



## Ljubljana Summer School

6 – 24 July 2020

### Logistics 4.0: How Technology is Transforming the Supply Chain

Master course (ECTS: 7)

10.00 – 12.30

**Course leader:**

**KIM Sungsu**

*Kyungpook National University, South Korea*

**Aims and objectives of the course:**

Every product that we use today is the result of a supply chain - a complex series of steps that turn raw materials into the final products we use and everything related with this. Managing these supply chains has become more and more a challenge, especially with all modern technologies and today's trends. The 24-hour economy, fast delivery of goods to your home, wanting to have customized products and of course the focus on sustainability are a few examples of these trends.

In this course students will learn why managing supply chains is important and challenging. It is a key activity for both large multi-national companies as well as for small businesses. Students will find out how to design supply chains that meet future economic, environmental and social requirements, asking questions such as:

- How did global supply chain become what they are today?
- How can current information and communication technology (ICT) make supply chains more efficient?
- Which trends do we need to recognize and cope with?
- How can you implement sustainable supply chain innovations?
- And what impact will new technologies, such as Blockchain, AI (Artificial Intelligence), Cloud Computing, and IoT (Internet of Things), have on operations and the supply chain?

The lectures will look at examples of innovations in operations and supply chain driven by technology in various industries from the home food delivery industry to the fashion industry, the grocery, and the manufacturing industry. The focus is on thinking supply chain and recognizing the impact of ICT so that students can be an innovator in this area and a driver of change. Key to a good supply chain manager is his/her ability to think across company borders and functional domains. In addition, being interested in both business and technology is essential.

Students will be encouraged to apply the knowledge they gain to their own product or industry (or a company and supply chain they're interested in). They are invited to share ideas for optimizing their supply chain with other learners.

By the end of the course, students will be able to:

- Describe the key trends in supply chain innovation.
- Explain in their own words the role of information and communication technology in supply chain innovation.



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- Discuss the impact of innovative information and communication technology in a clear and substantiate way.

### Course syllabus:

Day	Date	Topic(s)
1	7 July	What is the supply chain and challenges to meet demand with supply - Introduction to supply chain management - Demand forecasting and bullwhip effect - Inventory management and warehouse operations - Transportation
2	8 July	Logistics 4.0: How technology is transforming the supply chain - Emerging technologies and trends in global and sustainable supply chain innovation - The role of information and communication technology in supply chains
3	9 July	Innovation: AI and Machine Learning - AI in Production : A game changer for manufacturers with heavy assets - Case: How AI and Machine Learning are helping the GE digital transformation - Case: How AI will change business in Poland
4	10 July	Innovation: Robots - Robots aren't replacing Humans In key areas of manufacturing - What's now and next in analytics, AI and automation Innovation: Big data, AR and VR - How big data is shaping the supply chains of tomorrow - How AR and VR are revolutionizing the supply chain - Case: Logistics innovation through new computing environment called Meta-platforms: Amazon Case: H&M Pivots to Big Data to Spot Next Big Fast-Fashion Trends
5	13 July	Innovation: A revolution in Last Mile Deliveries - Case: Planning for the warehouse of the future by Swisslog - Case: Urban infill: the route to delivery solutions by JLL - Case: Toyota working with Amazon, Uber, and Pizza Hut to develop self-driving shuttle
6	14 July	Innovation: Blockchain and IoT (Internet of Things) in the Supply Chain - How Blockchain will transform the Supply chain and logistics Industry - How Blockchain can help to build trust in Supply chain - How Internet of Things and Blockchain strengthen the Supply chain



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7	15 July	Digital Supply Chain Risk - Leveraging data analytics for supply chain process improvement and risk management - Digital Supply Chain – the hype and the risks - Future of Supply Chain: Three Contrarian Predictions - Case: JFK snow disaster and The question of centralizing supply chain management
8	16 July	Cases - How to Survive the Retail Crisis: A Master Class from TJ Maxx - The cold chain problem in the retail industry - Smart Farming - Driving The clinically integrated healthcare supply chain
9	20 July	Digital Supply Chain Transformation - Things to know about digital supply chain transformation - Forces to drive digital supply chain transformation - Strategies to drive digital transformation - AI transformation roadmap - Case: DHL
10	21 July	Future of supply chains 2025 - Technology, Visibility, & Customer Centricity in the new retail supply chain - Change at breakneck speed In logistics, supply chain and transportation - Impact of the Fourth Industrial Revolution on supply chains
	22 July	Study day
	23 July	Project and/or research plan presentations
	24 July	Announcement of final grade

### Teaching methods:

- Interactive lectures
- Case studies



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### Evaluation method and grading scale:

- Case studies & in-class participation: 60%
- Student project: 40%

DEFINITION	%	LOCAL SCALE	ECTS SCALE	Grade (USA)
exceptional knowledge without or with negligible faults	92-100	10	A	A+, A, A-
very good knowledge with some minor faults	85-91	9	B	B+, B
good knowledge with certain faults	77-84	8	C	B
solid knowledge but with several faults	68-76	7	D	C+, C, C-
knowledge only meets minimal criteria	60-67	6	E	D+, D
knowledge does not meet minimal criteria	<60	5	F	

### Prerequisites for attending the course:

No prerequisites.

*Note: If approved by the home institution, Bachelor students in their final year of study can register for this Master course.*