

Supply chain renaissance through new talents

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Where innovation starts



**ESCF Operations Practices:
Insights from Science**

**Supply Chain Renaissance
Through New Talents**

Supply Chain Renaissance Through New Talents

Rethinking the supply chain by connecting the dots

Concise summary of this Operations Practice

This Operations Practice builds upon the vision of professor Hau Lee, who presented his ideas on Supply Chain Renaissance on February 11th, 2014 at the European Supply Chain Forum conference. He stated that firms often take a piecemeal approach to Supply Chain Management: they share some pieces of information to some suppliers, they restructure a part of their supply chain, they replace some materials with greener ones. Such change initiatives might all seem useful on a detailed level, but they might have counterproductive consequences in the grand scheme of things. Therefore, companies should aim for broader structural changes instead – they should not only align to what is called best practice, but they should organize a breakthrough in Supply Chain Management – a Renaissance. To achieve this, four organizational roles, or talents, will be outlined in this Best Practice: the Visibility Integrator, the Value Chain Architect, the Innovation Collaborator and the Social Transformer.

Key Terms

Supply chain design, supply chain collaboration, sustainability

Relevant for

Supply chain - and general management in large companies with global supply chains.

Introduction

Companies that aim to be supply chain leaders can no longer be solely focused on cost reduction. Supply chain management plays a fundamental role in enabling the company growth agenda through cross-functional engagement and external partnership with suppliers and customers. Firms often take a piecemeal approach to Supply Chain Management. They share some pieces of information to some suppliers, they restructure a part of their supply chain, they replace some materials with greener ones. Such change initiatives might all seem useful on a detailed level, but they might have counterproductive consequences in the grand scheme of things. For example, gradual inventory reduction beyond the point where customer service starts degrading, reduction of lot sizes beyond the point where production becomes inefficient, and sharing of point-of-sale data without sharing pipeline and on hand inventory, with obsolescence as a consequence. Therefore, companies should aim for broader structural changes instead – they should not only align to what is called best-in-class, but they should organize a breakthrough in Supply Chain Management.

This is what Hau Lee, professor at Stanford University and co-coiner of the “bullwhip effect”, refers to as Supply Chain Renaissance, and which he presented at a European Supply Chain forum meeting in 2014. Supply Chain Renaissance as promoted by Hau Lee constitutes four organizational roles, which are needed in a company: Visibility Integrator, Value Chain Architect, Innovation Collaborator, and Social Transformer. In this operations practice, these roles will be explained and illustrated by some of the examples that were also given by professor Lee.

Visibility Integrator

The visibility integrator capability is about the use of supply chain data to create visibility and thereby add value. There is much literature already about sharing information in supply chains, so this seems to be a trivial aspect of Supply Chain Management. However, just sharing information between two companies is not enough to achieve Renaissance performance. There must be a role in the organization that integrates all the sources of information from more than one source and ‘connects the dots’. It does not suffice to simply share the information and hope that something good comes out of it. The Visibility Integrator role should determine *how* information should be shared and used. Partners in the supply chain must be able to make sense of the information, to use it in a certain form, in a certain way. It must be clear in what way the information should be shared, and the information receiver should think about what to share back. The Integrator can help to interpret the information so that information can become knowledge.

Most companies only share information to one or a small subset of suppliers in the chain. However, these suppliers also have suppliers that have an impact several tiers downstream and upstream and they are often ignored in initiatives to share information. For example, Boeing has thousands of suppliers, many of them not supplying directly to Boeing but to other suppliers. At some point in time, the development of the Dreamliner was delayed because of a shortage in fasteners. There has been a trend at Boeing that more and more fasteners are consumed by suppliers of Boeing, instead of being supplied directly to Boeing. A capacity problem at the supplier of fasteners cascaded down the supply chain to Boeing. The visibility of the problem was impaired by this indirect relationship and this illustrated the point that companies should look beyond the companies they directly interact with. Even for a component which is perhaps not the most ‘fancy’, but nevertheless essential to assemble an airplane.

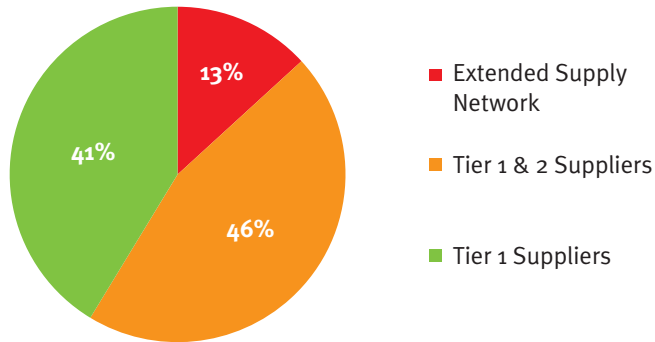
The screenshot shows a news article from The Seattle Times. The page header includes the newspaper's name, 'The Seattle Times', and its accolade, 'Winner of Eight Pulitzer Prizes'. The main section is 'Business / Technology'. A navigation bar lists categories: Home, Local, Nation/World, Business/Tech, Sports, Entertainment, Living, Travel, Opinion, and Shop. Below this is a 'Quick links' section with options like Traffic, Movies, Restaurants, Today's events, Video, Photos, Interactives, Blogs, Forums, and S. A banner for 'Get your career' is visible. The article's publication date is November 20, 2008, and it was modified on December 1, 2008. It has 37 comments and a print option. The title is 'Boeing 787 fastener problems caused by Boeing engineers'. The byline is 'By Dominic Gates, Seattle Times aerospace reporter'. The lead paragraph states that the problem was caused by a Boeing engineering error. A 'Related' section lists two other articles: 'The problem and the solution' and 'Boeing past peak in new jet orders'. A partial sentence at the bottom reads 'The big glitch that now has mechanics finding and replacing thousands of fasteners on every Dreamline'.

figure 1

Boeing fastener problems in the press

The same lesson has been put into practice by Nokia, who has been identifying risks in its supply chain, not only from the direct suppliers, but also from their suppliers' suppliers. After the earthquake in Japan in 2011, many manufacturing companies started to diversify their supply bases. However, when your suppliers' supplier is not known to you, they still might be taking the same risks as before. So even when a company believes it has mitigated the risk, the risk might still be there because another supply chain partner has not taken measures. As the picture below shows, only 13% of companies are looking beyond the tier 1 and 2 suppliers in their network for supply chain risks.

SCM World CSCO Survey 2013



Total Respondents: 739

figure 2

Scope of risk management

The table below summarizes the capabilities of the Visibility Integrator that are needed for Supply Chain Renaissance.

| Capabilities | Best Practice | Renaissance |
|--|---|---|
| Identify what to look for, and determine the right extent of the supply chain visibility | Information sharing of forecasts, inventory/capacity | Exploit big data, extended data sources, Supplier Evaluation Risk (SER) |
| Enable partners to share accurate and timely information to gain visibility, share information back, and to have joint accountability with integrated performance measures | Visibility on tier-1 suppliers or immediate customers | Visibility of extended supply network, extended performance measures |
| Perform analysis, derive insights and action plans; coordinate with partners for actions | CPFR, joint planning, Sense and Respond | Sensible Sense and Responsive Response |

table 1

Visibility Integrator characteristics

Value Chain Architect

Many companies have a global supply chain structure in various regions in the world, like Europe, Asia, Africa, Central America. In decisions on where to locate sites, a full understanding is needed of the implication to the costs and benefits. This means that for example focusing on cheap costs of labor is not enough, as the cost savings can be consumed completely by laborious export procedures, involving duties, and the like. The amount of corruption can also play a role as this makes the supply chain more expensive and unpredictable. Trade agreements might make structures beneficial that were not worth considering previously. At the same time, there is a risk mitigating factor: companies should not put all their eggs in one basket, which means that extending a production site might be less favorable than creating a new one.

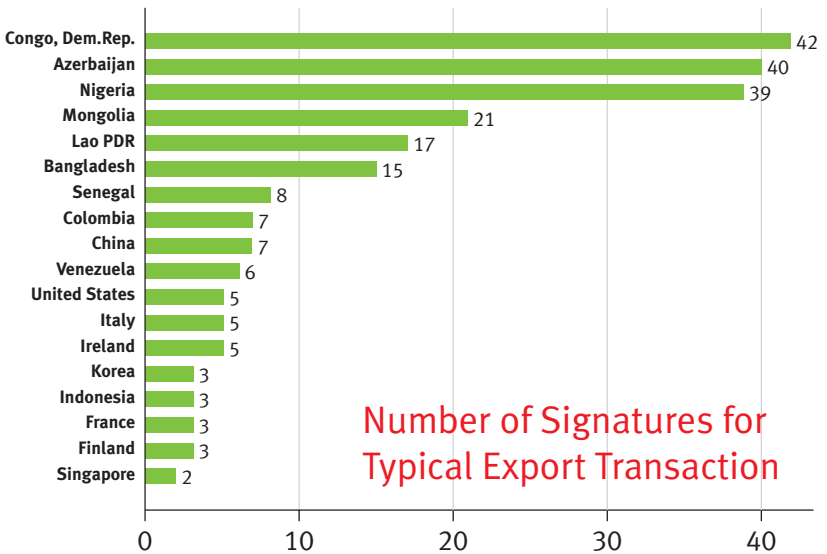


figure 3 Source: World Bank Global Logistics Indicators Survey, 2005

Frictions in crossing borders

The Value Chain Architect role within a company must realize the full implications of location decisions and crossing borders. It makes sure that these implications are understood, by determining what needs to be in- and outsourced, designing the geography of the network – what should be on- or offshored, and arrange the flows through the chain.

Logan, the budget car that is produced by Renault, has been a huge success. The cars were produced in Romania and capacity needed to be extended. The most straightforward choice would be to extend the capacity in Romania, as this was an existing site with an existing infrastructure and engineering capabilities. However, many Logans are sold in Western Europe and land transportation from Romania to for example France is not cheap and it has to cross many countries. Therefore, Renault decided to build a new site in Morocco. By sending the engines from Romania to Morocco, a significant part of the car is still EU-manufactured, and the cars could be shipped to Europe under a trade agreement, thereby bypassing duties. The transportation costs from Morocco to Western Europe are not high by shipping the cars to Spain. In short, all these benefits add up to the choice for Morocco as the new production site for the Logan car. Such a decision can only be arrived at by an Architect with the comprehensive understanding of full cost and benefits of location and cross-border supply implications.

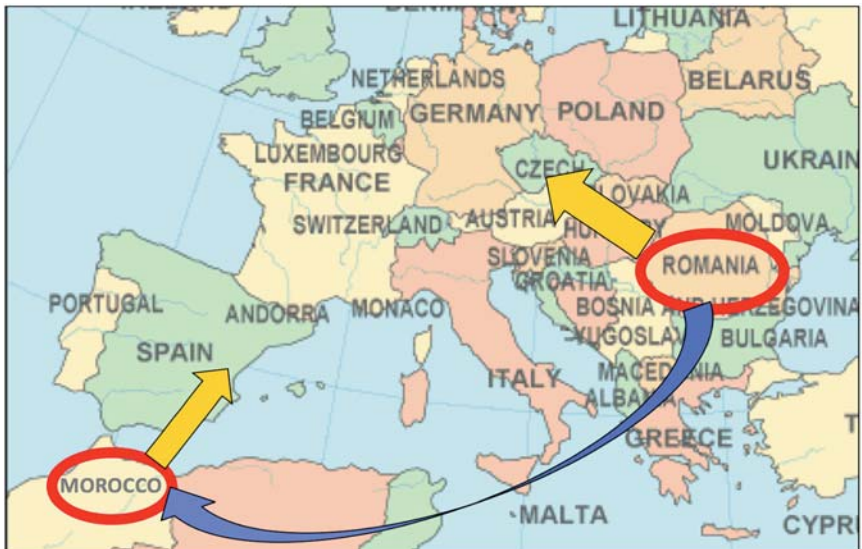


figure 4

The Logan supply chain flow

In pursuing a best practice approach, it would be good enough to understand some of the key drivers in supply network design and location decisions, and to monitor the supply chain process. Companies that pursue a Supply Chain Renaissance would increase the scope of the decision, including factors like global trade, environment, sustainability, and the like. They would adapt the design based on changes in the environment, as factors like local taxes and customs regulations change all the time.

| Capabilities | Best Practice | Renaissance |
|--|--|--|
| Structure the scope of the value chain – what to insource and what to outsource. | Capture the drivers of vertical integration decisions | Right scoping for value creation through customer service; be adaptive |
| Design the geography of the network – what to be on-shored and what to be offshored. | Understanding of total landed costs, right supply chain for the right products | Capture global trade complexities and SER; portfolio management; be adaptive |
| Navigate the complex supply chain process flows. | Tight monitoring of processes to ensure efficiency & reliability | Process re-engineering to reduce need for navigation |

table 2

Value Chain Architect characteristics

Innovation Collaborator

No single company has the capabilities to develop real breakthrough products – even the largest companies that have a substantial financial reserve. This includes companies like Microsoft and Cisco: although they are able to hire the smartest people, they cannot develop the full advanced product by themselves, or it would take a long time, where time to market is a crucial factor. Instead, companies have to supplement their capabilities with other companies, typically supply chain partners. The Innovation Collaborator role within a company makes sure that the right partners are involved in developing and designing new products. This role aligns and integrates design and supply chain management, accelerates innovations through leveraging partners, and thereby creates value to customers by enabling innovation.

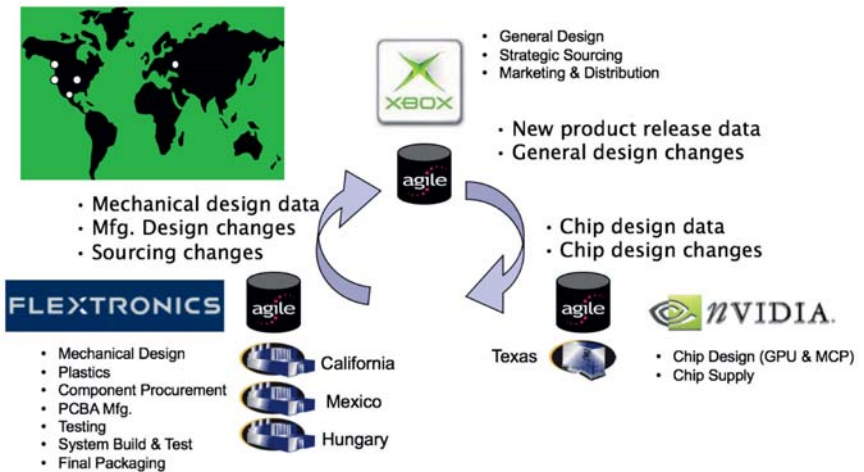


figure 5

Microsoft Xbox product introduction

Microsoft developed the Xbox together with Flextronics which has led to a much faster time to market. Where Microsoft has deep knowledge on the design of a console, Flextronics has the knowledge on how consoles can be designed for manufacture. As a company that outsourced manufacturing extensively, the supply chain partner may now possess more ability to innovate in the manufacturing and

component design process. Using the innovation power is essential to reduce manufacturing costs and to avoid quality problems. The Xbox product launch was achieved in 14 months versus 20 months for the Sony Playstation 2, winning 3.6% market share in 4 months. Another example is given by Cisco, who has developed the very advanced router Viking together with Chinese partner Foxconn. Another benefit of co-designing with this partner was that when the design is completed, there is no need for a transition of manufacturing locations later.

| Capabilities | Best Practice | Renaissance |
|--|--|--|
| Align and integrate design and supply chain management | Design for supply chain management | Design and supply chain integration |
| Accelerate innovations through leverage of supply chain partners | Supply chain readiness to support new product development | Partnership collaboration for new product development |
| Create value to customers as an enabler of innovation | Scaling flexibility in product launch and ramp; risk reduction for experimentation | Rapid prototyping, efficient design iterations, and flexibility in scaling up and down in launch |

table 3

Innovation Collaborator characteristics

Social Transformer

When companies globalize, they should not simply regard manufacturing regions as locations to generate value for the company. They should take an interest in the place where their sites operate and make sure the environment facilitates the operating sites' social and economic prosperity. For example, a company should avoid being exposed to issues such as labor non-compliance. The Social Transformer role of a company makes sure that local developments are monitored and guided into the right direction.

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Foxconn Scandal Offers Supply Chain Lessons

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What do Apple, HP and Dell have in common – apart from making computers? They all source electronics from Foxconn, the beleaguered Chinese company under fire for working conditions at its factories.

There is a clear lesson to be drawn from the ongoing Foxconn furor. Fortune 500 companies' supply



Foxconn protesters (Image by AFP/Getty Images via @daylife)

figure 6

Foxconn labor uproar

Some companies, like Nike, have begun to inspect their manufacturing suppliers to monitor problems related to compliance with social responsibility issues, such as labor and the environment. The Social Transformer role of a Supply Chain Renaissance company goes a step further and does not only monitor, but also

invests in interventions to make a positive impact. When suppliers are far away, in less developed regions, they will find it difficult to comply with its customer's rules. So these companies must be assisted to make them compliant and improve their productivity, for example by training the workers. Suppliers will become more productive as a result and risks will be reduced. This contrasts a 'policeman' approach to compliance: these companies cannot achieve these results alone so they must be assisted.

*"Using a unique data set ... in over 800 of Nike's suppliers across 51 countries over the years 1998-2005, ... **monitoring alone** appears to have produced only **limited results**. However, when monitoring efforts were combined with other interventions focused on tackling some of the root causes of poor working conditions—in particular, by enabling suppliers to **better schedule their work and to improve quality and efficiency**—working conditions seem to have improved considerably"*

— Locke, Qin and Brause, 2007, ILR Review

For example, Nestle went even a step further by not only helping the suppliers, but also the communities around these suppliers. While farmers, producing for Nestle, should perform well, the village where the farm is located should be also a good place to live. When there are good schools, safe water supply, medical facilities, and the like, the farmers do not have to worry about sick children, or children having to travel long distances to go to school. In other words, people can concentrate on the farm and running it productively. The young and talented people do not have to leave the village as there is a future for them within the village.

Another example is provided by farmers in Tibet, that have traditionally been producing clothes from Yak fur. These farmers are very poor and the clothes they produce from the Yak hair are for their own use only, as the hair is so rough that the clothes cannot be sold or exported. A company called Esquel has used its Research and Development capabilities to cut the Yak hair and process it, in such a way that comfortable yarns can be produced from it. The garments that are produced from the yarns can now be sold in developed market, opening up a new source of income for the farmers that used to live in poverty. On the buyer's side, there is also an advantage, as the buyer can offer something new and sustainable to its customers.

| Capabilities | Best Practice | Renaissance |
|--|---|--|
| Ensure socially and environmentally operations internally | Tight monitoring and inspection for compliance | Product & process design to reduce SER risks and improve performance |
| Strengthen responsible business to extended supply network | Supplier screening, tight monitoring for compliance | Collaboration, supplier investment and incentive alignment |
| Build up community of supply network through social innovation | Economic development through businesses & worker income | Investments for community development and social innovation |

table 4

Social Transformer characteristics

Conclusion

Companies that want to realize significant improvements in their global supply chain performance should take an integrated view on supply chain management. In this Best Practice, the vision of professor Hau Lee on achieving a Supply Chain Renaissance has been outlined and illustrated with real-life examples. A Supply Chain Renaissance is realized through the following organizational talents: the Visibility Integrator, the Value Chain Architect, the Innovation Collaborator and the Social Transformer. The takeaway message from this Operations Practice is that companies who want to win in global Supply Chain Management will have to ‘connect the dots’, instead of implementing fragmented local best practices.

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Editorial

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