Capstone: Future-proofing supply chains

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CV –Katri Kauppi (née Karjalainen)

Phd 2009, Helsinki School of Economics

- Phd student / lecturer at HSE 2006-2009

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2009-2011, Assistant Professor, Manchester Business School

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2011-2012, Assistant Professor, Nottingham University

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2012-2018, Assistant Professor, Aalto BIZ

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2018->, Associate Professor (tenured), Aalto BIZ

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CV –Katri Kauppi (née Karjalainen)

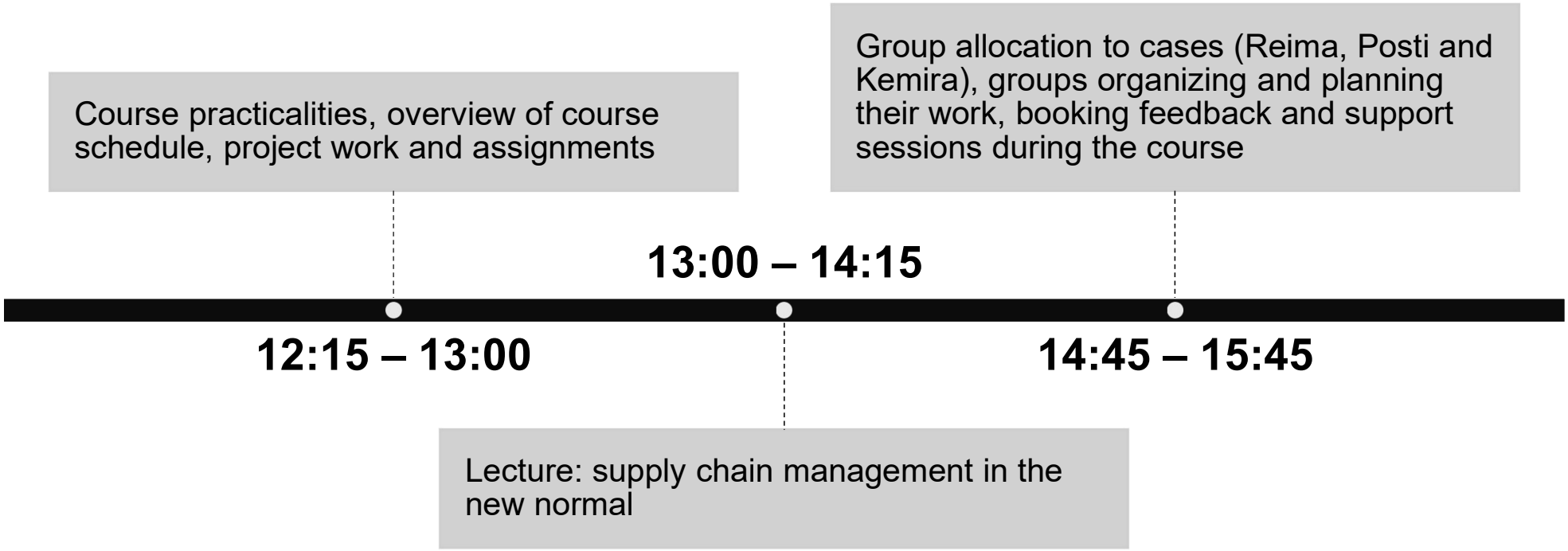
Teaching:

- Sustainable supply chains
- Capstone: Future-proofing supply chains
- BSc/MSc thesis seminar
- Various modules for Aalto EE on supply chain sustainability and supply chain risk management

Main research areas:

- Information asymmetry in buyer-supplier relationships
- Climate change risk management in SCM
- Purchasing organization & behavior
- Public procurement
- Social sustainability in supply chains

Agenda for today (tentative schedule)



Capstone - what does it mean?

Capstone-courses typically base on either simulation(s) or real cases

You are expected and encouraged to draw from previous courses you have taken – apply your knowledge!

Course learning objectives

- **This capstone course is a real case/project-based course intended to help students understand what are the major external challenges, opportunities and risks to supply chains in the future.**
  - Key megatrends to be included are for example climate change, geopolitical issues and digitalization.
- **At the end of the course, students are prepared to analyse supply chain risks and opportunities in light of these megatrends and can design surviving and winning supply chain strategies for the future.**

What has changed based on last year student feedback

Workshop session after final lecture added

Slides on how to do “supply chain improvement” added

More time between final report submission and presentation to case company (based on both student and company feedback)

What kind of skills are needed in SCM & logistics based on recent research?

Decision-making	Problem-solving	(Data) Analytical skills
Information search and processing	Sustainability & risk management	Strategic & operational performance measurement and management
Teamwork	Communication & self-develoment	Digitalization skills

Based on research by:
Midgley and Bak, 2022
Koh and Yuen 2022
Dobroszek 2020
Li et al. 2023; Merkert et al. 2023

On-campus module only, with mandatory participation

Lectures and case-workshops only on weeks 1 & 2, final presentations during week 6

Weeks 3,4 and 5 are for groupwork, though groups must participate in:

Feedback session on their project plan with case company (vai teams)

One feedback/status update session with Katri

- Weekly voluntary meeting options for support on your case work are available, but it is mandatory to participate at least once

Because of the case-based, workshop-like nature of the course, participation on campus is mandatory

If you have a schedule issue with one of the classes, please contact the lecturer ASAP

Within-group peer evaluation at end of course to prevent and tackle free-riding behavior

The course is 100% based on groupwork

Each group member is expected to put in equal effort

- But the problem of free-riding can unfortunately sometimes occur

To motivate equal contribution from group members & to provide a mechanism to address free-riding in the grading process:

- Each group member must fill in a peer-evaluation form of the other group members' contribution during the course
  - To be returned via Mycourses after final presentations are concluded
- If forms consistently suggest an unequal contribution to groupwork, an individual's grade can be decreased or increased by maximum of 1 grade (on the scale of 1-5)

Note: final grades will not be released into Sisu before all group members have completed the peer-evaluation

Three exciting cases

*In case **Reima** you get to understand product returns related logistics and analyze alternative reverse logistics operations models, considering the business case, operational aspects and sustainability..*

*In case **Posti,** you get to forecast and design the future of Postal services in Finland, considering operative logistics aspects, product portfolio and pricing*

*In case **Kemira,** you get to analyse and redesign the supply network of a global manufacturing company for optimal balance between efficiency and availability*

Grading completely based on the real case work

Assignment	% of course grade	Deadline
Project proposal	10%	19.1 @ 12.00
Final project presentation	20%	Due 1h before presentation session (note: whole session, not your slot!)
Final project report	70%	12.2 @ 23.59

Instructions for all assignments available at:
https://mycourses.aalto.fi/course/view.php?id=40816&section=4

For all your submissions:

Use Times new roman font size 12, and return the document in either word or PDF format

Remember to include a cover page with:

- all group members names and student numbers indicated
- the email address for person nominated as your group contact person towards the case company (using official Aalto-email for all company and course communications)
- Date of the submission

Submissions are done in groups, only 1 member per group submits via Mycourses

Project proposal (see detailed guidelines in Mycourses)

This is to communicate your analysis plan for the case company: what do you plan to do and how

700-1000 words (not including references and figures and/or tables)

Outline the following

- Your analysis plan, including but not limited to
  - Assumptions you plan to make in your analyses
  - Potential methods of analysis
  - Key reference sources or software used can be noted as applicable
- Your timeline (e.g. gant chart)
- Expected deliverables based on your analysis

- **Any key questions you want to get feedback on from the case company**
- **Any other information you see relevant**

Final report guidelines (see Mycourses for detailed instructions)

“Consultancy style” report, 3500-5000 words, excluding references and appendices

- Use of figures and tables is highly encouraged!

Your project report should include at least the following sections (you may add others as you see fit)

- Executive summary (1 page)
- Table of contents
- Introduction
- Analysis/background research (What this is will highly vary depending on the case company)
  - Make sure to note any assumptions you made that impact interpretation of results
- Outcome / results of your analysis, with a focus on your recommendation(s)
- Implementation proposal regarding your recommendation
- Reference list

	0	1	2	3	4	5
LG2 (problem solving skills): Ability to identify and analyze complex and unfamiliar business problems and provide strategically appropriate solutions	Does not meet minimum requirements	Faced with a complex problem, begins to construct a problem statement with evidence of at least some relevant contextual factors. Uses, in a basic way, skills, abilities, theories or methodologies gained during the studies, but the solutions suggested do not provide any new insight strategically. The problem statement, analysis and solutions are superficial and not logically aligned with each other.		Faced with a complex problem, constructs an adequately detailed problem statement with evidence of most relevant contextual factors. Uses, in a basic way, skills, abilities, theories or methodologies gained during the studies to provide strategically appropriate but non-insightful solutions. The analytical approach and solutions are both appropriate and logically aligned with each other and the problem statement.		Faced with a complex or unfamiliar problem, constructs a clear and insightful problem statement with evidence of all relevant contextual factors. Adapts and applies, in original and insightful ways, skills, abilities, theories or methodologies gained during the studies to solve difficult or complex problems and to provide strategically appropriate and insightful solutions. The analytical approach is clearly justified. Both the analysis and the solutions are logical and insightful, and demonstrate a deep comprehension of the problem and the context.
LG1 (business knowledge): Ability to demonstrate an integrated understanding of relevant business knowledge and to apply it in diverse contexts	Does not meet minimum requirements	Presents examples, facts or theories from more than one field of study, but does not connect them meaningfully to each other and the project.		Connects examples, facts or theories from more than one field or perspective that are relevant to the project.		Creates wholes out of multiple (synthesizes) and draws conclusions by combining examples, facts, and/or theories from more than one field or perspective in a way that is original and creates new insight.
LG3 (ability to communicate and collaborate in diverse professional contexts)	Does not meet minimum requirement	The required assignment is completed and communicated in a way that is barely appropriate for the given context and audience.		The required assignment is completed and communicated in a way that is in all ways appropriate for the given context and audience, but does not stand out from the mass.		The required assignment is completed and communicated in a way that demonstrates an excellent understanding of the context and the needs of the audience. It stands out from the average assignments by using innovative communicative approaches that add value to the audience.

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Final report grading uses the official school-level capstone Rubric - check rubric via submission box!

Group formation

Groups are formed by teacher based on:

1. Student case assignment preferences
2. Student background matching case assignment

To ensure each group is motivated and has a good complementary skillset for the case assignment

Group formation done based on pre-survey filled in via Mycourses

- Groups will be announced and formed later during today's lecture
- If you have not yet filled the survey, do it ASAP!

Groupwork agreement to facilitate smooth teamwork

After group announcements later today, each group has a chance to self-organize and book meetings & presentation slot

To avoid groupwork challenges, groups also need to discuss and decide on their work practices (e.g. communication, deadlines etc.)

Mandatory sessions for all

Date	Session
Thursday 11th of January 12.30-14.15	Lecture on major megatrends and their impact on SCM (Katri Kauppi)
Tuesday 16th of January 12.15-15.30	Lecture on SCM tools for future proofing (Katri Kauppi) Lecture on advanced risk management in SCM (Katri Kauppi)
Thursday 18th of January 12.15-15.30	Strategic foresight and identification of early warning signals (scenario workshop on your own cases) (Professor of Practice Gautam Basu) Groupwork session with Katri and TA available for support

Note: the lectures are partly designed with the case assignments in mind, BUT mainly for general education on what future-proofing in SCM should/could look like, i.e. not everything discussed during the lectures needs/should be applied in each or any case!

Sessions only for case Posti

What	When	Where
Case assignment workshop	Thu 11th of January 9.00-11.30	T003, BIZ building
Final presentations by groups	Tue 13th of February 10.00-14.00	F102, Väre (ARTS building)

Sessions only for case Reima

What	When	Where
Case assignment workshop	Thu 11th of January 14.30-17.00	T004, BIZ building
Final presentations by groups	Tue 15th of February 9.15-12.30	T004, BIZ building

Note for case Posti and Kemira, there is also a teaching assistant who can provide detailed assistance with your data analysis:

doctoral candidate Lauri Kuula, lauri.kuula@aalto.fi

Sessions only for case Kemira

What	When	Where
Case assignment workshop	Fri 12th of January 12.15-14.45	Room T003, BIZ building
Final presentations by groups	Fri 16th of February 12.15-16.00	Q202, Väre (ARTS building)

Feedback session with your case company after proposal submission

Slots available for booking via each of the case sections in Mycourses

- Make the booking today after groups are formed!
- These are online sessions, and if not all members can attend, choose a time that more than 1 member can
- Excellent opportunity to get feedback directly from the company AND to ask questions that have arisen as you have started your analysis

Teacher will be present in these sessions AND will also provide written feedback with your grade via mycourses

Each case company will provide you with contact details you can use throughout the course for groupwork during their workshop

Be prepared for your own group's meetings with case-company

After the workshop usually teams-meetings

- Find a calm place where you can focus and there is not too much background noise
- Turn on your camera (use a virtual background if needed)

Be prepared to discuss your proposal/approach etc.

- Have the necessary documents open before the start of the meeting
- This is a meeting for mutual Q&A, not the company telling you what to do

Weeks 3-5 are mostly independent groupwork

Teacher is available for weekly support meetings with the groups

- Come ask questions, get reflections on what you have done, just discuss the issues related to the case, whatever works for you
- No need to send any material in advance to these meetings but you are very welcome to do so
- Each group must come at least 1 time to a meeting with Katri, but you can come as often as you want/need

You can also contact via email anytime for support!

Final presentations on the last week of the course

A scheduler for the presentations will be sent a bit closer to the date, for booking the specific time for each case group

Multiple representatives from the case companies will be present to hear your results and ask further questions

Each team is given approx. 40-45 minutes.

- **20-25 minute presentation with PowerPoint slides**
- **Q&A session based on your presentation and final report**

Submit your slides via Mycourses before the presentation session

Use of artificial intelligence

While artificial intelligence is a useful tool in both studying and future work, your own intelligence is your best asset!

Aalto has general guidelines on the use of AI:

https://www.aalto.fi/en/services/guidance-for-the-use-of-artificial-intelligence-in-teaching-and-learning-at-aalto-university

On this course, you can use AI for general ideation and grammatical/ stylistic improvement of your report BUT NOT for content creation

- If you use AI, save the original version of your work before AI was used. If Turnitin gives a high AI generated score for your work, you need to be able to show your original work

IMPORTANT! You must NOT put any company specific information or data into ChatGPT or other AI tools! Remember the NDA you sign.

Contact

Mycourses: https://mycourses.aalto.fi/course/view.php?id=40816

Mycourses and email key communication channel from teacher to students

- Make sure you have correct email at mycourses and check that email so you get any announcements sent by the teacher

Depending on the question, different channels available

- email katri.kauppi@aalto.fi
- gsm 050 401 7112
- Come and see me at my office T208

Course assistant Lauri Kuula (for Posti and Kemira case only)

- Email lauri.kuula@aalto.fi

Supply chain improvement – how to approach it?

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Analysing and improving a supply chain

Describe	Predict	Prescribe
Describe – understand the current state (includes both internal and external element)	Predict – understand what can happen with changes and/or what changes will happen in the operating environment	Prescribe – give recommendations to improve performance now and/or in the future

Step 1 - Describe

Consider the operations in the chain– at what level should you focus / do you have information on?

Consider the relevant stakeholders and the operating environment – what is relevant for your focus?

Visualize?

Process mapping, supply chain mapping, SWOT, stakeholder analysis, etc. use relevant tools to get the ”picture”

Describe current performance (with the data/information you have available in the case, potentially comparing to relevant data available online)

Consider relevant variables (costs, quality, emissions, etc.)

Ask questions (from company and from yourself)

What is done, why is it done this way, what impacts the relevant variables etc.

What is the goal? What is the company strategy in general, what does the company want to achieve?

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Step 2 - predict

What needs to change & how? How do changes impact key performance variables

- Use research, industry reports etc. to draw ideas
- Use different analysis methods to test alternatives

What will change / can change in the operating environment?

- How does that impact your analysis?
- How should the company react to be prepared?

Step 3 - prescribe

Based on steps 1 and step 2, decide what is the best way to proceed

- What should the company do?
- What are the costs and benefits of doing it?
- How does it help the company reach their goal

Prescribe not only what to do but how to do it!

Table 1. SCOR model and examples of decisions at the three levels

SCOR Domain	Source	Make	Deliver	Return
Activities	Order and receive materials and products	Schedule and manufacture, repair, remanufacture, or recycle materials and products	Receive, schedule, pick, pack, and ship orders	Request, approve, and determine disposal of products and assets
Strategic (time frame: years)	• Strategic sourcing • Supply chain mapping	• Location of plants • Product line mix at plants	• Location of distribution centers • Fleet planning	• Location of return centers
Tactical (time frame: months)	• Tactical sourcing • Supply chain contracts	• Product line rationalization • Sales and operations planning	• Transportation and distribution planning • Inventory policies at locations	• Reverse distribution plan
Operational (time frame: days)	• Materials requirement planning and inventory replenishment orders	• Workforce scheduling • Manufacturing, order tracking, and scheduling	• Vehicle routing (for deliveries)	• Vehicle routing (for returns collection)
Plan	Demand forecasting (long term, mid term, and short term)			

Sousa, 2014

My most important advice to you

The more effort you put into the case – the more you learn from it

- Excellent opportunity to showcase your skills to potential employers

Start early – this is not a case you can do on the final night

- Remember that a 6 ECTS course is equivalent to 160 hours of work

Work together with your group – not separately

- Meet often to discuss and develop work together even if sharing responsibilities for individual tasks

Do not hesitate to seek support from teacher – that is what I am here for!

- Just email or use the scheduler to book appointments