

Supply Chain Operations Reference Model (SCOR)



One of the most recognised methods for integrating supply chains and measuring trading partner performance is use of the Supply Chain Operations Reference model (Wisner et al., 2008).



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Introduction

The SCOR model was developed by the management consulting firm PRTM and was endorsed by the Supply-Chain Council (SCC) as the cross-industry standard supply chain management diagnostic tool. The tool can help companies understand, describe and evaluate supply chains within and between all parties and provide a generic framework for measuring supply chain performance and identifying areas for improvement (Allnoch, 1997). The model can be used worldwide regardless of industry or location and was designed to provide organisations with a common language to discuss supply-chain issues, develop benchmarking measurements and give direction to the development of supply chain management software (Saccomano, 1998). SCOR features an intentionally broad scope and definitions that can be adapted to the specific supply chain requirements of any industry or application (Husby, 2007).

The SCOR model uses five key aspects to describe any supply chain: plan, source, make, deliver and return (Venkataraman and Pinto, 2011). The model also includes three levels of process detail. Level 1 defines the number of supply chains, the way their performance is measured and competitive requirements. The configuration of planning and execution strategies in material flow are defined at Level 2 by using standard categories (e.g. make-to-order, make-to-stock, engineer-to-order). Level 3 defines system functionality and business processes in relation to purchase, work and replenishment orders, return authorisation and forecasts.

Another two levels have been added to the process, but have not been formally included in the model. These can refer to improvement implementation, process management, or software configuration detail (Bollstorff and Rosenbaum, 2011).

Two additions have been made to the SCOR model: the customer chain operations reference model (CCOR) and the design chain operations reference model (DCOR) (Bollstorff and Rosenbaum, 2011).

Definition

Supply chain operations reference model (SCOR) is a consensus model that assists companies in evaluating the supply chain performance of the extended enterprise. It helps companies to identify weak areas, develop improvement solutions, define common supply chain management processes and match these with best practice, benchmarked performance measures and use of software (Stewart, 1997; Husby, 2007).

Successful application

Many researchers and practitioners agree that although the SCOR model is useful, it is often limited in its application because it fails to 'model the interfaces between trading partners and because ... [it] ignore[s] product development processes (Huang and Mak, 2000). The Supply Chain Council also identified that the model has deficiencies in relation to asset recovery, maintenance, repair and customer service. These factors contribute to relatively low levels of implementation reported (Stedman, 2000; Power, 2005).

Steps to successful application

1. Analyse the basis of competition to understand the current situation of the company under investigation. This can be done by the use of SWOT analysis

2. Configure a company's supply chain material flow by capturing and redesigning it. Material flow can be captured by showing the location of supply chain members on a map including the Level 2 process.
3. Align the performance levels, practices and systems of the company's information workflow.
4. Implement the supply chain processes and system changes based on the design.

CCS (2005); SCM Operations

Hints and tips

- Before the SCOR model can be used for risk assessment, there should be a risk management programme already in place (Harrington et al, 2010).
- When implementing SCOR it is important to ensure that implementation/deployment teams have a good understanding of the designs. In addition, it is essential to establish detailed requirement documentation and integrate team members in deployment teams where possible (Francis, 2010).
- For successful application of the SCOR model companies should identify and define the number of SCOR metrics needed (Bolstorff, 2002).
- Many larger companies use simulation software in SCOR model implementation project to make improvement to material flow (SCM Operations).
- Before applying the SCOR model, it is important to collect data, identify the company's sources and collect appropriate benchmark data (Bolstorff, 2002).

Potential advantages

- The SCOR model can help define standardised processes within the supply chain, thus helping companies 'speak the same language' (Overbeck, 2009).
- The SCOR model can help identify performance gaps (SCC 2005).
- The SCOR model can be used in risk management (Harrington et al, 2010).

Potential disadvantages

- The SCOR model cannot engage the entire organisation in assessment, selection of projects or implementation, thus failing to incorporate ideas of the entire team and to build a continuous improvement culture (Husby, 2007).
- The SCOR model cannot be used in an unstable supply chain because it 'requires a high degree of continuity' (Overbeck, 2009).
- The SCOR model does not address processes of sales and marketing, some aspects of service and support processes, such as human resources and technology development (Wisner et al., 2008)

Performance monitoring

- Reliability: metric category that contains value chain metrics focused on quality of product and service. In the case of a service, it could refer to delivery, post sales service, or warranty, for example perfect order fulfilment (SCC, 2005).
- Responsiveness: metric category that focuses on speed or velocity in responding to demand events such as a customer order, new product introduction, service order, for example order fulfilment cycle time (SCC, 2005).

- Flexibility: metric category that allows the measurement of value chain adaptiveness to reliably meet demand variation both in short and long term, that is, upside supply chain flexibility (SCC, 2005).
- Cost: metric category that enables the measurement of process performance of both direct and indirect aspects of the value chain, including customer chain, supply chain, design chain and aggregate measures, such as total returns warranty management costs (SCC 2005).
- Asset management: metric category that measures the efficient use of assets including fixed and working capital, for example cash-to-cash cycle time (SCC, 2005).

Case studies

- Implementation of SCOR model in Merck Serono, a subsidiary of Merck KGaA, the world's oldest pharmaceutical and chemical company, helped Merck Serono to achieve a joint process understanding and feeling for dependences. Moreover, all employees became aware of the processes.
- Using the SCOR framework allowed ADVA Optical Networking reduce gross inventory from €59m to €38m in ten month. In addition, inventory days of supply were reduced by 47% from the initial scorecard (Francis, 2010).
- The use of the SCOR model by Raytheon IDS resulted in a 37% reduction in headcount and increase in college-educated population to 66%. In addition, the company achieved a 75% reduction in transactional processing for material acquisition, 25% improvement in SC Cost-to-Sales, US\$57m in bottom-line savings and 98% supplier conformance to contract (Francis, 2010).

Further Resources/Reading

Web

[logistics and the SCOR](#)

[summary of a study on identifying important activities within the SCOR process categories.](#)

[Week Magazine on](#)

[on SCOR model and its](#)

[SCOR for supply chain innovation: HP](#)

Books

Supply Chain Excellence: A Handbook for Dramatic Improvement Using the SCOR Model ISBN 978-0814417713

Supply Chain Management and Advanced Planning: Concepts, Models, Software, and Case Studies ISBN 978-3642093920

Logistics and Supply Chain Management ISBN 978-0077117382

Essentials of Supply Chain Management (Essentials Series) ISBN 978-0470942185

Application of the SCOR Model in Supply Chain Management ISBN 978-1934043233

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Video

Expert interview on SCOR

[://www.youtube.com/watch?v=](http://www.youtube.com/watch?v=)

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