# Minor in Supply Chain Intelligence - An applied perspective

## Description

### The Minor concept

A minor gives you the opportunity to specialize your master program even further. The minor is a bundle of electives that can be chosen separately, but if chosen together gives you a coherent set of competencies that qualifies you to a specialist or leadership function, in this case within Supply Chain Intelligence

### Purpose

Digital technologies have permeated every aspect of modern business. Currently, innovations like the Internet of Things, big data analytics, e-commerce, artificial intelligence and automation create new challenges but also opportunities for the supply chain manager of the 21st century. With more data than ever before companies are struggling to transform the data into intelligence that will provide them a competitive advantage. The minor is designed around how IT is used instrumentally in three main activities that organizations engage in when gathering, analyzing and using intelligence i.e.: managing information, managing decision making processes and managing business processes. The coordination of innovative processes in a global environment would not be possible without innovations in information technology. Intelligent supply chain systems are crucial to create sustained competitive advantage.

This minor aims for the scholarship and application of information technology (IT) for solving operations and supply chain problems. The minor focuses on the fundamental theories within information systems, and how these relate to supply chain management concepts, and their practical application within and between firms. The aim is to support and harmonize the flow of goods based on demand-driven information from all actors who are involved in the supply chain.

By taking this minor the students – the supply chain managers of the future - will be able to know how to use technology to better manage information flow in the supply chain, how to analyze decisions with the support of IT tools and how to use IT tools to support and develop excellent business processes. The need of this minor is based on the latest development in research and practice as shown in the following articles:

Companies see massive shift in search for supply chain talent

Design af intelligente supply chains

**Structure and Content**

The content combines theory and practice of SCM and IT systems at an advanced theoretical and applied level with a focus on hands-on experience on IT instruments, and will give a deep insight into specific problem areas such as IT, decision making, inter-organizational business processes and business process excellence. The minor consists of three courses each equivalent to 7.5 ECTS:

| Course | ECTS |
|---|---|
| Advanced Decision Support and Analysis in the Supply Chain | 7.5 |
| Information Management in the Supply Chain | 7.5 |
| Business Process Excellence | 7.5 |

**1. 'Information Management in the Supply Chain'**

Course coordinator: Arisa Shollo (OM)

With the rapid spread of the standard IT solutions that cover entire businesses and their supply chains, it is the focal firm's challenge to ensure that these solutions are optimized. The course will show how information management and the information technology perspective can be put in relation to the various challenges in supply chains. It discusses how information technology can contribute to the optimization of supply chains and how sustainable competitive advantage can be achieved. We will discuss the dominant technologies traditionally used in planning, forecasting, scheduling and managing supply chains. The entire gamut of information systems e.g. ERP, CRM, APS, BI systems, will be introduced through description and discussions. We will then explore the emerging new technologies such as Internet of Things, Big Data, E-commerce, Cloud Computing, RFID that enable firms to innovate in their business models through dynamic engagement with their supply partners in evolving global supply networks.

Learning Objectives

- Describe how current information technology affects the business environment, business models and the value chain
- Define enterprise applications, describe its components, and understand the challenges of its management
- Be familiar with the processes involved in planning, developing, and implementing information systems like ERP, CRM, SCM and e-procurement
- Understand the role of information management in supporting the business processes in the functional areas within an organization
- Understand how information management can be used to manage organizational knowledge, enhance an organization's efficiency, aid in decision making, and create a strategic competitive advantage.

Indicative literature (more to come)

- Nyman (2012) An Exploratory Study of Supply Chain Management IT Solutions (2012) 2012 45th Hawaii International Conference on System Sciences
- Lee, H. (2010)  Don't Tweak Your Supply Chain -- Rethink it, Harvard Business Review.
- Lim et al (2013), RFID in the Warehouse: A Literature Analysis (1995–2010) of its Applications, Benefits, Challenges and Future Trends

**2. 'Advanced Decision Support and Analysis for Supply Chain Management'**

Course coordinator: Arisa Shollo (OM)

Most firms have reached a point where the utilization of IT to support strategic/tactical/operational decision-making surfaces as more vital than ever. This course will provide the students with the opportunity to have hands-on experience with cutting-edge software tools and learn how to analyze data and solve supply chain problems. Yet, leveraging benefits from IT systems and tools depends less on possessing and using the technology and more on the ability to best utilize the information in decision-making processes. Although pure rational models give a simple prescriptive solution to reaching optimal solutions, most decisions to be made in real life, involve humans and their subjective considerations. The intention of this course is to especially bring these considerations out. The overall aim of this course is to develop the students' understanding of the organizational challenges when making and implementing organizational decisions in a supply chain context, as well as improve their skills in using IT tools to support their decision-making processes.

Learning Objectives

- Identify supply chain problems requiring decision support and analysis in the enterprise
- Identify and use appropriate mechanisms and tools for problem solving in supply chains
- Use cutting-edge IT tools to analyze supply chain problems and utilize this information in decision-making processes
- Identify and reflect on the challenges of organizational decision-making in supply chains
- Reflect on how to make supply chain decisions involving multiple stakeholders, uncertainty and ambiguity

Indicative literature (more to come)

- Goodwin P, Wright G.  *Decision Analysis for Management Judgment*, 5th Edition
- Trkman, P., McCormack, K., Valadares de Oliveira, M., & Ladeira, M. 2010. The impact of business analytics on supply chain performance. Decision Support Systems, 49, 318-327.
- Vaidyanathan, Ganesh & Sabbaghi, Asghar, (2010), "Supply Chain Intelligence and Value Creation: A Framework". Issues in Information Systems, (9: 1) pp. 570-576.

**3. 'Business Process Excellence'**

Course coordinator: Günter Prockl (OM)

The challenge of a company is to create innovative new opportunities where the value in the supply chain is driven by the information used to create competitive advantages through differentiation.

This means that companies must be able to handle the changes required to implement sophisticated business processes in a technical, social and cultural perspective. Business Process Excellence is based on the theoretical fundaments of lean management, process management, and six sigma. The students gain skills that enable them to act as process or project managers for the implementation of advanced information systems that include several of the company's internal functions and external partners in a supply chain perspective.

Learning Objectives

- Put key challenges and pitfalls associated with the major activities and processes in different industrial or service environments into the perspective of lean/six sigma management.
- Apply the relevant tools from a repertoire of lean strategies and six sigma instruments to analyse and solve problems within business processes.
- Organise a well-structured process from analysis to generation of solutions.
- Explain root causes of the problems applying lean management, lean thinking, six sigma, and network management views.
- Present argumentation from a lean/six sigma management point of view that supports action oriented conclusions based on the analysis of a given case.
- Reflect on the consequences of applying different solution approaches on a given issue.

Indicative literature (more to come)


- George, M. (2010): The Lean Six Sigma Guide to Doing More with Less, Wiley, 327 p.
- Brunet, A. B., New, S., 2003.: Kaizen in Japan: an empirical study. International Journal of Operations and Production Management 23 (12), 1426-1446.
- Cox, A./Chicksand, D. (2005): The limits of lean management thinking: multiple retailers and food farming, European Management Journal, 23, 6, 648-662, 15 p.


**Examinations**

The minor consists of the examinations listed below. The learning objectives and the regulations of

the individual examinations are prescribed in the online course catalogue. Direct links to the individual examinations are inserted in the table below.

| Exam name | Exam form | Gradingscale | Internal/external exam | ECTS | Weight |
|---|---|---|---|---|---|
| Advanced Decision Support and Analysis in the Supply Chain | Written sit-in exam on CBS' computers | 7-step scale | Internal exam | 7.5 | 7.5 |
| Information Management in the Supply Chain | Oral exam based on written product | 7-step scale | Internal exam | 7.5 | 7.5 |
| Business Process Excellence | Home assignment - written product | 7-step scale | Internal exam | 7.5 | 7.5 |

**Minor coordinator**

Assistant Professor Arisa Shollo, Operations Management

## Study Board

The minor in Supply Chain Intelligence - An applied perspective is offered by the Study Board for the Master of Science Programme in Economics and Business Administration.

## How to sign up

If you want to sign up for the minor in Supply Chain Intelligence you have to select CCMVM1014U Minor in Supply Chain Intelligence when you sign up for electives. You will then subsequently be signed up for all three courses.