CIPS KNOWLEDGE

Future Supply chains

In our industry the competitor that's best at managing the supply chain is probably going be the most successful competitor over time. It's a condition of success (Jim Owens, former chairman and CEO of Caterpillar)

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01 CPD HOURS

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Future supply chains

Introduction

There has been a rise lately of interest in the evolution of supply chains which is driven by the advancements in technology, by the creation of operating ties among participants and through the use of inter-organisational forms (Hoppe, 1999). Some of the generally anticipated short- term characteristics of the future supply chain are: multi-partner information sharing among key stakeholders, collaborative warehouses and collaborative transport capabilities, ware- house locations on the edge of cities will be turned into hubs and cross-docking will take place for final distribution, non-urban areas will have regional consolidation centres in which products will be cross-docked for final distribution and final distribution will take place via consolidated deliveries using efficient assets (GSI & Capgemini, 2008). More generally, the future will be characterised by a quick change in relative attractiveness of manufacturing locations and by the ability to produce large volumes economically (Malik et al., 2011).

Most of the current supply chains were designed to operate in a stable, high-volume production environment by capitalising on the labour opportunities available in low-cost countries (e.g. China, India). Their structure means that companies are ill-equipped for the future. Some of the elements identified as important in future supply chains are visibility, collaboration and coordination. Other key elements that will need to be taken into account are cost containment, risk management, customer intimacy, globalisation as interconnectedness among supply chains (IBM Institute for Business Value, 2010), flexibility, adaptability and resilience (Sullivan,2008).

A few organisations have already been making adjustments and structural changes to successfully face the future. First, such pioneering organisations have been 'splintering' their traditional supply chains into smaller and nimbler ones to prepare them for higher complexity levels. Second, some organisations reconfigure their manufacturing footprints to weather a range of potential outcomes and treat their supply chains as hedges against uncertainty (Malik et al.,2011). In addition, organisations can call in action retailers, manufacturers, logistics service providers, government bodies and shoppers to rethink supply chains and establish new ways of working together (Ridder and Hagedorn, 2008).

Definition

Supply chains of the future can be characterised by the three major traits:

1. They are strategic
2. They are dynamic; and
3. They are customer-driven (Melnyk et al., 2006).

Successful Application

Creating future supply chains requires managers to align their supply chain strategies with changing business strategies. In order to execute those strategies, managers need to innovate and make the supply chain more sustainable, flexible and responsive through increased instrumentation, interconnection and intelligence. Moreover, transition to an innovative form of supply chain for the future must be seamless and without operational interruptions or performance gaps. Given that it is a strategic balancing process, it further requires talented leadership and additional effort from within the company (Melnyk et al., 2006).

Steps to Successful Application

- Establish a buy-in on the vision from a group of key stakeholders (e.g. retailers, manufacturers, governmental bodies, customers).
- Check the progress and success of the business case for a future supply chain by including the key stakeholders.
- Pilot the general framework and concept on which the future supply chain shall be based. Evaluate the potential implementation and share learning from this evaluation.

Ridder and Hagedorn (2008)

Hints and Tips

- Innovative forms of supply chain require focus on a more strategic approach and key sup- plier collaboration (Hales et al., 2011).
- Key customer collaboration should have a more strategic rather than tactic perspective (Min and Zhou, 2002).
- When considering future supply chains, key partner management should be centrally positioned in the company's strategy (Hales et al., 2011).

Potential Advantages

- Future supply chains are more agile, allow for more flexibility and a more rapid response to changing market conditions (Melnyk et al., 2006).
- Future supply chains are about efficient risk mitigation and management (Melnyk et al.,2006).
- Future supply chains focus on advanced synchronisation planning (internally and with supply chain partners), which can result in higher customer satisfaction due to better performance (Min and Zhou, 2002).

Potential Disadvantages

- Globalisation and interconnectedness create new skills requirements and require distinctive leadership talent (IBM Institute for Business Value, 2010).
- Innovative future supply chains may require increased sustainability efforts, for example, modifications in product design or packaging, further environmental considerations (IBM Institute for Business Value, 2010).
- Creating a future innovating supply chain system or adequately upgrading an old one can be costly and time-consuming (Hales et al., 2011).

Case Studies

The Army and Air Force Exchange Service uses collaboration as a means to build innovative supply chains. In 2007 the Service realised that tremendous synergies could be achieved through a shared services model with the Family and Morale, Welfare and Recreation Command (FMWRC), so the two organisations formed a team to examine procurement, distribution and transportation. This resulted in lower unit delivery costs via increased volume, eliminated needs to carry average inventory of about US$2.3m and reduced labour expense by US$800,000 (IBM Institute for Business Value, 2010).

Airbus focuses on visibility as a means to innovate supply chains. It was difficult for Airbus to track parts and other assets as they moved from supplier warehouses to one of its 18 manufacturing sites globally. To improve visibility, the company created a sensing solution to detect inbound shipments that deviate from their

intended path by using smart containers fitted with vital information tags. As a result, Airbus reduced carrying costs and containers by 8% and increased efficiency of parts flow (IBM Institute for Business Value, 2010).

Cisco considers prevention to be vital for building innovative supply chains. To improve overall resilience, the company created a supply chain risk framework that included a resilience index and a set of metrics related to recovery from events and crises. Each 'node' (suppliers, manufacturing partners, logistic centres) in Cisco's supply chain is responsible for tracking and reporting its 'time to recover' and ensuring recovery plans and capabilities are in place prior to any actual disaster (IBM Institute for Business Value, 2010)

Further Reading

Web Resources

Article on future supply chains: http://www.scdigest.com/assets/FirstThoughts/09-05-21.php

Building the supply chain of the future:
http://www.mckinsey.com/insights/operations/building_the_supply_chain_of_the_future

Books

Fourth Party Logistics: The Future of Supply Chain Outsourcing, S. Kutlu, ISBN 978-1846930577

Supply Chain Cybermastery, John Gattorna & Andrew Berger, ISBN 978-0566084133

The Shipping Point, Peter Levesque, ISBN 978-0470824535

Future Trend in Supply Chain Practices in Cement Industry, Rameshwar Dubey, Sadia Samar Ali & Saurabh Tiwari, ISBN 978-3847320906

Understanding Supply Chains – Concepts, Critiques and Futures, Steve New & Roy West- brook

References

Hales, M., Perrilliat, P. and Bhardwaj, N. (2011) Key Supplier Collaboration: New Way to Drive Value. Supply Chain Management Review, July/August, pp. 50-51.

Hoppe, R. (1999) Outlining a Future of Supply Chain Management - Coordinated Supply Networks. [Online] Available at: web.mit.edu/supplychain/repository/network_hoppe.pdf [Accessed: 8 February 2012].

Malik, Y., Niemeyer, A. and Ruwadi, B. (2011) Building the Supply Chain of the Future. McKinsey Quarterly. January.

Melnyk, S., Lummus, R., Vokurka, J. and Sandor, J. (2006) Supply Chain Management 2010 and Beyond: Mapping the Future of the Strategic Supply Chain. Report prepared for the SSCM: 2010 and Beyond Workshop, Michigan State University and APICS E&R Foundation Henry Center, September.

Min, H. and Zhou, G. (2002) Supply Chain Modelling: Past, Present and Future. Computers and Industrial Engineering, Vol. 43, pp. 231-241.

Video

Future Supply Chain 2016:
https://www.youtube.com/watch?v=US5lO1HfmEo&feature=player_embedded