

Project Business Management¹

Supply Chains Versus Project Supply Networks²

Oliver F. Lehmann

"The only profit center is a customer whose check has not bounced."
- Peter F. Drucker



Summary

In many aspects, project managers working with Project Supply Chains (PSNs) can learn lessons from Supply Chain Management (SCM) in manufacturing and other industries. This corporate function has developed a high degree of maturity in the last decades, that can make it a role model for project management.

However, the differences should also be considered.

¹Editor's note: This series of articles is by Oliver Lehmann, author of the book "[Project Business Management](#)" (ISBN 9781138197503), published by Auerbach / Taylor & Francis in 2018.. See full author profile at the end of this article.

² How to cite this article: Lehmann, O.F. (2019). Supply Chains Versus Project Supply Networks. *PM World Journal*, Vol. VIII, Issue X, November.

Modern Supply Chains

It was a coincidence in my professional life that I was a witness of the beginning of modern supply chain management. In the late 20th century, a major change in manufacturing took place, whose consequences became fully visible only decades later.

Before that time, manufacturing was mostly performed inside the protective walls of the own organization. Here and there, external vendors were used as a “verlängerte Werkbank”³, providing additional production capacity and skills.

Several revolutionary developments, at least for that time, dramatically changed the way production was done:

- After studying Japanese methods, in particular the Toyota Production System, Western production managers learned how to become more productive with limited internal resources by outsourcing more work to contractors. In contrast to the Verlängerte Werkbank, which solely outsourced shop floor work, System Suppliers also took over responsibility for organizational and commercial tasks. They became prime contractors managing an often large number of subcontractors over different tiers for the customer.
- Essentially based on Ford’s Q1 quality management system, the ISO 9000 series of standards⁴ for quality management and quality systems was developed. It expanded the rather narrow standard developed by Ford to an open family of norms that could be applied by all industries and across all application areas.

These standards allowed different organizations such as firms, agencies, and associations to put together a network of quality systems in a supply chain. While each of these organizations may differ in their actual implementation of the quality system, they all are based on the same founding principles and therefore compatible.

- Electronic Data Interchange (EDI) enabled an undisrupted stream of communications between customer, direct suppliers, subcontractors, and so on. They used data structure and transfer protocols such as Odette, Edifact, and XML to ensure all contract partners spoke the same language, at least in a digital field. Its introduction was highly controversial by that time. It allowed a customer to trigger production processes at subcontractors, with whom they had no direct business relationship, just skipping the prime contractor in between.
- National borders became permeable. An example is the European Economic Area, which includes 28 countries of the EU⁵, plus Norway, Iceland, and Liechtenstein. The

³ German for “extended work bench”

⁴ An interesting contemporary comparison of Ford Q1 and ISO 9000 can be found at TQM Magazine (Stephens, 1997)

⁵ The British Brexit, the exit from the EU may lead to the United Kingdom getting excluded from the EEA, which would then have 27 EU countries as members.

easiness of crossing borders inside the area led to the creation of millions of new jobs, particularly in manufacturing and supporting industries.⁶

- Supply chain management (SCM) as a now well understood business discipline evolved. Today, it includes consulting, literature, education, research, standards, and certifications. In addition, the discipline has special software at hand, online services such as digital markets that bring together customers and contractors, and a lot of other supporting offerings. It is mature, and if help is needed, it is likely that this is available somewhere, typically against money.

Supply chains today are engineered and managed in a way that is almost as stringent as internal production management. As multi-tier meta organizations, they are set up in a way that places key players at strategically important nodes and delegates responsibility to them to manage the players that have more distance to the final customer. The intention to make the feasible over long durations and run them as smoothly and efficiently as possible gives an incentive to all players to maintain a cooperative approach based on good faith and mutual empathy.

This does not exclude more or less subtle pressure applied to change the commercial key numbers of the business. Contractors intend to increase prices and customers to reduce them in re-occurring efforts. There are however limitations to these efforts, mostly due to the mutual dependencies of the organizations involved: Losing a functioning vendor may be far more costly than paying more than what the cheapest vendor would charge. Supply chain management is not acting in a perfect world, however, the leeway for competitive and even destructive behavior is narrow, facing the penalties of dysfunctionalities in these systems.

Modern supply chain management has become a strong driver of innovation. Mix of new technologies that would have not been brought together in the past, such as passenger cars and artificial intelligence, have driven the emergence of new generations of blends of product and services, and this process is far from being over.

Supply Chain Management (SCM) has changed the world of manufacturing, services, and other kinds of business in a managed and engineered way.

Project Supply Networks

In project management, the use of chains or networks of contractors may be much older than in manufacturing. Particularly in large projects, owners of projects seem to have bought in services and products from external vendors, turning the assets of these vendors into resources for the project. In return, these vendors tapped into the financial assets of their customer, turning some of them into project funding, another resource for the project, and others into profit.

⁶ One may also note the foundation of the World Trade Organization, a multilateral agreement of 165 countries, which also eased cross-border business, however not with the same impact as the EEA.

There is reason to assume that this was already true for non-monetary societies, such as the ancient Egypt that left us the pyramids and the temples of Karnak.

In old Greek mythology, the hero Heracles was contracted to clean the stables of King Augeas, who had 3,000 oxen and who had not cleaned the stables for 30 years. Heracles was given just a day to remove the manure accumulated, and the price offered was a tenth of all the oxen, if he could meet the deadline. As Hercules found the task to big for human labor and the time given too short, he decided to instead temporarily redirected the river Alpheus to flush the stables and take the huge dunghill with it.

During the times when the legend was told, people probably admired, what the will and the power of a demi-god can achieve. Today, some project managers may say “so what? Everyone would do it that way”. However, modern project managers would probably use machinery to direct the flow of the water.

Project contracting has probably existed for millennia. So, it is surprising, how poor the general knowledge about it is. Apart from a small number of exceptions, it is not described in literature, neither scientific⁷ nor dedicated to practitioners⁸. Offers for training and workshop are rare, and as far as I am aware of, so is software to plan and track these projects helping to keep an eye on profitability and liquidity. Apart from some home-made or industry-specific solutions, there are no online market places available that allow project vendors and clients to come together and develop business for the duration of a project. Existing marketplaces are great to find a supplier for a deep-sea container full of washing machines, but not to find the strategic partners to support transformations and change.

Timing is the Issue

Business lifecycles can differ dramatically.

Someone recommended me to read a specific book. I go to a bookstore, buy it, and take it home. Or I order it online and wait until it gets delivered. Then, the contract lifecycle is over, and with it the business. It may take me some days to read it, and it may then stand for years in my bookshelf, however, the business lifecycle is long over. If I dislike the book or find out later that it gave some bad advice, I will not blame the bookstore for the poor product. I will not bring it back and say “this book you sold me has poor quality. I want you to replace it with another one.”

Industrial purchases can be more taxing. The example of the container (see

Figure 1) with washing machines is an example for that. The purchase is probably preceded by a vendor selection process, and on vendor side, sales and marketing are busy to ensure the buyer is aware of the vendor and will include the company in the selection process.

⁷ An exception is the book *Project Business* (Arto, Martinsuo & Kujala, 2011)

⁸ An exception is my book *Project Business Management* (Lehmann, 2018)

However, when the contract is fulfilled, all deliveries and services have been provided and payments have been made, the business is over.⁹

In supply chain management, business lifecycles are much longer, and they get thoroughly engineered. Engineering the supply chain is an often a big investment in time, work effort, inspiration, and commitment by professionals, who are generally well educated and have support by management, software, and online solutions, such as digital market places. They can in addition ask educated and experience consultancies for advice and help.

An essential part of this engineering process is building trust and rapport necessary for a business relationship that may take years. The ability to connect with others without losing sight of own interests is obviously a core trait for SCM experts on customer and vendor side.

After the engineering has been finished and the system of supply chains has become operational, some adjustments may be needed from time to time, but in basic essence, the supply chain remains as developed.

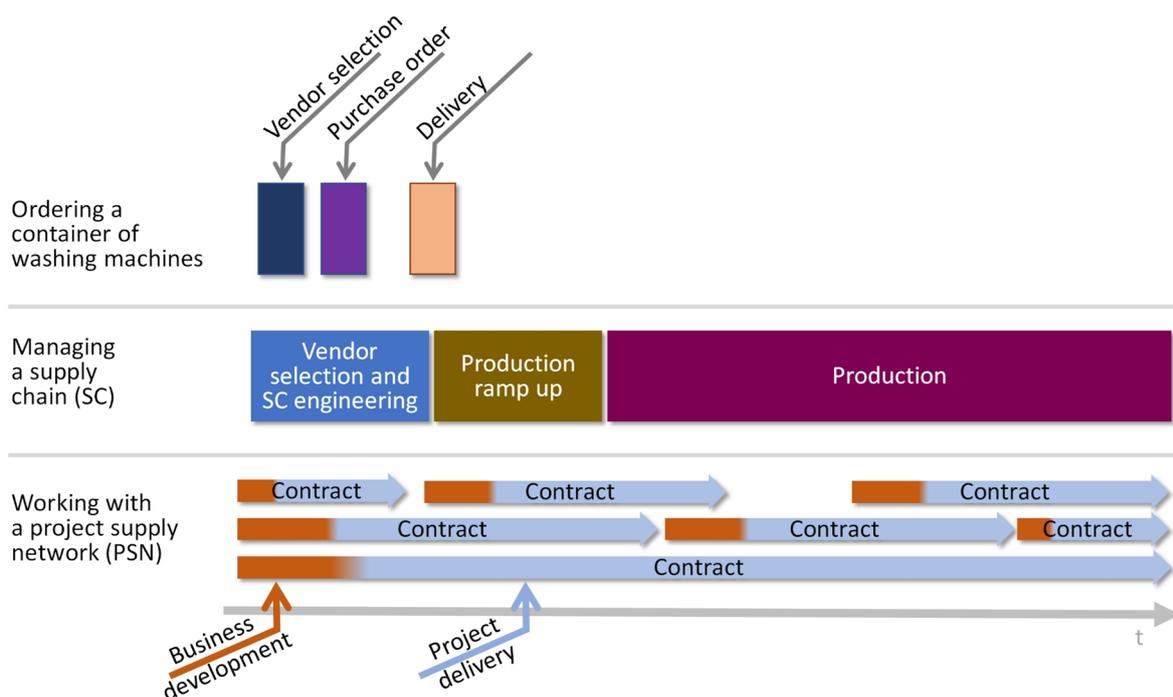


Figure 1: Business lifecycles are fundamentally different for simple purchase orders (POs), supply chains in manufacturing and similar industries, and in project business.

Compared with the rather static supply chains (SCs), project supply networks (PSNs) are far more dynamic. Some contractors may work for the project from start to finish, while others have short gigs in it, lasting maybe a few weeks. The structure of the PSN may undergo constant change. An indirect 2nd tier subcontractor may become a 1st tier direct contractor. When necessary, further subcontractors may be brought into the project, often without the

⁹ Depending on jurisdictions and contract clauses, warranty and product liability may be lasting obligations for some time after the actual business.

customer knowing and possibly in breach of existing contracts, that do not allow for subcontracting.

This opaqueness is another common element of PSNs. A common observation is that no one has a full and complete knowledge of all players active in the project and how they connect with each other. Some players may be dedicated to the project and its mission, others are just there to grab money.

One course of the opaqueness may be the lack of standardization in the management of project supply networks. Project management standards such as the PMBOK Guide¹⁰ are generally silent on them.

Conflict management

Another aspect of maturity of business structures is the introduction of alternative conflict resolution (ADR, see Figure 2) mechanisms. Industries that have been using project business for longer times, such as infrastructure and construction, have mediation and binding/non-binding arbitration established as means to avoid litigations, which are costly, time-consuming, and uncertain in their outcomes. Industries, which have been turning to grand-scale outsourcing more recently, still lack those systems.

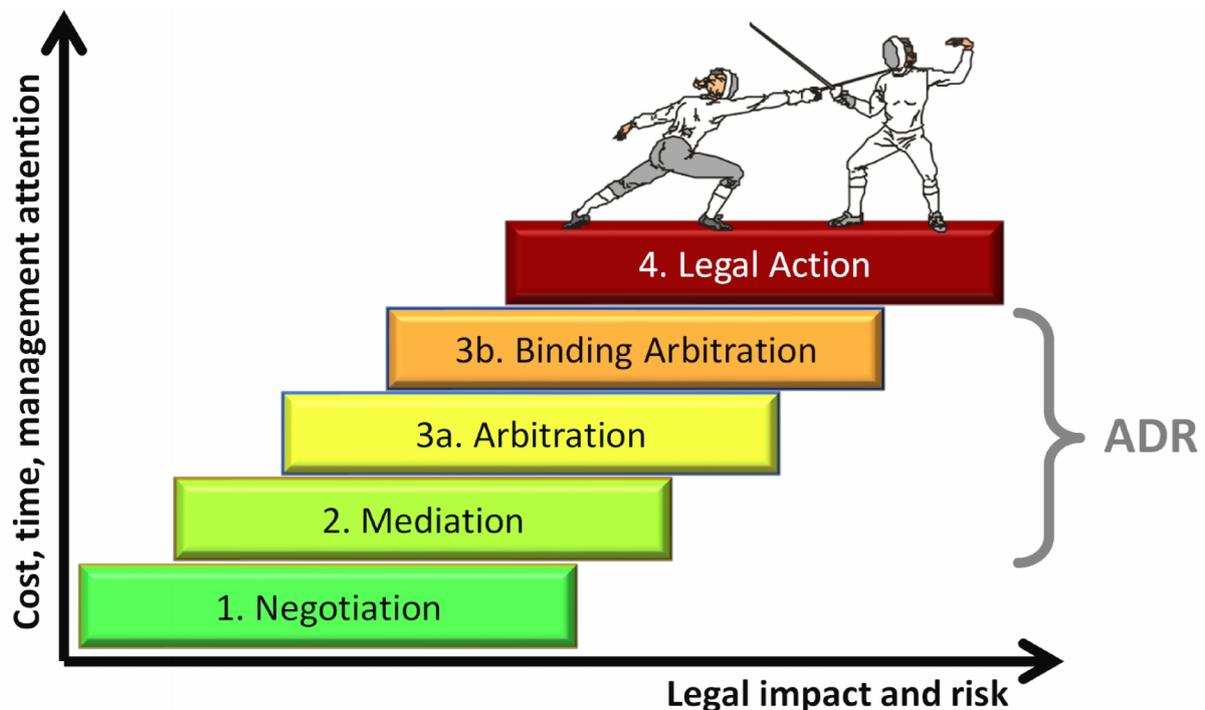


Figure 2: Stages of ADR, after negotiation has been found insufficient, to avoid legal action.

A fine staged system of ADR techniques generally includes some or all of the following stages:

¹⁰ (PMI, 2017)

- **Mediation:** A mediator is generally known to the two or more conflicting parties as trustworthy and is perceived to have equidistance to them. The mediator helps them change the focus from what divides them to what they have in common and what connects them, such as a common interest in finding a solution to the conflict and go on with business. Even supporting the same football team may be a helping commonality.
- **(Non-binding) Arbitration:** In contrast to a mediator, an arbitrator in most cases has been unknown to the parties before the assignment. Arbitrators are often provided by professional associations, industry chambers, or by courts. An arbitrator commonly develops an arbitration finding that is recommended to the parties as a settlement of the conflict. If the parties accept the finding and commit to abide by it, the arbitration was successful. If only one party rejects it, the arbitration has failed, and litigation may be the next step.
- **Binding arbitration:** The binding nature of the findings developed in this type of arbitration makes them almost as strong as court decisions. The parties are legally or contractually obliged to accept the arbitration umpirage and end the conflict, when it has been spoken out. As binding arbitration does not constitute precedence for future cases, it can be done behind closed doors, protecting the parties from private information becoming public, as may happen in a lawsuit at court. Another benefit is that arbitration is generally finished much faster than a lawsuit.

Conclusion

The management of project supply networks has many aspects in common with supply chains in manufacturing, services, and other industries. However, the degree to which they have been developed including education, consulting, and conflict resolution lags widely behind what is considered normal in supply chain management. A major task to do for experts, educational organizations, and associations in the field of project management.

Bibliography

Artto, K., Martinsuo, M. & Kujala, J. (2011) *Project business*, Helsinki [Online]. Available from: https://www.academia.edu/29186058/Project_business (Accessed: 28 October 2019).

Lehmann, O.F. (2018) *Project Business Management*, New York City, USA: Taylor & Francis [Online]. Available from: <https://www.crcpress.com/9781138197503> (Accessed: 30 September 2019).

PMI (2017) *A Guide to the Project Management Body of Knowledge - PMBOK Guide*, 6th edition, Newtown Square, PA, USA: PMI - The Project Management Institute, Inc.

Stephens, B. (1997) 'Implementation of ISO 9000 or Ford's Q1 Award: effects on organizational knowledge and application of TQM principles and quality tools', *The TQM Magazine*, 9 (3), June, p. 1 [Online]. Available from: <https://www.emerald.com/insight/content/doi/10.1108/09544789710168975/full/html> (Accessed: 28 October 2019).

Copyright Note

All illustrations: ©2019 Oliver F. Lehmann

About the Author



Oliver F. Lehmann

Munich, Germany



Oliver F. Lehmann, MSc., PMP, is a project management author, consultant, speaker and teacher. He studied Linguistics, Literature and History at the University of Stuttgart and Project Management at the University of Liverpool, UK, where he holds a Master of Science Degree. Oliver has trained thousands of project managers in Europe, USA and Asia in methodological project management with a focus on certification preparation. In addition, he is a visiting lecturer at the Technical University of Munich.

He has been a member and volunteer at PMI, the Project Management Institute, since 1998, and serves currently as the President of the PMI Southern Germany Chapter. Between 2004 and 2006, he contributed to PMI's *PM Network* magazine, for which he provided a monthly editorial on page 1 called "Launch", analyzing troubled projects around the world.

Oliver believes in three driving forces for personal improvement in project management: formal learning, experience and observations. He resides in Munich, Bavaria, Germany and can be contacted at oliver@oliverlehmann.com.

Oliver Lehmann is the author of the books:

- "[Situational Project Management: The Dynamics of Success and Failure](#)" (ISBN 9781498722612), published by Auerbach / Taylor & Francis in 2016
- "[Project Business Management](#)" (ISBN 9781138197503), published by Auerbach / Taylor & Francis in 2018.