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## Real Life Challenges – Service Innovation in Manufacturing

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# The Cranfield framework



## *Exploring the state of the art in PSS*

**-What themes exist in the literature?**

**-What PSS do companies have?**

**-How did these PSS arise?**

**-What value do firms appropriate from these PSS?**

**-What value do customers and consumers appropriate from these PSS?**

**-What are the challenges of designing, building and delivering PSS?**

## Sub-themes...

- **Understanding the State of the Art**
- **Economic Analysis**

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## The PSS Futures Lab: Illustrating, inspiring and disseminating

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# Servitization Literature



1988



**'Servitization'**  
terminology introduced by  
Vandermerwe & Rada

- ✓ Most definitive papers are from the USA
- ✓ Followed by the UK and Western Europe
- ✓ Few from Asia and the Far East
- ✓ Authors are from Operations, Production, Services and Business Management

# PSS Literature

1999

## 'Product Service Systems'

..... Ecological and Economic Basics  
Report commissioned by VROM & EZ Holland  
Authors – Goedkoop et. al.



- ✓ Most papers are from the Scandinavian countries
- ✓ Increasing no. of papers from UK
- ✓ A few papers from Asia
- ✓ Most authors are from Environmental and Ecology disciplines

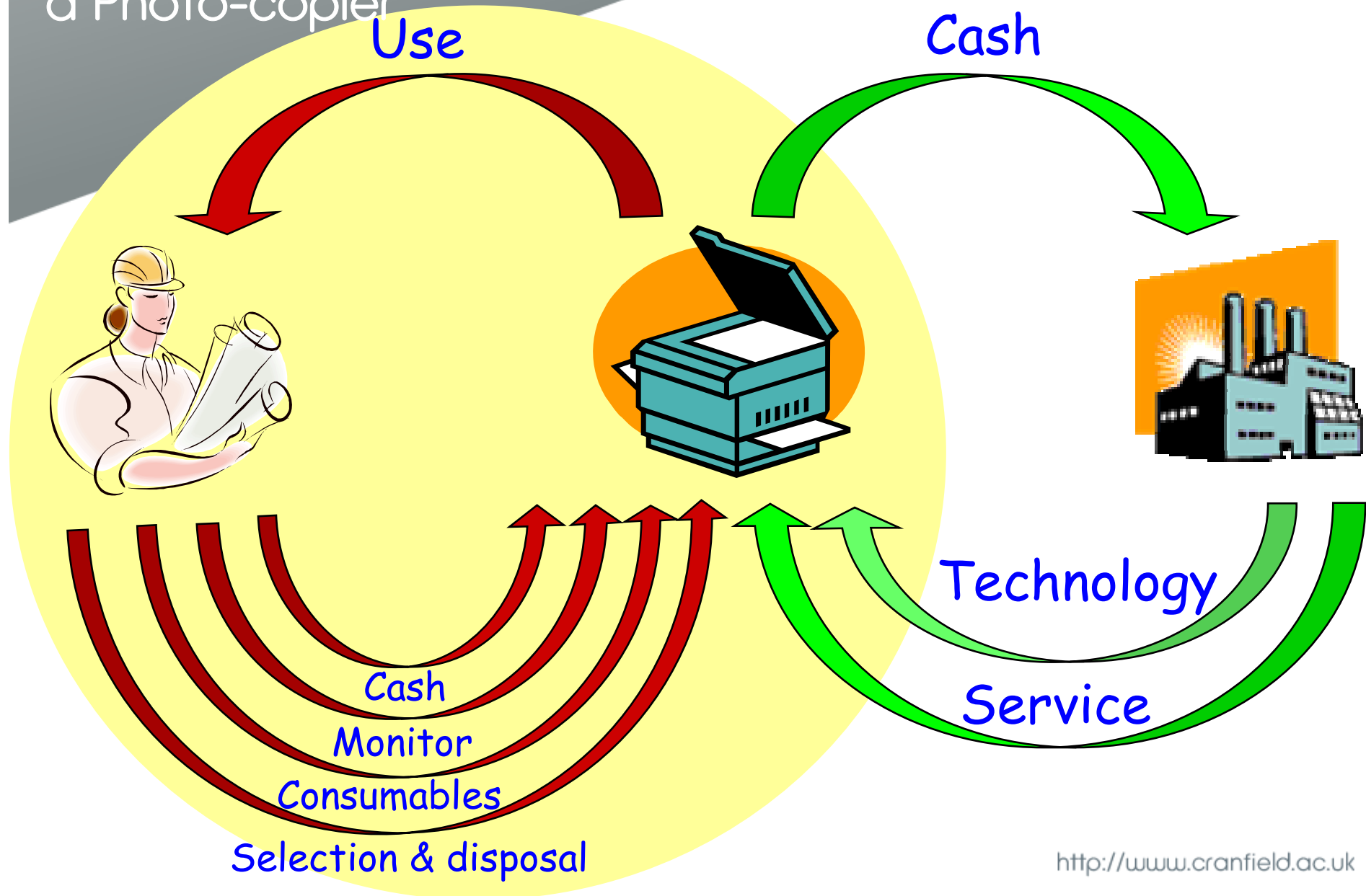
## How are we defining Servitization ?



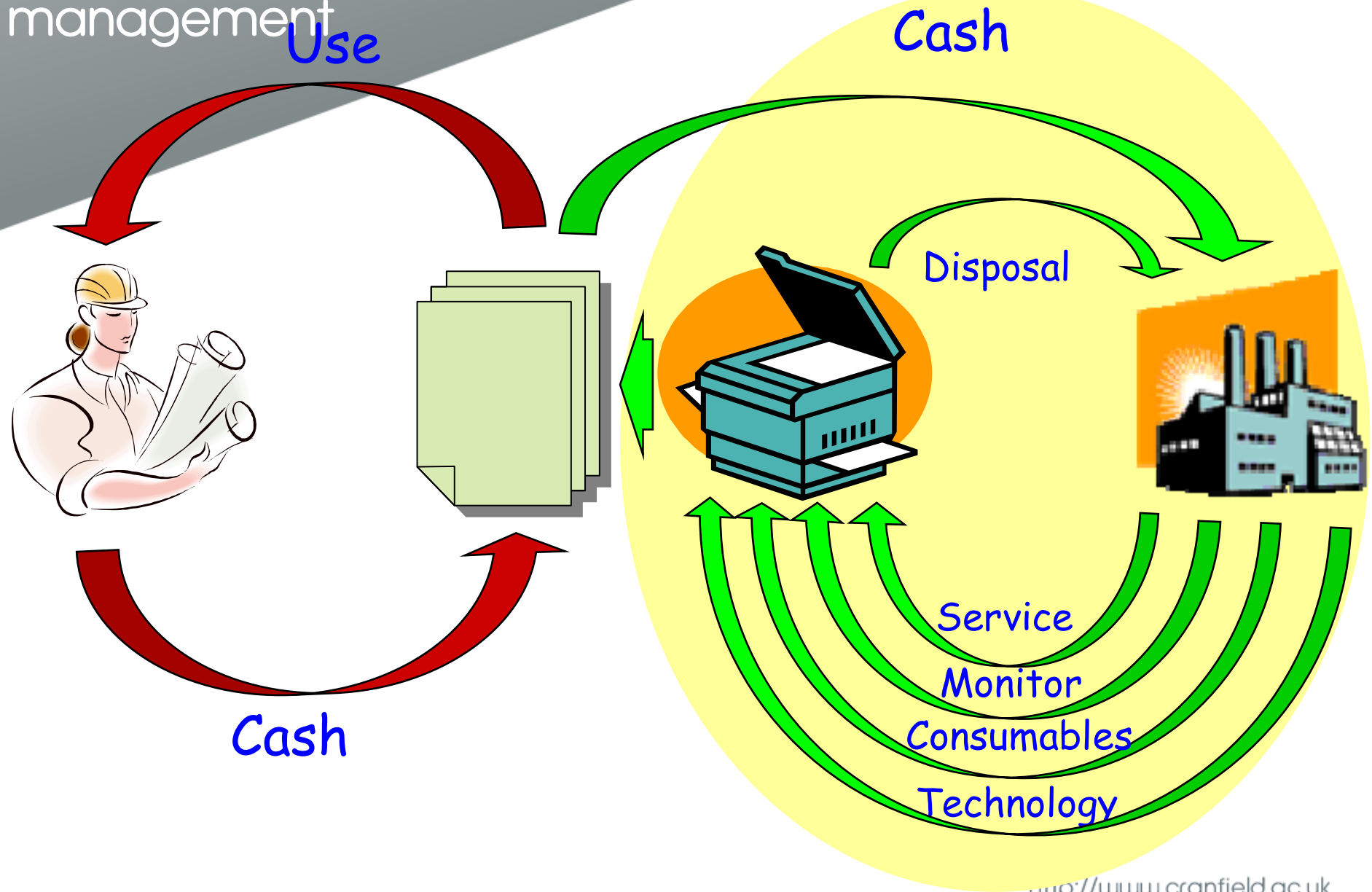
Combining popular themes in the literature:

*Servitization is the innovation of an organisations capabilities and processes to better create mutual value through a shift from selling product to selling Product-Service Systems*

# Traditional purchase of a Photo-copier



# Purchase of document management



## Servitization characteristics



- A key feature of servitization strategies is a strong customer centricity
- the offering can differ considerably depending on the type of customer they are provided for
- customers are not just provided with products but broader more tailored 'solutions'.
- a focus on asset utilisation is common

# The State-of-the-art in PSS



## Literature review findings indicate:

- More and more western manufacturers are seeking revenues from services (Wise & Baumgartner 1999).
- The adoption of a PSS strategy brings with it significant cultural (e.g. behaviour / mindset) and corporate challenges (e.g. risk absorption)  
( Mathieu, 2001; Mont, 2002; Slack, 2005)
- Intriguingly, there is some concern about the dangers of bankruptcy and lower returns (Neely, 2007)

A study with coding using business descriptions to identify whether firms classified as manufacturing offer:

1. Pure manufacturing...

- e.g. PetroChina principally engaged in a broad range of petroleum and natural gas-related activities.

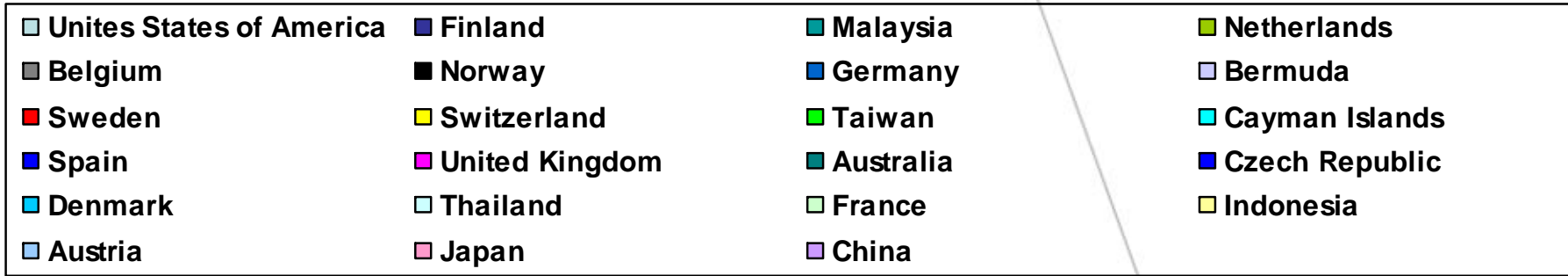
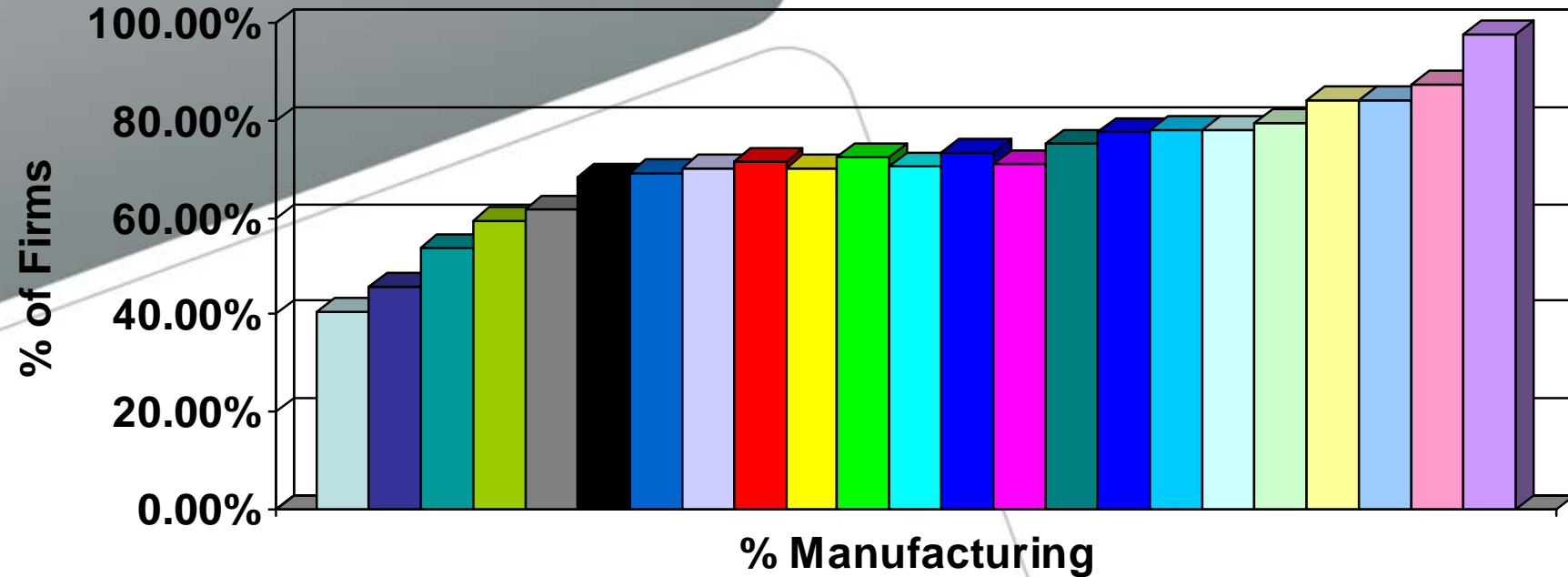
2. Some combination of manufacturing and service...

- e.g. Siemens - predominantly electronics and electrical engineering, but provides a wide variety of consulting, maintenance and other services.

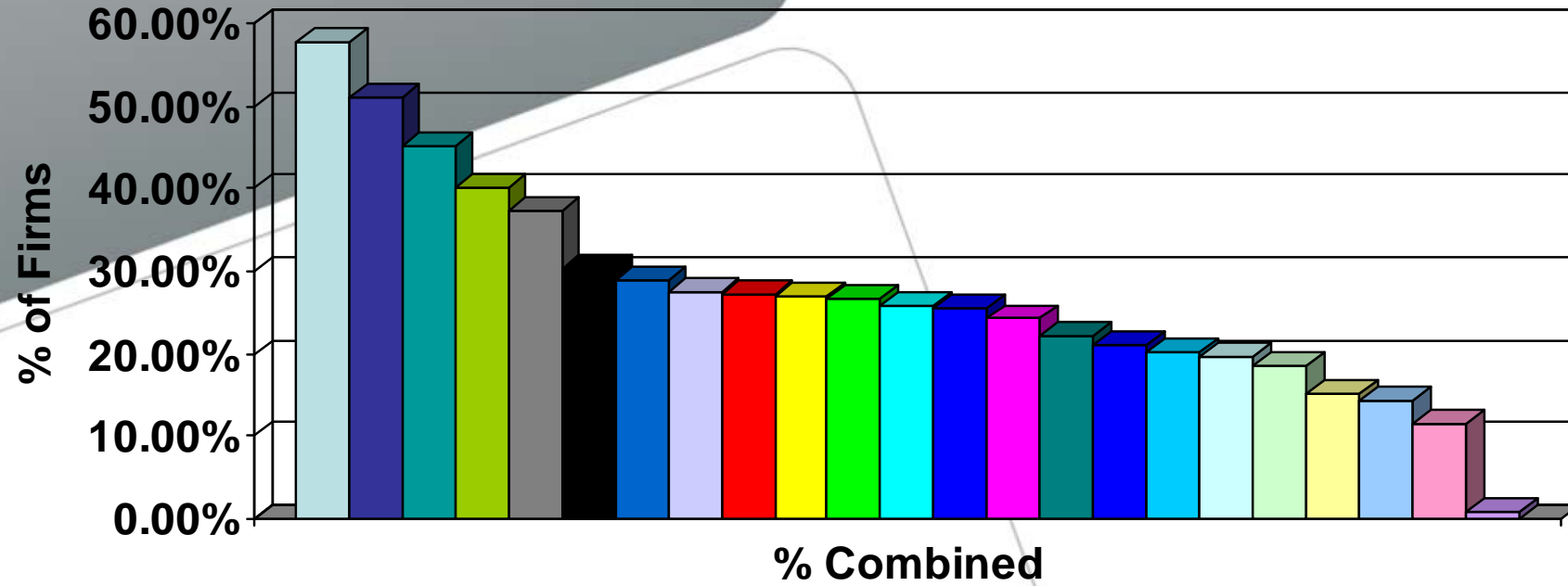
3. Pure service...

- 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.

# Country comparison of firms focus

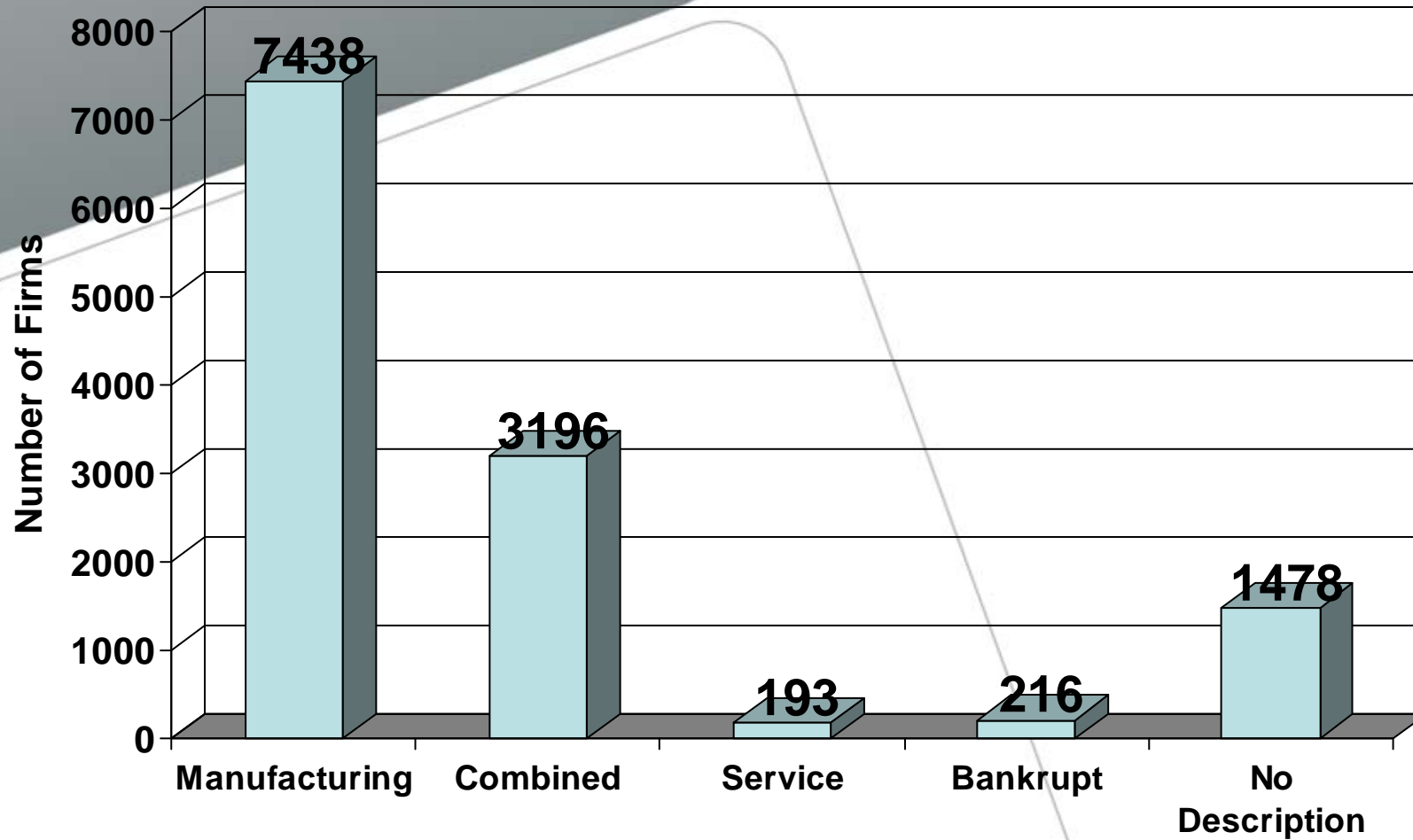


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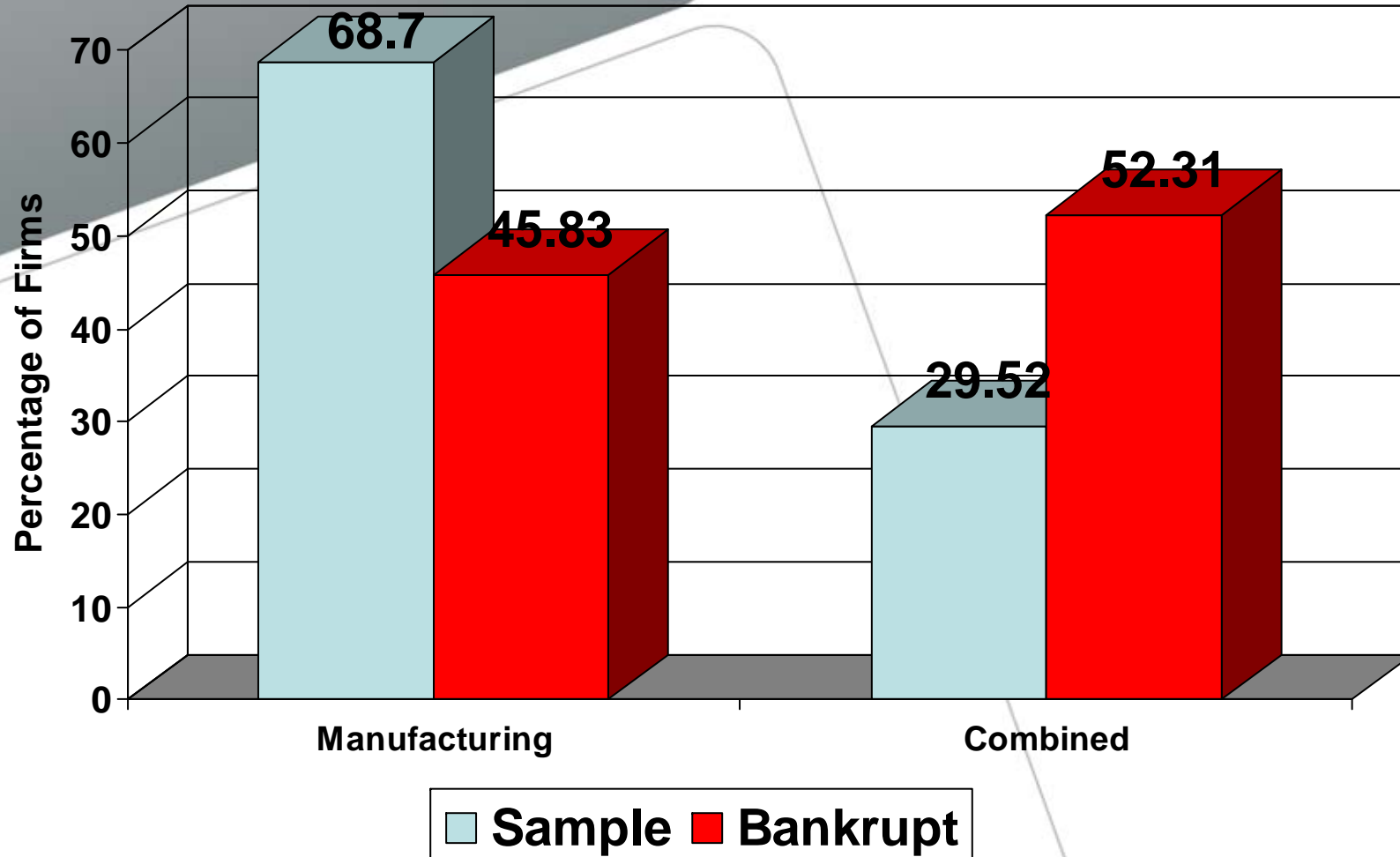


- |                          |                |           |                |
|--------------------------|----------------|-----------|----------------|
| Unites States of America | Finland        | Malaysia  | Netherlands    |
| Belgium                  | Norway         | Germany   | Bermuda        |
| Sweden                   | Switzerland    | Taiwan    | Cayman Islands |
| Spain                    | United Kingdom | Australia | Czech Republic |
| Denmark                  | Thailand       | France    | Indonesia      |
| Austria                  | Japan          | China     |                |

Focus of Firms:  
Manufacturing – Combined - Service



A greater proportion of combined firms went bankrupt than might be expected



## Some emerging implications and questions:



1. Twelve different forms of service that manufacturing firms offer...
  - [1] Consulting Services; [2] Design and Development Services; [3] Financial Services; [4] Installation and Implementation Services; [5] Leasing Services; [6] Maintenance and Support Services; [7] Outsourcing and Operating Services; [8] Procurement Services; [9] Property and Real Estate; [10] Retail and Distribution Services; [11] Systems and Solutions and [12] Transportation and Trucking Services.
2. The servitization of manufacturing is clearly influenced by geographic location (and potentially local economic circumstances)...
  - e.g. 58% of firms in the United States are classified as combined; 97.8% of Chinese firms are classified as pure manufacturing.
3. The bankruptcy question...
  - Why do more combined firms than would be expected go bust? Theoretically these firms are spreading their risk across a more diverse range of sectors, so why do they go bust? Is it something to do with the process of servitization (how firms make the change)? Is it something to do with the cost of being a servitized firm (either operating cost and/or loss of focus)?

Adopting a service based  
competitive manufacturing  
strategy



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Real-life challenges of servitized manufacturing  
(A Case Study)

## Emergence of Servitization at ServCase



- ServCase provides capital equipment products, and often offers these with a broad range of services that ensure asset availability via a risk and revenue sharing contract
- This market proposition emerged in response to customers
- Also ServCase sought to prevent component suppliers attacking their lucrative aftermarket
- Change issues have arisen as a consequence of this transition from traditional manufacturer

## Language is particular and peculiar



- The everyday language used by the employees in the delivery of services.
- Conventional manufacturer personnel use (and fully understand) nomenclature such as product, part and component they may only loosely understand the term service
- This distinction appears strongest amongst personnel who deal most closely with customers of services.
- Challenges are, therefore, to make such language pervasive throughout the organisation.

.....“we need to think and talk like our customers”

## Value dimensions are special



- The nature of the boundary with the customer changes from being biased towards transactional to that of relationship
- Conventional manufacture will frequently focus on QCD (Cost, Quality and Delivery) associated with product families
- For services at ServCase, value becomes more associated with asset use, rather than sale or repair, then the appropriate measures can be subtly different.
- Precisely defining, distinguishing and communicate the key performance measures is challenging

*"relationships are important ..... if the customer doesn't 'see' what he's getting, then he thinks he's getting nothing"*

## Products and design process are different



- The value proposition has changed - product designs now reflect value gained through asset use rather than asset ownership
- Significant revenue is generated through services – products incorporate facilities for remotely sensing performance - the recovery of extra cost in product manufacture relies on the customer taking-up the service contracts offered
- Understanding how these processes differ is a challenge.

*"we have a new business model and maybe we should be designing things differently"*

## Integrating service and product delivery systems is challenging



- The organisational design required to support the value proposition has changed
- Conventional view of materials flowing into a factory, through production, to be consumed by the customer does not adequately describe ServCase
- A complex service delivery system is super imposed, that monitors and supports the asset in use.

*“we are trying to run a service business on production principles...”*

## Integrating service and product delivery systems is challenging



- These requirements are so particular, that this delivery mechanism is decoupled from their more conventional production system
- As business pressures increase, sharing of resources and knowledge, are likely to necessitate these systems to be more tightly integrated
- How to achieve this is a topic of some debate within the organisation.

*"the organisation needs to position itself to be more responsive to customer requirements".*

Transformation issues are  
both particular and pervasive



- ServCase illustrates a manufacturer that, adopting a servitization strategy, is encountering changes to language, value, along with product and organisation design
- ServCase has changed, and continues, to change to face one of the biggest challenges – transformation across the organisation and its broader supply chain
- Educating employees in the language of service and changing process to better suit the nature of service design
- How to understand and overcome these transformational issues, is a principal future challenge.

# Conclusions from the Case Study



- Language used in service is particular and peculiar
- Value dimensions are special and biased towards relationships rather transaction.
- Products and design process are different and better enable service support.
- Integrating service and product delivery systems is challenging.
- Transformation issues are both particular and pervasive throughout customers, employees, partners and suppliers.

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