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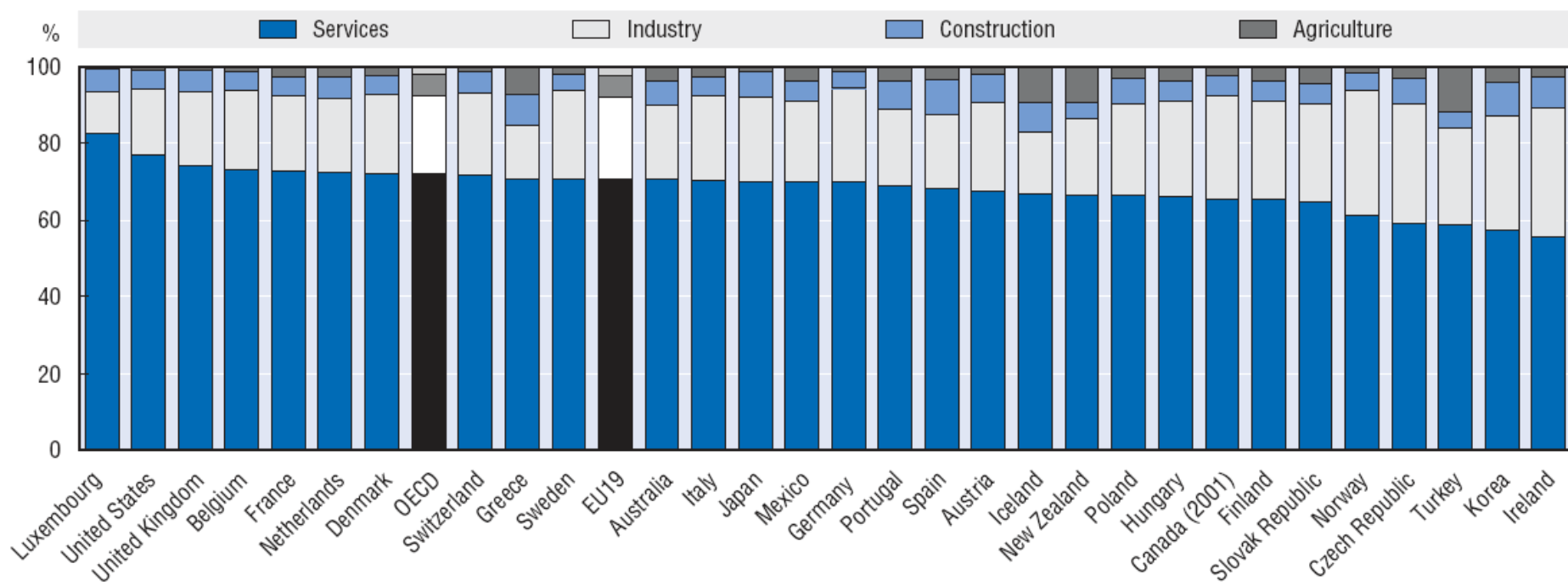
# **The Servitization of Manufacturing: An Analysis of Global Trends**

Professor Andy Neely

# The shift to services...

Services now account for the majority of GDP and employment in the west...

- Service sector accounts for over 70% of EU's economic activity
- Nearly 70% of EU's workforce are employed in service sectors



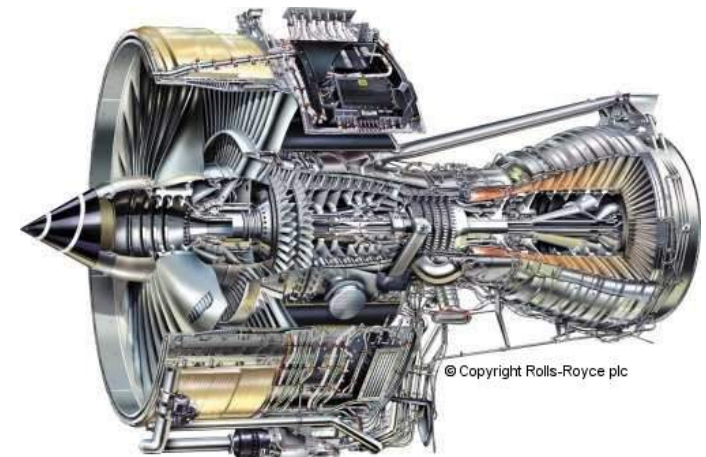
# Services in manufacturing (high value production)...

## Interest in service-based competitive strategies is not new:

- ❑ Andersen and Narus – Capturing the Value of Supplementary Services, Harvard Business Review, 1995.
- ❑ Wise and Baumgartner – Go Downstream: The New Imperative in Manufacturing, Harvard Business Review, 1999.

But we may be at a technologically enabled tipping point...

- Servitization/Serviceization...
- Product-Service Systems...
- Service Science...
- Remote Product Servicing...
- Intelligent Vehicle Health Management...



# The opportunities for services...



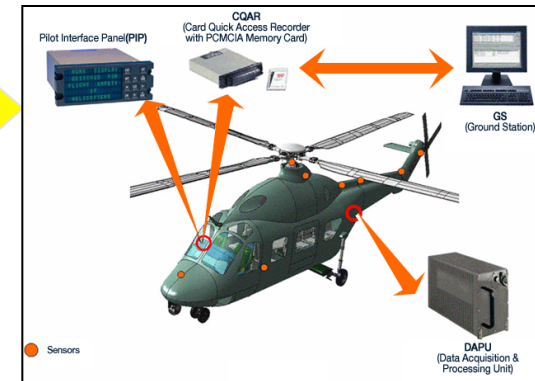
## John Deere iGuide system (2007)

Uses GPS technology to automatically shift the steering pattern of the tractor to compensate for implement drift



## Health and Usage Monitoring Systems

Use sensors on equipment to detect repair and overhaul requirements

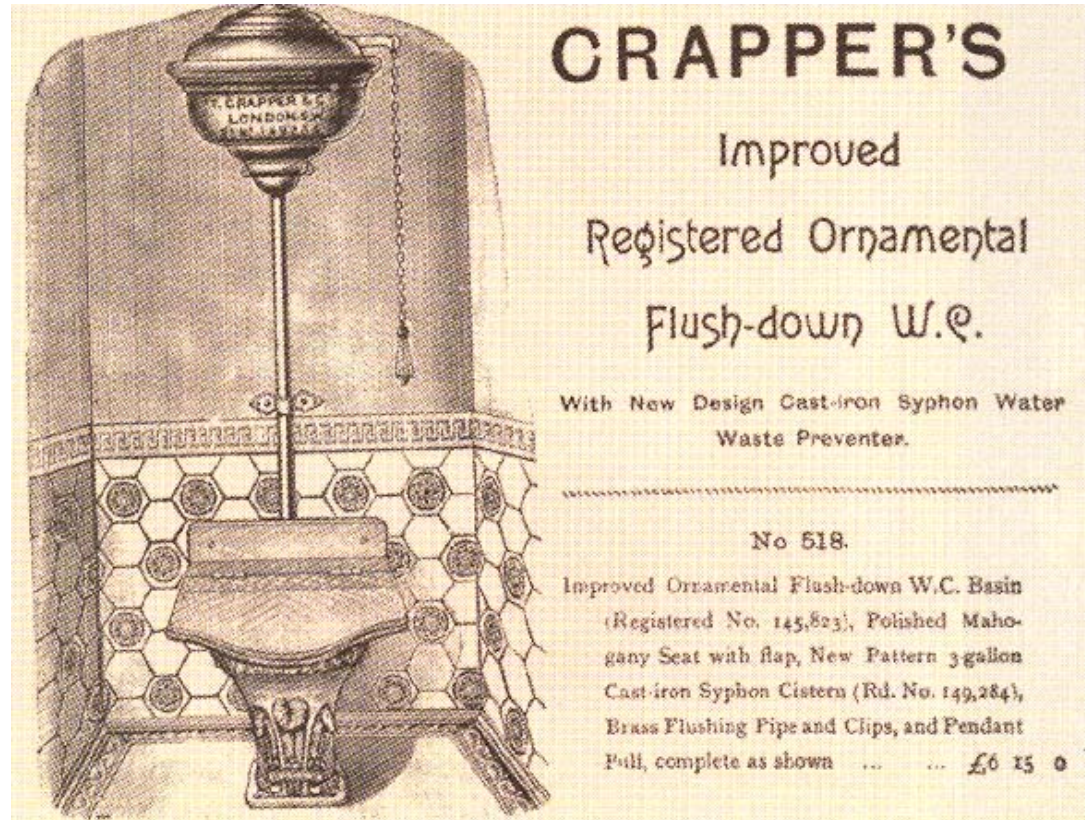


And it does not end there...

## Yesterday's Technology...



**Thomas Crapper (1836-1910)**  
**Sanitary Pioneer**



# Today's toilet technology...



## The intelligent toilet...



### Neorest toilets...

- Lid opens automatically as you walk up...
- The seat's heated...
- There's a catalytic air purifier to remove any "unwanted odours" ...
- With a manual power override for those particularly unpleasant visits...
- There's a warm-water massage spray and a hot air dryer...
- The temperature and intensity of both are controlled using a LCD panel...
- Once you've finished and left the "sensor zone" the toilet automatically closes the lid and starts a three stage "Cyclone" flush; the strength of which depends on how long you've been busy on the toilet and previous patterns of usage.

# What about the toilet of tomorrow?



Put simply...

**The servitization  
of manufacturing  
= adding  
services to  
products...**

# Four questions...

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- What is servitization?
- Why servitize?
- Who is servitizing?
- What are the challenges of servitization?



# Four questions...

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- What is servitization?

# What is servitization?

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- *Servitization* is the innovation of organisation's capabilities and processes to better create mutual value through a shift from selling product to selling Product-Service Systems.
- A *Product-Service System* is an integrated product and service offering that delivers value in use.
- A *Servitized Organisation* designs, builds and delivers an integrated product and service offering that delivers value in use.

# Four questions...

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- What is servitization?
- Why servitize?

# Why is manufacturing servitizing?

<b>Economic rationale</b>	<ol style="list-style-type: none"><li>1. Manufacturing firms in developed economies cannot compete on the basis of cost (technological developments are enabling them to add innovative services)...</li><li>2. The installed base argument (e.g. for every new car sold there are already 13 in operation, 15 to 1 for civil aircraft and 22 to 1 for trains)...</li><li>3. Stability of revenues – services vs. products...</li></ol>
<b>Strategic rationale</b>	<ol style="list-style-type: none"><li>1. Lock in customers (sell the original equipment at cost, make money on spares &amp; suppliers - razor, printers)...</li><li>2. Lock out competitors...</li><li>3. Increase the level of differentiation (e.g. equipment provider offers to take customer's risk and give predictable maintenance costs)...</li><li>4. Customers demand it (e.g. contracting for capability)...</li></ol>
<b>Environmental rationale</b>	<ol style="list-style-type: none"><li>1. Environmental rationale (change notions of ownership and resource use – e.g. Mobility cars)...</li></ol>

# Four questions...

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- What is servitization?
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# So what can we find out about servitization?

	2007 dataset	2009 dataset
Source of data	OSIRIS database	OSIRIS database
Nos. companies	44,000 publicly listed firms	55,000 publicly listed firms
Nos. manufacturing firms (US SIC codes 10-39)	22,952 firms	27,670 firms
Nos. manufacturing firms with over 100 employees	12,521 firms	13,259 firms
Nos. firms with no business description	1,478 firms	706 firms
Nos. firms declaring bankruptcy	216 firms	222 firms
Useable sample	10,827 firms	12,331 firms

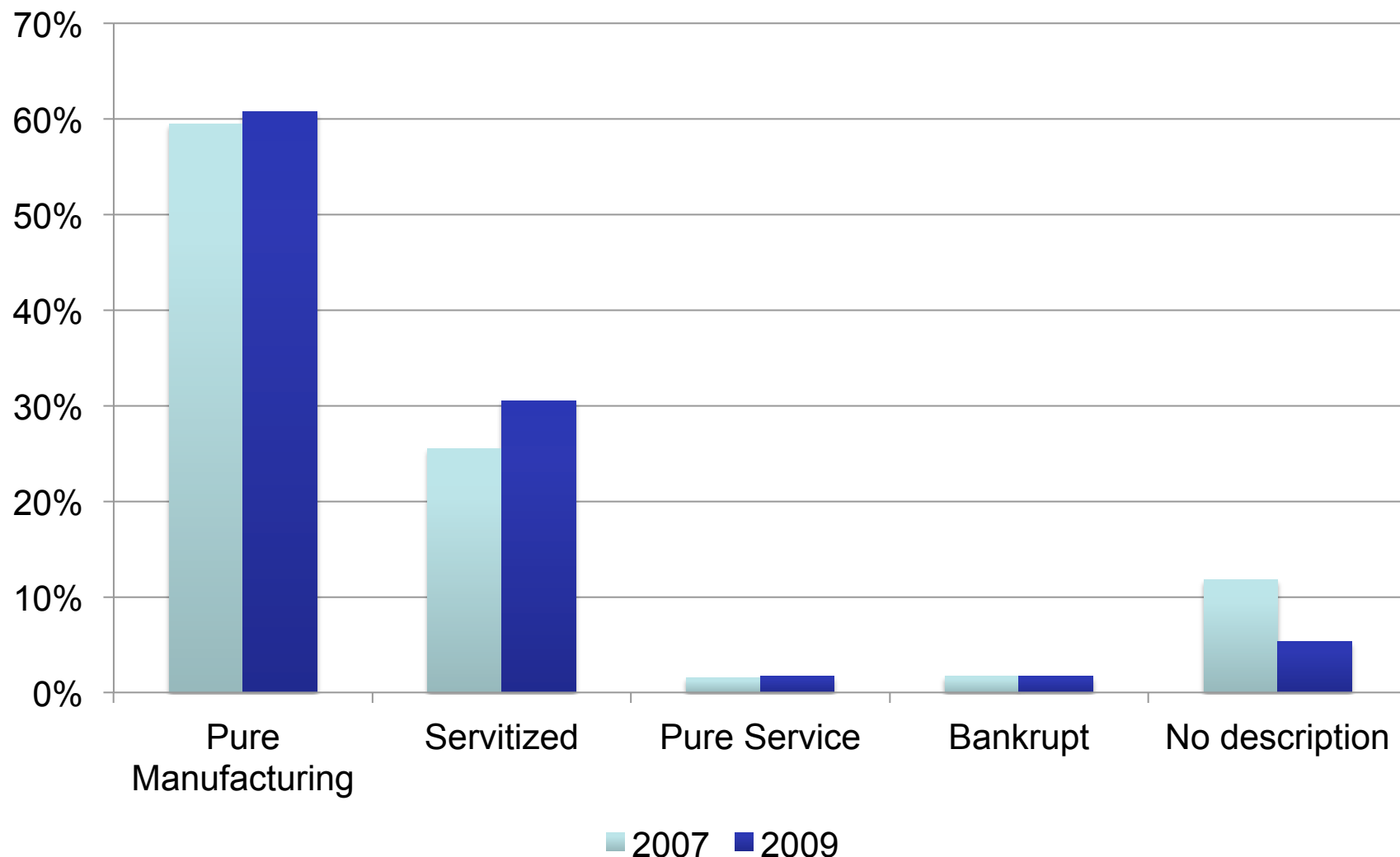
# Coding – identifying which firms have servitized

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## **Coding – using business descriptions to identify whether firms classified as manufacturing offer:**

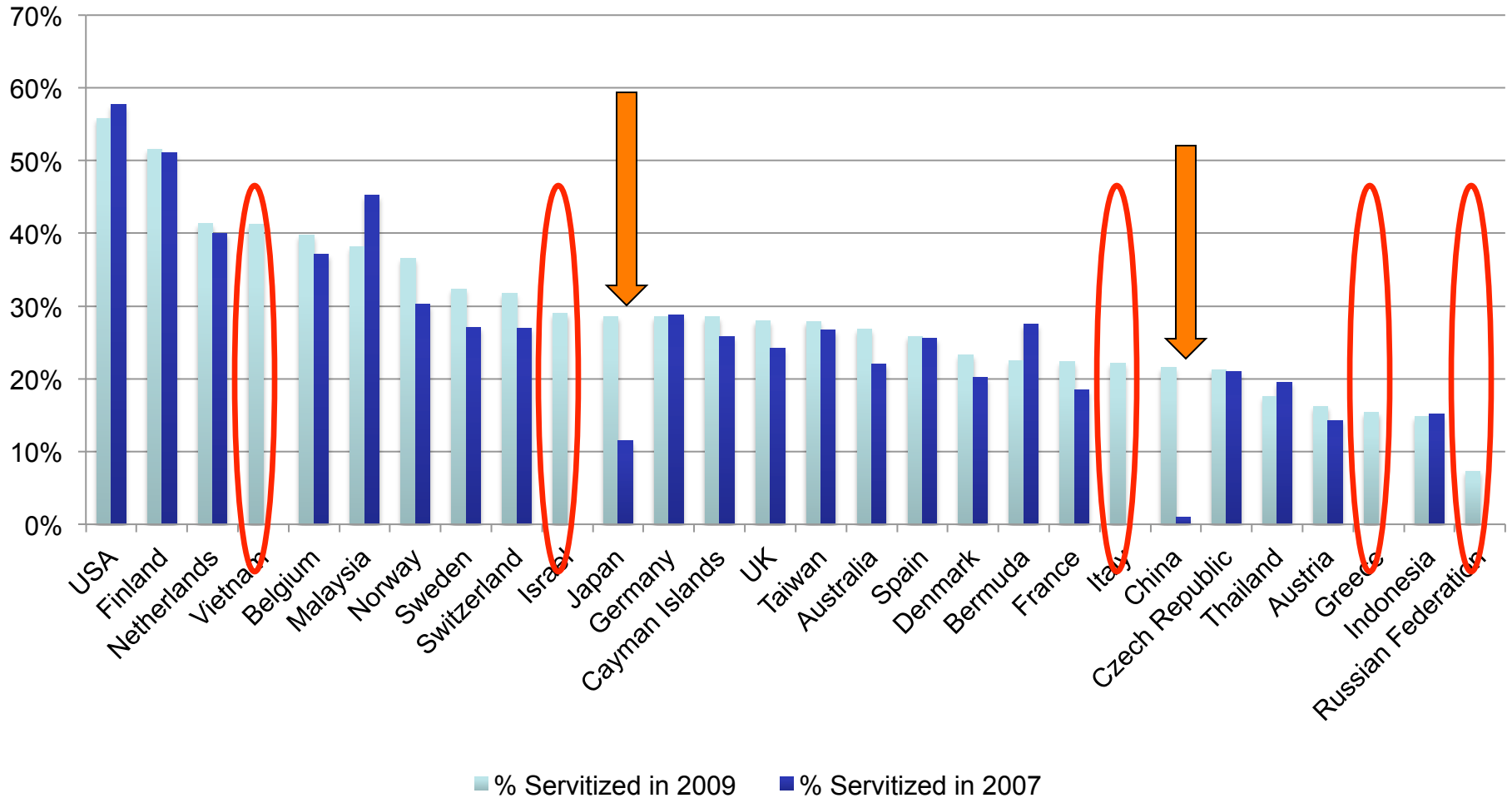
- Pure manufacturing, e.g. PetroChina principally engaged in a broad range of petroleum and natural gas-related activities.
- Some combination of manufacturing and service, e.g. Siemens - predominantly electronics and electrical engineering, but provides a wide variety of consulting, maintenance and other services.
- Pure service, e.g. The Brink's Company, conducts business in the security industry. The services offered by the Company include armoured-car transportation, automated teller machine (ATM) servicing, currency and deposit processing, coin sorting and wrapping, and arranging the secure air transportation of valuables.

# Despite having manufacturing SIC codes...





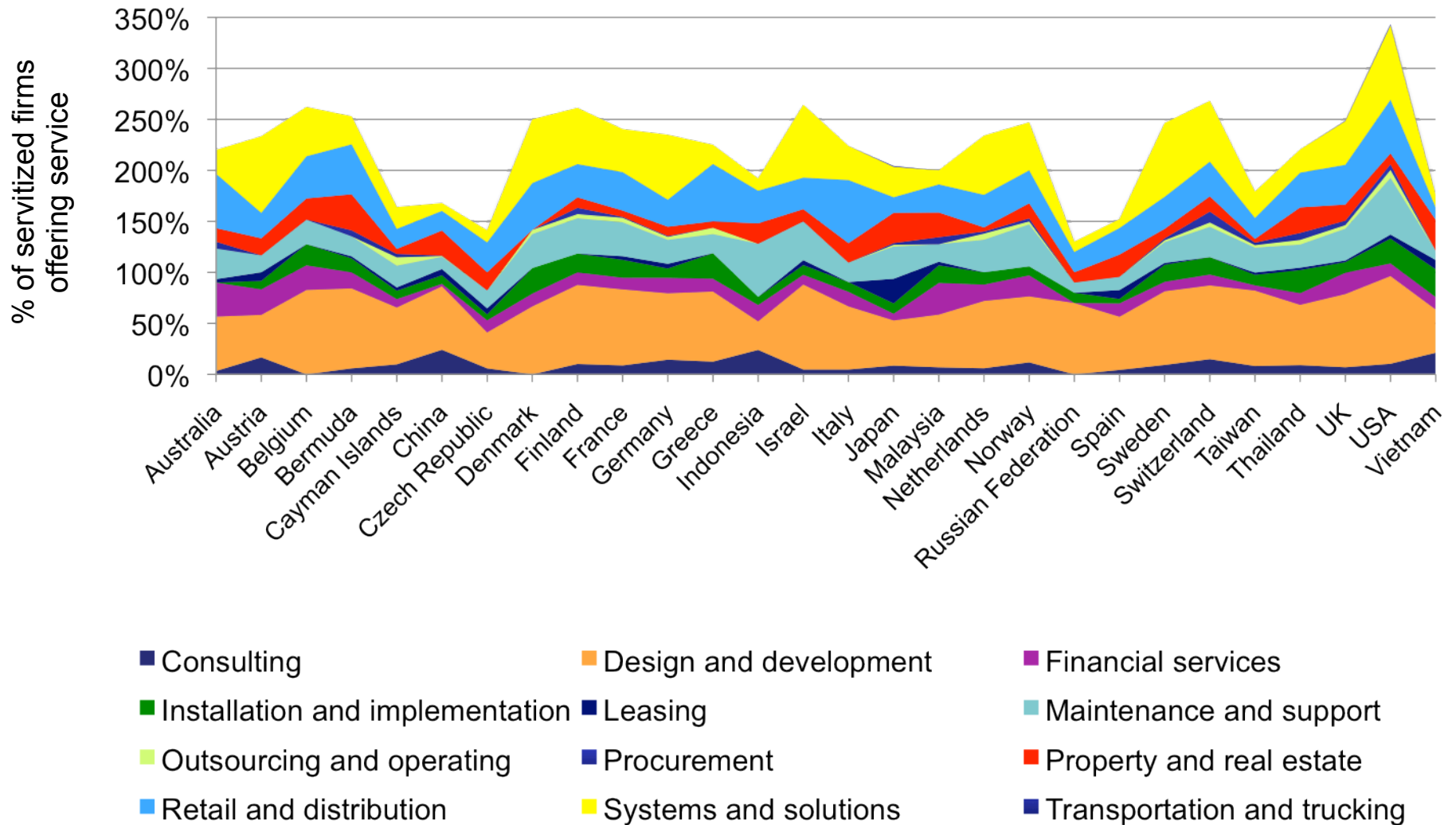
# Levels of servitization by country



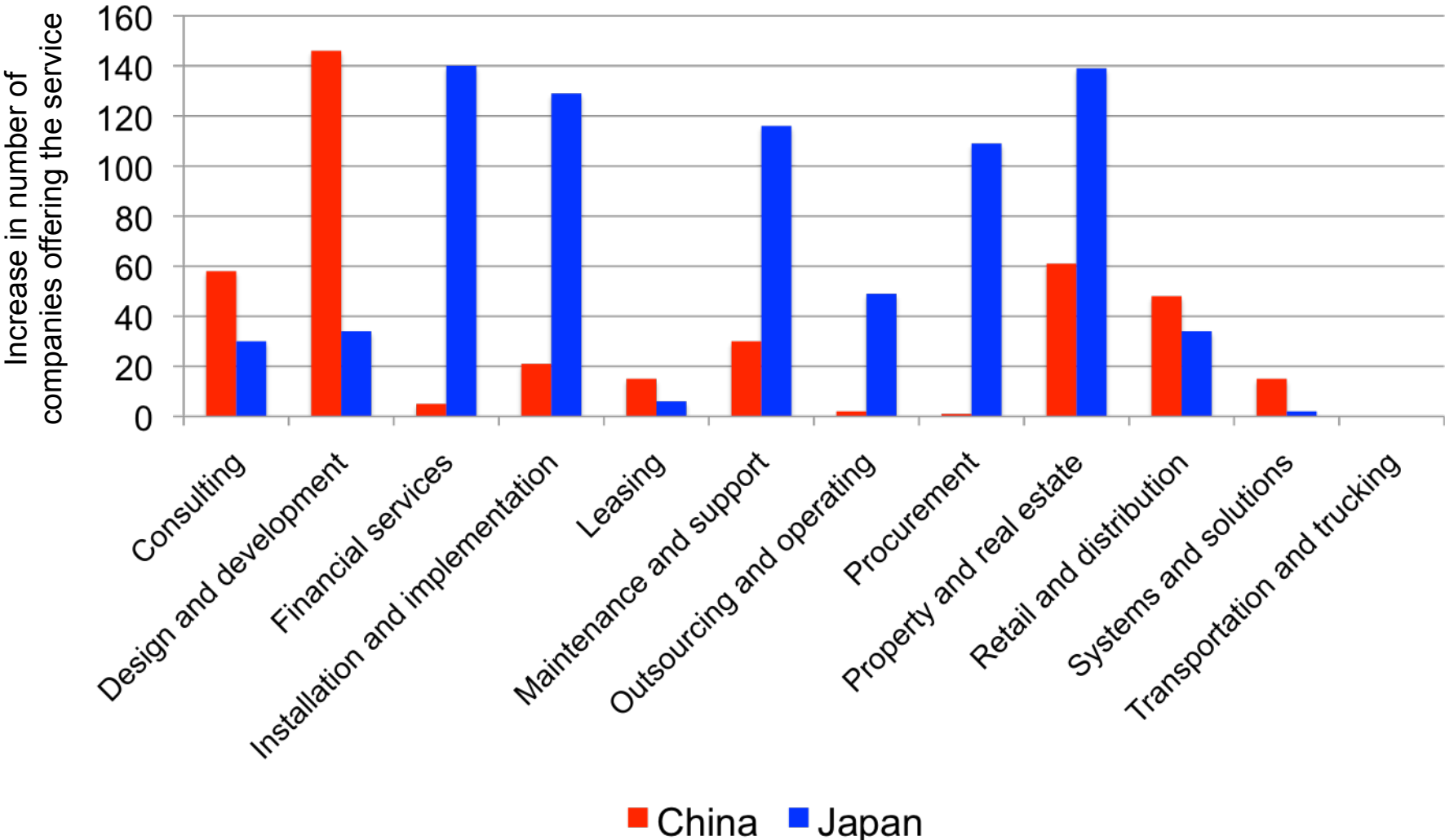
# What types of services are offered?

Service Offered?	% of Firms Offering Service in 2009	% of Firms Offering Service in 2007
Design and Development Services	23.21%	21.92%
Systems and Solutions	15.92%	15.70%
Maintenance and Support Services	12.33%	11.94%
Retail and Distribution Services	12.14%	12.18%
Installation and Implementation Services	5.35%	5.10%
Property and Real Estate	4.89%	3.83%
Financial Services	3.80%	3.89%
Consulting Services	3.37%	2.69%
Leasing Services	2.06%	1.07%
Outsourcing and Operating Services	1.46%	1.68%
Procurement Services	1.18%	1.15%
Transportation and Trucking Services	0.19%	0.20%

# Which services in which countries in 2009?



# Services from China and Japan



# Four questions...

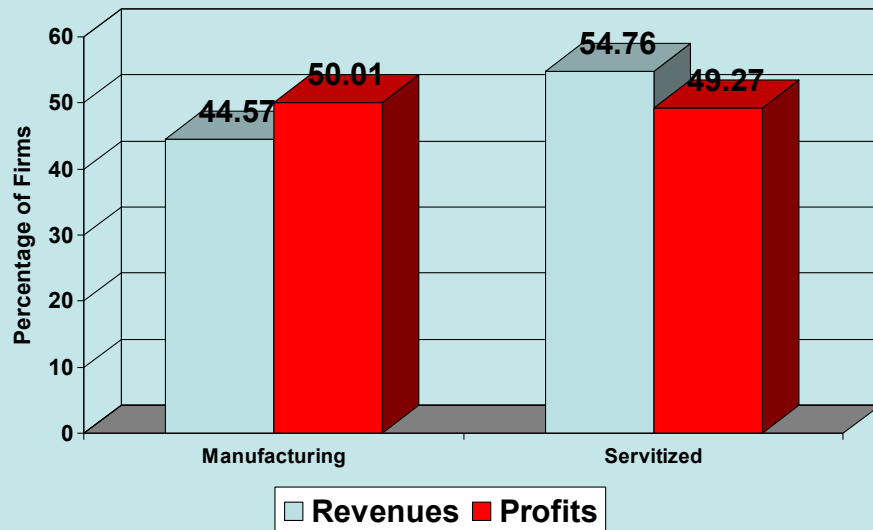
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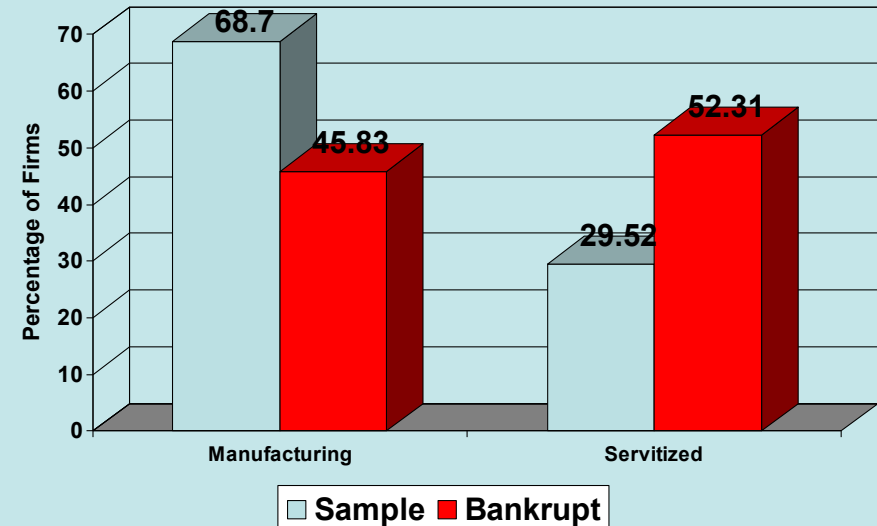
# Does servitization always work?

## The services paradox...

**Servitized firms account for a greater proportion of revenues, but a lower proportion of profit**



**A greater proportion of servitized firms went bankrupt than might be expected**



# The story so far... a services paradox

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1. Widespread efforts to servitize...  
58% of US firms with manufacturing SIC codes offer services.
2. The extent of servitization differs markedly by country...  
Less than 2% of Chinese manufacturing firms had servitized by 2007.
3. Although the gaps between countries – in terms of the extent of servitization – are closing...  
Over 20% in China and just under 30% in Japan have now servitized.
4. While services are thought to deliver higher margins, there is mixed evidence on the impact of servitization...  
(Gebauer et al, 2005; Neely, 2009; Visnjic and Van Looy, 2009).
5. With increasing evidence that the relationship is non-linear...  
(Fang et al, 2008; Suarez et al, 2008).
6. And some evidence that servitizing can be high risk...  
Firms that servitize appear more likely to suffer bankruptcy (Neely, 2009).

# The challenges of servitizing...

## Shifting mindsets

- Of marketing – from transactional to relational
- Of sales – from selling multi-million dollar products to selling service contracts and capability
- Of customers – from wanting to own the product to being happy with the service

## Timescale

- Managing and delivering multi-year partnerships
- Managing and controlling long term risk and exposure
- Modelling and understanding the cost and profitability implication of long-term partnerships

## Business model and customer offer

- Understanding what value means to customers and consumers (not producers and suppliers)
- Developing the capability to design and deliver services rather than products
- Developing a service culture
- Embedding all of the above into a service organisation





# For further information...

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Professor Andy Neely

IfM

University of Cambridge

Charles Babbage Road

Cambridge

Mobile +44 (0)7711 140198

E-mail [andy.neely@eng.cam.ac.uk](mailto:andy.neely@eng.cam.ac.uk)

[www.ifm.eng.cam.ac.uk/people/adn1000/](http://www.ifm.eng.cam.ac.uk/people/adn1000/)