Vertically and horizontally integrated supply chains

Introduction

Vertically and horizontally integrated supply chains are supply chain management strategies adopted by companies to take advantage of synergies in their value chain to achieve more profits and competitive advantage (Naslund & Willamson, 2010). Effective supply chains are critical to the success of organisations operating in global multifaceted environments as well as organisations seeking to achieve optimal efficiency and customer satisfaction (Lambert, 2008). An increasingly competitive and interconnected global environment means that successful performance depends on the collective decisions and actions of all members of a supply chain rather than that of a single member and competition is increasingly between supply chains rather than between individual firms (Naslund & Willamson, 2010). Hence, organisations are faced with the challenge of making decisions regarding appropriate supply chain strategies that will deliver their objectives based on their capabilities, needs and circumstances. Vertical and Horizontal supply chain integration are two such strategies that enable companies to manage their organisations and their relationships with other companies in the same supply chain/value chain (Hill & Jones, 2012).

From a supply chain management perspective, vertical and horizontal integration aim to achieve cost savings, higher profits, greater efficiency and customer satisfaction by improving supply chain processes and performance through value-adding investment and activities that benefit all supply chain members (Stonebraker & Liao, 2003). For example, achieving cost reductions, improved performance and better target market access as a result of eliminating redundancies/duplications, lowering inventories, shorter

lead times, greater control over supply and distribution, access to partner networks and lower fixed costs (Mentzer et al., 2008).

This essay will discuss and analyse key similarities and differences between vertically and horizontally integrated supply chains, highlighting the key issues and the scope of organisational departments involved.

Supply Chain Management (SCM)

Simchi-Levi et al. (2008) defined SCM as integration strategies aimed at coordinating functions across suppliers, manufacturers, distributors and retailers to ensure that products and services are produced and distributed at the right volume, location and time with the aim of reducing operational costs, maximising profits and ensuring satisfaction across the supply chain.. Vertically and horizontally integrated supply chains are SCM strategies introduced in the early 1980s with roots in the logistics literature.

Supply Chain Integration Strategies

Supply chain integration strategies are network-based business models used by organisations to align strategic decisions and processes across the network from supplier/manufacturer end to the customer end in order to achieve competitive advantages, synergy and efficiency in their operations as well as to gain more control in the input and output of their operations (Hill & Jones, 2012). Network-based business models are organisational structures that allow companies to operate as interconnected configurations across its value chain usually consisting of partnerships, collaborations and optimised cross-organizational activities (Mentzer, 2008).

Vertical Integration

Vertical integration is a coordination strategy in which a company owns its supply chain by incorporating supplier and/or distributor supply chains in its operations strategy or by expanding its operations to perform activities traditionally performed by suppliers and distributors (Hill & Jones, 2012). This strategy helps organizations to ensure high levels of control and to avoid the " hold up" problem, a situation in which an organisation's contract with another party in its supply chain results in delays and loss of profit due to delays, non-performance of contract or imbalance of bargaining power between the 2 parties (Hill & Jones, 2012). The Ford River Rouge Complex, an automobile factory built by Henry Ford in 1927 is a good example of a vertically integrated supply chain providing economies of scale and ensuring high levels of control in the supply and production process – Iron ore and coal from Ford owned mines arrived on Ford freighters to produce Ford steel. Ford also owned its timberlands, glass plants, rail lines and rubber plantation, which helped to ensure efficiency, availability of necessary components as well as control over inputs and outputs (Slywotzky, 1996).

A vertical integrated supply chain can be implemented to varying degrees, broadly classified into 3 categories:

1. Backward vertical integration, in which a company owns subsidiaries that produce the inputs/components used in production. For example, the Ford River Rouge Factory with its own timberland and glass making companies (Slywotzky, 1996).
2. Forward vertical Integration in which a company owns or controls its distribution centres and/or retailers, thereby having direct contact with

customers at the bottom of the value chain. For example, airlines performing the traditional roles of travel agents (Hill and Jones, 2012).

3. Balanced vertical Integration in which a company implements both backward and forward integration by owning/controlling its supply, production, marketing and/or retail centres. Apple is a good example of a company implementing balanced vertical integration by owning their own data centres, manufacturing equipment to produce their own chips and other proprietary components, as well as their own marketing and retail stores, content platforms and support centres (Hill and Jones, 2012).

As a strategic tool, a vertically integrated supply chain can provide companies with solutions to mitigate or remove the threat of powerful suppliers, decrease bargaining powers of suppliers, distributors and customers as well as reduce transaction costs. When properly implemented, a vertically integrated supply chain can help companies achieve competitive advantage and higher profits through economies of scale and scope (Fresard et al., 2014).

Horizontal Integration

Horizontal Integration is a single industry SCM strategy whereby companies seek to achieve competitive advantage and profitable growth through value creation activities that are focused on a single business or industry, for example, McDonald’s with its focus on global fast-food business and Walmart, with its focus on global discount retailing (Hill & Jones, 2012). A horizontally integrated supply chain is a business model whereby companies acquire or merge with industry competitors to achieve competitive

advantage through economies of scale and scope (Fresard et al., 2014). For example, Boeing merged with McDonnell Douglas to create the world's largest aerospace company, Pfizer acquired Warner-Lambert to become the largest pharmaceutical company (Hill and Jones, 2012)

This SCM structure provides the advantage of focus and scope, particularly in fast growing, dynamic industries where companies are required to focus substantial resources and capabilities on competing in one area in order to achieve long term competitive advantage (Lambert, 2008). Technological advancements, changing customer needs, fierce competition and low levels of entry barriers are common features of horizontally integrated supply chains. Due to changing customer needs, new competition and the pace of change in such industries, companies often find it difficult to sustain competitive advantage without changing/adapting their business model (Juttner et al. 2010). For example, with the advent of wireless telephone service and the likes of SKYPE, companies like AT&T had to quickly adapt their business model and join forces wireless companies that provided them with the capability to start offering broadband and wireless services. Its merger with Time Warner and Comcast enabled AT&T's competitive positioning and its relevance in the changing world of telecommunications (Hill and Jones, 2012).

A successfully implemented horizontal integration strategy can increase a company's profitability due to reduction in cost structures as a result of (Hill and Jones, 2012):

- Economies of scale, particularly in industries with high fixed cost structures;
- Increased product differentiation due to the combined product lines from merger or acquisition which enables the company to be able to offer product bundles and innovative new products to customers at different price points;
- Replication of the business model due to the ability to leverage the increased product differentiation and lower cost structure achieved through horizontal integration to replicate the business model in new market segment, for example Walmart using its low-cost discount retail business model to enter into the warehouse and supermarket segments in the US as well replicating the model globally as by acquiring supermarket chains in several countries;
- Reduced industry rivalry, as excess capacity is eliminated in the industry through acquisition or merging of competitors which results in more stable price environments and the elimination/reduction of price wars;
- Increased bargaining power due to the consolidation of the industry resulting in companies that are a much larger buyer and hence wield a level of leverage or " buyer power" which can be used to drive down the price it pays to suppliers. Walmart is a good example of a horizontally integrated supply chain with bargaining power advantage.

Horizontal integration has limitations that are worth noting and guarding against. Similar to vertical integration, horizontal integration is a complex and difficult strategy to implement. For example, it is difficult to successfully

merge companies with very different corporate cultures and where the merge/acquisition is a hostile takeover, it often results in high staff turnover and loss of much needed talent and expertise hence resulting suboptimal benefits or downright failure. There is also the risk of failure or penalty due to antitrust laws when companies attempt to use horizontal integration to become a dominant industry player as these laws exist to ensure fair trading and prevent companies from using their market powers to prevent competition.

Vertical and Horizontal Integration – Key issues to consider:

Similarities

Vertically and horizontally integrated supply chains are usually complex and capital intensive to implement. Both are also similar in the sense that they are business models that are aimed at optimising value chain processes and performance in other to achieve competitive advantage through economies of scale and scope. However, organisations need to consider several factors to ascertain the right strategy and whether it will be a profitable investment, including (Fresard et al., 2014):

1. Are there economies of scope to make it cheaper for the company to own or control subsidiaries involved in the supply and production of its inputs and outputs?
2. Is there need to establish entry barrier in the industry or obtain monopoly power by controlling the value chain in order to have competitive advantage?

3. Is it cheaper overall for the company to perform the role of suppliers and distributors than to conduct business with arm’s length suppliers and distributors?

Differences

Companies pursuing vertical integration may also pursue horizontal integration and in fact many do. However, the underlying principles and the operational implications of implementing both strategies have very clear differentiators.

In a vertical integration, the company enters new industries to support the business model of its core industry, whereas in a horizontal integration, the company competes in a single industry but expands through mergers, acquisitions and strategic alliances/collaborations. Vertical integration is more closed/proprietary model compared to horizontal integration which is more open because of the involvement of partners and the need to cooperate/collaborate. The differences in the operational implications include (Hill and Jones, 2012):

Vertical integration	Horizontal integration
More control through ownership	Less control due to dependen

of the value-adding stages.	ce on others cooperation.
The vertically integrated company reaps the higher benefit.	Benefits are from the success of everyone in the value chain
Efficiency over flexibility	Flexibility over maximum efficiency
Intensive capital required to create, produce, and distribute all	Lower capital requirements due to shared ownership.

componen
ts of the
end
product.

Departmental Functions

One of the challenges faced by organization in managing their supply chain is that of integrating internal functions as well as the entire supply chain (Christopher & Juttner, 2000). Understanding the supply chain begins with understanding internal processes as this directly impacts performance. From a supply chain perspective, key internal processes include (Pagell, 2004):

- Purchasing, responsible for buying process inputs
- Operations, responsible for the transformation of raw materials into final outputs
- Logistics, responsible for the management of processes involved in the production and delivery of outputs to customers

The key task in managing these functions is to ensure a process of interaction and collaboration in which purchasing, operations and logistics work together to achieve the mutual objectives of the supply chain.

Stakeholder Management

In vertical integration, the proprietary nature of the investment creates a more closed/not very trusting approach in the interaction with partners as the organization will seek to protect its trade secrets/intellectual property. In horizontal integration however, companies adopt a more open and trusting

approach with partners, as this is integral to the success of their business model (Hill and Jones, 2012). For example, Microsoft and Google have adopted a more open approach to working with partners in their values chain as the success is achieved collaboratively and through open source platforms. Apple on the other hand operates a proprietary model, which tightly protects its intellectual property through its vertically integrated supply chain (Pomfret & Soh, 2010).

Conclusion

The decision between vertical or horizontal integration will determine an organisation's operating strategy and the supply chain dynamics in terms of how functional departments and stakeholders interact. The challenge is to analyse how new emerging technologies will impact their business models, how and why these technologies might change customer needs and customer groups in the future, and what kinds of new distinctive competencies will be needed to respond to these changes (Hill and Jones, 2012). In the end it is all about what is right for the organisation in terms of its objectives, capabilities and customer value proposition and how that can be achieved efficiently and profitably.

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