

INNO-Grips Workshop on Disruptive Innovation
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Disruptive innovation trends in transport and logistics

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Agenda

1. Outline of the transport and logistics service industry in Europe
2. Different views on innovation in transport and logistics
3. The role of ICT innovation in the EU logistics service industry
4. Main ICT related innovation trends in 3PL industry
5. Policy recommendations

Key definitions

Logistics consists in the management of several activities along the supply chain that may be roughly classified into two categories:

- **BASIC ACTIVITIES** (transport and warehousing related activities)
- **ADVANCED ACTIVITIES** (value added activities beyond T&W such as order fulfilment, inventory management, supply/demand planning, sourcing and procurement, production planning and scheduling, packaging and assembly, and customer service)

Logistics outsourcing involves the use of external organisations called **Third Party Logistics Service Providers (3PLs)** to execute logistics activities previously performed in-house by manufacturers and retailers themselves

EU logistics service market: key figures

Total **logistics costs** accounted for 6,9% of the **EU GDP** in the 2004, this percentage increased to 7,2% in 2009 (AT Kerney, 2010)

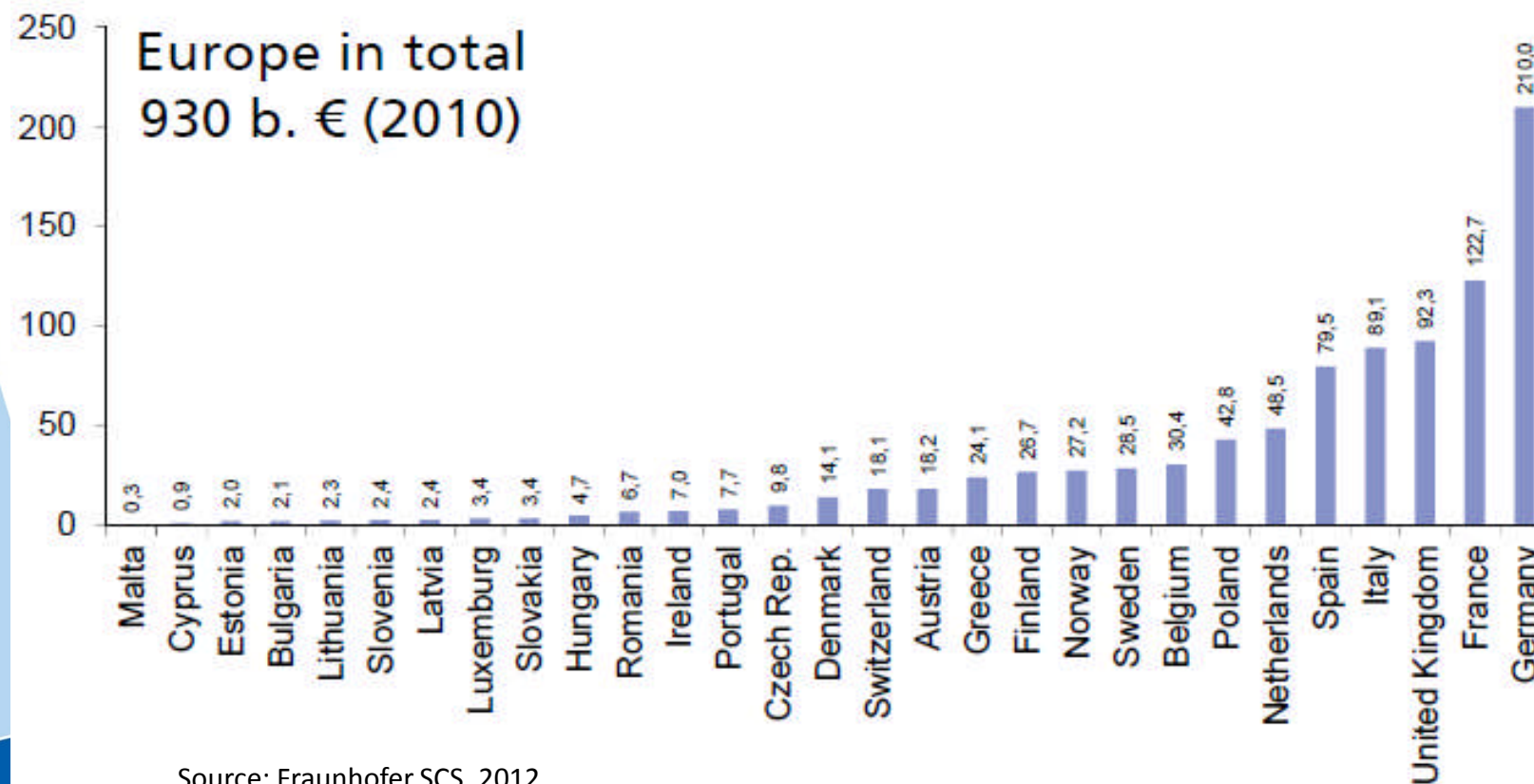
In 2008, the transport services sector in the EU27 **employed** around 9.1 million persons (approx. 4.5 % of the total workforce). Around 2/3 of was employed in land transport and 27 % in warehousing and supporting and transport activities (Eurostat, 2011)

In 2008, the **total number of enterprises** was approx. 739.000 (with a share of 81% operating in the road transport segment) and in several EU countries most of the transport companies are small and micro (Eurostat, 2011)

58 % of employees in EU-27 in 2005 were **employed by SMEs** and 24% of the workforce was employed in micro-enterprises (Eurostat, 2009)

European Logistics Market Size, 2010

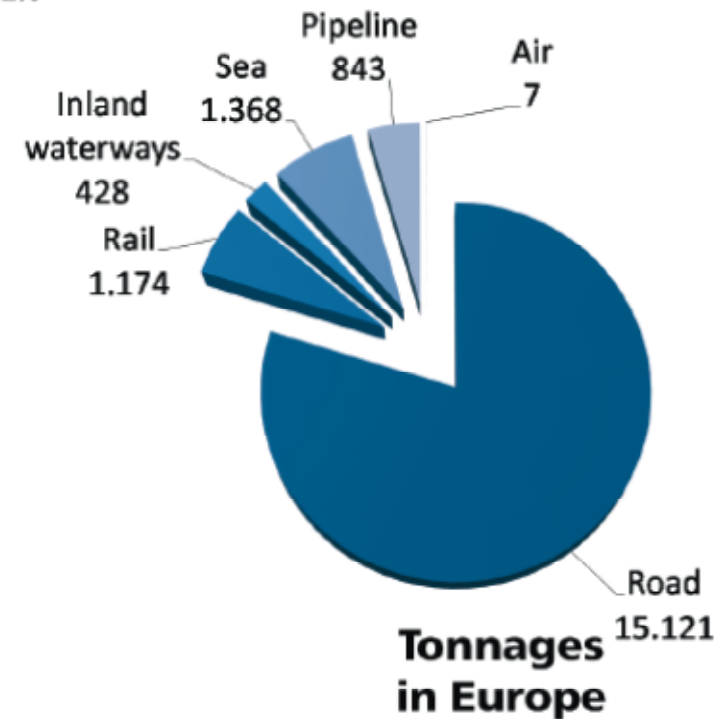
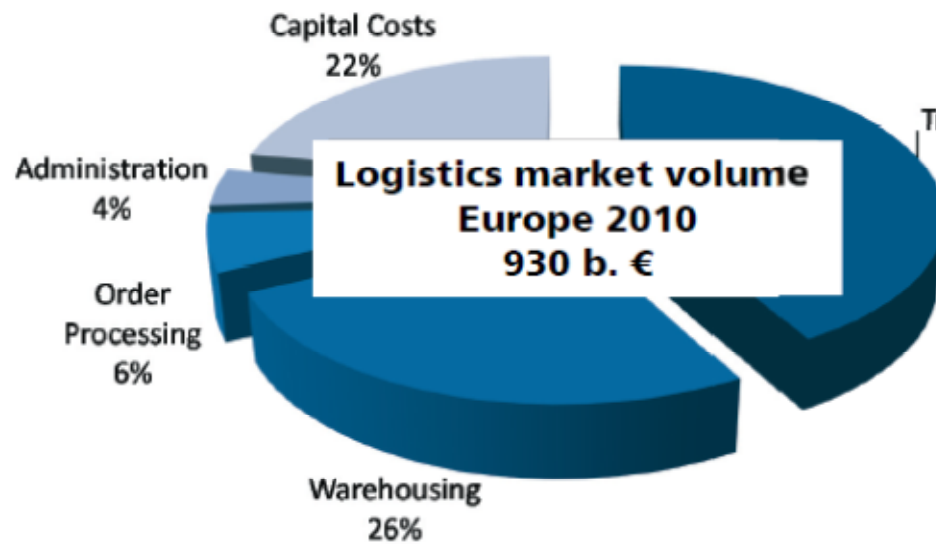
In 2010, the total volume of logistics expenditures in Europe (EU 27 plus Switzerland and Norway) was estimated in 930 billion Euros. 512 billion Euros are outsourced to external logistics service providers, leading to an outsourcing rate of 52%



Source: Fraunhofer SCS, 2012

Logistics market segments in Europe, 2010

Market volume Europe 2010



Source: Fraunhofer SCS, 2012

in m. to 2010

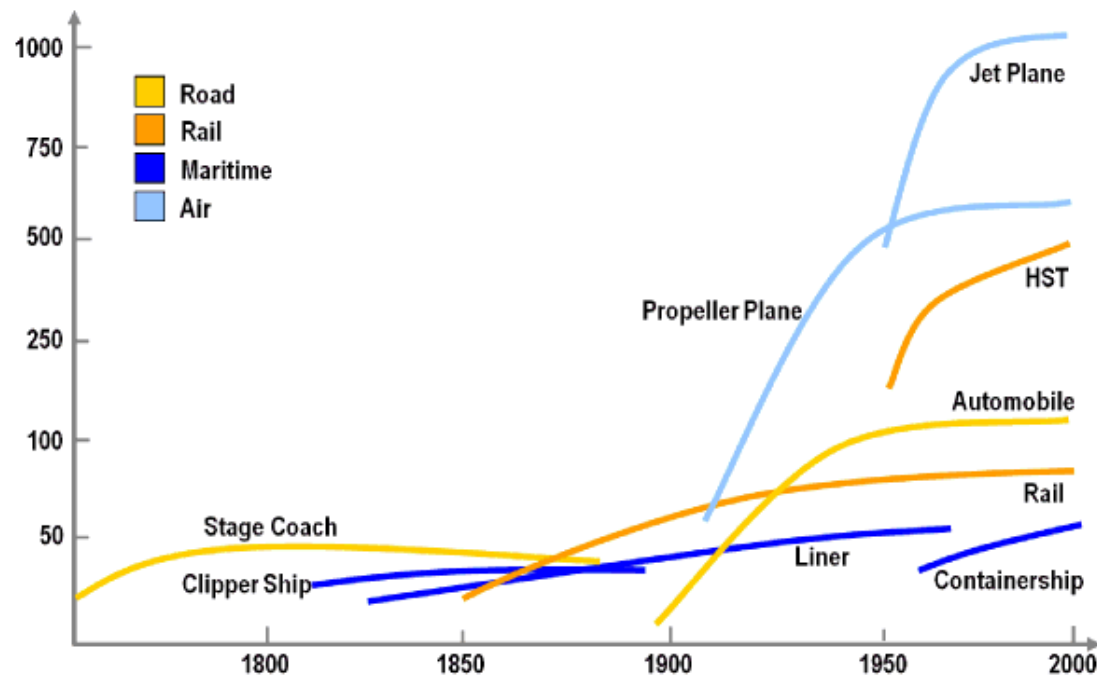
Main challenges for today 3PL players

- ⇒ ***Globalisation of the 3PL market***
- ⇒ ***The emergence of global logistics service providers***
- ⇒ ***Flexibility in service offerings***
- ⇒ ***Relationship with customers***
- ⇒ ***Innovation***

Different views of innovation: the “transportation system” perspective

Innovation is viewed as improvements may be achieved in speed, capacity, efficiency and geographical coverage of transport systems

Adopting this perspective, beyond the introduction of commercial jet planes and the container in the late 1960s, no significant disruptive innovations have impacted freight transport systems

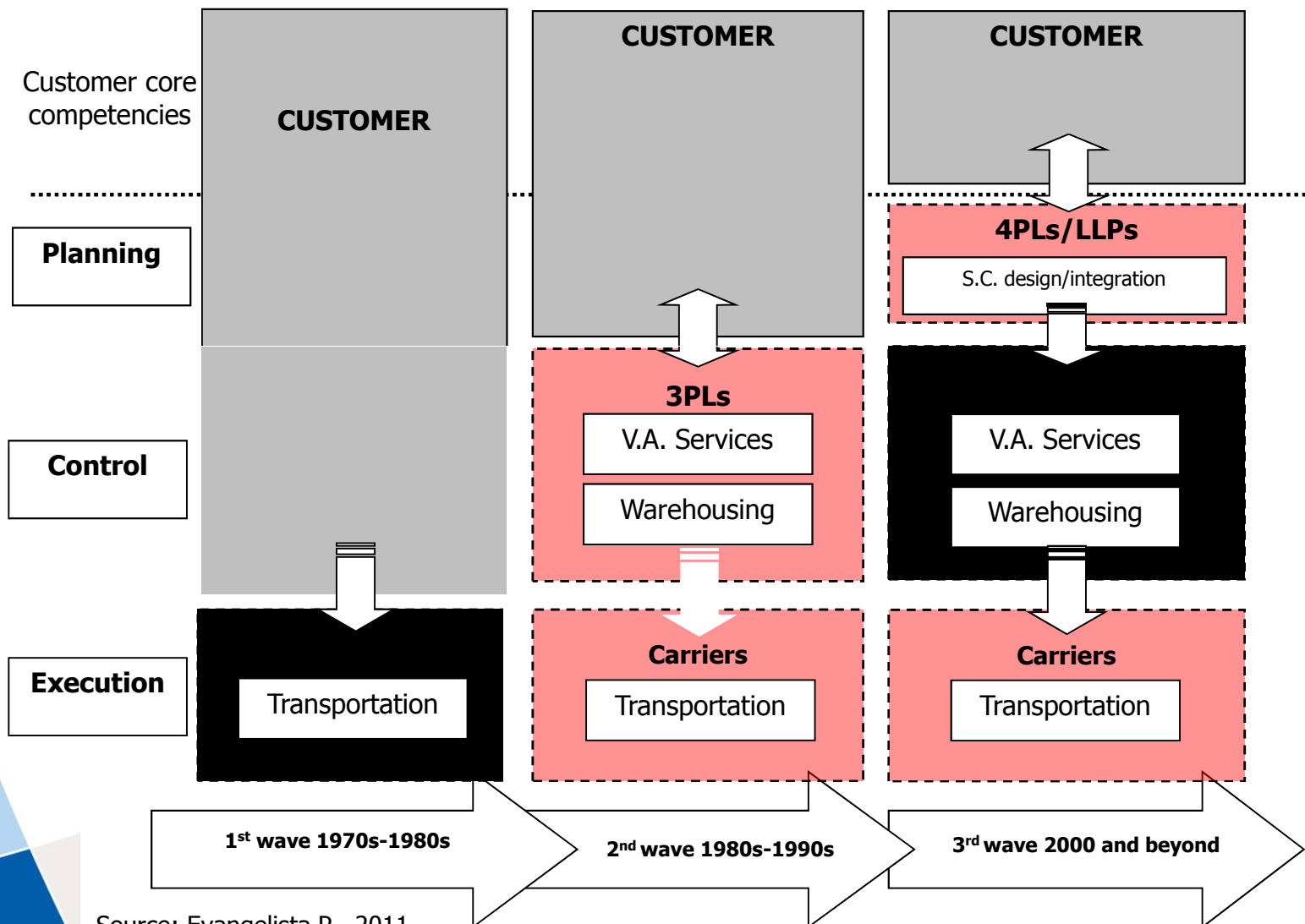


Source: Rodrigue et al., 2006

The “logistics service innovation” perspective

- Innovation can be associated with changes in the offering of logistics service
- The focus is on the company rather than the system
- **Incremental innovation** concerns the stepwise improvement of an existing **service** offering and operations using the existing technology. This leads to expand or make an existing service provision more efficient and competitive
- **Disruptive innovation** happen when the 3PL provides **solutions** to customer based on deep process improvements by using **new technology** to obtain greater value from innovations in logistics outsourcing beyond the provision of traditional services

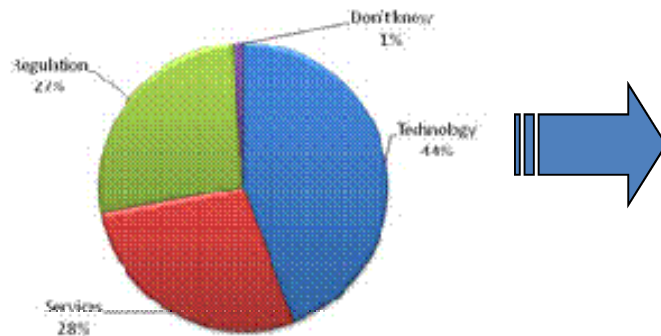
Evolving service innovation in logistics outsourcing



Source: Evangelista P., 2011

ICT innovation in 3PL industry

IN YOUR OPINION
Transport sector innovation will come more from:



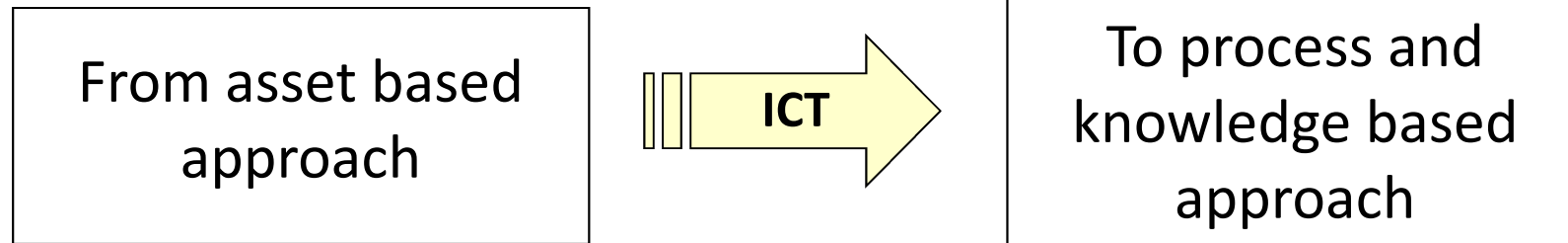
ICT in logistics service is considered a critical enabler of innovation to achieve a competitive edge especially in a turbulent economic environment

Source: ITF, 2010

Benefits of ICT innovation in logistics service :

- allow to anticipate customer service needs
- improve the quality of service supplied
- supports services diversification and customisation
- facilitate supply chain coordination and control

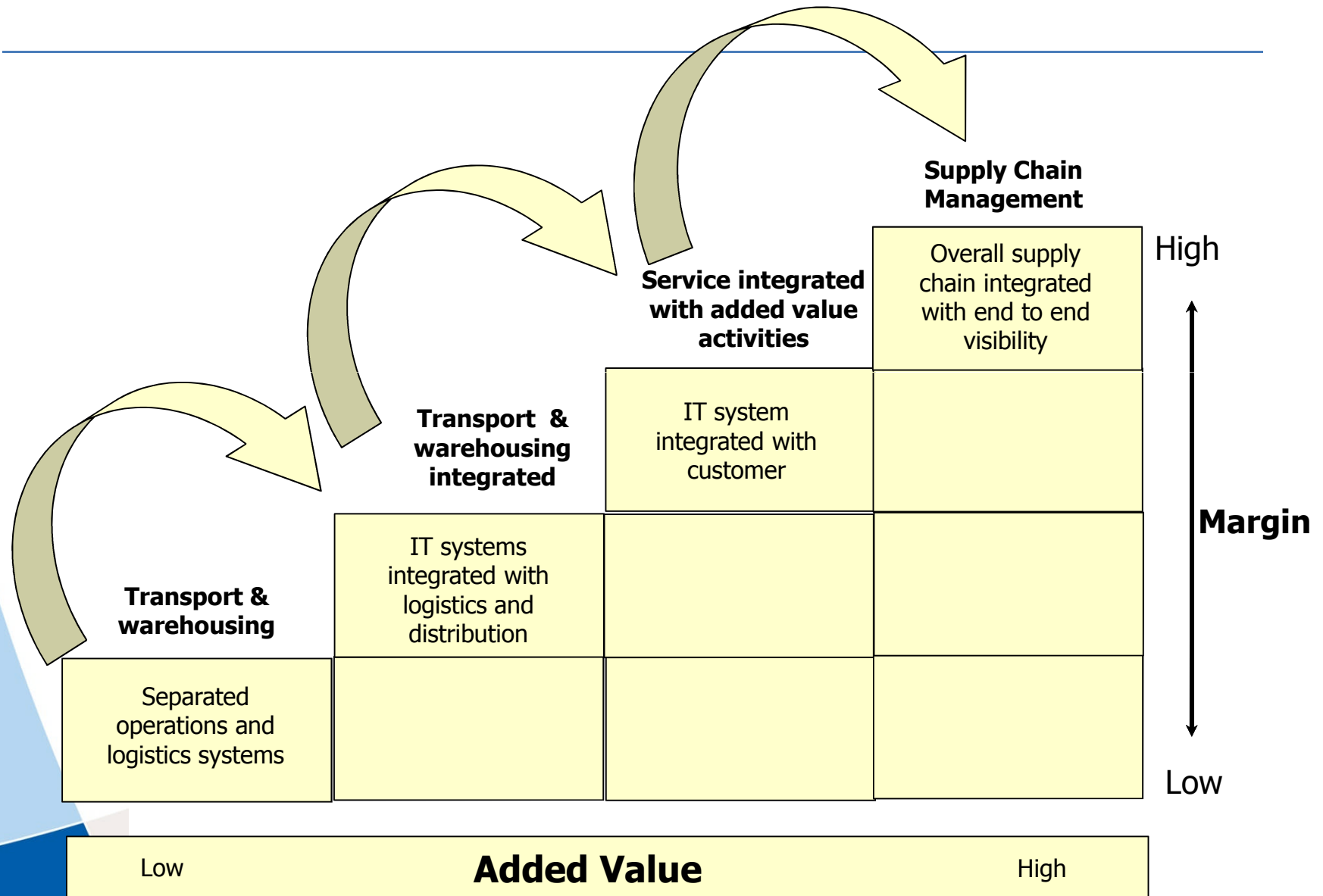
ICT innovation enables radical change in 3PL industry



ICT is playing a major role as a driving force of supply chain integration and innovation in 3PL companies (van Hoek, Harrison, 2004; Simchi-Levi, Caminsky, 2003; Christopher, 1992)

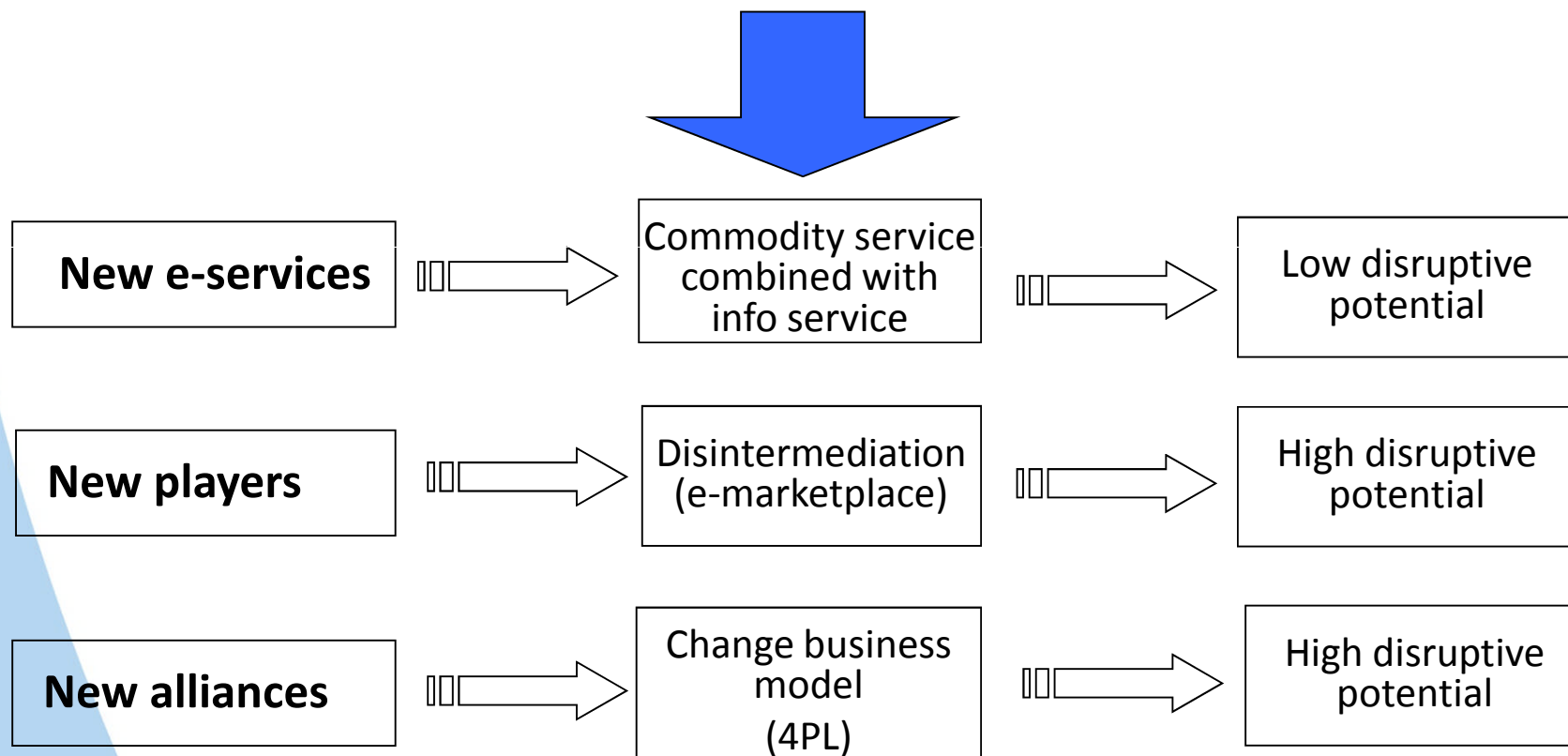
Value-added services together with information management could be the key to differentiate businesses and improve 3PLs competitive positions (Sauvage, 2003; Van Hoek, 2002)

How ICT support service innovation in the 3PL industry



Main ICT related innovation trends in 3PL industry

What are the main innovation trends associated with ICT in 3PL companies?



ICT diffusion in the EU logistics market

Large multinational 3PL groups have invested in technology gaining substantial benefits while the potential of ICT in EU transport SMEs is underestimated

A recent report of the EU commission (2008) documented the substantial *digital divide* existing between large and small logistics companies in the EU

According with a recent study on ICT diffusion in small Italian 3PLs the main barriers inhibiting ICT usage are: a) **financial**; b) **human resources**; c) **ICT supply side**

Policy recommendations

Policy actions should be oriented primarily to remove these barriers

1) low level of ICT expenditure:

- stimulating higher ICT expenditure through fiscal actions that may be able to reduce tax charges on technology investments

2) lack of technology skills in the workforce:

- reassessing education and training systems at all levels in the sector in order to meet the professional and skills needs of companies
- provide mixed education and training programmes on cross-functional knowledge and skills across and within the supply chain context combining, for example, knowledge on ICT and supply chain management

Policy recommendations

3) ICT supply side (lack of standards and difficulties in selecting ICT products and services):

- achieving a better dissemination of technology solutions in order to facilitate data and information sharing among small 3PLs and other supply chain actors
- stimulating cooperative technology platforms through which ICT vendors may design solutions more closely aligned with small 3PLs needs

Strategic market segmentation and policy actions for SMEs

	Q2	Q1
High added value logistics	<p>Type: branches of foreign logistics groups or spin-off of leading Italian manufacturing companies</p> <p>Size: medium-large</p> <p>ICT role: relevant in supporting service integration (logistics planning systems)</p>	<p>Type: multinational companies</p> <p>Size: large</p> <p>ICT role: relevant and integral element of service offered (Enterprise Integration Application, Advanced Planning Systems)</p>
Low added value logistics	<p>Type: road hauliers and warehousing companies</p> <p>Size: micro-small</p> <p>ICT role: little relevance limited to improving internal effectiveness (ITS, GPS, on-board computer)</p>	<p>Type: specialised companies in nich market (function, sector or a mix of the two)</p> <p>Size: small-medium</p> <p>ICT role: relevant in customising the service offered (warehouse planning & optimisation, network /facility location configuration)</p>
	Q3 Service	Q4 Solution

Thanks for your attention

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