

Re-engineering the external drug supply chain



EAHP
Barcelona



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vrije Universiteit amsterdam



Agenda

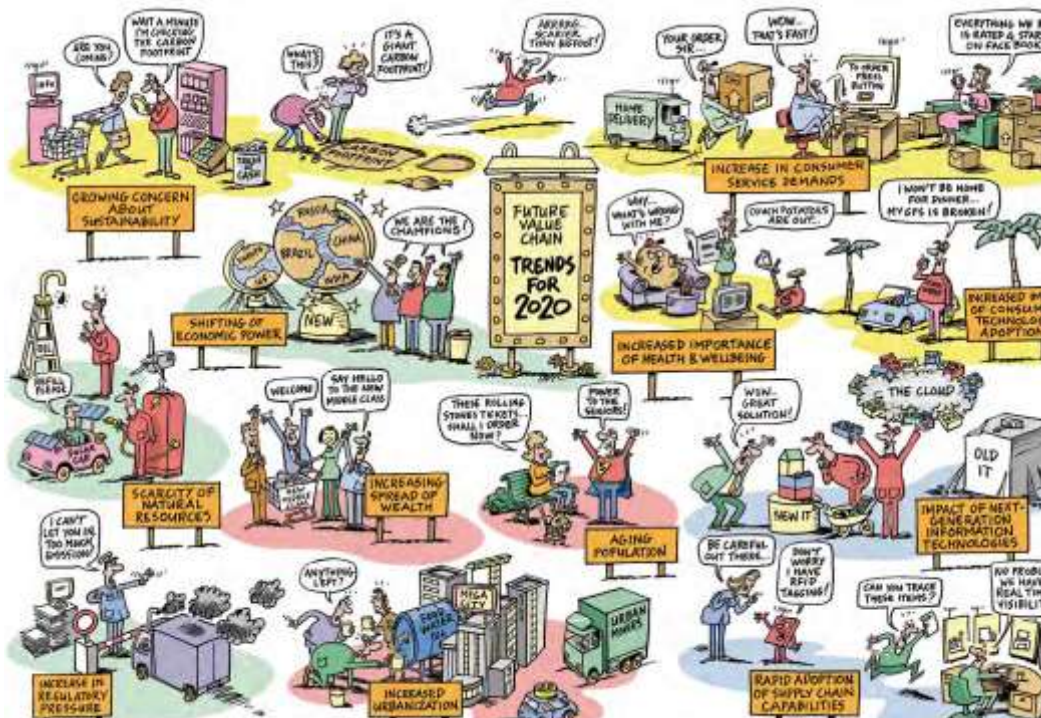
- Future Value Chain 2020
- Pharma Supply Chain
- Supply Chain Aspects
- Pharma Logistics
- Supply Chain Logistics
- Horizontal vs Vertical
- Conclusions



"Conflict of interest : nothing to disclose"

Future Value Chain 2020

Source : Cap Gemini 2012



Make your business more sustainable



Optimize a shared supply chain



Engage with technology-enabled consumers



Serve the health and well-being of consumers



Pharma Supply Chain



Gross Margins

- In industries where the gross margins are under pressure year after year, the innovations in supply chain reengineering are fabulous!
- Food 25%
- Fashion 200 %
- Drugs ???



Characteristics Drug Supply Chain

- Increasing assortments
- Competition generics/ private label drugs
- Changing market demands
- Competition on-line/ traditional channel
- Pressure on margins
- Less cooperation between suppliers/distributors/hospitals
- Pharmaceutical supply chain is a relative closed chain with a “smoke stake” approach: no transparency and visibility between the chain partners.
- Source : S. Weishard, Cognizant, Logistics.nl, January 28 th , 2014



Study 2014

Vlerick/Groenewout/ELA

- Gross margins are under pressure due to several reasons by i.e. growth of generics and OTC's stimulated by authorities, savings programs in the hospitals and by decrease of patent periods.
- EU-directives: i.e. serialization, parallel import, more stringent requirements enforced by GMP/GDP.
- Changing route-to-market strategies i.e. direct-to-patient/pharmacy.
- High value products affects working capital to finance R&D -> postponed customization.
- The customer expects better service levels in terms of i.e. stock availability, shorter delivery lead times, higher (L)OTIF-rate, order visibility, cargo monitoring.
- Source : SCM benchmark survey for healthcare industry, SC magazine, January 9th 2014



The hospital pharmacist as a pharmalogistics serviceprovider

- **Past** : the pharmacist as a dedicated manufacturer of drugs acting from the back-office of a hospital.
- **Future** : Customer focus. The hospital pharmacist on his way to the bed of the patient.
- **Supply Chain Management is this future.**
Predicting demand for drugs at the intake of a patient, during his stay in the hospital and at the leave of the hospital.
- Finetuning the demand for drugs with patients, public drug stores and doctors. Ambitious! In this way the hospital pharmacist may become a real logistics serviceprovider. The hospital pharmacy can remove its dusty image and become visible at the corner of the bed of his real-customer : the patient

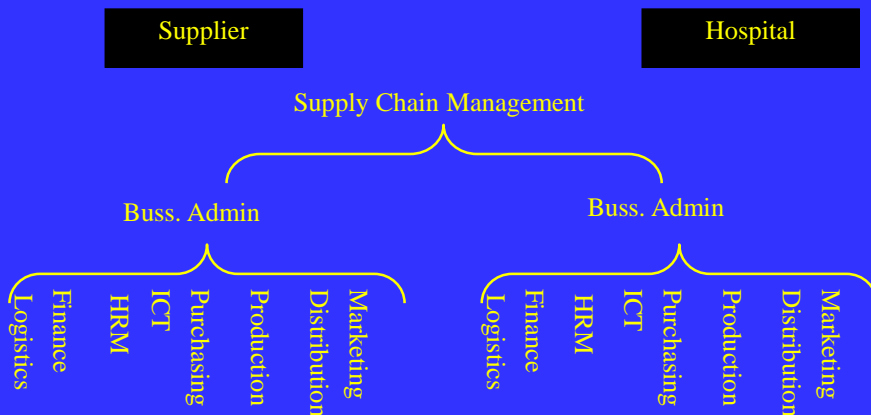


Source: E.Faber, Logistics.nl, January 15th 2012

Supply Chain Aspects



SCM vs. Business Administration

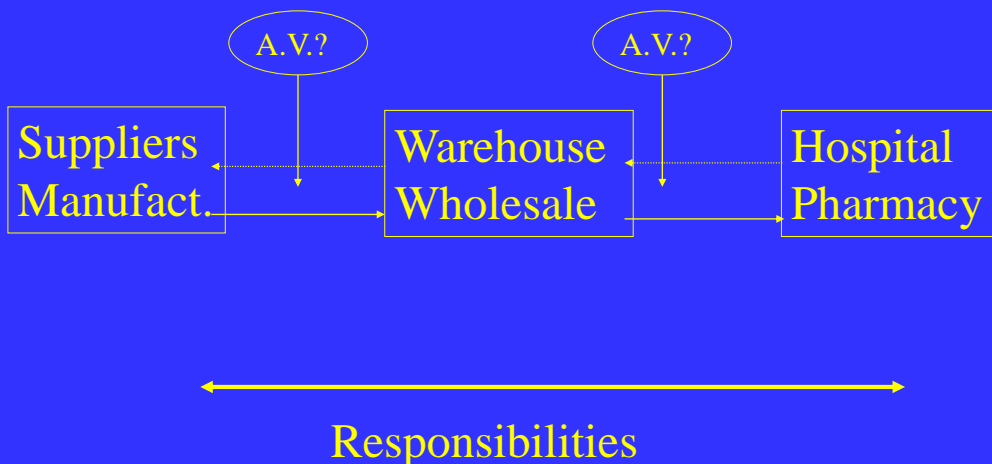


Definition SCM

Demand driven Supply Chain Management is the management of a network that links customers and suppliers as one 'single entity' with the objectives to create value and reduce waste through voluntary integration and coordination of the objectives of three or more - and ideally all the - independent parties in the network.



Drug Supply Chain Manager



Incoterms 2010

Rules for any mode or modes of transport

EXW: ex works

FCA: free carrier

CPT: carriage paid to

CIP: carriage and insurance paid to

DAT: delivered at terminal

DAP: delivered at place

DDP: delivered duty paid

Rules for sea and inland waterway transport

FAS: free alongside ship

FOB: free on board

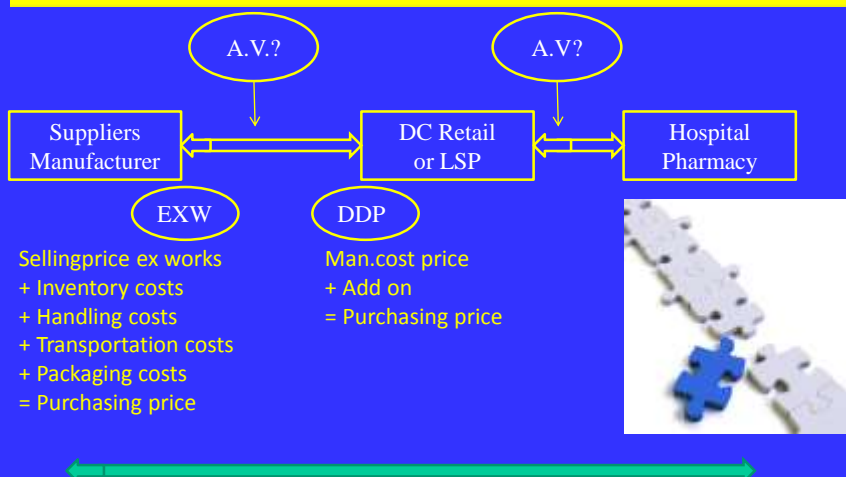
CFR: cost and freight

CIF: cost insurance and freight



Tool : Activity Based Costing

Modules Added Value



PHARMA LOGISTICS



Inbound Logistics



Controlling Costs in the Healthcare Supply Chain

Many healthcare companies are investigating ways to consolidate and trim expenses in logistics and supply chain.



Healthcare Logistics Gets a Shot in the Arm

Delivering temperature-sensitive flu vaccines to Laos required climate-controlled transport and impeccable timing.



Navigating Pharma Logistics

Pharmaceuticals manufacturers face special supply chain challenges such as temperature control, security, chain of custody, and regulatory compliance, but successful strategies help deal with these is question



Healthcare Supply Chain Costs: A Tough Pill to Swallow

Organizations all along the healthcare supply chain are taking a dose of smarter procurement and logistics practices to cure high costs and treat ailments in other areas of the business



Healthcare Logistics: A New Prescription for Medical Distribution

Linking bar-coded pharmaceuticals and electronic patient records using Zebra Technologies solutions helps the Sisters of Mercy Health System streamline supply chain operations.

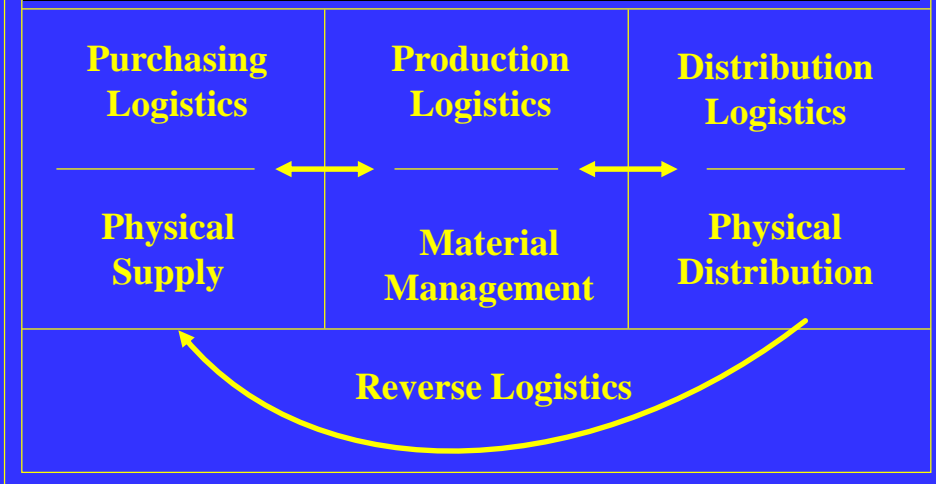


Healthcare Logistics: Under Pressure

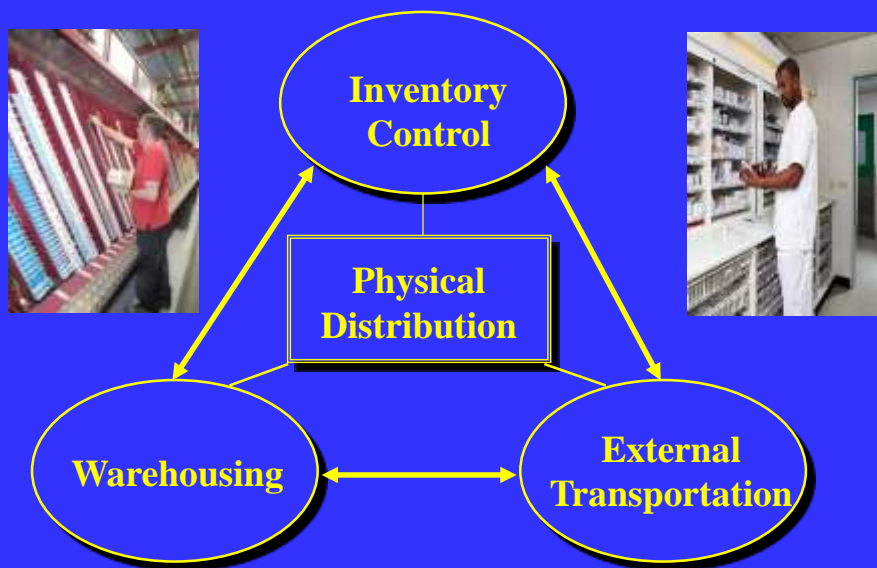
Healthcare leaders diagnose their biggest supply chain pains and write a prescription for the Obama administration.



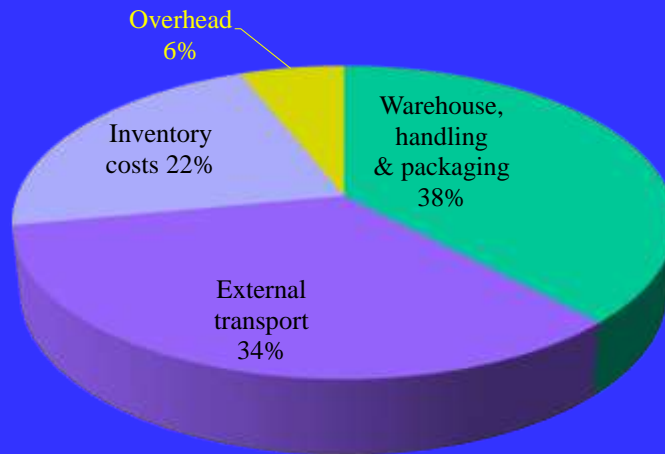
Business Logistics



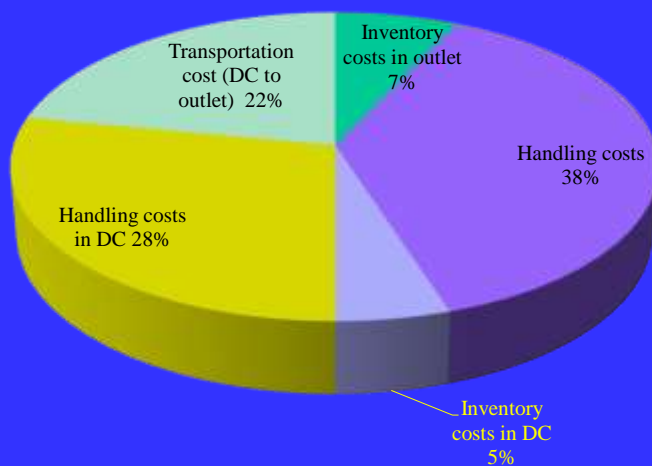
Subsystems Distribution Logistics



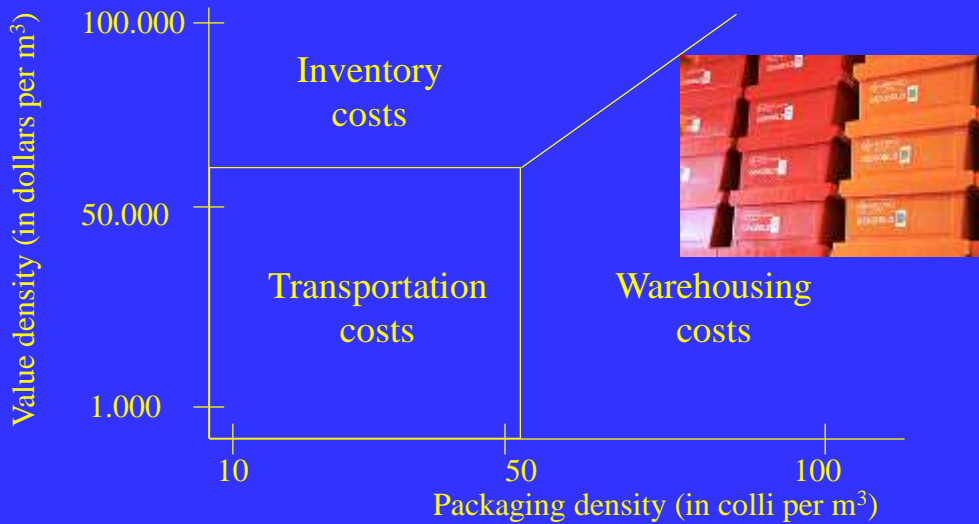
Distribution Logistics Costs



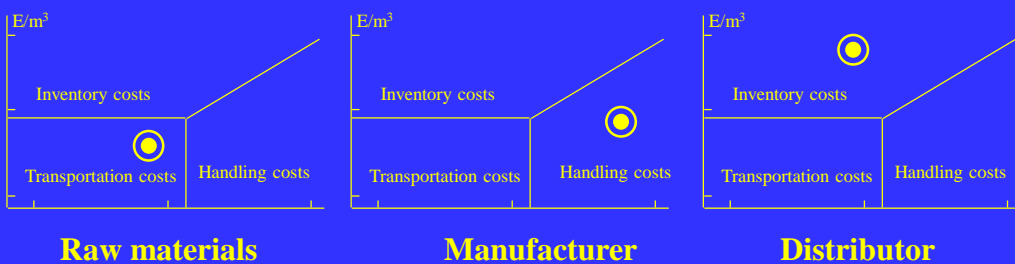
Logistics Costs DC / Outlet



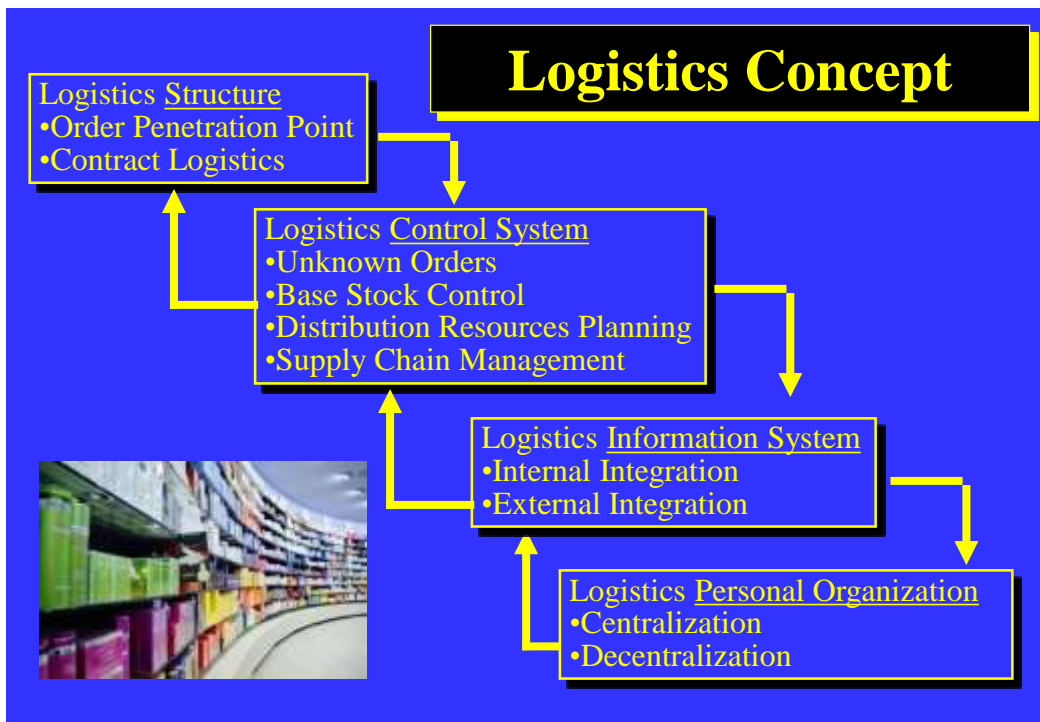
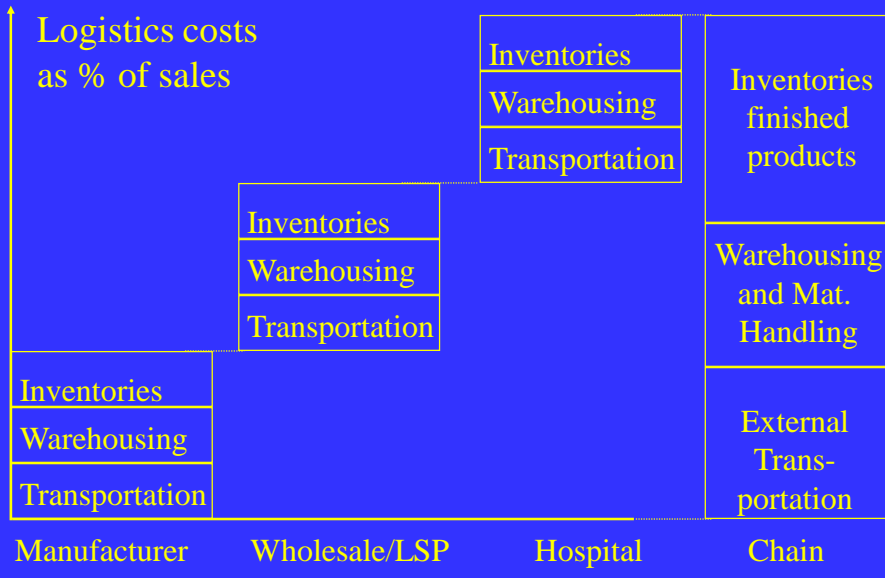
Accents Distribution Logistics



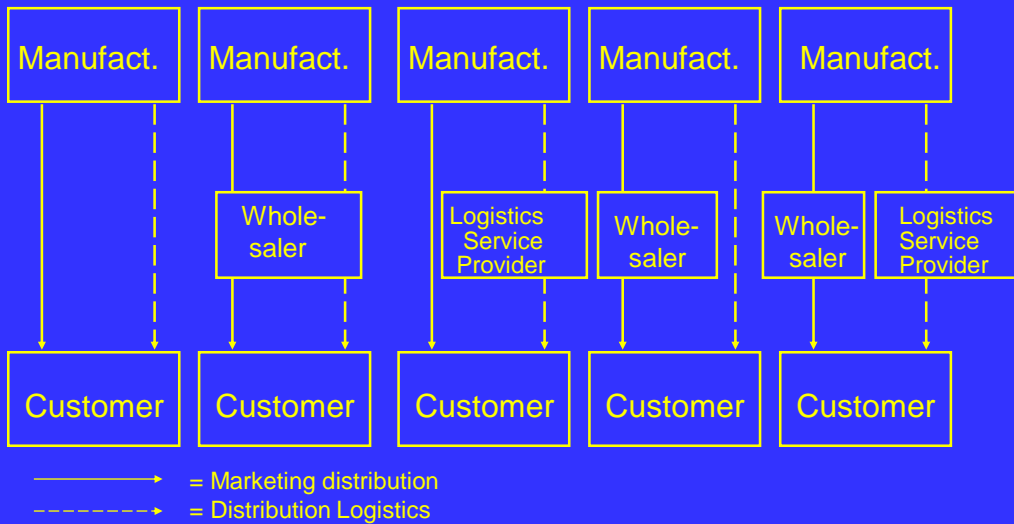
Logistical Supply Chain Accents



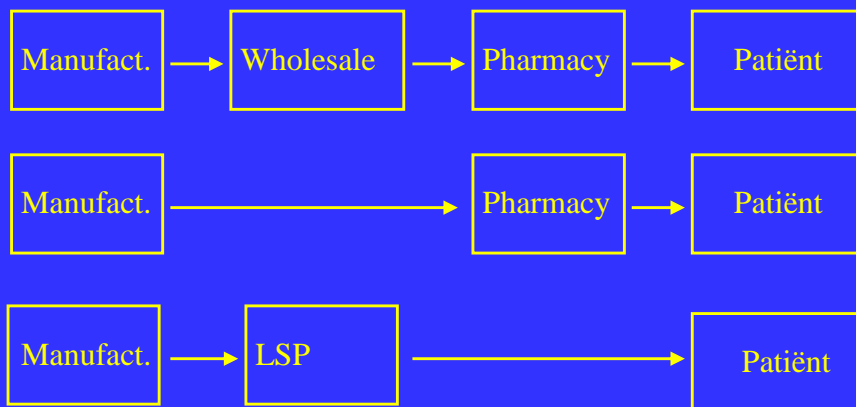
Cost Calculation in a Drug Chain



Possible Distribution Structures



Distribution Structures Drugs



Different solutions with :

- * Central filling
- * Robot
- * Vendor Managed Inventory
- * Carrousel

Logistics Control

Supplier

$q = 1.300$
 $n = 8$

Manufacturer

$q = 10.000$
 $n = 1$

Hospital

$q = 130$
 $n = 80$

Inventory = 400

Out-of-stock

Efficient Healthcare Consumer Response

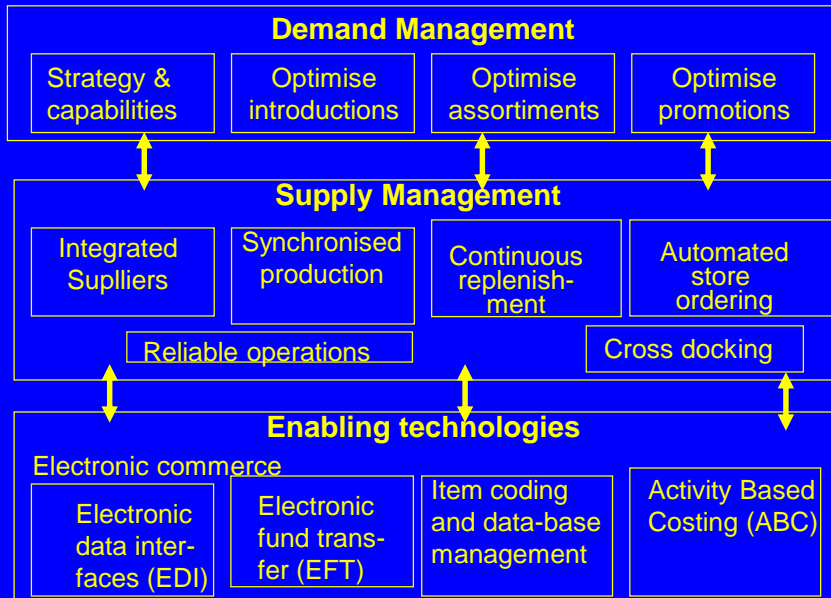
Punctual, paperless flow of information



Continuous flow of goods, driven by P.O.S.

Source: Kurt Salmon Associates, 1993

EHCR contains 14 improvement-concepts



SUPPLY CHAIN LOGISTICS



Supply Chain Logistics

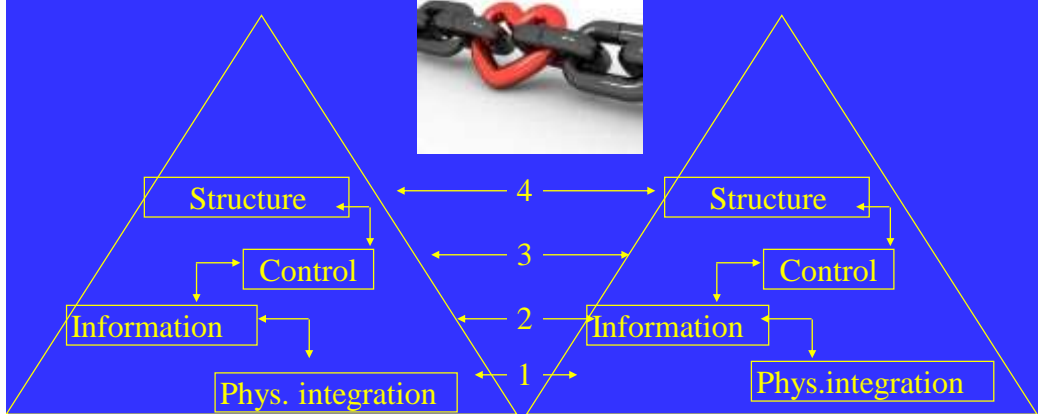
- ◆ Core in Distribution Logistics
- ◆ Managing the chain as a “single entity”
- ◆ No mergers/ acquisitions
- ◆ Four types
 - Physical
 - Information
 - Control
 - Structure



Four Types of Supply Chain Logistics

Manufacturer

Distributor



Physical integration

- Standardization packaging sizes
- Materials Handling Equipment



Information integration

- EDI
- RFID tags
- Voice picking
e.g. CERP Rouen



Control integration

- Vendor Managed Inventories (V M I)
- Coll Planning Forecasting Replenishment
- Sales & Operations Planning (S & OP)



VMI Process Flow

Source : Cognizant , february 2012



CPFR

Source : Vol.Int.Comm.Standards (www.VICS.org)



Structure integration

- Outsourcing logistics activities :
transport, warehousing, shelf filling



Horizontal vs Vertical Supply Chain Logistics



Problem : Smaller Goodflows

- Logistics Service Providers
- Rebirth Wholesale function
- Collaboration Pharma Manufacturers
- Collaboration Pharma Wholesalers
- Collaboration Pharma Hospitals



Chain Conversion

Distribution at arm length of production

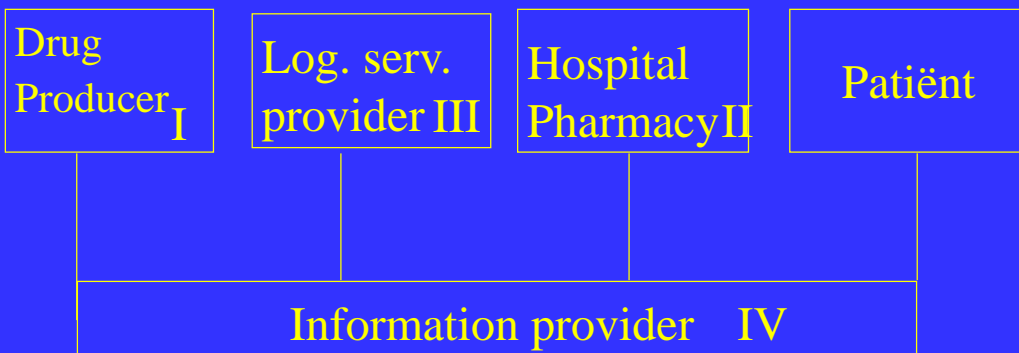


HAS to BECOME



Production conducted by distribution !

Power in supply chain



Horizontal Coöperation



Conclusions

- SCM as tool for re-engineering the drug SC.
- Internal possibilities are not exhausted.
- Knowledge on pharma SCM has to be improved.
- Pharmacists have to use their power !
- Thinking “out – of – the box” !
- Who takes the lead?

