Introduction to Logistics and Supply Chain Management

Günter Prockl
Department of Digitalization
Copenhagen Business School

CBS COPENHAGEN BUSINESS SCHOOL
HANDELSHØJSKOLEN

Who is speaking, someone between Theory …

- Associate Professor for Supply Chain Management, CBS, since April 2009, since 2019 @ digi
  - Global Program GSCLM, Cand merc. SCM, HD SCM
- Adjunct Professor, FAU Erlangen-Nürnberg, VSE Prague and others
- Full Professor
  Mercator University Duisburg Essen
- Lecturer, FAU Erlangen-Nürnberg, Germany

- Academic track record
  - Habilitation – Post Doc, Business Administration,
  - Dr. rer. pol., Business Administration,
  - Master of Business Administration (Diplomkaufmann),
  - Master Arts, Economics, USA

CBS COPENHAGEN BUSINESS SCHOOL
HANDELSHØJSKOLEN

… and hands on practice

- Director Supply Chain Management, Fraunhofer Application Centre for Logistics and Communication Technology, Nürnberg, Germany
  - Projects for Industry, Retail, Logistics Service Providers, others like Airports, Governments ...
- Research Associate and Consultant, Fraunhofer Application Center for Logistics and Communication Technology
- Project work Production Planning & Control, Ehrmann AG, Oberschönegg, Germany
- Production Planner and Scheduler, Schwäbische Formdrehteile GmbH Babenhausen, Germany
- Apprenticeship Industry, Schwäbische Formdrehteile GmbH Babenhausen, Germany

slido

Why are you here? What do you expect from this course?

ⓘ Start presenting to display the poll results on this slide.

"Translation" of the Learning Objectives

- Students should learn to identify and understand specific basic and global supply chain management problems and relate it to theories, methods, and justifiable solutions.
- For the application and discussion of solutions they should acquire knowledge on concepts, structures, tools and processes, which are necessary for the management of global supply chains as well as on there application context of global supply chain management issues.
- Finally the students should learn to demonstrate the use of "flow thinking" and SCM terminology that is central to this course..
- Students shall be assessed against these learning objectives of the course. To gain the highest grade in the exam, students must be able to select and recall basic appropriate models and concepts from the curriculum and present them in a comprehensive and well-argued way that may also put their findings into new perspectives.

- Upon course completion students should be able to:
- suggest ways of factoring complexity in business situations arising from international business and inter-organisational relationships in operations like logistics, sourcing, and production
- Apply basic theoretical ideas and concepts by using taught methods such as mapping global supply chains in terms of flows and scope and demonstrating comprehension of SCM concepts and terminology
- Distinguish challenges in global procurement, production and logistics issues and analyse, both qualitatively and quantitatively, basic trade-off's such as global supplier, site and transport mode selection

Just a stupid sport metaphor?

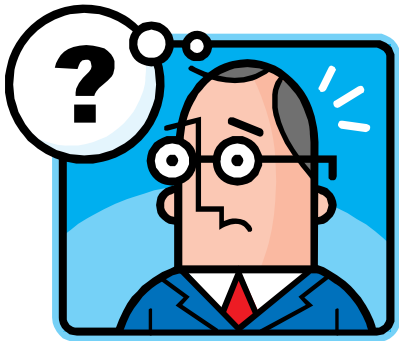
CHARACTERISTICS OF THE COMPLETE PLAYER

It is a long list of things needed on the long road that every kid who dreams to become a memorable player has to tread. **There isn't just one main factor that we can say is the most important to become complete player, because it is a mixture of those.** They combine together during Player's career, from the beginning till the end of a Player's active playing time.

QUESTIONING

Exam structure
What will be asked?

Slide from exam workshop session 11 – see there for details



- Will contain a set of three to four main questions with sub-questions :
  - Open essay question with guiding sub-questions that require understanding and argumentation
  - Pre-structured question requiring active knowledge to answer it *and/or*
  - Pre-structured question requiring a decision to be made, and a for/against justification
  - Multiple-choice questions – Scope of (Passive) Knowledge
- All questions would need to be answered
- All questions would be of equal importance

Today's Topics

Footprints of a modern understanding of Business Logistics and

introducing views on Logistics and Supply Chain Management

The "logistics system" of **the course GSCM** – actors, functions and structural elements to support your learning efforts

Defining Logistics and its Management or „how to nail the Jelly to the Wall“

- Or how a truck driver once put it:

  First I had
  „Smith Trucking“ on my trailer,
  then I had
  „Smith Logistics“ on my trailer
  now they put
  „Supply Chain Management“ on it,

  … but I am still driving the same damned old truck.“

- **So what is it, Logistics Management**

  and what does it?

Two Questions for you

Think about your answers; maybe write them down!

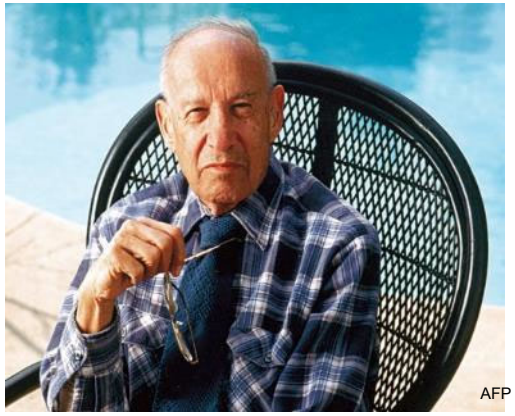
- How would you explain what Logistics **Management** is, what are we doing in Logistics Management?
- How old is Logistics **Management** as a management discipline, i.e. how long are we doing it?

slido

How old is Logistics Management as a management discipline, i.e. how long are we doing it?
Enter a year that you think is the first year!

ⓘ Start presenting to display the poll results on this slide.

Starting Point – Peter Druckers “Dark continent” of “Physical Distribution“


AFP

- Discovery of up to that time almost forgotten functions, i.e. „if you can produce it every dummy can ship it“

Peter Drucker 1962 in Fortune:

- “We know little more about distribution today than Napoleon's contemporaries knew about the interior of Africa. We know it is there, and we know it is big; and that's about all.”
- physical distribution is one of "the most sadly neglected, most promising areas of American business“

Logistics Management as systematic

- Professionalization, Rationalization and Technization of the elementary Transfer-Operations: Transportation, Warehousing and Transshipment
- by e.g. Transportation planning, Warehouse optimization, better transshipment technology

- as (at that times) new success factor for Management

The elementary logistics functions: Transportation, Warehousing, Transshipment – What questions could a Management have?

Does logistics (in this first understanding) add value – and if yes, how?

Or does it rather create problems?

Welds View on Utility – an old piece of literature

Logistics Adds Time and Place Utility

Manufactured products possess some value or utility because an assembled item is worth more than its unassembled components or raw materials. A completed automobile, for example, is much more valuable to a consumer than its unassembled parts. The value, or utility, of making materials available in a completed state is called *form utility*. To the consumer, however, the product not only must have form utility, it must be in the right place, at the right time, and be available to purchase. The value added to products beyond that added by manufacturing (form utility), is called *place*, *time*, and *possession utility*.[12] The logistics activity provides place and time utility, while marketing provides possession utility.[13]

Logistics Adds Value to Products

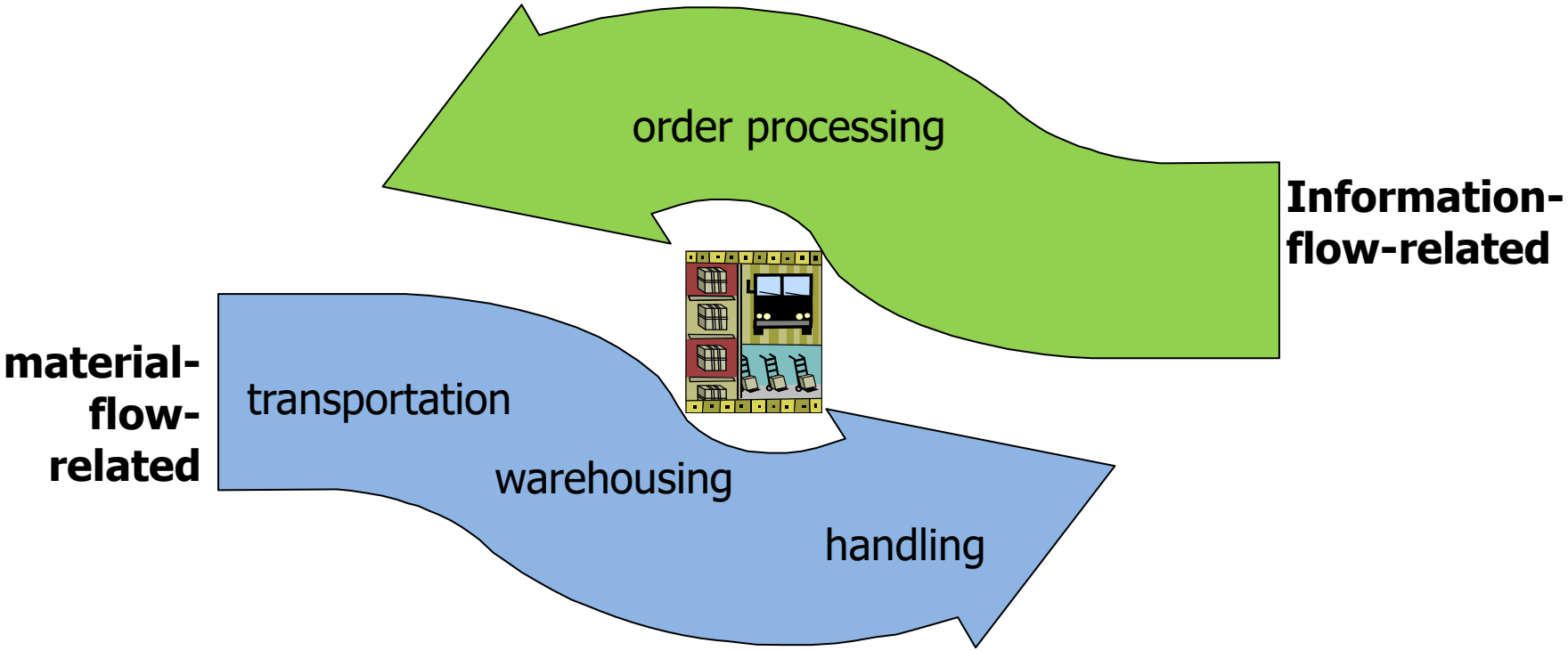
Management is quite concerned with the "value added" by logistics, because improvements in place and time utility are ultimately reflected in the firm's profits. Cost savings in logistics or a stronger marketing position due to an improved logistics system can both cause improved bottom line performance. In firms where logistics contributes a significant portion of the "value added" to a product, logistics management is particularly important. Figure 1–3 illustrates that importance in several industries.

[12] See L. D. H. Weld, *The Marketing of Farm Products* (New York: Macmillan, 1919).

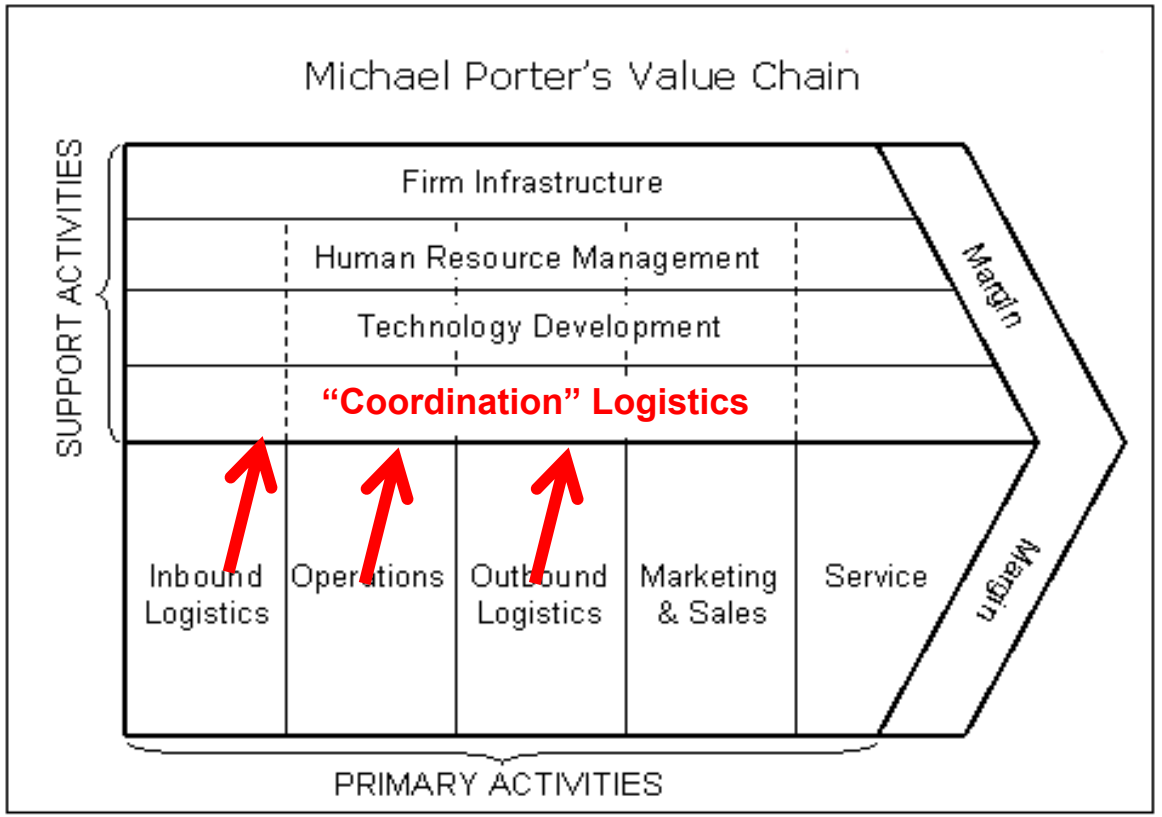
Next then: Coordination and Integration as new key levers for business success

- "80% of errors and problems within companies occur at the interfaces between functions not within the functions... " (Fukuda)
  - Logistics as an „Art and Science" of Coordination
  - Tradeoffs and interfaces - planning/optimizing
  - New focus on information processing
- Management question: how to coordinate and control „divided" functions in sequential, „distributed" systems
  - Plowmans „Seven Rights": The right goods, in the right quantity, to the right place …
  - Logistics as a Cross sectional function

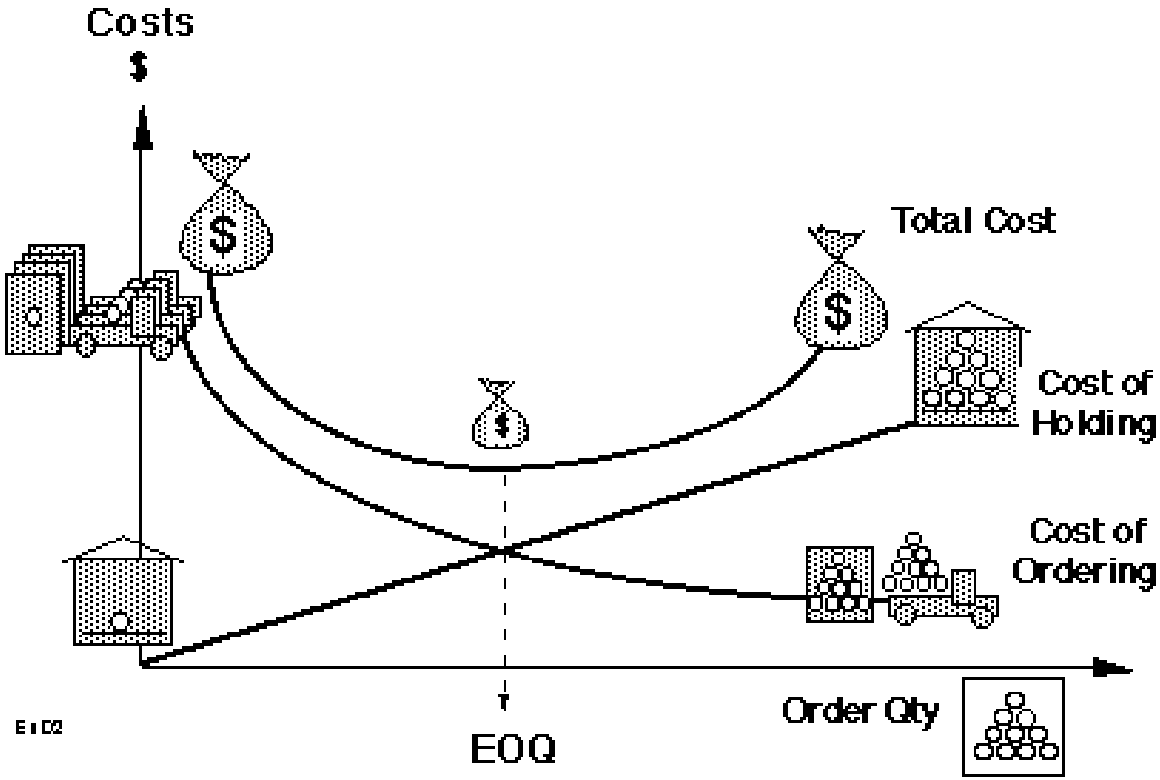
Logistics = management of what type of activities?

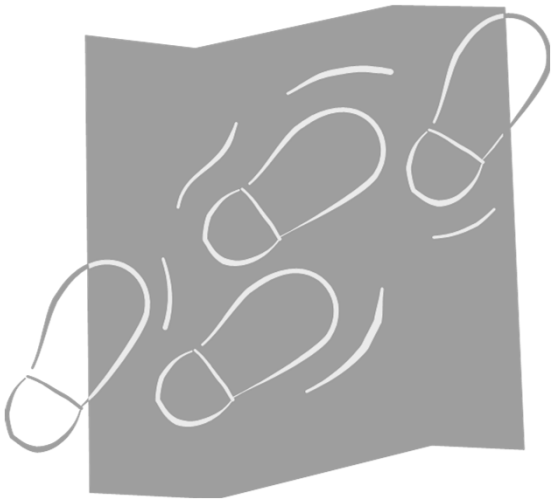


From functional to cross-functional



And a world of tradeoffs – E.g. holding costs for inventory vs. transportation





But there is more: Footprints of another, third form

Questions for you

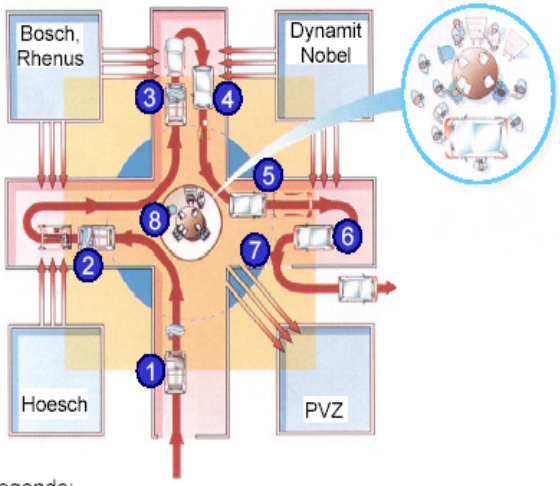
When you look at the short video

- What do you see – what is your first impression, see again, what do you see?
- Now recapitulate the understanding of logistics management that we have so far, does it apply in this context, how does it apply; how do we manage?

Industry: „real“ Just-in-Time

Industry: „real“ Just-in-Time

Integration of collaborating system partners into the production process



Legende:

1 Montage Safety-Bodyframe
2 Assembly gear-drive modul
3 Glazing, seat system
4 Interieur-Decor-Elements
5 Customized-Design-System
6 Testrun, functionality test
7 Quality audit
8 Permanent forum for system partners

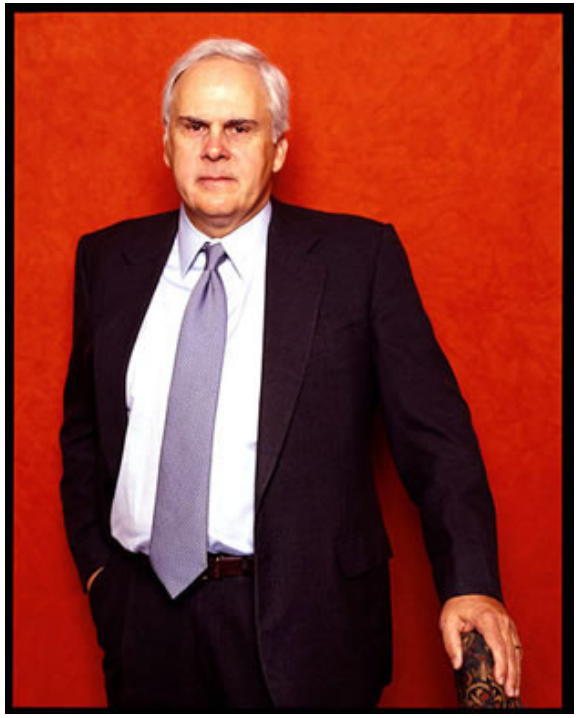
Maximal length of assembly line, minimal communication distance

Just-in-time supply of modules

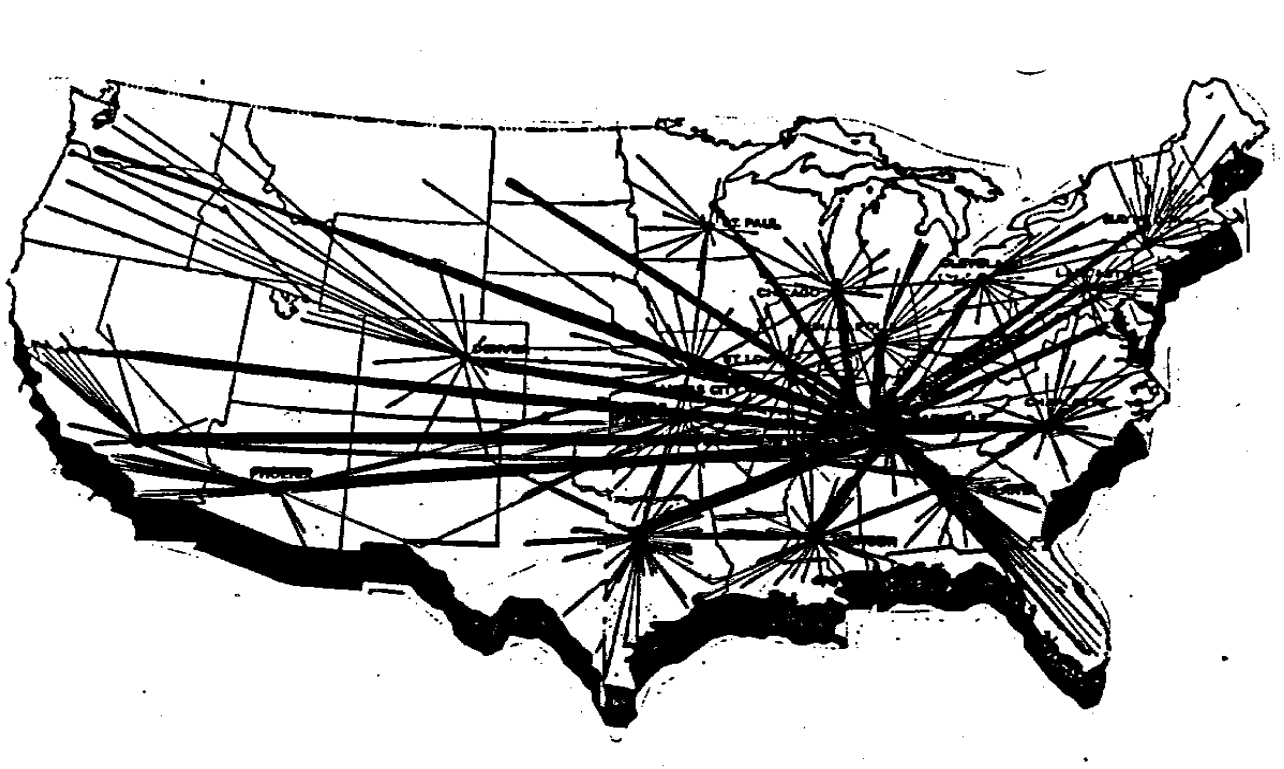
Flexible adaptable material flows „transmissable facade“

Rework transparent in center

Fred Smith:
He got a „C“ for a project paper!



For that Idea!

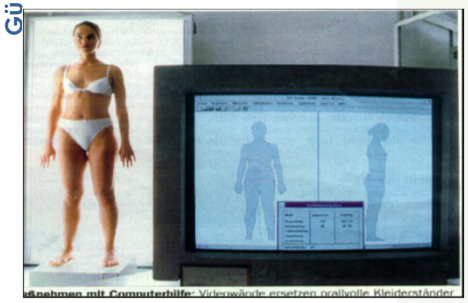


Today it is a bit more complicated but look at the basic pattern

HTTP://WWW.YOUTUBE.COM/WATCH?FEATURE=PLAYER_DETAILPAGE&V=F3TPKVSXQTS

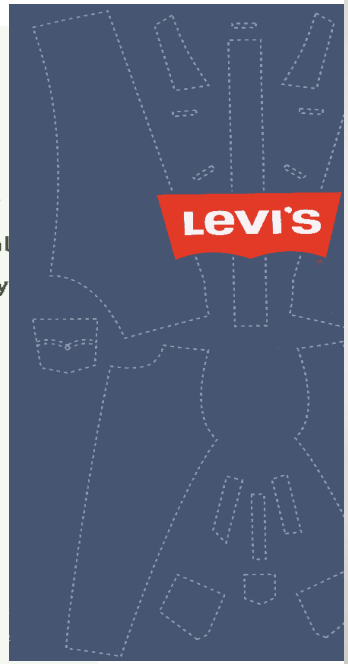
Using Logistics as a Basis for new Business Models – E.g. Levi‘s Personal Pair of Jeans

1. „Measure-ment“ in store



2.

Our technology links the store computer directly to the factory where our state-of-the-art single ply cutter cuts the pieces for your individual pair of Levi's® Personal Pair™ jeans. They are carefully sewn by a special team, washed, then marked inside with a unique bar code containing your fit data...



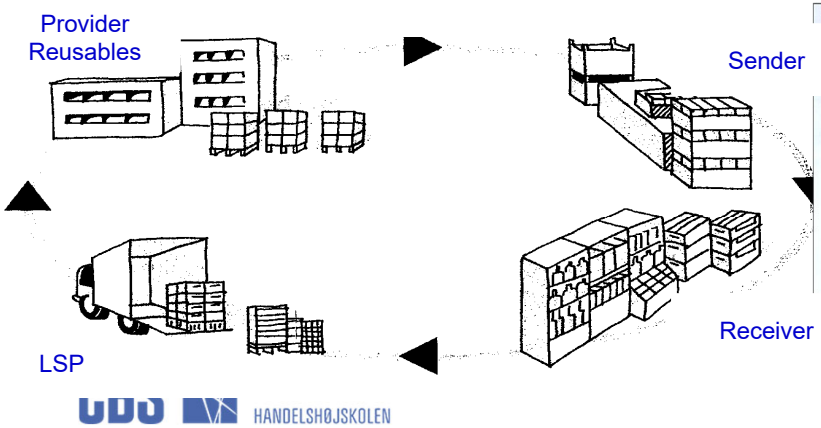
3. Delivery

e.g.

- Innovative Supply Chain Designs as a Basis for new Business Models
  - See the Levi‘s Vision: try on, then sewing: measurement in store, transmisson to production, direct distribution to consumers
  - Dell, also Amazon; Getting the order (and the money) before production and distribution into the channel (make to order)
  - Benettons Pullover: Knitting in „white“ and coloring later in the process
  - Zara, The Gap, H&M: Fast „one way“ design in the Fashion-Market
- **How you “ship” it determines how you produce it?**

.

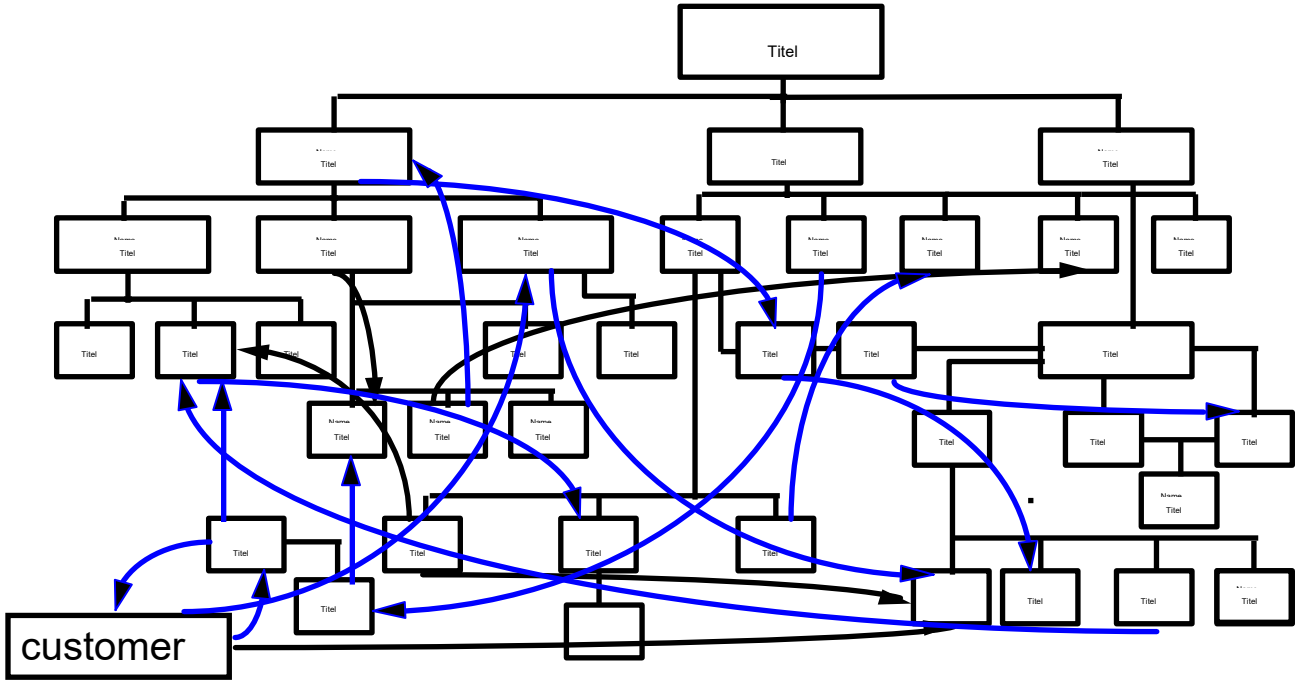
Longer Chains, e.g. including the last Miles or Circular Logistics including return flows



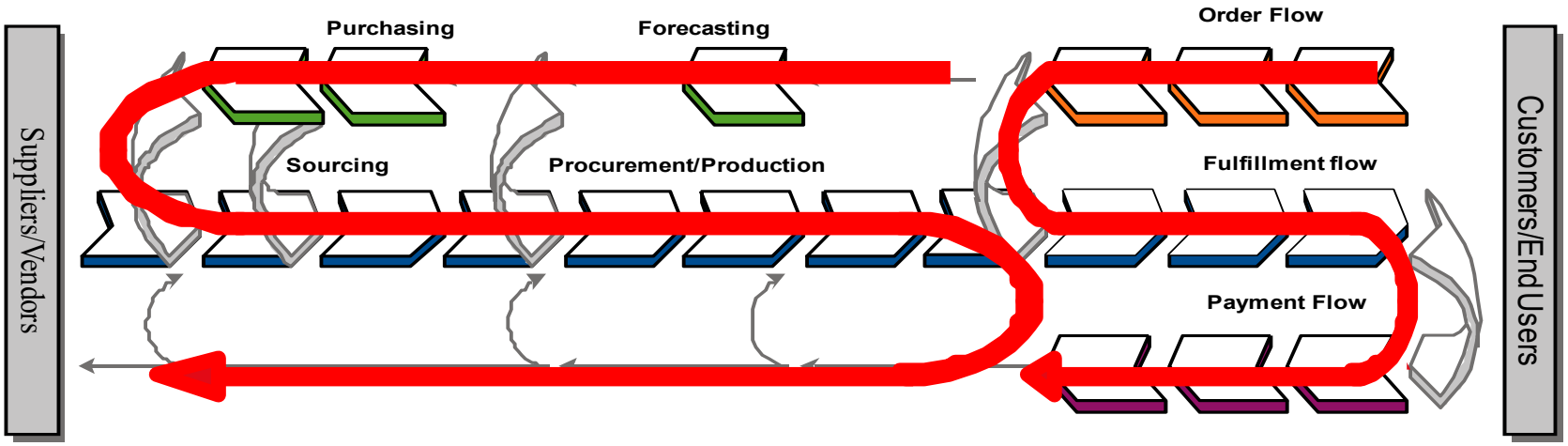
HANDELSHØJSKOLEN

A quick “academic” summary of the third understanding of logistics/supply chain management

... more specifically: identifying „flows“ in the world of business

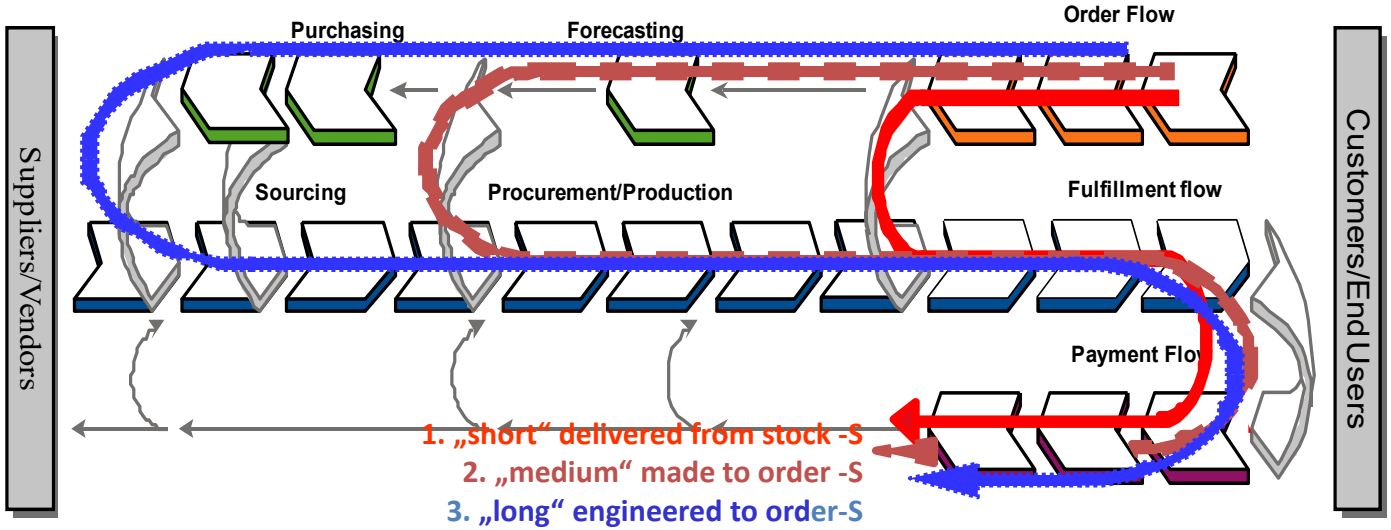


Looking at flows and less on the "silos" (boxes)
e.g.: The Order-to-Payment Flow



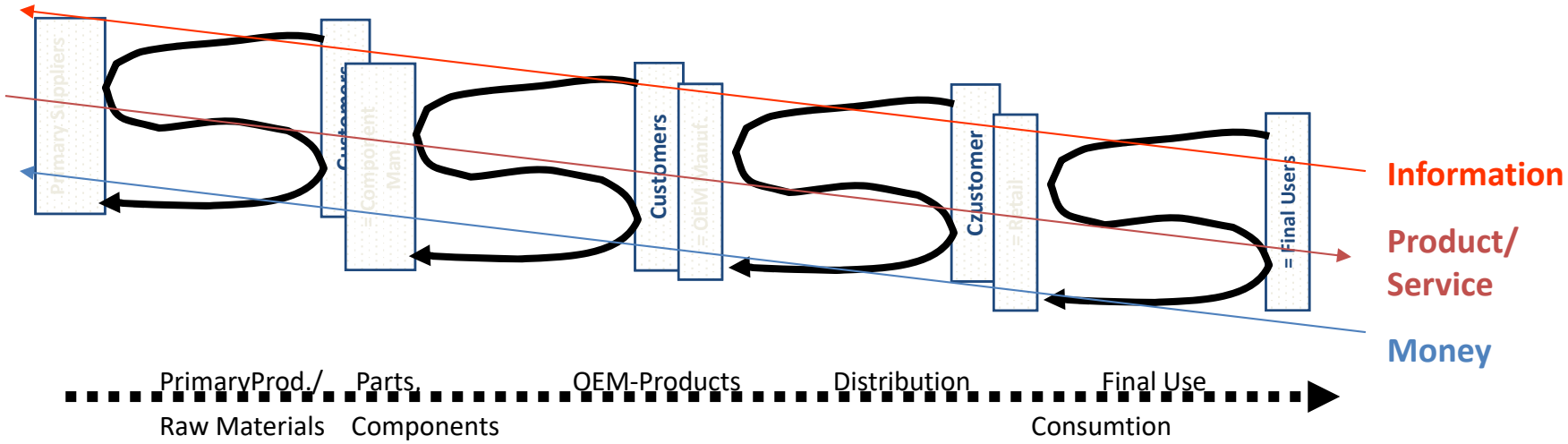
… how to integrate activities in the Supply-Chain „S"?

e.g. Integrating with different length of the chains or the major objectives such as efficiency vs. agility, vs resilience, vs. sustainability …



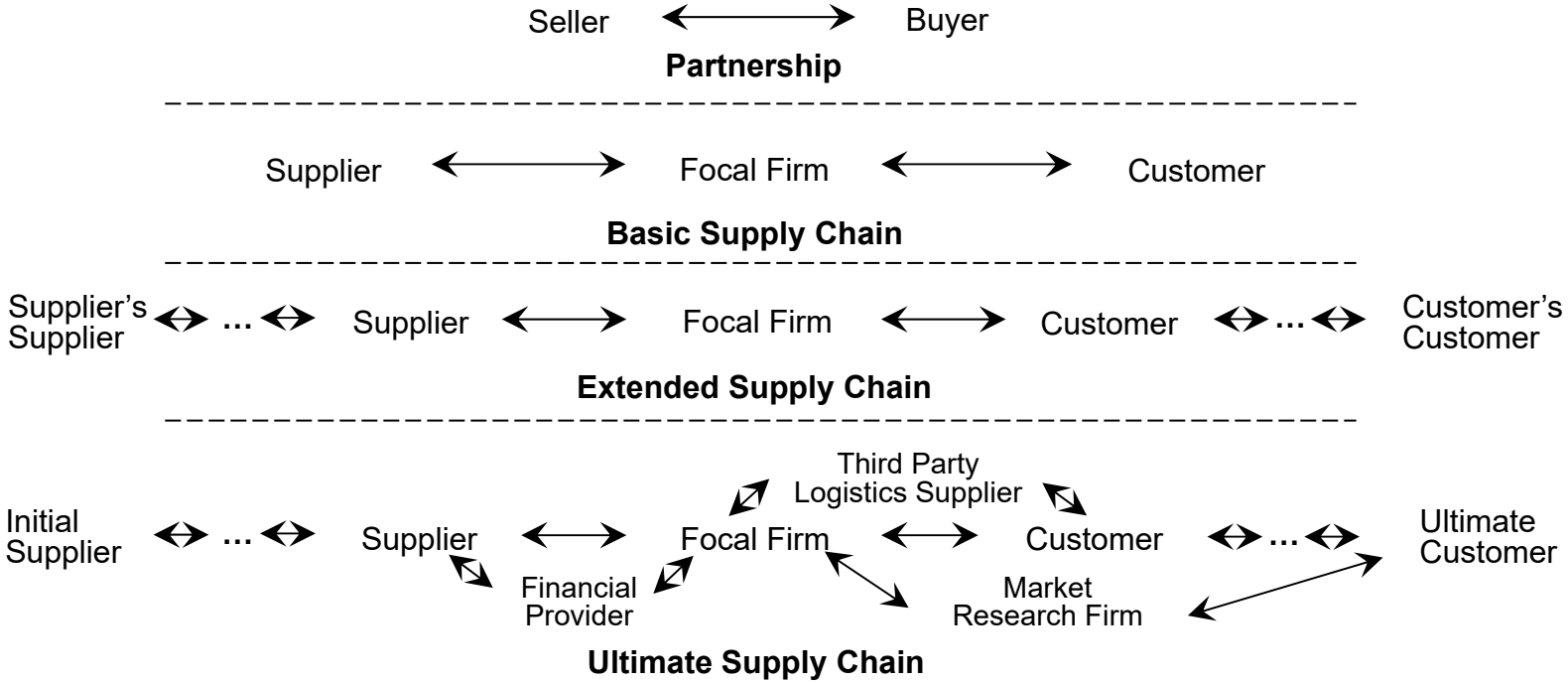
… how to determine „optimal complexity“ and the optimal „customer penetration point“?

The "Full" Supply Chain: A Sequence of S's



... How to configure entire economy-wide Supply Chains for competitiveness?

The challenge of the Scope?
Basic – Extended - Ultimate



Source: Mentzer u.a. (2001), S. 7

Different levels are also creating challenges – Supply Chain, Company and Process level

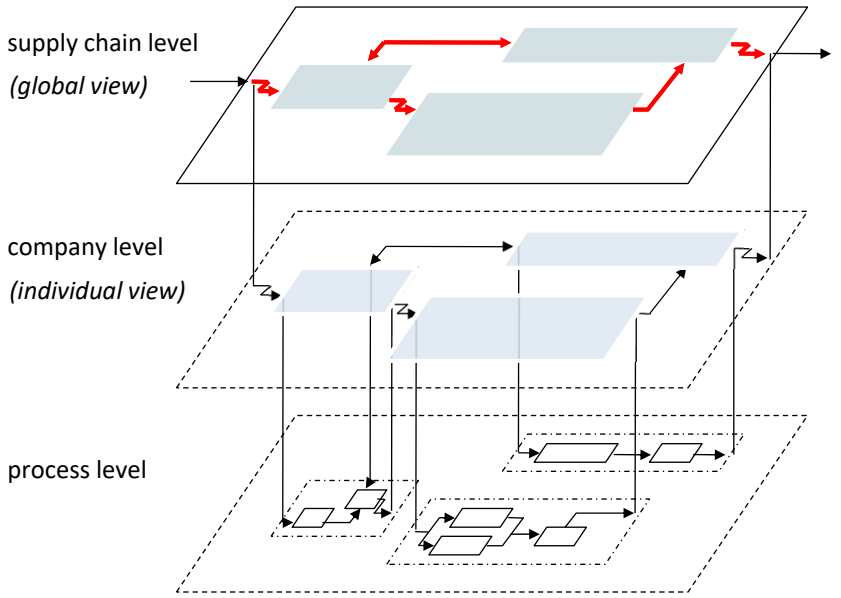
It is no longer all about technology, warehouses, and distribution centres ,or trucks or planes ….

… in effect the supply chain is any combination of processes, functions, activities, relationships, and pathways, along which products, services, information and financial transactions move in and between enterprises

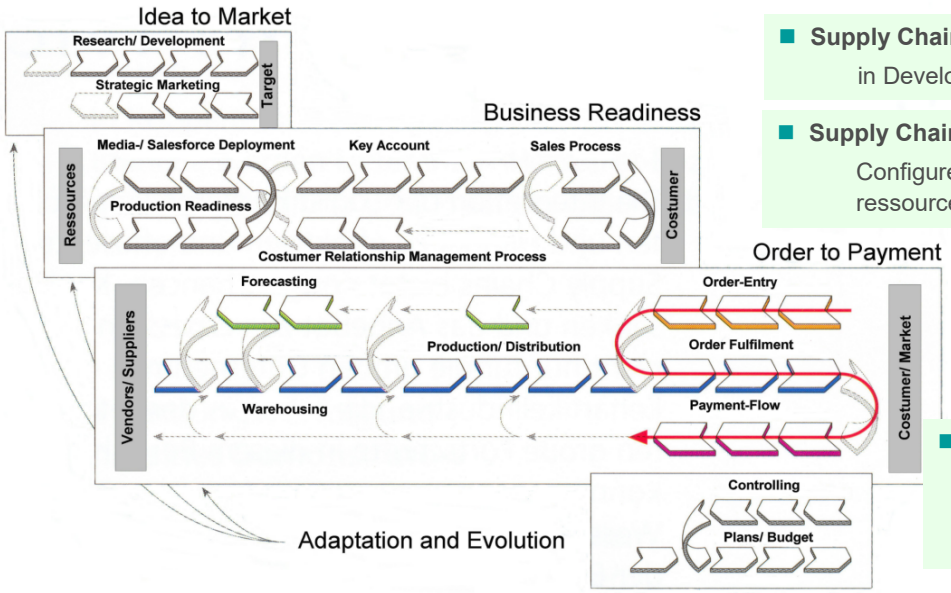
(Gattorna 2006)

Supply chain management focuses on the **integration** and **coordination** of all activities associated with the financial, material, and information **flows** through improved supply chain relations to achieve a sustainable **competitive advantage**.

(Monczka/Trent/Handfield,2002)

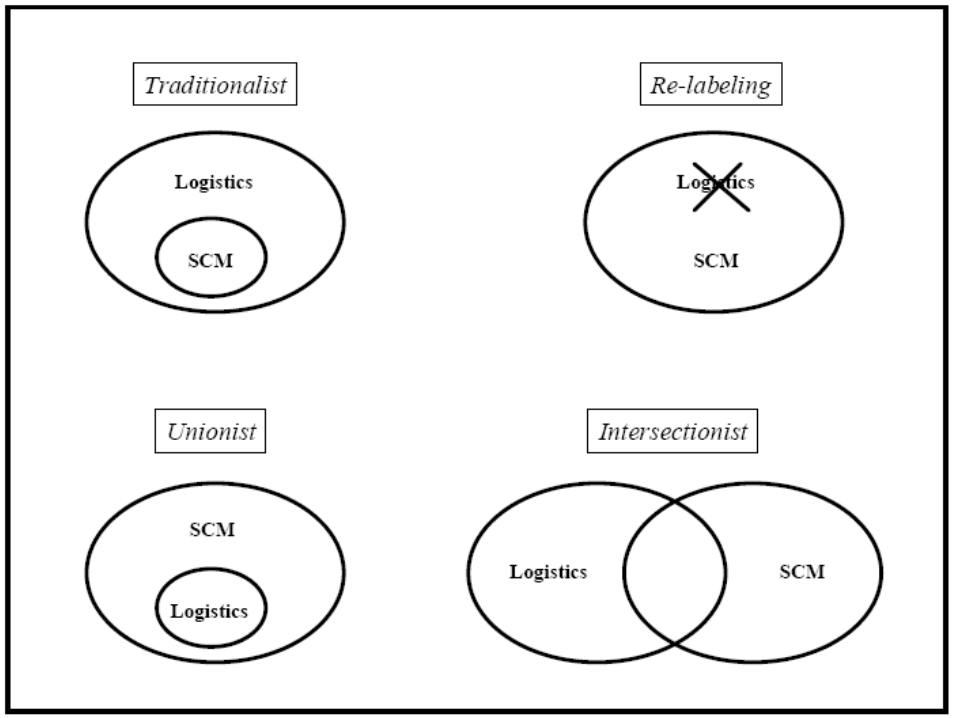


It is not only the order-to-payment flow



- **Supply Chain Awareness**
  in Developing new Business/Supply Chain Ideas, Develop Products
- **Supply Chain Structure**
  Configure your physical network and optimize ressource allocation and facility location
- **Integrated Processes**
  Integrate organizations, information systems and human ressources into effective and efficient flows
- **Adaptation and Development**
  Keep your supply chain „state-of-the-art“ and adopt emerging technologies and ideas

Logistics vs. SCM: not always clear – See Larson and Halvorson's four positions



The CSCMP definition for supply chain and SCM

CSCMP Definition of Supply Chain Management

Supply Chain Management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all Logistics Management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. In essence, Supply Chain Management integrates supply and demand management within and across companies.

Supply Chain Management – Boundaries & Relationships

Supply Chain Management is an integrating function with primary responsibility for linking major business functions and business processes within and across companies into a cohesive and high-performing business model. It includes all of the Logistics Management activities noted above, as well as manufacturing operations, and it drives coordination of processes and activities with and across marketing, sales, product design, finance and information technology.

CBS COPENHAGEN BUSI HANDELSHØJSKOLEN

CSCMP Council of Supply Chain Management Professionals

What is logistics management?

"Logistics management is that part of Supply Chain Management that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services, and related information between the point of origin and the point of consumption in order to meet customer requirements."

CLM definition of Logistics Management (2003) as quoted in Mentzer et al. (2004)

Today's Topics

Footprints of a modern understanding of Business Logistics and

introducing views on Logistics and Supply Chain Management

The "logistics system" of the course HAI GSCM – actors, functions and structural elements to support your learning efforts

The system of the course

Learning Objectives

Faculty GP + HJS	Admin Etc.
Lectures & Workshops	Canvas
The Book	Vids, Quizzes Slides, Readings

Its only logistics, but I like it! Pedagogical?

In general, the **principles focus on student learning and action rather than teacher** performance

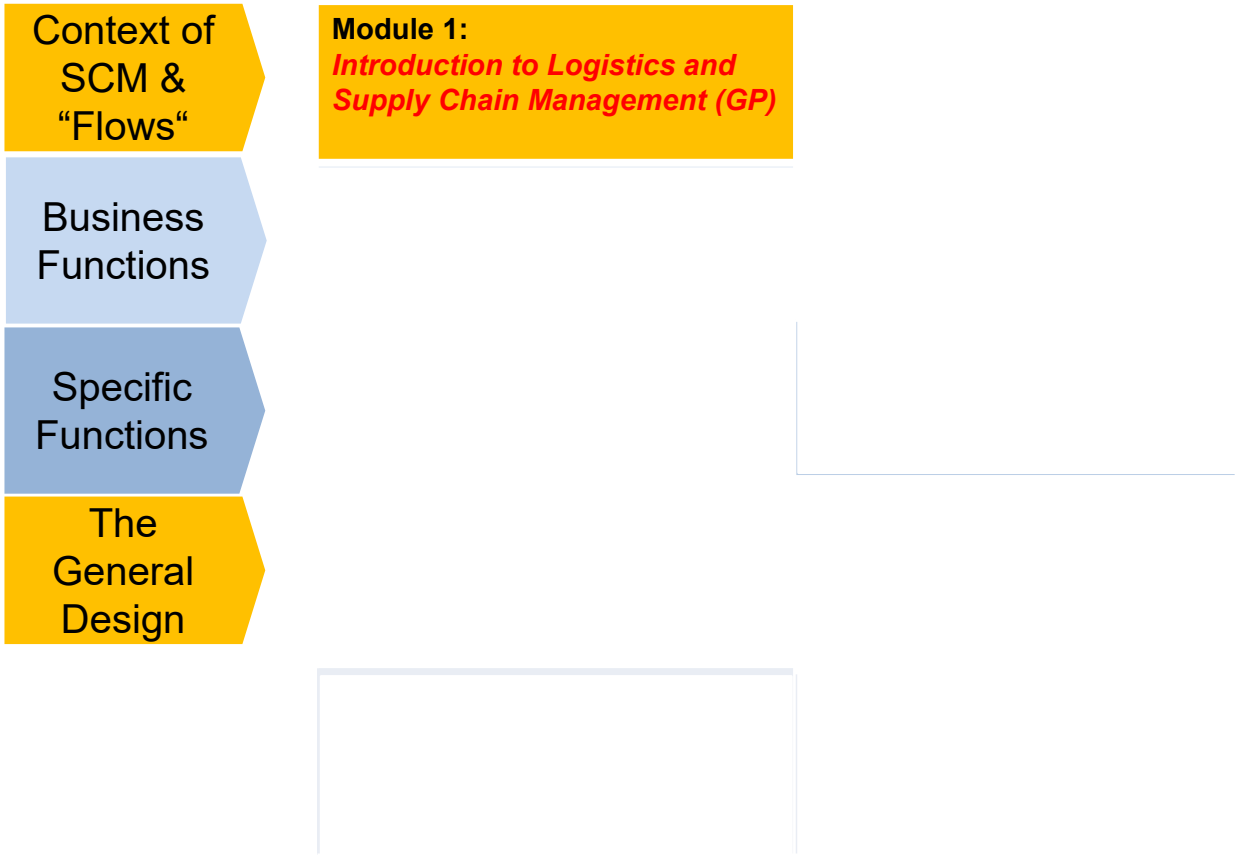
*"The basic concept…….is that class sessions are intended to support and facilitate student learning, but **a major part of the learning process takes place outside classes"***

"Cases, examples and textbooks based on CBS' own research will be used"

*"The most recent research results will be included in the courses, **researchers will take part in the courses, and external teachers will be more involved in** research environments."*

- Class lectures – slides etc.
- Using the book and readings for being prepared and maybe digging deeper
- Attendance should better be thinking - not just listening
- Optimize learning by useful debates and discussion
- To learn "how to" and also ask "why to" and how to communicate it

Syllabus – Book – and so on

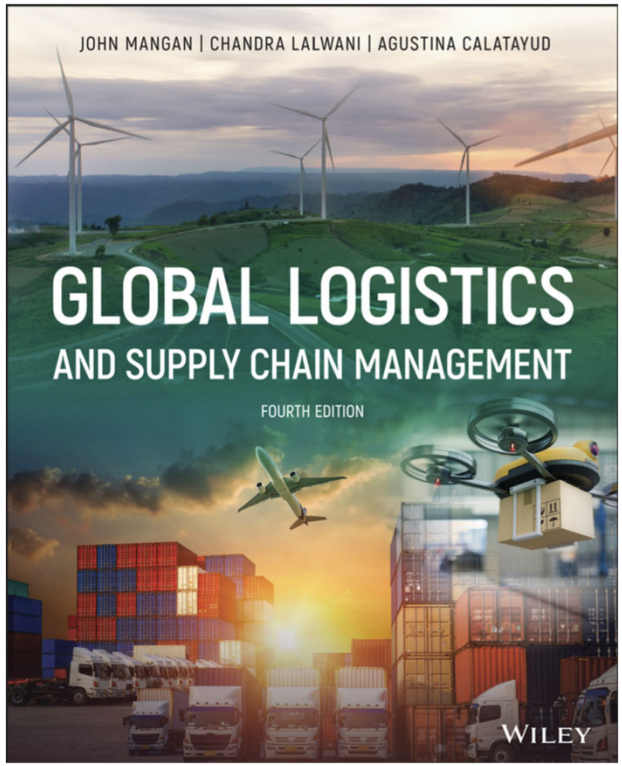


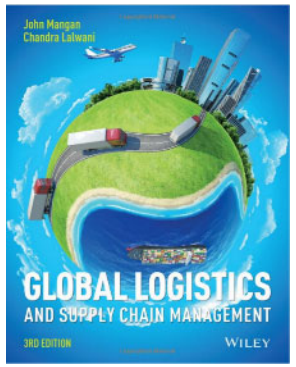
Syllabus – Book – and so on

Context of SCM & "Flows"	**Module 1:** *Introduction to Logistics and Supply Chain Management (GP)*	**Module 2:** *The global context of logistics and supply chain management (GP)*	**Module 3:** *Integration, collaboration and SCM (GP)*
Business Functions	**Module 4:** *Global Production in the Supply Chain (GP)*	**Module 5:** *Inventory Management Planning and Control(HJS)*	**Module 6:** *Outsourcing Offshoring and Procurement (HJS)*
Specific Functions	**Module 7:** *Management of International Sales and Good flows (HJS)*	**Module 8:** *Distribution systems and after sales in the supply chain (HJS)*	**Module 9:** *Logistics Planning and design: Warehousing & Material M. (HJS)*
The General Design	**Module 10:** *Logistics Planning and design: Transport and Logistics Services (HJS)*	**Module 12:** *Digitization and Digitalization in the Supply Chain (GP)*	**Module 13:** *SC strategies and configurations for globalization - Summarizing (GP)*
	Module 11: *„Get prepared for the exam"*	**Module 14:** *Contemporary Issues in Logistics and SCM Recap of the course*	

The book, the slides the readings

- Structure (TOC)
- Glossary
- Index
- (Questions)





For next Time:

Please prepare a bit on the Flower Case