Future Trends of Logistics Strategy

A Normative Perspective
"Volvos recept för fusionslycka"
Agenda

• Industrial trends
  • Customer demand
  • Function deliveries
  • Industrial impacts
  • Statements

Reduction rate ~ 2.2%
LOGISTICS COMPLEXITY - LEAN PRODUCTION

Freight flow $= \phi = v_1 \cdot A_1$
LOGISTICS COMPLEXITY - LEAN AND PARALLEL PRODUCTION

Increased performance of supply system

Parallel flows
Reduced unit capacity

$K = \sum_{i=1}^{n} K_i$

K = Capacity
Discussion
based on the concept of ’The Japanese Sea’

• Flow speed
  – New system
• Reduced batch sizes
  – More consignments
• More controlling
  – Better information system
• More information
  – Focus on interfaces
Paradigm: Capital cost – logistic cost
If T are to increase what is than needed?

Paradigm: Capital cost – logistic cost
Annual 3PL/Contract logistics market revenue in the US

Expanding rate = 14%
Agenda

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• **Customer demand**
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SUPPLY CHAIN and DEMAND CHAIN

= Company in focus

Supplier (Back tiers)

Customer (Front tiers)

End customer (User)

Distributors

Supply Chain - SC

Demand Chain - DC

1st tier

2nd tier

3rd tier

4th tier

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Consequences on delivery set-ups

- Company in focus

Supply Chain - SC

- Supplier order
- Power Plans

“DDP or DDU”
- Supplier responsibility

“Whatever”
- Customer adaptation

Demand Chain - DC

Customer (Front tiers)

Supplier (Back tiers)

End customer

Distributors
SUPPLY CHAIN and DEMAND CHAIN

= Company in focus

Company in focus (old)

Order

Collaboration

Company in focus (new)

Order

Collaboration
SUPPLY CHAIN and DEMAND CHAIN

= Company in focus

Company in focus (old)

Driver of Supply

Order

Collaboration

Company in focus (new)

Driver of Collaboration

Order

Collaboration
Flow Competition

“Competition between companies”.

Traditional paradigm.

“Not a competition between companies, a competition between Supply Chains”.

Christopher M., 1995

“Not a competition between companies, not a competition between Supply Chains, a competition between Demand Chains”.

Lumsden K., 2002
SD CHAIN – Procurement of functions

☐ = Company in focus

Supplier (Back tiers)

Customer (Front tiers)

Distributors

1st tier

2nd tier

3rd tier

SC

DC
Empirical findings

- 87% have cost focus
- 18% have an external collaboration focus

(Lindau et al., 2004)
Agenda

• Industrial trends
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• *Function deliveries*
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LOGISTICS SYSTEMS

COMPLEXITY

FREIGHT

MARKET

Articles

Supply Chain

Consignments

Cross section

Vehicles

Network Chain

Infrastructure

ACCESSIBILITY

TRANSPORT

TRAFFIC

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LOGISTICS SYSTEMS

ACTOR

Individual

Production Company
-Design

Production Company
-Management

Logistic Company
(Logistic Service Provider – LSP)

Society

COMPLEXITY

Money

Time

Articles

Supply Chain

Cross section

Consignments

Transport

FREIGHT

FUNCTION

ACCESSIBILITY

TRANSPORT

TRAFFIC

MARKET

Interface

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Outsourcing

ACTOR
- Individually
  - Production Company
    - Design
    - Management
  - Logistic Company (Logistic Service Provider – LSP)
  - Society

COMPLEXITY
- Time
- Money
- Articles
- Supply Chain
- Cross section
- Consignments
- Network Chain
- Infrastructure
- Vehicles
- Network Chain

FUNCTION
- Function
- Product

ACCESSIBILITY
- Consignments

FREIGHT
- Rates

MARKET
- Supply Chain
- Subassembly
- Warehouse
- Transport (3PL)
- Carrier
- Slot
- Functional outsourcing

Levels of OUTSOURCING
- Brand
- Design
- Production

Freight Market Actor
- Time
- Supply Chain
- Cross section
- Consignments
- Network Chain
- Infrastructure
- Vehicles
- Network Chain

Complexity
- Individually
- Production Company
- Logistic Company (Logistic Service Provider – LSP)
- Society
Consequences of Function focusing

Function

 Interfaces

Function definition
Converted into Contracts

Modules

Standard Commodities
S/D CHAIN - General Interfaces

☐ = Company in focus

Function 1 suppliers
Module 1

Function n suppliers
Module n

Line of modularization

Merge In Transit Customazation

Customer (Front tiers)

Distributors
Structural Changes

Industry Share of Total Value Added

Source: OECD National Accounts

Källa, IVA 2005
Egenförädlingen (i %) för svenska teknikföretag har trendmässigt minskat de senaste 30 åren

Definition och källa: Egenförädling (%) = Förädling/Omsättning, Teknikföretagens årliga lönsamhetsundersökningar

Källa, IVA 2005
What is the probability that the following statements will be a reality?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>If choosing a manufacturing site today Sweden would not be the choice</td>
<td>46</td>
</tr>
<tr>
<td>If choosing a manufacturing site today a OECD country would not be the choice</td>
<td>33</td>
</tr>
<tr>
<td>If choosing a manufacturing site today a low cost country would be the choice</td>
<td>61</td>
</tr>
<tr>
<td>If transferring the manufacturing from Sweden the product development would be moved</td>
<td>36</td>
</tr>
<tr>
<td>If transferring the manufacturing it will be closer to the customer</td>
<td>44</td>
</tr>
<tr>
<td>The manufacturing will be transferred to Sweden</td>
<td>13</td>
</tr>
<tr>
<td>Up to 2010 the companies will increase their insourcing of manufacturing</td>
<td>20</td>
</tr>
<tr>
<td>Up to 2010 the companies will decrease their insourcing of manufacturing</td>
<td>46</td>
</tr>
</tbody>
</table>

(IVA, 2004)
S/D CHAIN – Function supplier

= Company in focus

End customer (User)

Supply Chain - SC  Demand Chain - DC  Function contracting

Function Supplier

Function

Time
Product- vs Service cost

(Accenture, 2005)
Agenda

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Inventory, Automotive industry

(Hellveg, 2004)
Sales sourcing

Sales Sourcing and Vehicle Stock
Volume Cars - Major Markets 1999

<table>
<thead>
<tr>
<th>% of Sales</th>
<th>USA</th>
<th>UK</th>
<th>Europe</th>
<th>Japan (Toyota)</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-90 days</td>
<td>64 days</td>
<td>55 days</td>
<td>20 days</td>
<td>Average New Vehicle Stock in days</td>
</tr>
</tbody>
</table>

(3DayCar and ICDP, 2000)
From Lead-time to Capacity Variation
Asymptotic Factory

Fixed Capacity (FC)

Delivered Lead-time

Time

CLT ≠ DLT

Capacity

Customer Lead-time

Variation in Capacity (VC)

Time

CLT = DLT

Variation in Capacity (VC)

Capacity

Customer Lead-time
• Clockspeed increases closer to the final customer
• Clockspeed amplification in the Supply Chain:

(Fine, 1995)
The Long Tail

- Large article number
- Indirect article number ("linked")
- Connected business
- E-business
- Virtual inventory
- Software
- "Print on demand"
- Make to order
Agenda

• Industrial trends
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• \textit{Statements}
TRENDS AND POSSIBILITIES
The Product

- Increased product value
- Subcomponents
- Modules of function
- "Time to Cash" – TTC
- Digitalization of products
- Individualization
Statements

• Logistics and Transport of freight do not have a life of its own

• Energy cost is not the critical factor, rather the availability of energy

• The infrastructure will be there

• Information technology has to be used more effectively in logistics
SYSTEM CHANGABILITY

Magnitude of change ($\Delta D$)

- Ideological (Political network concepts)
- Information (Abstract network components)
- Mobile resources (Physical network components)
- Infrastructure (Physical network)

Implementation time
Information and Flexibility

”Adding information is a way to reduce the number of alternatives

– it is reducing the flexibility”

(Lofti, 2005)
Tack för att ni lyssnade

Be careful, i might be back!
From Supply Chain to Demand Flow

Chain
- Goes both ways
- Goes down- and upstream
- Responsibility in time

Flows
- Goes one way
- Goes downstream
- No responsibility the next second