plays in maintaining business alignment in a turbulent world.

Building for Business Alignment

The ultimate goal of a publicly listed company is to deliver a sustainable return to its shareholders. It does so through its business strategy which is typically a mix of sales growth and cost reduction targets. The traditional cascade of strategy typically assigns the sales growth targets to the domain of marketing, and cost reduction targets to the supply chain.

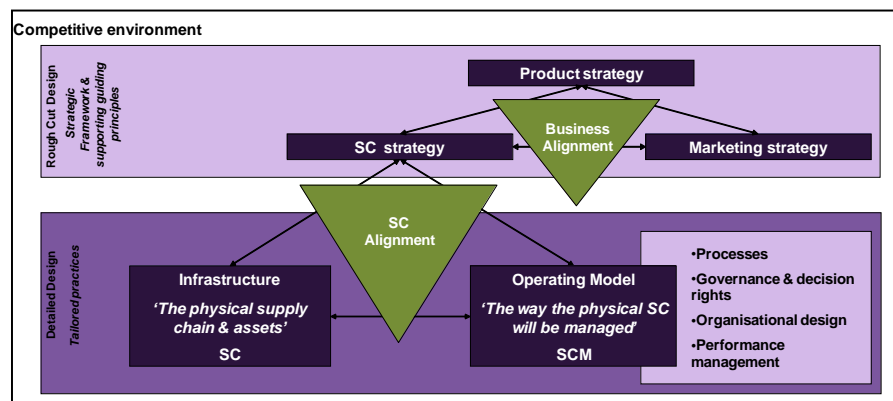


Figure 1: Business Alignment Model

Such approaches tend to lead to the pursuit of marketing and supply chain targets in isolation and the long term erosion of shareholder value. As illustrated in Figure 1, business alignment seeks to ensure congruence between the product, marketing and supply chain strategy. Market opportunities are identified by understanding the competitive environment and translating this into a customer value proposition through the product and marketing strategy. Competitive advantage is then achieved if the supply chain can develop a strategy to deliver this value proposition at the lowest possible cost. This could be considered as the "rough cut design" which depicts the strategic framework and set of "guiding principles" that provide the ground rules for the detailed supply chain design. Supply chain alignment is achieved when there is congruence between the supply chain strategy, the infrastructure (the physical supply chain and its assets) and the operating model

(the way the physical supply chain will be managed). This essentially determines the “tailored practices” through which the supply chain strategy is brought to life. It also helps to make the distinction between the supply chain and supply chain management. The supply chain being the infrastructure and supply chain management the way the operating model is used to manage the supply chain, in terms of processes, governance and decision rights, organisational design and performance management.

Maintaining Business Alignment: the Role of SC Segmentation

‘the holy grail of the supply chain is to find the stable demand’

The need for congruence between product, marketing and supply chain strategy is heightened in today’s turbulent world. It requires co-delivery of two potentially conflicting priorities: driving growth through innovation whilst simultaneously reducing costs. To successfully address this challenge the business needs to unite. No longer can the supply chain pursue cost reduction in splendid isolation. It needs to connect to the marketplace and ensure that the right supply chain strategy is developed to meet market needs. These needs are a fairly complicated mix of varying product and service requirements which the marketing community address through various forms of brand, channel and customer segmentation. Unfortunately these segments lack relevance to the supply chain. They can create confusion which typically manifests itself in what appears to be a variable and unpredictable pattern of demand. A situation exacerbated by the frequent promotions, brand extensions and new product launches designed to stimulate growth.

The problem with unpredictable and variable demand is that it costs. Either in reduced customer service (as orders are not fulfilled) or through increased SC costs. It also consumes management resource and creates a culture of short-termism and fire-fighting. The reality is that for many products consumer demand is actually stable. We are creatures of habit who tend to consume at a relatively constant or predictable rate. My work with consumer packaged goods companies has identified that typically 60-70% demand is actually stable. The Holy Grail for the supply chain is to find the stable demand. If you can identify and isolate the stable demand, you can maintain or increase customer service whilst removing the costly buffers (inventory, spare capacity, work in progress etc.) against uncertainty. You create a stable supply chain process that may account for up to 70% demand but require less than 30% of management effort. It creates the management headroom to focus on the truly variable or unpredictable products: the promotions, brand extensions and new product introductions critical to driving growth through innovation. Typically companies that adopt a segmented approach to supply chain strategy have between 2 and 4 segments depending on the nature of their supply chain. But how are these segments identified?

SC Segmentation: Getting Started

A major inhibitor to the more widespread adoption of SC segmentation is the confusion caused by the vast array of complicated models presented by consultants and academics to address the issue. A problem exacerbated by confusion as to who the customer actually is? Is it the consumer, the store, the regional warehouse or end market? The problem becomes so complicated that organisations don’t know where to begin. The key is to start simple and only get more complex if required. As obvious as it may sound this has been a major enabler in the organisations where segmentation has been successfully implemented.

‘Start simple. Only get more complex if required’

The 7 steps to developing a segmented supply chain are:

1. Map out the end-to-end supply chain (also called value chain) to provide visibility across the business.
2. Identify the scope or 'arc of integration' that the supply chain organisation should actively manage.
3. Identify the primary customer base for the supply chain organisation. This is the customer base at the end of the 'arc of integration'.
4. Identify the customer demand signal to which the supply chain will respond, the decoupling point and hence where strategic inventory will be held to buffer against demand: supply variability.
5. Conduct a demand profiling analysis. This is a basic two by two plot of demand volume vs. variability (the coefficient of variation)¹ for each stock keeping unit (SKU) within a defined region, market or category.
6. Identify the key supply chain segments.
7. Develop tailored practices for each segment for each of the functions involved.

The first four steps can be summarised in a simple diagram of the end-to-end supply chain as illustrated in figure 2. This is an example for a global CPG company. The primary customer for their supply chain was the 180 end markets that they served and this is the demand signal for the supply chain. The decoupling point was at the end market warehouse where strategic inventory was held.

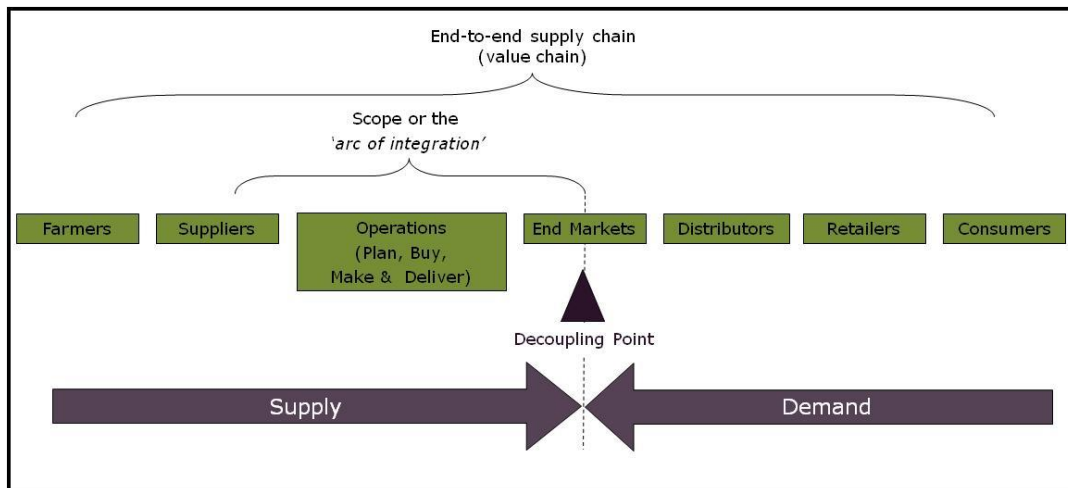
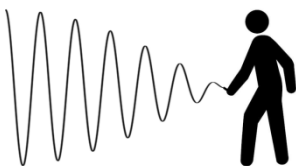


Figure 2: The End-to-End Supply Chain for a CPG Company



Its main purpose is to provide clarity and a common understanding across the business which aids communication. Rhetoric suggests that we should manage our supply chains end to end and respond directly to end consumer demand. Why? Because of the bull-whip effect (The final customer places an order and order fluctuations build up upstream in the supply chain). The reality is that unless you are actually in direct contact with consumer demand (i.e. own the retail outlet) this is extremely difficult.

Leading practice has shown that organisations with a track record in implementing segmented supply chains have just started with the actual demand signal that they receive from the customer (it is the one they need to respond to) and accept that it is likely to be subject to the bullwhip effect.

Once the correct signal has been identified it is then possible to do the demand profiling analysis. Experience has shown that it is best to start simple with a volume: variability analysis for the SKUs in a given region, end

¹ The coefficient of variation is the ratio of the standard deviation to the mean

market or category as illustrated in figure 3. This is an example from a global CPG company who identified the category level within a region as the most appropriate level at which to begin the analysis.

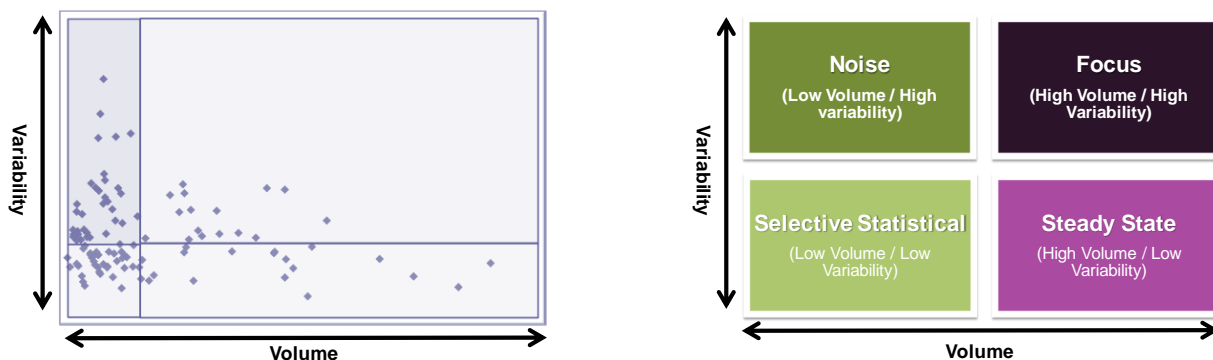


Figure 3: Demand profiling to identify SC segments

Where to ‘draw the lines’ to determine the segments is a decision specific to each organisation. In this example it was based initially on a simple 80:20 Pareto on volume (high: low) and 50:50 split on variability. The most important thing is that the ‘lines are drawn’ in a way that is meaningful to the organisation.

The final step is to develop the tailored practices for each of the identified segments as illustrated in figure 4. This involves creating the supply chain for each segment by identifying what each function needs to do to contribute to its success. Tailored practices cannot be copied and pasted from one organisation to another. They need to be developed to meet the specific organisational context.

Function	Tailored Practices			
	Steady State	Selective Statistical	Focus	Noise
Sales	Minimise promotions	Avoid promotions	Drive volume through promotion in close collaboration with customer	Avoid promotions and validate why a SKU is in the portfolio
Marketing	Build SKU base	Increase volume base and consolidate SKUs	Build flexibility into the portfolio	Reduce SKU complexity
Planning	Statistically forecast	Statistically forecast	Manual forecast based on past history	Collaborative forecast with customer & commercial teams
Manufacturing	Minimise production cycle and production costs	Minimise / maintain production cycle	Maximise agility with a must respond mentality	Make to order
Procurement	Focus on quality and cost	Focus on quality and cost	Minimise order lead time	Cover variability with inventory

Figure 4: Tailored practices to create the supply chain segments

Enabling SC Segmentation

Identifying the segments and tailored practices is relatively straightforward. The difficult part is making it happen. It is essentially an organisational change that needs to be underpinned by all the good principles of project and change management. In addition there are 5 specific enablers that will accelerate implementation.

5

Enablers

1. **Owned by the board**
2. **One owner of demand and supply planning**
3. **Clear benefits to individuals**
4. **Simple communication**
5. **In-house data analytics capability**

1. Owned by the board

SC segmentation is an integral part of business strategy and ownership has to reside with the board. It must not be seen as a supply chain initiative, but part of the broader business strategy.

2. One owner of demand and supply planning

One of the biggest tensions that can exist within an organisation is between the commercial and supply chain teams. The tension is predominantly fuelled over issues with balancing demand and supply, given that failure to do so is costly to the business either in lost sales or excess and potentially obsolete inventory. One way to resolve this tension is to create a single planning function that is responsible for all demand and supply planning.

3. Clear benefits to the individuals

Employees on both the commercial and supply chain side of businesses are notoriously over worked. The thought of any additional work that a new initiative might bring is not very attractive. The reality is – segmentation should reduce their workload. Make this benefit clear to them. For instance, 'How would you feel if you only had to forecast 15% of the SKUs'. A quantified statement of how much easier it will make their job is a powerful selling tool.

4. Simple communication

Supply chain professionals can be fixated on technical solutions and numbers. In terms of effective communication across the business this is disastrous. The key to effective communication is to keep it simple. Create a compelling story with relatively few words and numbers that employees across all functions can relate to. Avoid technical words that may be pre-laden with meaning. Most importantly ensure that the benefits both to the business and the individual are clear. A good test is to test your communication pack with a teenager. It needs to be simple enough for them to understand.

5. In-house data analytics capability

Having some people (typically 1-3) as part of the planning team that are seriously good at maths and data analytics is a significant enabler to the implementation and on-going support of a segmented supply chain strategy. It helps initially with the analysis to position the SKUs. It also provides a resource to develop the tools that will enable SKUs to be tracked on an on-going basis and the decision support necessary to monitor SKUs and ensure changes in their segment is recognised and action taken by all across the business.

Next steps

If you are a business faced with the dual challenges of reducing cost whilst building the capability for growth through innovation then supply chain segmentation has to be a serious consideration for your leadership team. If you would like to find out more about the work that WMG conducts in this area please contact the author at j.godsell@warwick.ac.uk.

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