CIPS KNOWLEDGE

Supply Chain Visibility (SCV)

This knowledge paper is supportive of Procurement professionals operating at Professional level of the CIPS Global Standard

01 CPD HOURS

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Introduction

Francis (2008) defines SCV as "the identity, location and status of entities transiting the supply chain, captured in timely messages about events, along with the planned and actual dates/times for these events". The entity refers to any object moving through the chain. It can be an item, stock-keeping unit (SKU), a form of packaging (eg. cartons, packages, cases), an entire customer order, a form of encasement for the order (eg. a pallet, tote, returnable plastic container), a shipment (a collection of orders with a common origin and destination), a loading asset, for example, a container, trailer, railcar or uniform load device (for an aircraft), or a vehicle, such as a truck, train, ship, aircraft (Francis, 2008).

Along with connectivity, integration and responsiveness, visibility is one of the critical elements of effective purchasing and supply chain management (Lysons and Farrington, 2016). There are many reasons why visibility can be important. For example, a lack of visibility and control in supply chains can result in a reduced confidence that augments supply chain risk (Porasmaa and Ojala, 2011).

Most large organisations are reliant upon complex supply networks and recognise the need for strategies to improve end-to-end visibility and mitigate risks (Christopher and Lee, 2004). Without these strategies in place, reduced supply chain visibility can cause members to be reliant on forecasts and build up buffers which increase vulnerabilities and risks throughout the chain (CIPS: Supply chain vulnerability).

One of the benefits of increased SCV is its potential to reduce the bullwhip effect through active information sharing. Problems created by the bullwhip effect, which arises from uncertainty caused by distorted flows of information up and down the supply chain, can include excessive inventory quantities, poor customer service, cash flow problems, stockouts and high material costs, overtime expenses and transport costs (Lysons and Farrington, 2016).

Ultimately, information sharing as the basis of visibility and the flow of this information along the supply chain comes down to a series of decisions by multiple parties and stakeholders, and the relationships and trust that bind them together.

Definition

Supply chain visibility (SCV) refers to the ability of relevant stakeholders in the supply chain to have ready access to relevant, accurate, timely and meaningful information. It is the process of sharing usable and useful information to assist parties in the supply chain to make better decisions to mitigate risk (Porasmaa and Ojala, 2011).

Successful application

The lack of clarity on defining supply chain visibility has created a dearth of best practice advice for practitioners to follow. Thus Karen Butner, Supply Chain Management Lead for the IBM Institute for Business Value, prescribes a ‘service-oriented architecture’ (SOA) as the blueprint for supply chain visibility. Butner argues that a service-oriented architecture (SOA) technology strategy can provide "better and faster business change and responsiveness".

The IBM model covers end-to-end supply chains which include flows of product, process, information, cash and capital equipment between suppliers/manufacturers and their customers and channels (e.g. stores, brokers). Thus, Butner’s approach considers the constituent elements of the supply chain, the chain in its entirety from end-to-end and is also customer- and competency-focused (Hines, 1993). Some other

approaches to defining supply chain visibility are considered in Christopher and Lee (2004) and Porasmaa and Ojala (2011).

Steps to successful application

1. Start with a pilot study.
2. Assess the company's operations capabilities.
3. Keep only the most significant events and do not add events that are difficult to monitor.
4. Establish implementation group and invite all users as members.
5. Maintain your schedules to keep more accurate estimates.
6. Mandate visibility in your contracts by making sure that the contracts with logistics providers stipulate that your organisation receives the data (regardless of which party directly controls the shipment).
7. Make sure the business group knows the project and has all the information to lead it.
8. Ensure that the data entered in the SCV system is consistent across logistics providers, shipment lanes, and inbound and outbound functions.
9. Manage organisational change and ensure that your transportation staff have the knowledge and capabilities to switch from administrative to analytical tasks.
10. Set expectations by ensuring everyone knows the system's limitations before it is running.

Ruriani (2006)

Hints and tips

Visibility is not about sharing information with all stakeholders in the supply chain, but only the information which is relevant and meaningful (Porasmaa and Ojala, 2011). If you are unsure about what information to share, assess whether the information is relevant, accurate, timely
and meaningful to assist those you have partnered with or who you collaborate with to make better decisions that will be beneficial for all parties (Porasmaa and Ojala, 2011).Careful assessment, planning and research is important to secure a low-risk supply chain visibility that can go a long way (Butner, 2007).

Potential advantages

- SCV is important for auditing environmental and ethical compliance (Stanford University SER Conference, 2010).
- Supply chain ‘confidence’ increases proportionately to the quality of supply chain information and visibility (Christopher and Lee, 2004).
- Increased confidence through enhanced visibility is important because without it, entities in the supply chain are likely to experience long pipelines and a build-up of buffers (Christopher and Lee, 2004).
- Assists Benchmarking- For effective Information gathering it is vital to have a huge range of data. Knowing the procurement function is world class in terms of functional capability is of little value unless you know the contracts you have in place with your suppliers are actually saving your organisation money. Knowing you have superior price points within your contracts is valueless, unless you know that people are using them. (Howes , C, 2008)
- Every £10 invested in e-procurement can help organisations achieve cost savings of £72, it has been claimed.(Allen, A 2018)
- Benefits derived from the integrated models include increased efficiency and savings, better risk management and greater client centricity. To capitalise on the ‘digitisation agenda’, companies want a highly integrated digital/IT strategy which focuses human intervention on value-add activities, while automating transactional compliance. (Booth, R, 2014)

Potential disadvantages

- SCV is a relatively new concept and some might argue that its conceptual meaning is underspecified. More rigorous academic work is certainly required to shape and more clearly define the concept so it has greater applicability for P&SM; professionals (Porasmaa and Ojala, 2011).
- To enhance SCV, information sharing requires trust in the supply chain partners. At the same time this kind of trust is not necessarily easy to build (Porasmaa and Ojala, 2011).
- Building trust incurs costs and so do the potential risks of information misuse in its various forms (Porasmaa and Ojala, 2011).

Performance monitoring

- Customer satisfaction: percentage of deliveries received in full and on time (CIPS: How do we measure up?).
- Strategic alignment: visibility of a formally documented procurement strategy/percentage of objectives linked to business strategy / percentage of procurement time spent on global and enterprise-wide focus (CIPS: How do we measure up?).
- Technology integration: percentage of requests for information/proposal/quotation (RFI/RFP/RFQ) communicated electronically to potential suppliers/percentage of companies where information on spend analysis is available companywide/percentage of purchase orders approvals done online (CIPS: How do we measure up?).
- A post-contract audit: can be conducted one year after a contract has been let. This assists purchasing and supply management professionals and their Sourcing Board in learning from the experiences and assessing commercial arrangements (CIPS: How do we measure up?).
- Error rates: percentage of transactions requiring correction after being processed (CIPS: How do we measure up?).
- Technology will give you intelligence from the contracts and drive most value for your company." Research from Emptoris found companies using technology to manage their contracts are 1.38 times more likely to avoid penalties for non-compliance with contract terms. It also found on average, poor or inefficient contract management can reduce a company's bottom line by 9.15 per cent. (Reynolds ,A 2012)
- Transforming contracts into data and analytics should be at the forefront of a company. (Reynolds ,A 2013)Supplier incentivisation - relevant outcomes need to be specified and linked to supplier payment to offer incentives for achieving desired performance and to foster incentive alignment. This also presupposes the development of reliable systems of collecting and analysing related data in combination with measuring and reporting performance. (Roehrich, J , 2014)

Case studies

Mission Foods, a large processor of tortillas with operations in Mexico, Central America and US, developed and set a number of transportation procedures and technologies to provide supply chain visibility. Over the first few years the company achieved $5.3m savings based on the cost per pound benchmarks originally established. In addition, net sales grew by 6% and transportation costs were reduced by almost 13% (Penske, 2010).

Boeing 787 Dreamliner launched in July 2007 and, marked by 710 aeroplane orders from 50 companies, became the most successful airline launch ever. The relationship with 70 company suppliers responsible for almost 70% of all parts and assemblies was built around supply chain visibility, which embedded trust that suppliers were able to perform detailed engineering and testing on many of the supplied components (Wisner et al., 2008).

In collaboration with its key suppliers, Intel Corp. developed production facility capacity models along the company's semiconductor supply chain. Holding access to these models in the strictest of confidence, Intel better handles bottlenecks and annually saves tens of millions of US dollars, while suppliers benefit from more accurate forecasts (Shirodkar and Kempf, 2006).

Jaguar-Land Rover- A cross-department team worked together on total cost of ownership of parts and saved €48m. The project at JLR was to calculate total cost of ownership (TCO) of exhausts, wheels, tyres, seats, instrument panels, doors and headliners for two new Jaguar models.

The project brought together teams working in production purchasing and engineering, logistics and manufacturing, embedding better communication and a better understanding of the impact of each team's decisions. A complex Excel-based cost model gathered data supplied by the purchasing, logistics and manufacturing teams, factoring in budgets and operational realities.

The teams supplied granular data ranging from individual component piece prices, to trailer fill, to line feed strategy. The model's greatest advance was not just collating these but linking them together to calculate the impact throughout the value stream. (Ellinor, Tyler, R, 2016)

Further reading

Web Resources

- Supply chain visibility case example http://www.supplymanagement.com/news/2006/supply-chains-vulnerable-says-survey/?locale=en
- Why visibility matters in the supply chain http://www.mhi.org/media/news/7960
- Supply Chain Visibility Best Practices http://www.supplychainvisibility.org/
- Supply chain visibility and collaboration http://www.scdigest.com/assets/newsviews/11-01-24-1.php?cid=4125
- What is supply chain visibility and why is it important?
- http://www.businessofgovernment.org/blog/strategies-font-color-redcut-costsfont-and-improve-performance/visibility-part-1-what-supply-ch

Print Resources

- International Supply Chain Management and Collaboration Practices ISBN 978-3844100716
- Supply Chain Redesign: Transforming Supply Chains into Integrated Value Systems (Financial Times Prentice Hall Books) ISBN 978-0130603128
- Supply Chain Risk: A Handbook of Assessment, Management and Performance (International Series in Operations Research & Management Science) ISBN 978-0387799339
- The Supply Chain Handbook ISBN 978-1930426030
- Principles of Supply Chain Management: A Balanced Approach ISBN 978-0324657913
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- CIPS: How do we measure up?

- CIPS: Supply chain vulnerability.
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- Reynolds ,A (2013) Experts reveal contract management tips Supply Management March
- Roehrich, J et al (2014) Performance principles Supply Management Oct
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- Wisner, J.D., Tan, K.C. and Leong, G.K. (2008) Principles of Supply Chain Management: A Balanced Approach. South-Western.

Video

Forbes interview on visibility in the supply chain.
https://www.youtube.com/watch?v=MOHlehH2ehM