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Herausgeber

Forschungsinstitut für Rationalisierung e. V.
an der RWTH Aachen
Pontdriesch 14/16, D-52062 Aachen
Tel.: +49 2 41 47705-0
Fax: +49 2 41 47705-199
Email: info@fir.rwth-aachen.de
Web: www.fir.rwth-aachen.de
Bankverbindung: Sparkasse Aachen
BLZ 390 500 00, Konto-Nr. 000 300 1500

Direktor

Univ.-Prof. Dr.-Ing. Dipl.-Wirt. Ing. Günther Schuh

Geschäftsführer

Dr.-Ing. Volker Stich

Bereichsleiter

Dipl.-Ing. Gerhard Gudergan (Dienstleistungsmanagement)
Dipl.-Ing. Dipl.-Wirt. Ing. Peter Laing (Informations-
management)
Dipl.-Ing. Carsten Schmidt (Produktionsmanagement)

Redaktion, Satz, Layout und Database Publishing
Olaf Konstantin Krueger, M.A. (Informationsmanagement)
Tel.: +49 241 47705-510

E-Mail: OlafKonstantin.Krueger@fir.rwth-aachen.de,
redaktion-udz@fir.rwth-aachen.de

School of Communication, Information and New Media
University of South Australia, Adelaide SA 5001 Australia
Ph.: +61 8 8302 4656, Email: office@m-publishing.com

Design und Bildbearbeitung

Birgit Kreitz, FIR, Tel.: +49 241 47705-153

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Collaborative Partner-Networks and Supply Chain Integration

How companies can use Supply Chain Reference Models for intra- and inter-enterprise collaboration

This article analyses supply chain integration and collaborative business approaches and describes how in the next decade companies would face challenges of rethinking business structures and best practices, implemented and optimised to answer business questions and solve business problems currently undergoing rapid change. The authors also discuss the concept of the virtual enterprise and the challenges that need to be faced to design, build and operate new network- and enterprise models, the need to standardise and customise this general approach to company-specific supply chain operations and finally will illustrate how companies, especially SMEs, can optimise their collaboration inside their own boundaries as well as across supply chains.

Introduction

Today's business environments are demanding from the companies of all sizes dramatically improved levels of customer service, corporate flexibility and ongoing time and cost improvements across their end-to-end supply chain, or maybe better described as integrated collaborative networks.

This indicates the rapidly growing expectation from cross-enterprise supply chain management strategies. The value proposition many customers are asking their product and service-providers for involves a highly improved level of decision making in design, build and the operation of supply chain concepts, business processes, applications and technologies driving results in improved economic value and profitability.

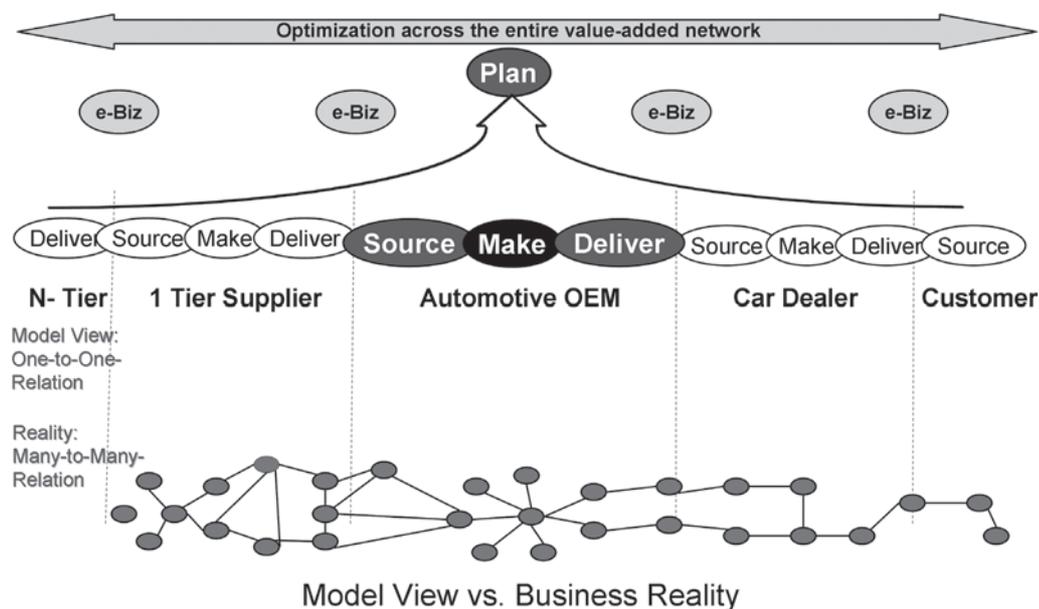
Following such an enterprise vision might easily become a complicated and time consuming process requiring major changes to today's management practices, business processes, organisational

structures, cultural behaviour and information and communication technology infrastructures. The complexity of modern supply chains is increasing enormously. Sales, offerings, service-portfolios, production, and distribution-concepts must be adapted continuously and integrated seamlessly. Huge saving potentials currently lie hidden in inefficient supply chains. Information-based decision making along the entire corporate value chain is the prerequisite for expansion of market share and an increase in cash flow and profits. A recent benchmarking study showed that for a one billion euro company with about 60% cost of goods sold (COGS), the difference between average and best-in-class supply chain performance makes about 100 million necessary in additional working capital.

Collaborative networks as a competitive differentiator also for SME's?

The competitive environment is constantly changing. Production and service quality alone is no

Figure 1
An Integrated Supply Chain Approach



longer a decisive competitive differentiator for many companies executing supply chains for their customers. Success is based on the ability to meet customer requirements for volume, flexibility or responsiveness and best in class service-levels at the same time. The integrated supply chains of different partners lead, in the end, to corporate networks that compete with other SC networks, rather than company against company as it is today.

Customer requirements in the future will only be met by collaborative relationships among trading partners based on joint planning and execution. New developments in the area of information and communication technologies require end-to-end supply chain target setting and performance measurements. State of the art methodologies, solutions and tools provide the necessary infrastructure for the elements of design, build, and operation in a customer driven value-chain in connection with cross-enterprise end-to-end processes. The SC software market still expects growth of up to 50% per annum. In supply chain solution portfolios of the leading vendors and integrators there are three main areas: Advanced Planning and Scheduling (APS), Supply Chain Execution (SCE), and Enterprise Resource Planning (ERP). APS adds collaborative SC planning capabilities to ERP. SCE covers the execution of requirements planning, which in most companies is traditionally an area with little automation and optimization, currently mainly manufacturing execution systems (MES), warehouse management systems (WMS) and transportation management systems (TMS). Based on cost, time and complexity constraints however many smaller companies cannot afford this approach.

Integrated Collaborative Networks- a new approach to supply chain integration

Professionally designed and integrated networks of suppliers and customers form synergistic business communities which exploit competitive

advantages of speed and cost that go far beyond those of traditional approaches. This, by the way, is not a revolutionary new concept. For many years companies have striven to streamline and optimise core business processes across functional stovepipes. IT-systems, like enterprise resource planning, process ware and the like promised seamless integration of disparate, functional designed system architectures.

Looking at how today's enterprises are managed, what contribution information and communication technology has delivered to fulfil the ideas of business process reengineering we see that in most cases not much progress has been made since the early nineties. There are too many reasons for this to discuss in great detail here, however, the magic formula is, nevertheless, integration. We found in many customer and in-house projects, that top management (encouraged by software vendors keen to make easy money by selling licences) often believes that buying a standard software package customized to fit the often poorly managed operational processes is the panacea. In fact what they get in the best cases is automation of poor performance.

The customer can enter his specific project in this two dimensional portfolio matrix wherever he needs to. In a portfolio matrix, consulting and implementation services are ordered in a structured manner. One dimension covers the customer process in the phases of design, build, operate, while the other dimension covers the business levels of 'strategy, processes, applications, technology'. Now specific combinations of service packages can be implemented on the basis of individual company requirements.

An improvement project therefore can be started at any point in the portfolio matrix:

- to design corporate strategies (e.g. worldwide production and logistics concepts after a merger or acquisition)

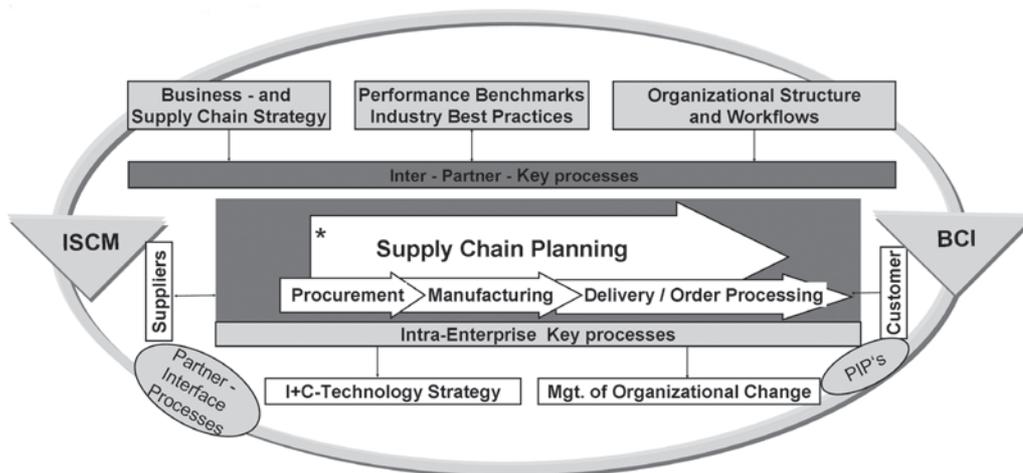


Figure 2
Business Community
Integration

- to analyze the current business situation and then align business processes toward best-in-class management practices in combination with benchmarks
- to implement and provide technical support of integrated solutions.
- All customer interactions from order entry through paid invoice.
- All product (physical goods, services ...) transactions including equipment, supplies, spare parts, bulk product, software, etc.
- All market interaction right from the understanding of the aggregate demand to the fulfilment of each order.

In connection with state of the art ICT approaches, multiple partners can do this in a coordinated manner using joint process control parameters and compatible software and management tools. Nevertheless implementation examples of such integrated systems show that success is not primarily a matter of information and communications technology, but rather a paradigm shift to partnerships and actions based on mutual trust. This applies within a single plant just as it does to collaboration among corporate groups or partner networks. In our experience – at least 50% of the game-in many cases the make or break factor, is the so-called soft side of integration.

From the supplier's supplier to the customer's customer using appropriate reference models

To exploit these improvement potentials, we must again go through change processes in dealing with suppliers and customers. Specifically clearly understood and communicated flows of goods, information and money mean leaving behind any hiding regarding required data and revealing, for example, operational problems to our business partners early. In the context of an integrated supply chain or collaborative network, the potential that we want to exploit lies in the early revelation and communication of bottlenecks and excess capacities etc. This can only be achieved through the creation of win-win situations. We must look for these situations and integrate them into the value systems of our partners in the network.

The key to many industrial initiatives has been the design and integration of supply chains of collaborating companies. Therefore supply-chain operations reference-models (like SCOR) had often been selected as key reference model to be used in such a setting. These reference models are widely used in industry, thus applying such proven industry standards should facilitate a fast implementation of the developed approach and realisation of ROI. The Supply-Chain Operations Reference-model has been developed and endorsed by the Supply Chain Council (SCC), an independent non-for-profit organization. The SCC was founded in 1996 in the USA and has now branches all over the world.

SCOR is a business process reference model that contains all supply chain activities from supplier's supplier to a customer's customer. This includes

SCOR contains three levels of process detail. The top level (process types) defines the scope and content. It consists of the five top level processes

- Plan
- Source
- Make
- Deliver
- Return.

The second level of SCOR, the configuration level (process categories), contains more than 30 process categories, like „Make-to-stock“, „Make-to-order“, „Engineer-to order“ or „Production execution“. These process categories can be used to „configure“ a company's supply chain. Companies implement their operation strategy through the configuration they choose for their supply chain. The third SCOR level, the process element level (decomposed processes) is used to fine tune the operations of a company. It consists of

- process element definitions
- process element information inputs and outputs
- process performance metrics
- best practices
- system capabilities necessary to support best practices
- Systems/tools to be used.

The companies implement their supply chain solution on level 4 (or even more levels of detail). Level four, called implementation level (decomposed process elements), and define practices to achieve competitive advantage and to adapt to changing business conditions. Levels 4 and lower however are company specific and not in scope of SCOR, but consequently follow the same structures and rules. They can as workflow diagrams finally been transmitted in ERP reference models and executed.

SCOR also includes a methodology that enables companies to analyze and improve their supply chain operations by helping them communicate information across the enterprise, measure performance objectively, and identify supply chain performance gaps and improvement objectives. The SCOR methodology has essentially four steps:

- Analyze the basis of competition
- Configure the supply chain
- Align performance levels, practices and systems

- Produce a plan for supply chain improvement backed up with projected ROI.

The methodology is applied to produce supply chain improvement project proposals backed up with sound business cases and high-level specifications of proposed solutions.

Integrated Supply Chain Workshop offered by FIR, Aachen and H2O GmbH, Neusaess

On 16 and 17 October 2006 FIR Aachen and H2O GmbH will present these concepts in a 2-day interactive workshop at the Lindner Congress Hotel at Düsseldorf Airport.

The workshop will introduce participants to supply chain planning and execution challenges using a standard methodology and framework and applying these learning's to a specific business case in four interactive case studies. Detailed program and registration can be found at: www.score-cards.com.



M. Tech. Amit Garg
Wissenschaftlicher Mitarbeiter
am FIR im Bereich
Produktionsmanagement
Tel.: +49 241 47705-439
E-Mail: Amit.Garg@fir.rwth-aachen.de

Herbert Heinzel
Geschäftsführer der
H2O Organisationsoptimierung GmbH
Tel.: +49 821 4861-268
E-Mail: herbert.heinzel@score-cards.de
Webs: www.score-cards.com
www.value-chain.org

Integrated Supply Chain Workshop

How can I evaluate, benchmark and optimize performance of my supply chain?

Companies doing international business are challenged to achieve industry leadership using seamless information and knowledge within supply networks. Many of these companies have already achieved internal supply chain excellence and are now addressing „External Collaboration“ with their business partners upstream and downstream, ultimately leading to an end to end supply chain synchronization. The key challenges currently faced are:

- Alignment of supply network processes with performance objectives and key metrics
- Transformation of strategic targets into operations
- Mapping of company specific business goals all the way down to implementation
- Adaptation of organizational structures and workflows to new process architectures
- Consistent and timely management of process performance
- Achievement of end-to-end supply chain synchronization and transparency.

To address these challenges and pave the way for a successful supply chain synchronization, FIR and H2O GmbH will jointly present supply chain concepts in a 2-day highly interactive workshop.

The workshop will introduce participants to Supply Chain Planning and Execution Challenges using a Standard Methodology and Supply Chain Framework and eventually applying these learning's to a specific business case in four detailed and interactive case studies.

The workshop will address manufacturing and logistics managers from all industries interested in improving collaboration with their supply chain partners as well as IT managers challenged with the integration of supply chain processes within organisational structures and ICT system requirements.

For detailed program and registration please visit www.score-cards.com.

2-days-Workshop
Oct. 16/17 2006
Düsseldorf
Lindner
Congress Hotel



Contact:
Mr. Amit Garg,
FIR
amit.garg@fir.rwth-aachen.de
Mr. Herbert
Heinzel, H2O
herbert.heinzel@score-cards.com