



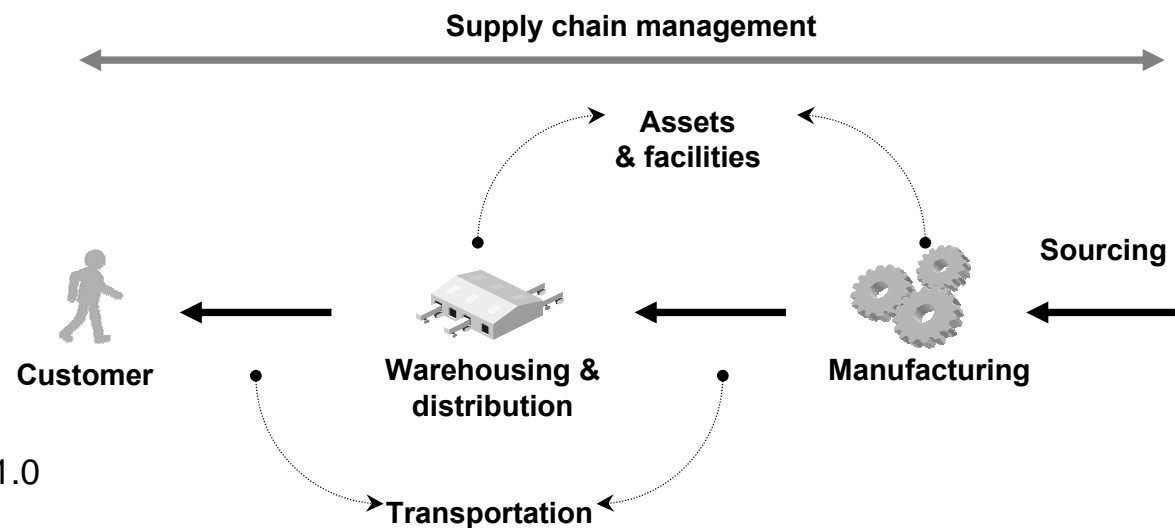
# Supply Chains in the healthcare industry

Trends & best practices

November 19, 2009

Brussels

version 1.0



# Agenda



- Supply Chains in its perspective
  - Sector differentiation
  - Challenges & Trends
- Supply Chains optimization
  - Network redesign
  - Supply chains differentiation
  - Inventory management
  - Warehousing optimization
  - Outsourcing
- Supply Chains collaboration
  - Operational capabilities
  - Sales & Operations Planning
- Closing statements

# Supply Chains perspective

## Logistics parameters

	Performance attribute	Performance Attribute Definition
CUSTOMER FACED	Supply Chain <b>Delivery Reliability</b>	The performance of the supply chain in delivering: the correct product, to the correct place, at the correct time, in the correct condition and packaging, in the correct quantity, with the correct documentation, to the correct customer
	Supply Chain <b>Responsiveness</b>	The velocity at which a at which a supply chain provides products to the customer
	Supply Chain <b>Flexibility</b>	The agility of a supply chain in responding to marketplace changes to gain or maintain competitive advantage
INTERNAL FACED	Supply Chain <b>Costs</b>	The costs associated with operating the supply chain
	Supply Chain <b>Asset</b> Management Efficiency	The effectiveness of an organization in managing assets to support demand satisfaction. This includes the management of all assets: fixed and working capital

# Supply Chains perspective

## Healthcare differentiation

	Non-Patented Drugs
Performance Attribute	SC Performance versus Competition
Reliability	●
Responsiveness	●
Flexibility	●
Operational Costs	●
Asset Utilization	●

● superior ● advantage ● parity

	Bio-Pharmaceuticals
Performance Attribute	SC Performance versus Competition
Reliability	●
Responsiveness	●
Flexibility	●
Operational Costs	●
Asset Utilization	●

● superior ● advantage ● parity

	Patented Drugs
Performance Attribute	SC Performance versus Competition
Reliability	●
Responsiveness	●
Flexibility	●
Operational Costs	●
Asset Utilization	●

● superior ● advantage ● parity

	Medical Devices
Performance Attribute	SC Performance versus Competition
Reliability	●
Responsiveness	●
Flexibility	●
Operational Costs	●
Asset Utilization	●

● superior ● advantage ● parity

# Supply Chains perspective

## General trends

### Market challenges

The financial crisis and a more demanding customer have significant implications on the supply chains ...

... increase balancing on costs versus customer service

**Cost** leadership

vs.

Quality **reliability**

vs.

**Agility** and speed

### Supply Chains response

- Consolidation in regional network structures
- Enhance supply chains flexibility & agility
- Apply stringent risk management
- Control net working capital / inventory value

# Supply Chains perspective

## Healthcare trends

### Healthcare challenges

- Pressure on the sales **margins**, especially in
- **Counterfeit** medicines through the internet
- Numerous **patent endings** for bigger companies
- **Speed to market** has reduced, resulting from stricter legislation
- **Smaller blockbusters** then before

### Supply Chains response

- Supply chains simplification
  - Reducing degrees of separation between manufacturer and end-consumer
- Delivery specialization
  - Tailor made supply chain solutions

# Supply Chains perspective

## *Supply chains response*

### **In high cost, high competitive value areas**

Focus on economy of scale  
buy companies specialized in R&D or  
increase market share by takeovers

### **In high cost, high logistics competitive value**

Optimize logistics  
Minimize (logistics) costs

### **In high cost, low logistics competitive value**

Why compete?  
Why not cooperate?

- Network redesign
- Supply chains differentiation
- Inventory management
- Warehousing optimization
- Outsourcing
- Sales & Operations Planning
- Collaborative Planning  
Forecasting & Replenishment



# Agenda

- Supply Chains in its perspective
  - Sector differentiation
  - Challenges & Trends

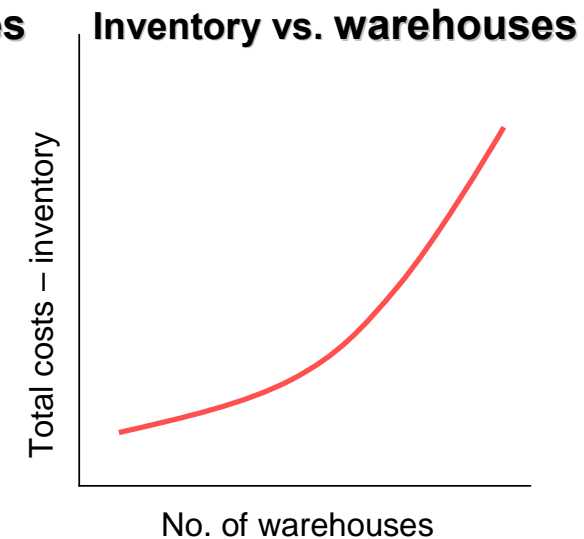
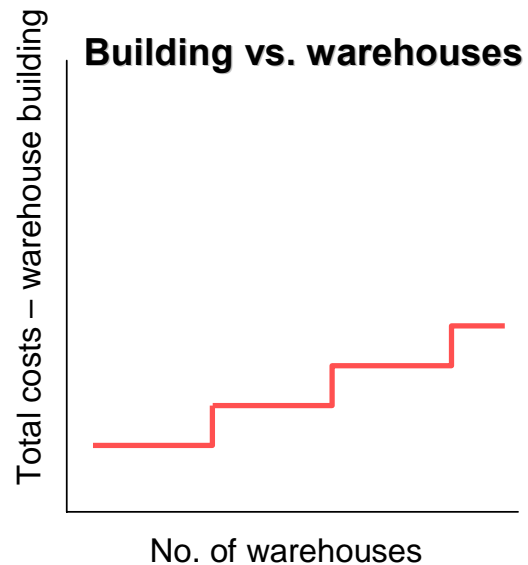
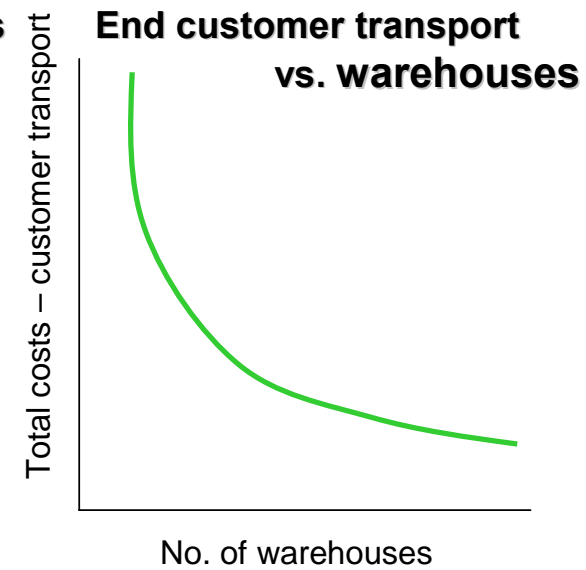
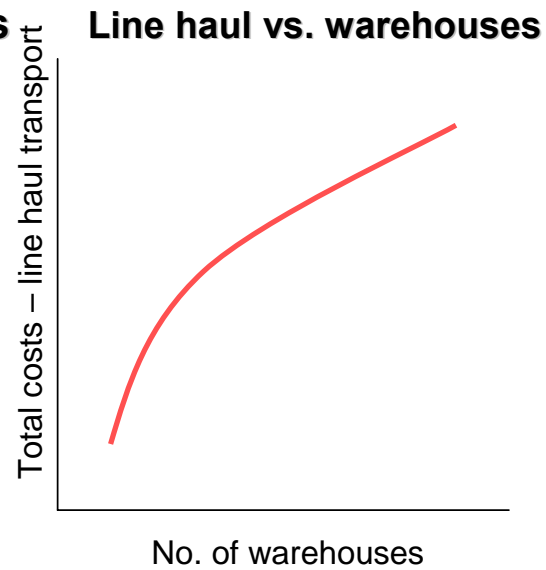


- Supply Chains optimization
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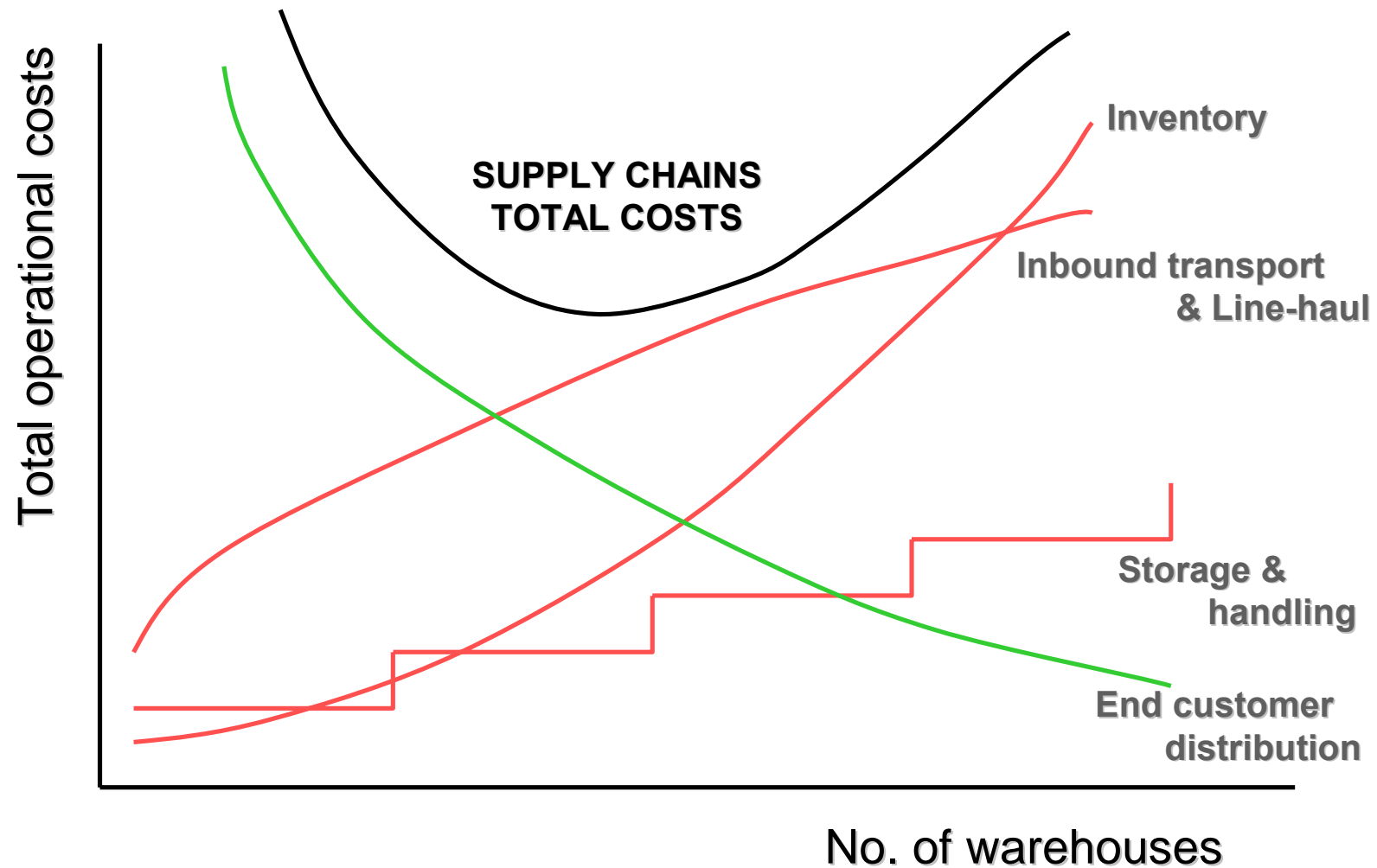
# Network redesign

## Cost factors



# Network redesign

## Cost factors - overview



# Network redesign

## History (1)

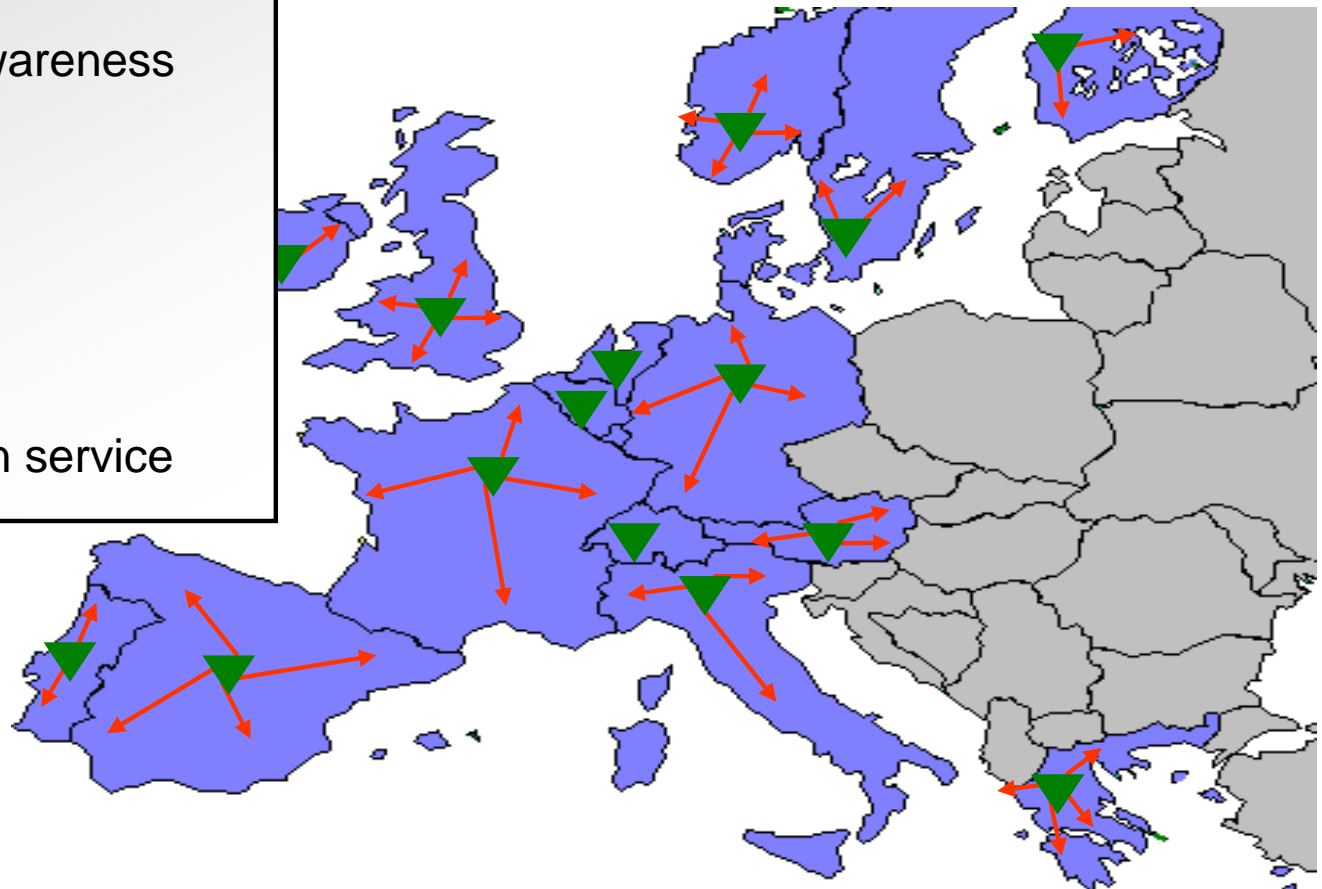
European Economic  
Community established

Schengen  
agreement effective

1957

1990

- Limited integral Supply Chain awareness
- Decentralized country approach:
  - DC's self-owned
  - Local stock management
  - Local transport
  - No / limited article overlap
  - No / limited diversification in service



# Network redesign

## History (2)

European Union  
established

AUT, FI, SE  
joined EU

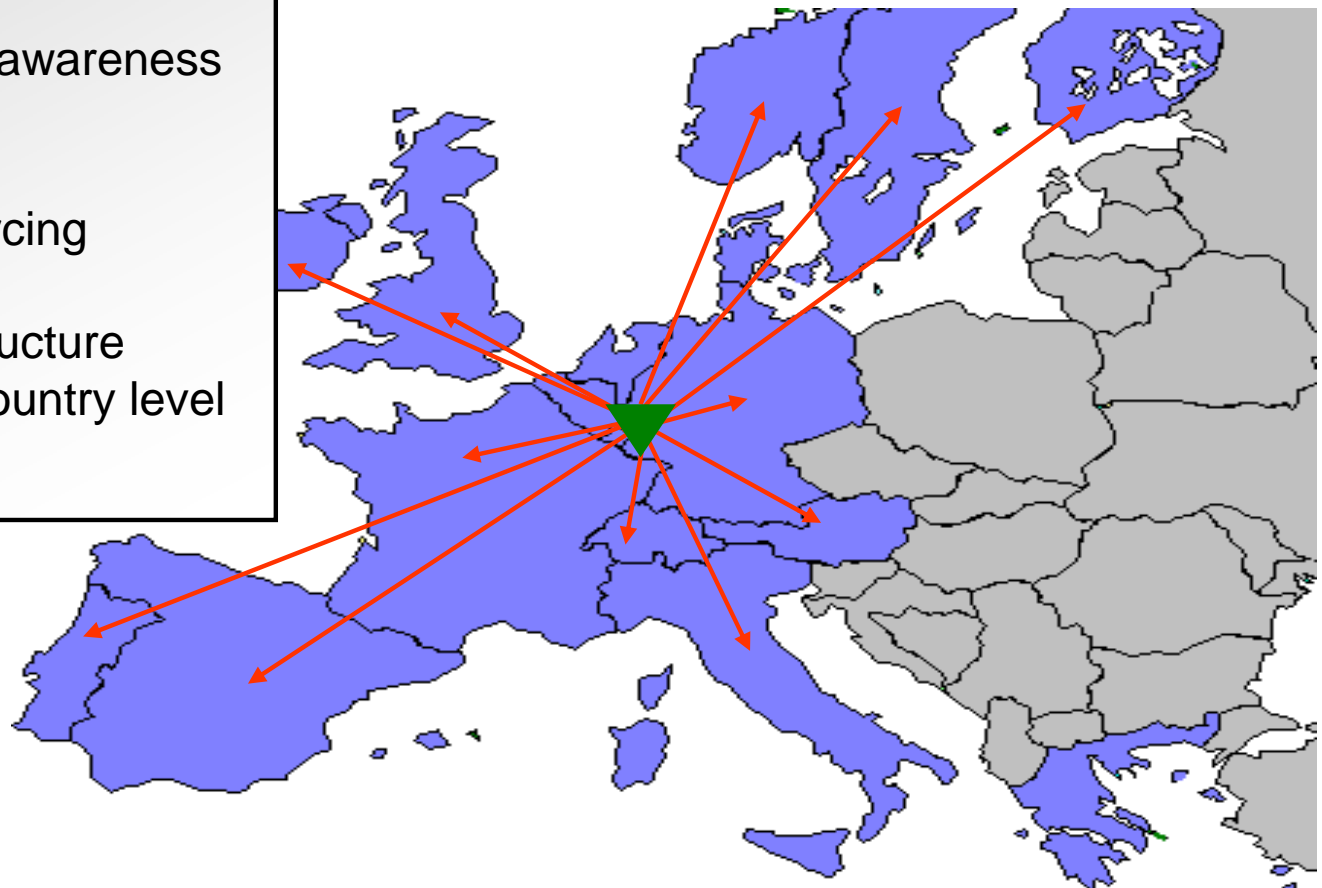
Euro (€)  
introduced

1993

1995

2002

- Moderate integral Supply Chain awareness
- Centralized European approach:
  - From self-owned to outsourcing
  - Central stock management
  - Transport based on hub structure
  - Service diversification on country level
  - More VAL activities



# Network redesign

## History (3)

10 nations  
joined EU

RO, BUL  
joined EU

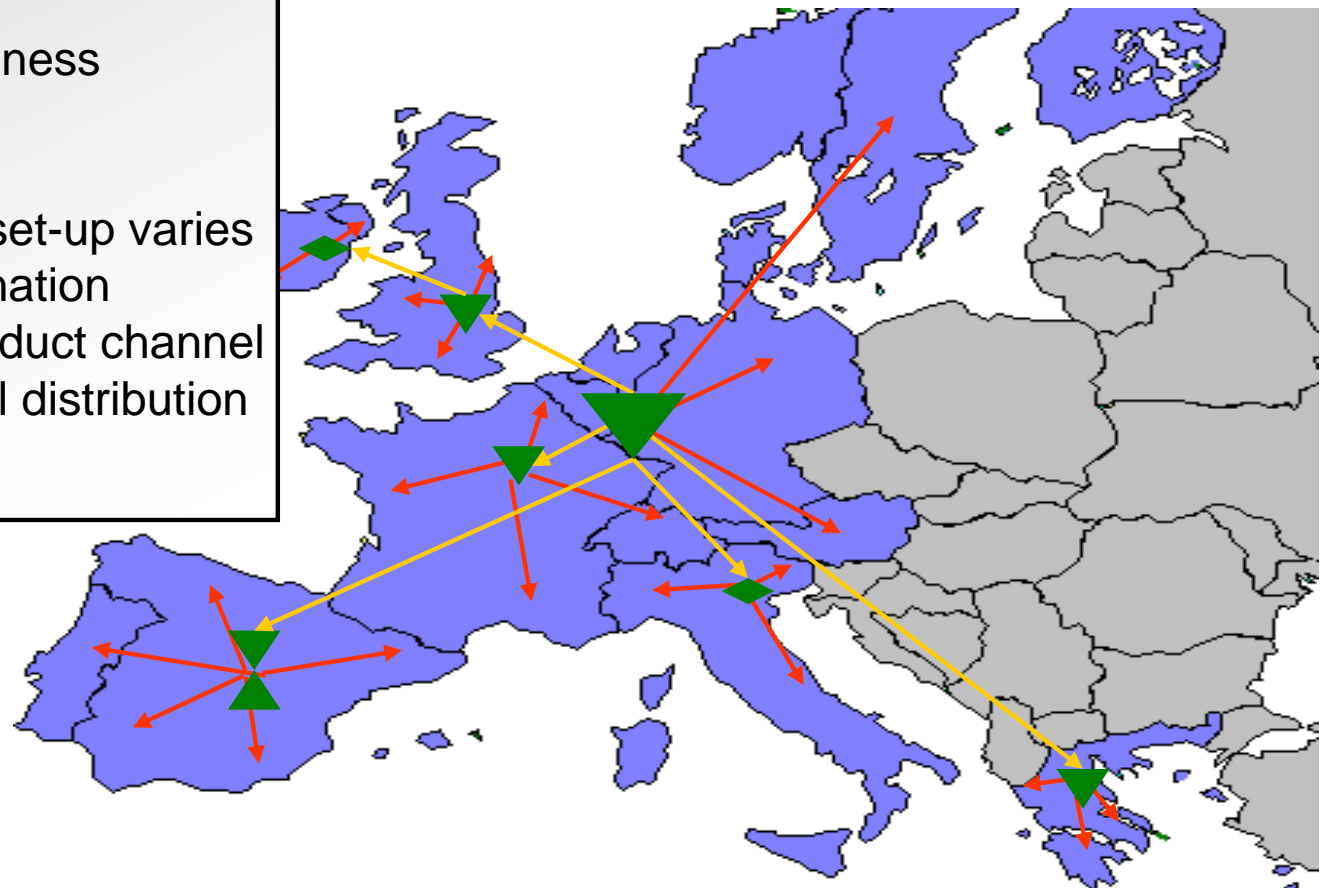
SL adopted  
The Euro

2004

2007

2009

- Full integral Supply Chain awareness
- HUB & SPOKE structures:
  - DC's mainly outsourced & set-up varies per product channel combination
  - Stock management per product channel
  - International trunking - local distribution
  - Service is customized



# Supply chains differentiation

## *Reasoning*

- “We are serving local market with local warehouses”
- “All products must be physically available at all our warehouses”
- “Medicine deliveries are very specific, because we do not deliver at the door of a warehouse”
- “Medicines have specific storage conditions to guarantee the quality”
- “We need flexibility because medicines have very short customer lead-times (same-day deliveries)”
- “Validating a complete supply chain is impossible”

Is there one best practice supply chain  
solution for all pharmaceuticals  
manufacturers?



# Supply chains differentiation

## *Logistics models*

Volume manufacturer	Network integrator	High-tech manufacturer
<ul style="list-style-type: none"><li>• Emphasis on service &amp; costs</li><li>• Manufacturing using mature technology</li><li>• Achieves excellence in Lean &amp; Six Sigma</li><li>• Integrates with wholesaler channels</li></ul>	<ul style="list-style-type: none"><li>• Expert in supply chains network design</li><li>• Specialist in channel innovation</li><li>• Coordinates &amp; executes global launch</li><li>• Manages network performances</li></ul>	<ul style="list-style-type: none"><li>• Technology lifecycle leader</li><li>• Integrates with R&amp;D</li><li>• Expert in accelerated launch</li><li>• Pursues highest quality and regulatory compliance</li></ul>

### Stock level management is extremely important for pharmaceutical product because of the following:

- Limited shelf life of products
- Relatively high value of product
- Product range increased due to country/label specifics
- High cost for space due to conditioning requirements
- Extra space required for separated storage of lots

### Stock levels can be reduced by:

- Postponement activities - Delay the moment of switching from generic product to specific product to last (cost efficient) moment, when more is clear about sales profile
- Optimize production batch sizes - When determining production batch sizes take into account not only production costs but entire supply chain costs
- Centralization / virtual warehousing
- Use forecasting and stock control processes & tools



### **Driving factors in warehouse optimization for pharmaceutical companies are:**

- Tracking and tracing requirements on lot level
- Shelf life / FEFO requirements
- High picking accuracy requirements
- High risk products (narcotics)
- Conditioned products (temperature, humidity control)
- Quality status control
- Special packaging requirements
- GDP, GMP requirements

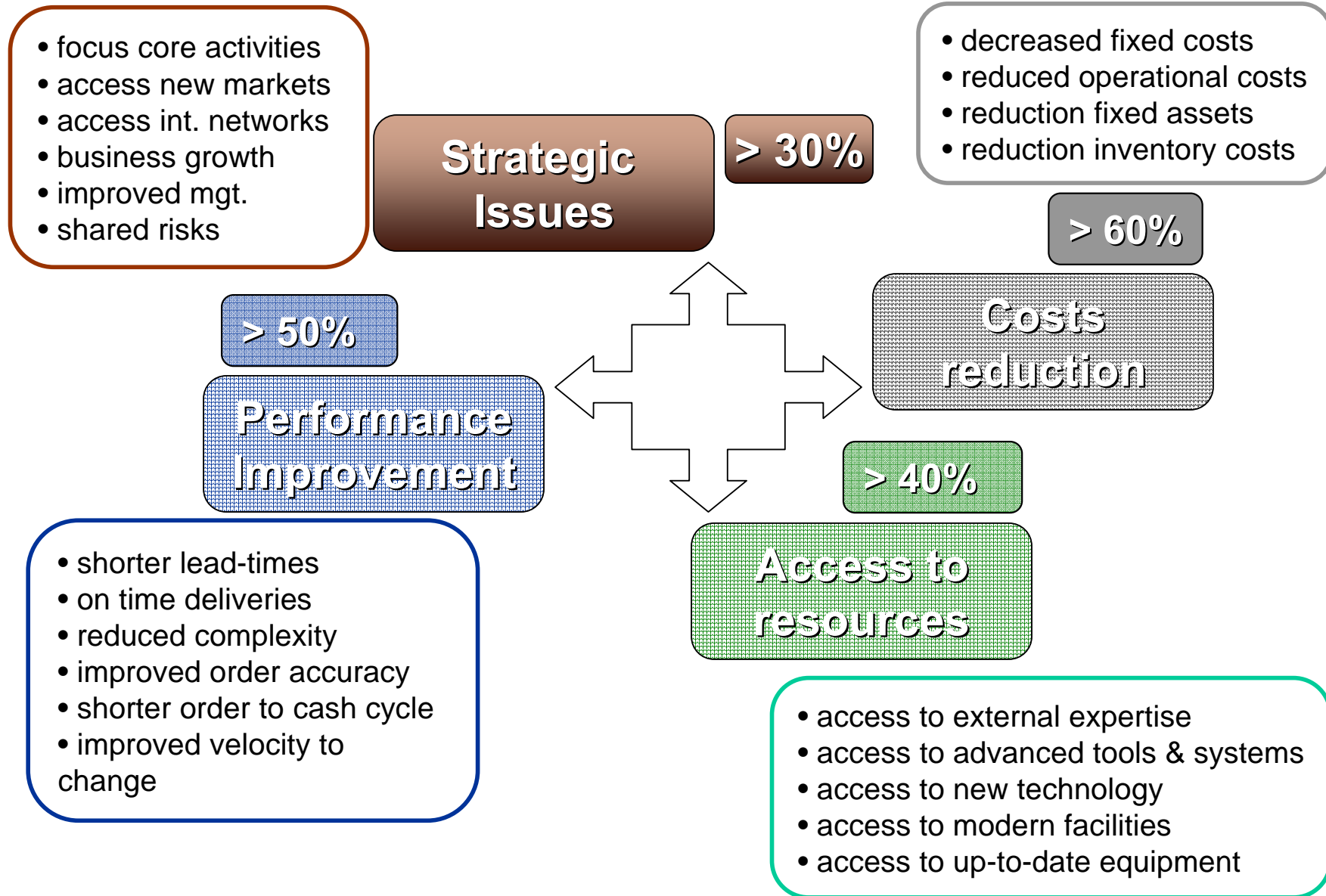
In general, any mistake can influence health....

### **Due to high quality requirements warehouse optimization in pharmaceutical business tend toward reduction of human error possibilities by:**

- high level WMS support of processes - online info through RF / pick to light
- Automation and mechanization efficiency possibilities could be limited depending on warehouse sizing
- RF control quality could increase dramatically by introducing standardized bar-coding

# Outsourcing

## Business drivers

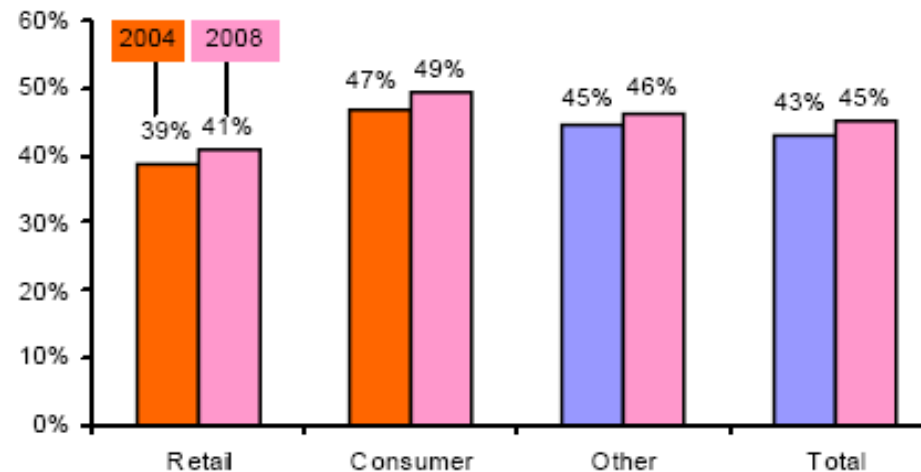


Source: LogXpert & VIL benchmark

# Outsourcing

## Market study (1)

Penetration of outsourcing in total logistics spend - distribution, warehousing & associated services



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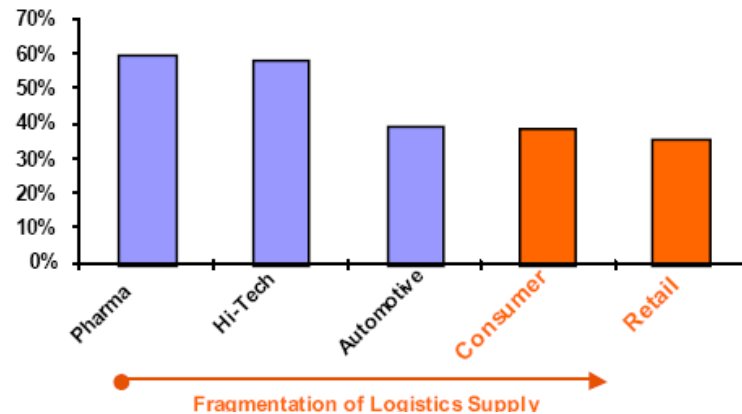
Based on customer perception studies:

*“ It has been estimated that about 40% of the global logistics is outsourced, for Europe just over 50% ”*

# Outsourcing

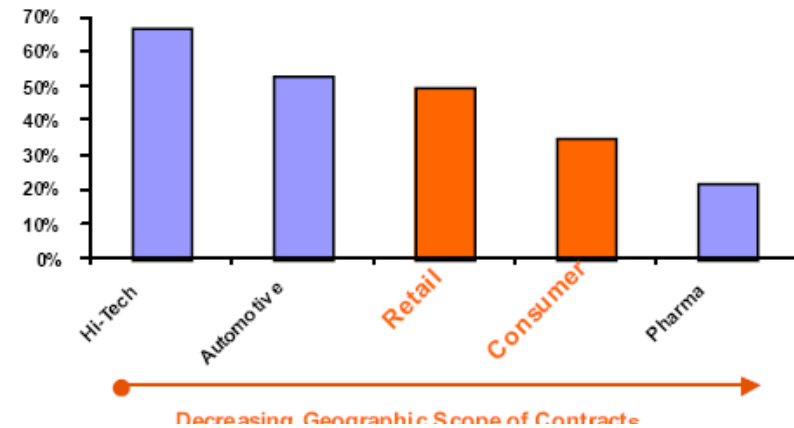
## Market study (2)

Sector comparison showing percentage of companies where top 3 suppliers account for more than three-quarters of logistics spend



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Proportion of respondents with European or global logistics contracts

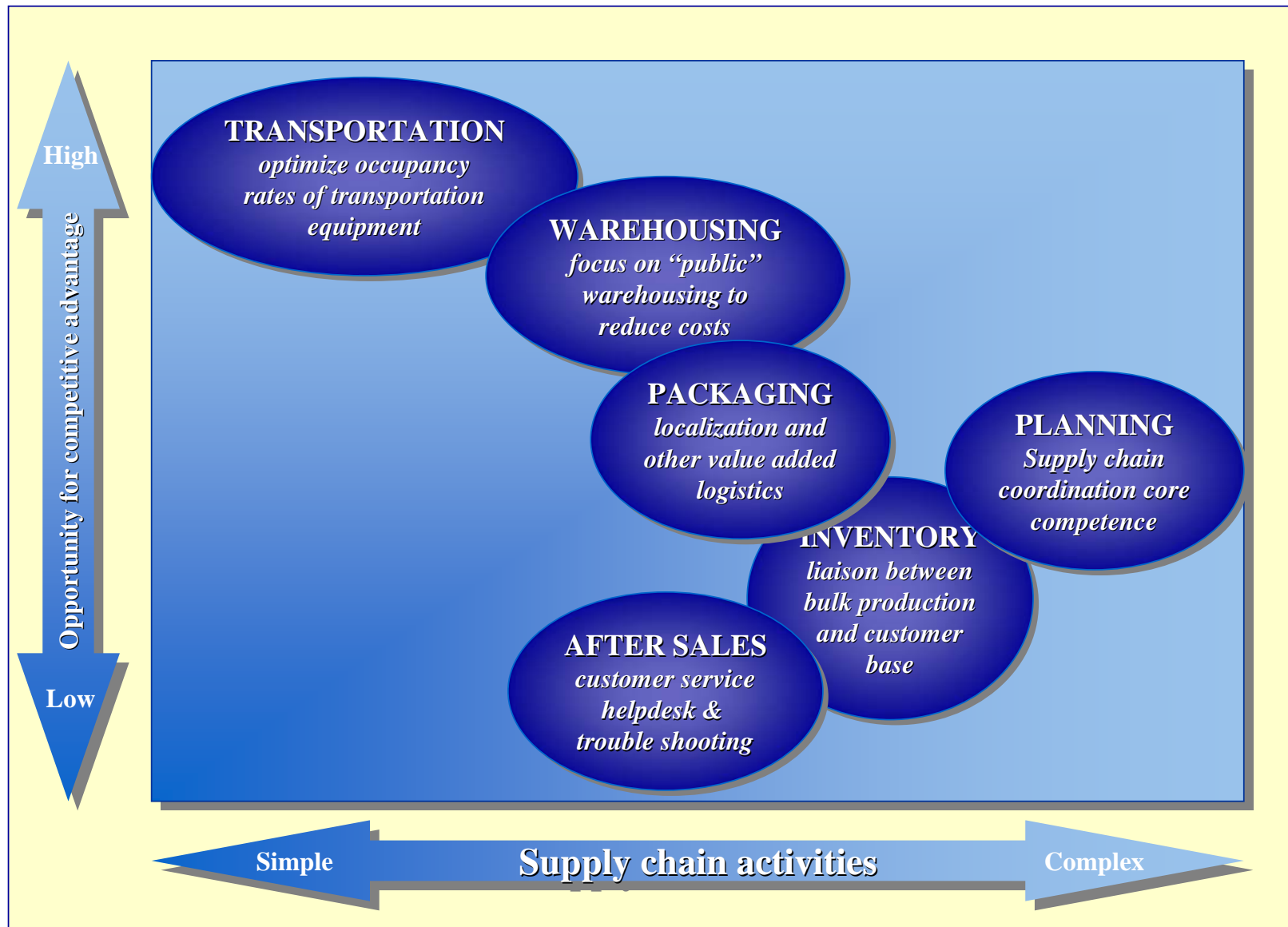


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- *The outsourced spends are more regional and more concentrated compared to other industries*
- *The outsourcing of logistics activities is relatively limited within Pharma industry;*

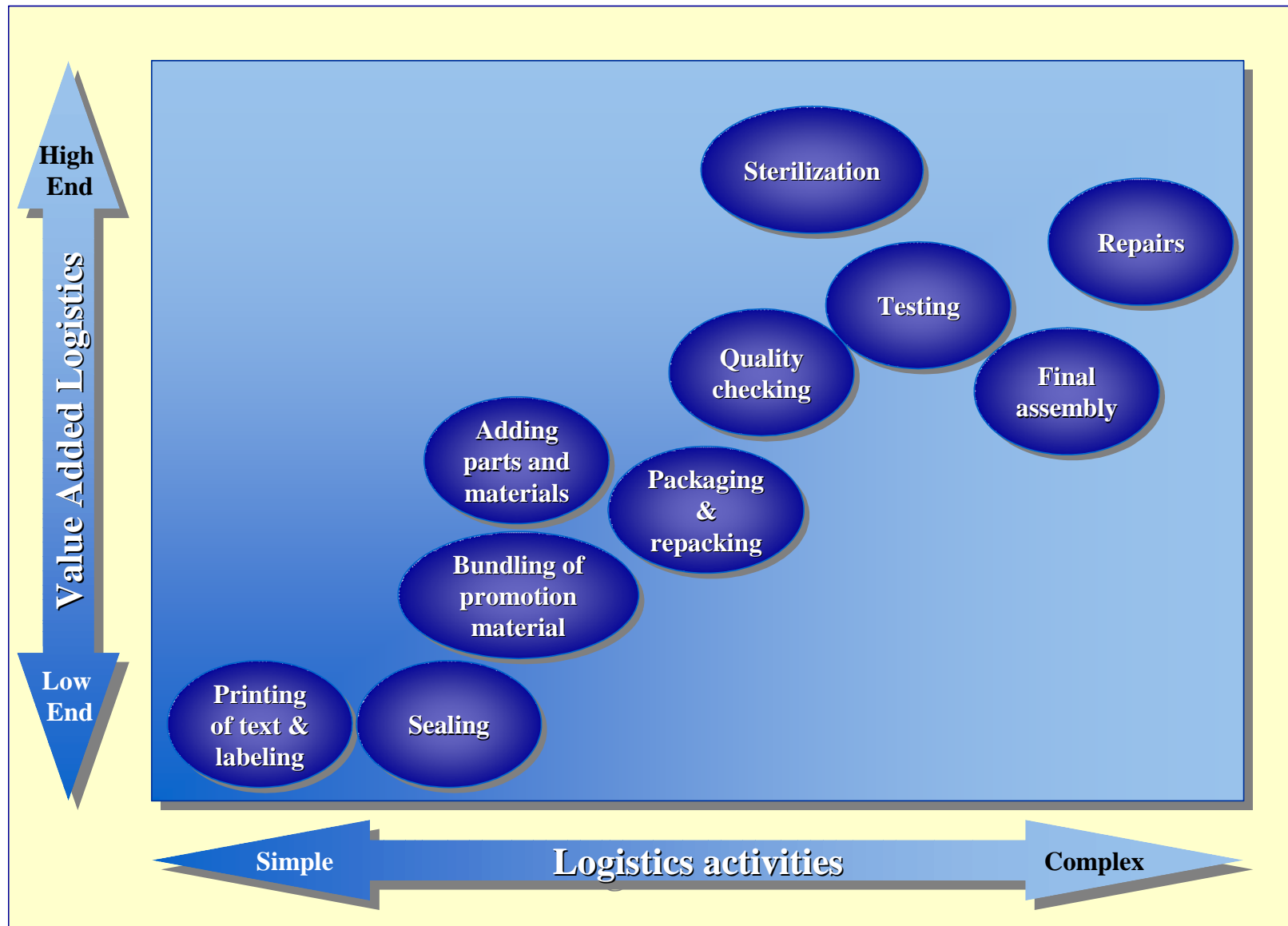
# Outsourcing

## *Outsourcing priority*



# Outsourcing

## *Level of outsourcing VAL*



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# Outsourcing

## Healthcare current levels of collaboration

### Knowledge sharing

- Create platforms on validation approach
- Share information on regulatory issues per country

### Experience sharing

- Select vendors based on experience in pharma / with validation
- If possible, purchase equipment / systems based on validated status

### Facility sharing

- Share temperature controlled storage areas
- Share GDP storage facilities
- Share GMP facilities (*for postponement, Value added etc.*)
- Use LSP's specialized in pharma

### Transport sharing

- Share temperature controlled transportation
- Combine direct distribution transport
- Share hazardous goods transportation



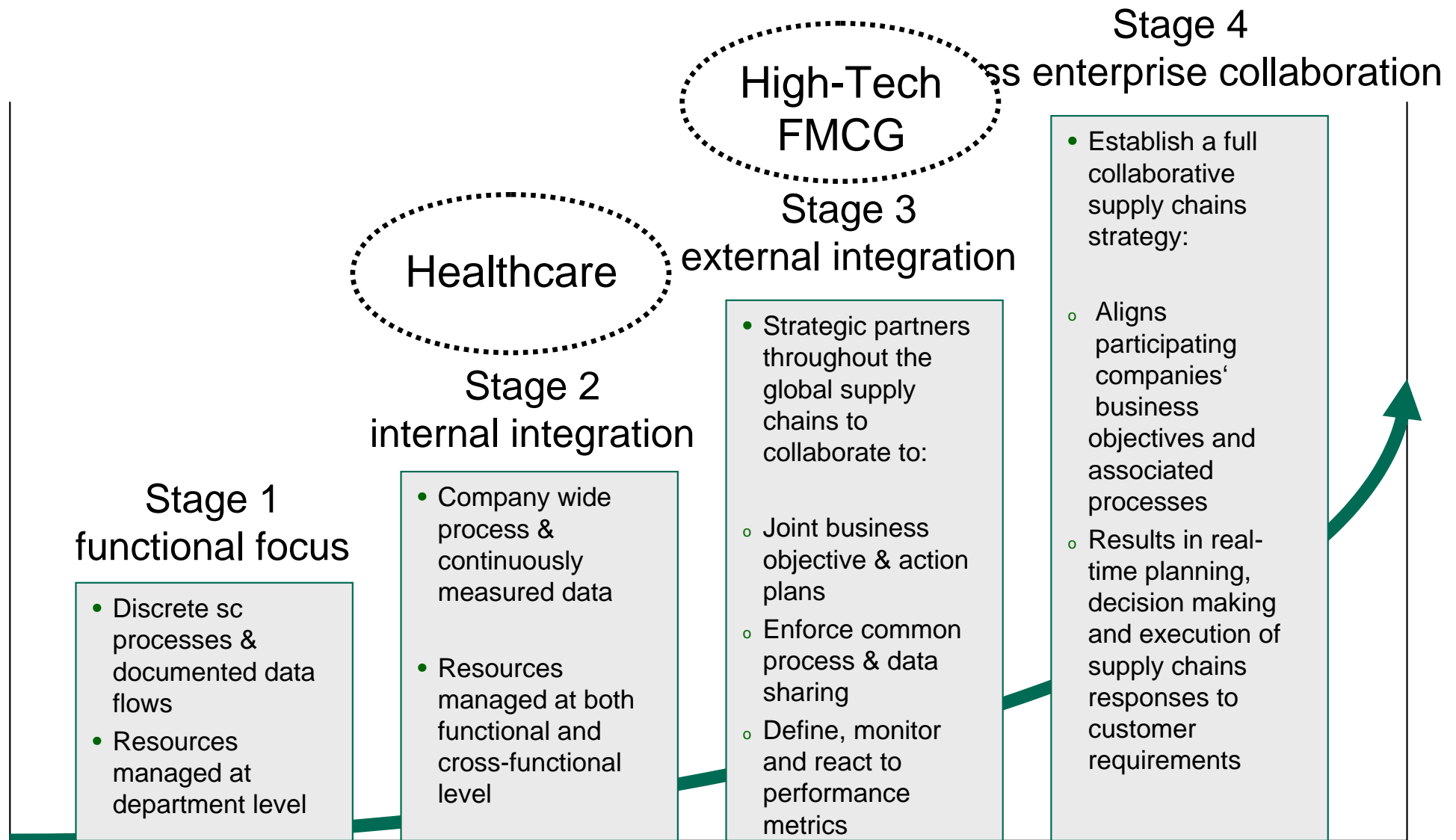


# Outsourcing

*Healthcare vs. other industries*

Automotive

supply chains performance



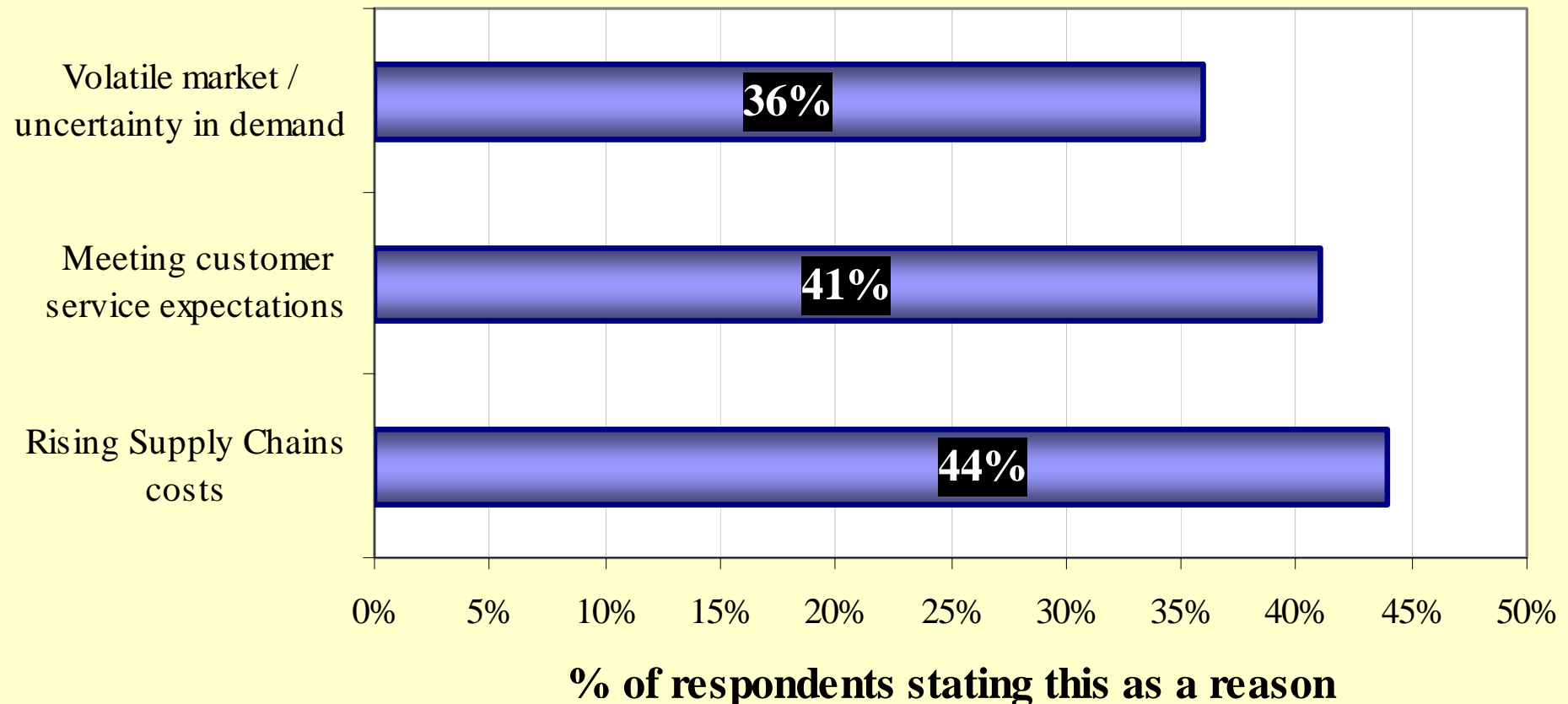
stages of operational capability



- **Purpose of S&OP:**

- On a monthly basis align relevant Sales & Marketing and SC developments (forecast, assortment, market actions) with key decision moments ( cost, pricing, introductions, capacity..), to respond to demand and supply variations and risks.
- The level of subject review is covering relevant deviations and developments in the business, short term as well as long term, resulting in financial or operational adaptations to the plan.
- The work is prepared and/or executed outside the S&OP platform to provide the right information for appropriate decision making.

### Why companies look into S&OP

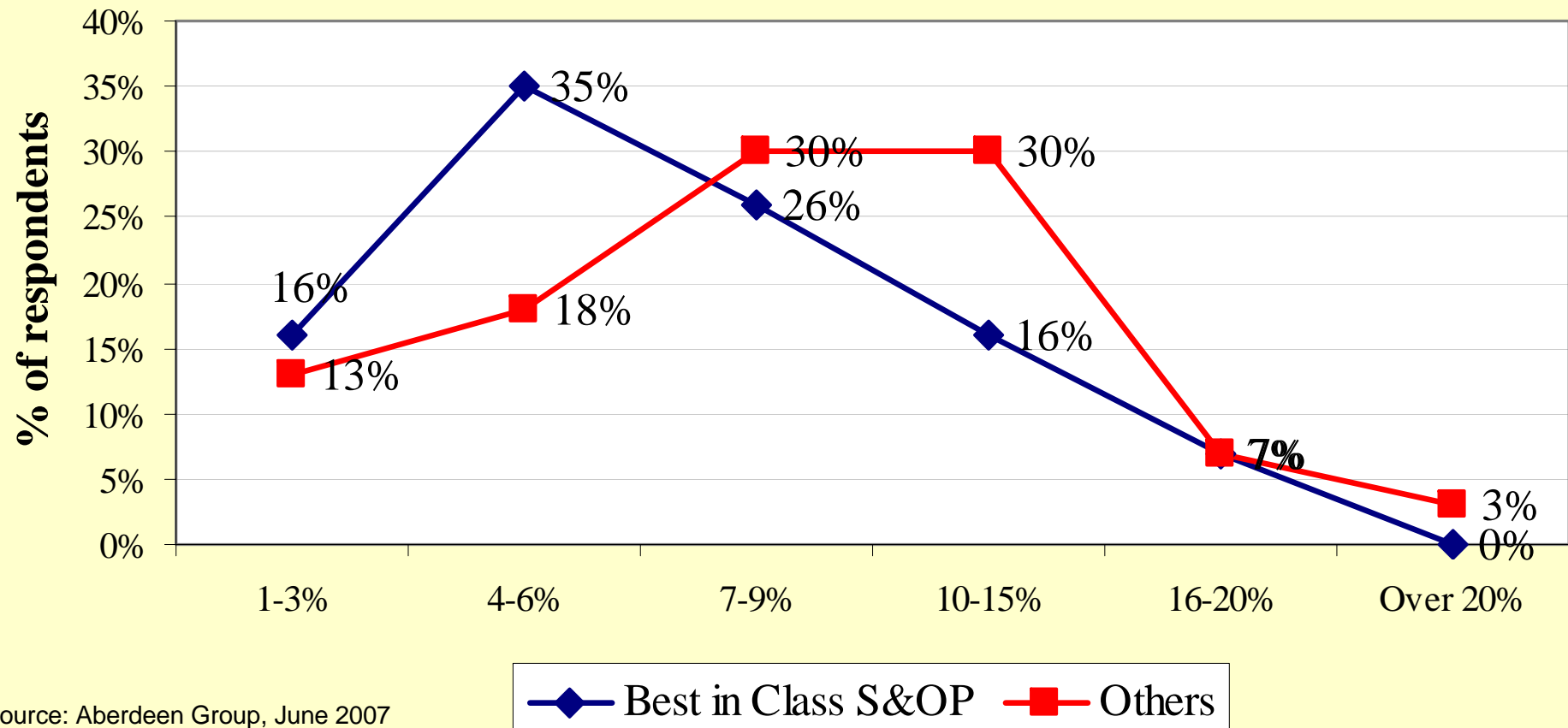


Source: Aberdeen Group, August 2008

# Sales & Operations Planning

*Benchmark – logistics costs as part of sales*

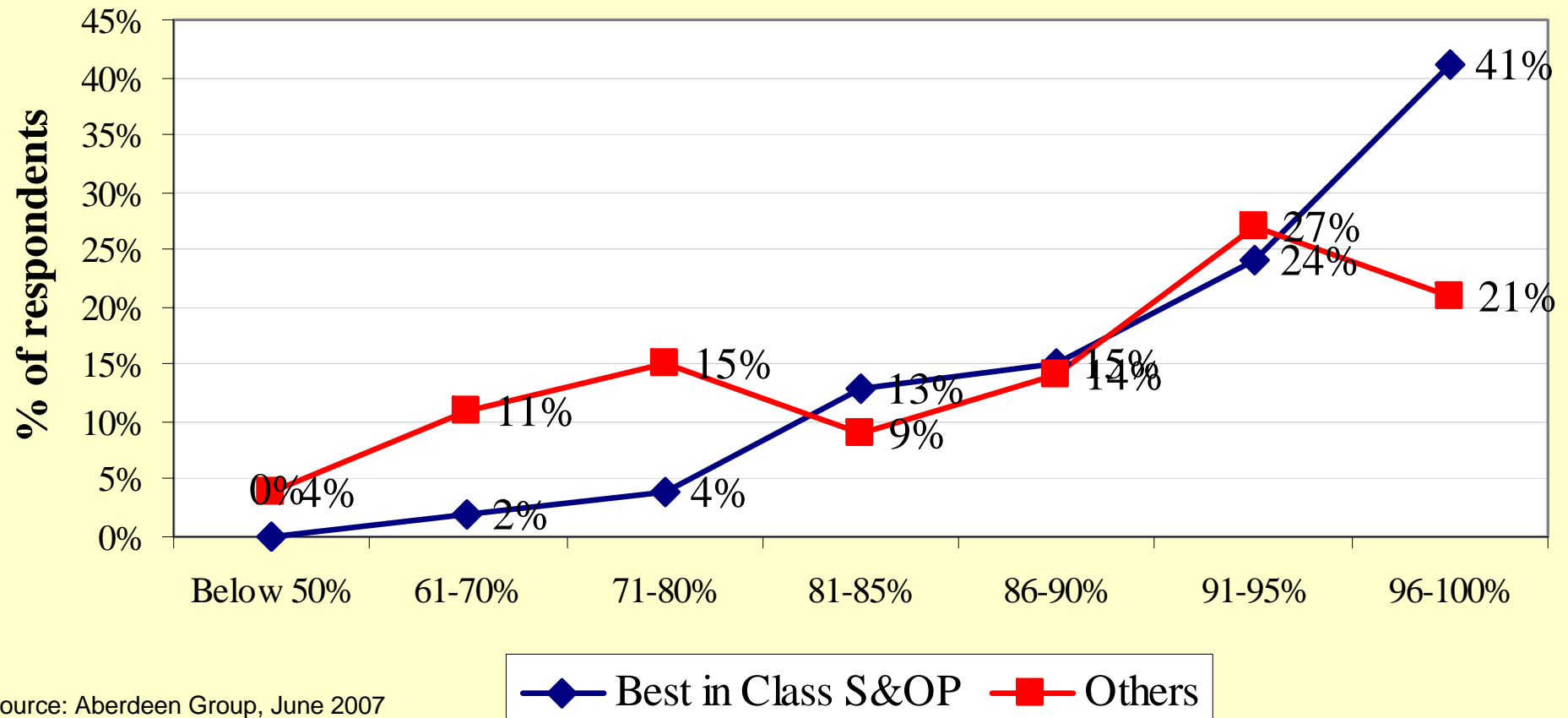
## Logistics costs as % of sales



# Sales & Operations Planning

Benchmark – customer order fill rate

## Customer order fill rate



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- Closing statements

# Closing statements (1)

1. Cost savings become more and more necessary in the pharmaceutical world, and in the mean time quality requirements are increasing
2. Three ways to battle this strategic dilemma:
  - Focus on economy of scale
  - Supply chains / logistics optimization
  - Cooperation

The type of cost savings to use depends on the competitive value of that activity

3. If rules and regulations are driving up costs, why compete why not cooperate?



## Closing statements (2)

4. The savings potential on annual supply chain costs in the pharmaceutical world are 10 - 30%
5. Whilst quality demands are high, supply accuracy typically is no higher than 95%. With the right approach this could be increased to 99.5 % and higher, maintaining the cost savings mentioned above







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