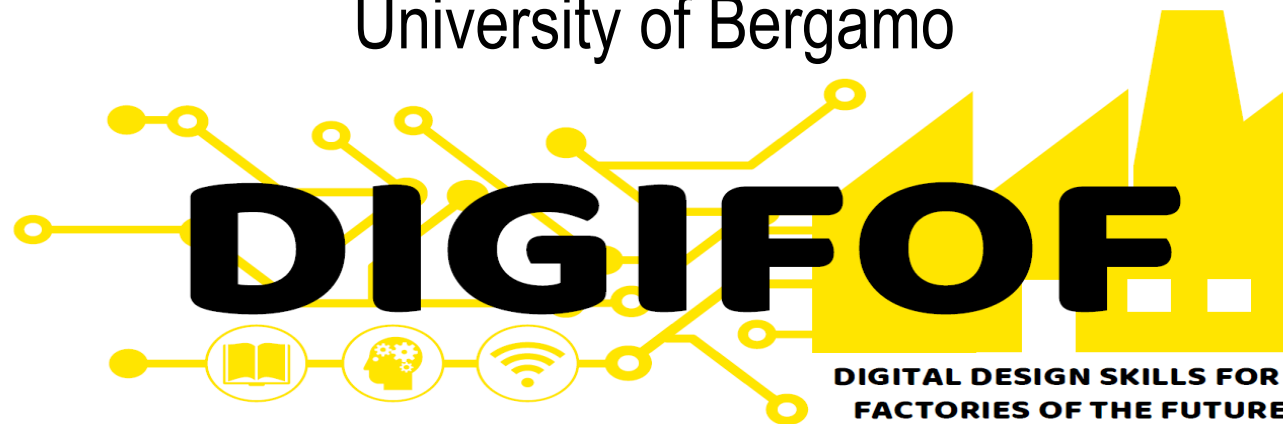


Service and Product Service System Management

Prof. Pezzotta Giuditta
University of Bergamo



Goal & Scope



Through the utilization of theoretical and practical applications, focusing on both the strategic and operational aspects that characterise Service configuration and management, this course deals with Service design, organization, management and performance measurement.

Why Services Matter...



Traditional products



Why Services Matter



Products ...



... are replaced by services



Why Services Matter

New services spreads ...



Why Services Matter

New services spreads ...



DREXCODE
Join the Fashion Revolution

HOME NOLEGGIO COME FUNZIONA PROVA A DOMICILIO SALDI - VENDITA DESIGNERS BLOG PROMOZIONI SHOWROOM

Cosa stai cercando?

Un armadio infinito ti sta aspettando...

NOLEGGIA IL TUO LOOK

Why Services Matter

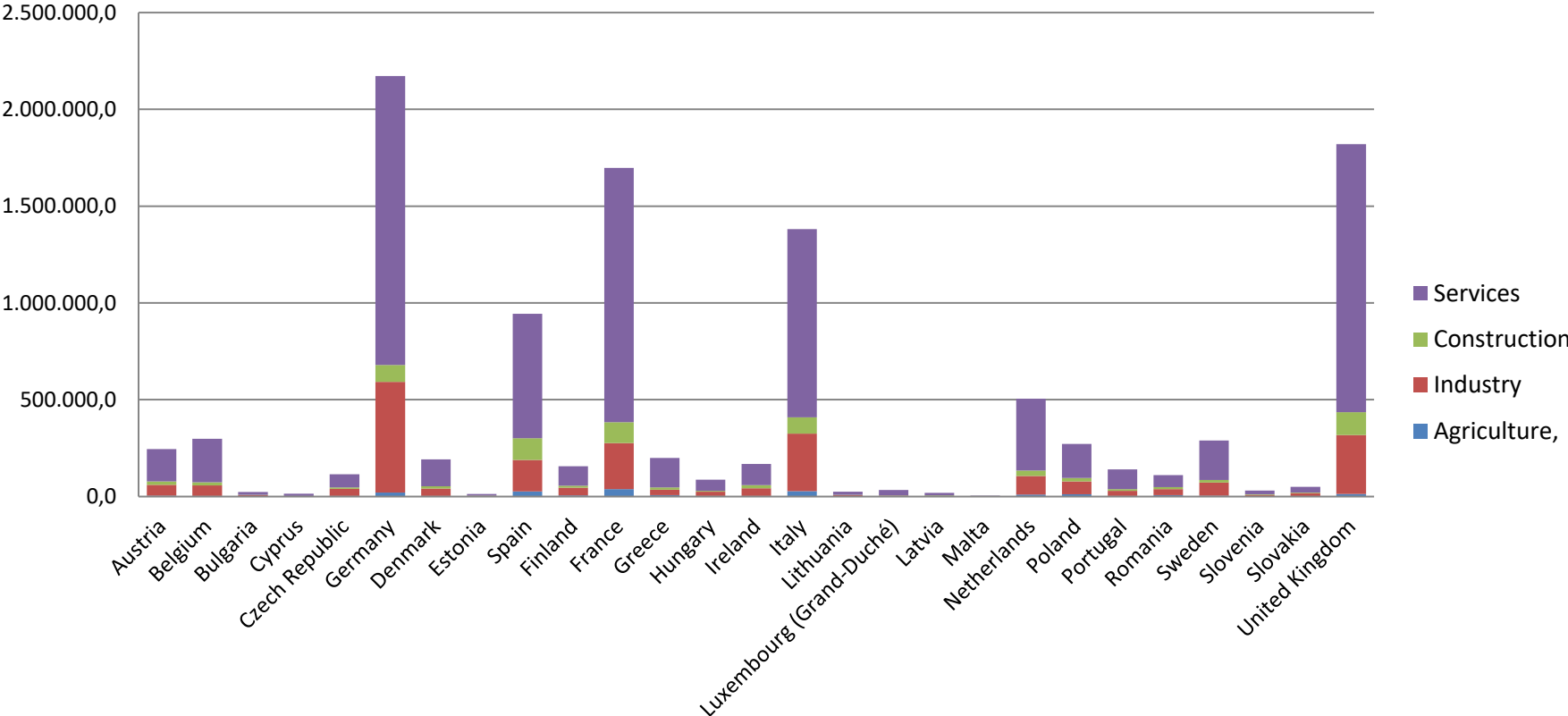
- Services dominate Europe and worldwide economies
- Services are growing dramatically
- Service leads to customer retention and loyalty
- Service leads to profits
- Services help manufacturing companies differentiate themselves



Services dominate Europe and worldwide economies



Gross value-added at basic prices, by branch of activity
Year 2007 Unit of measure: Million euro.

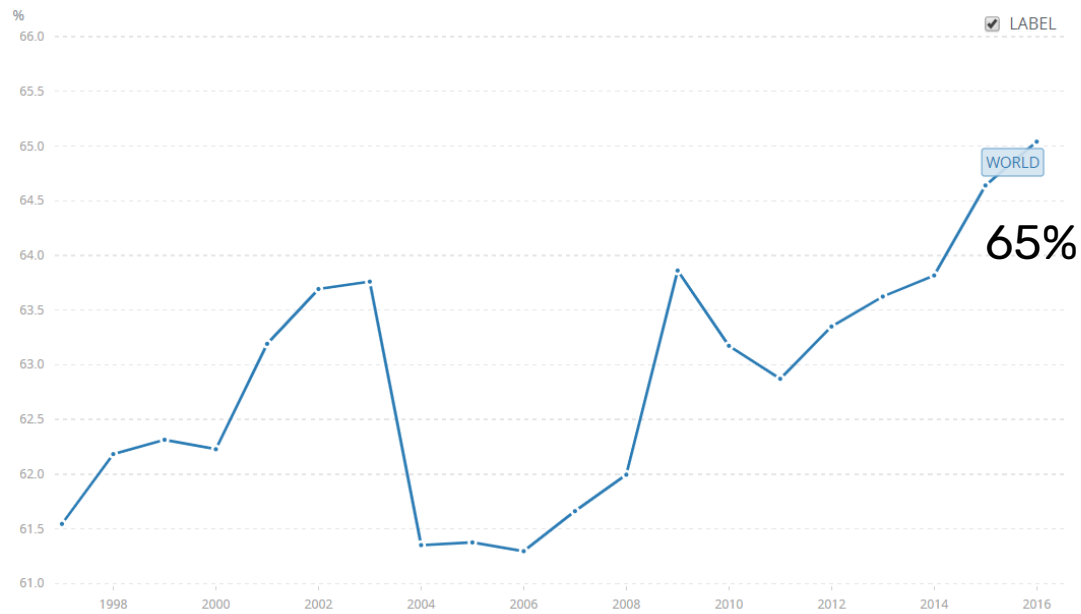


Services dominate Europe and worldwide economies

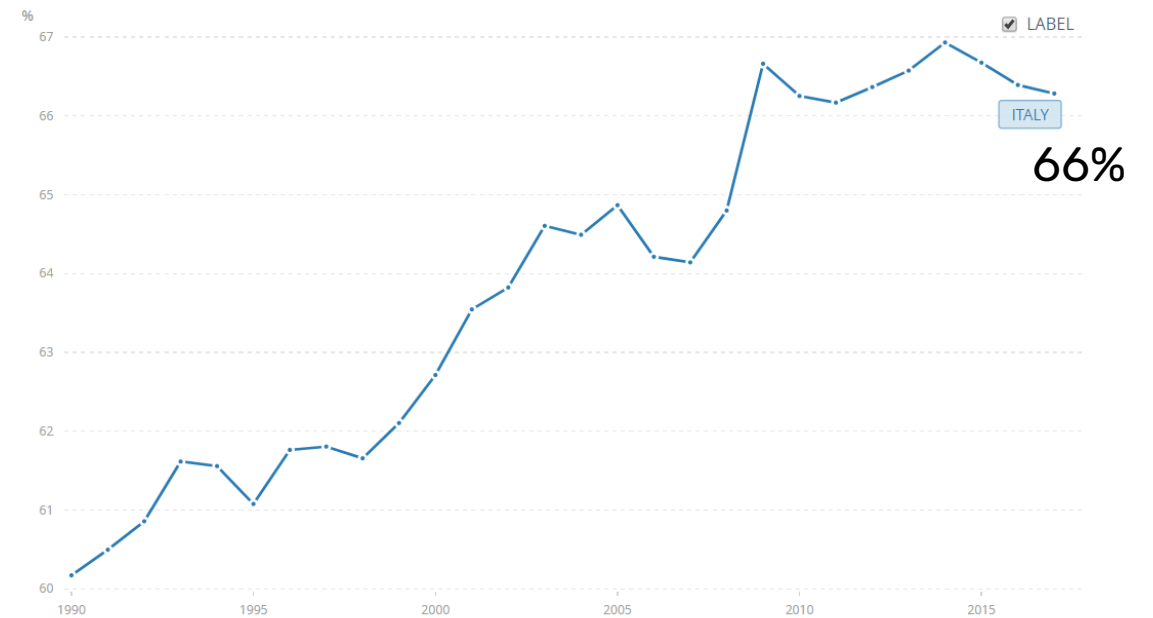


- % of GDP

World



Italy

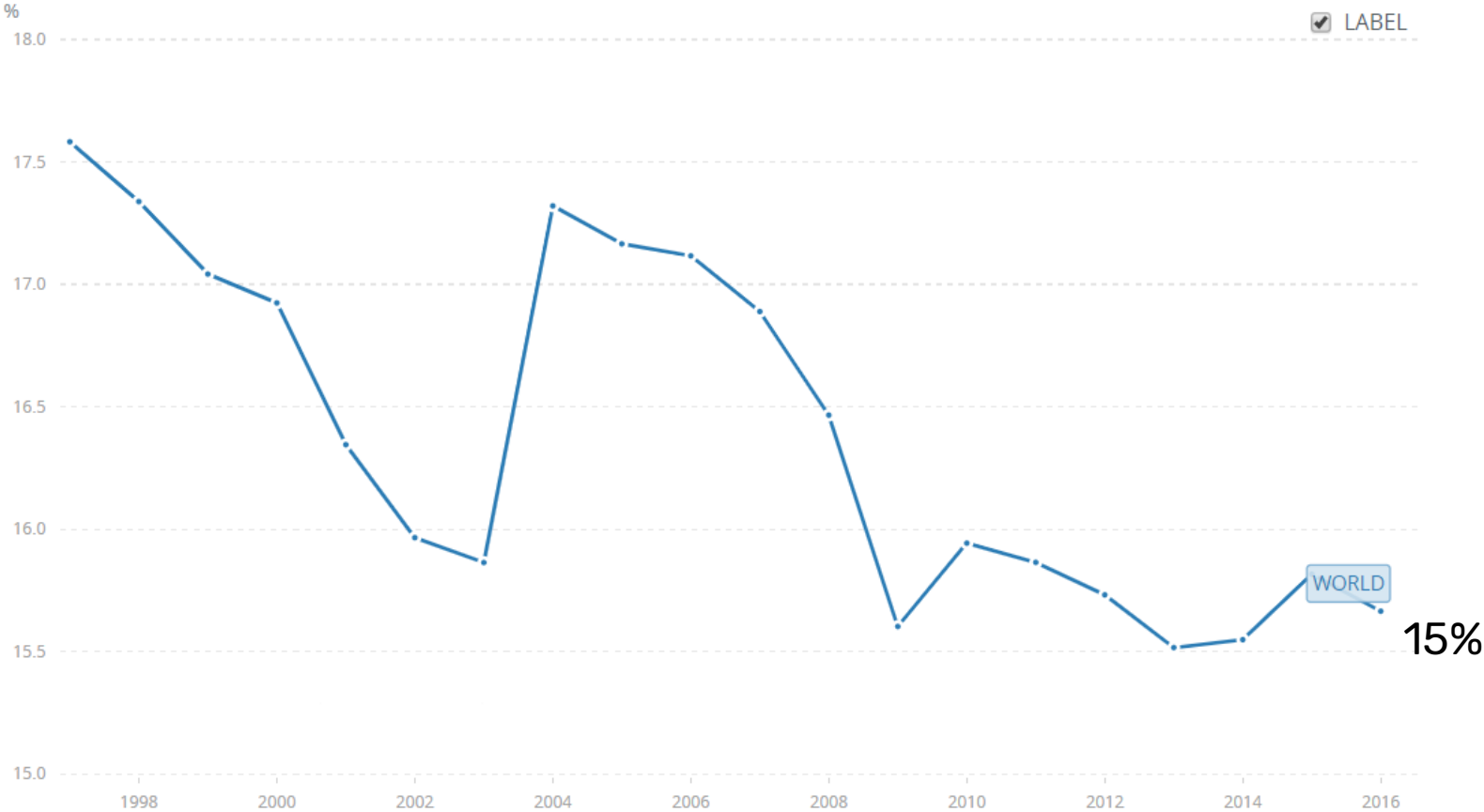


Source: World bank 2019

Manufacturing

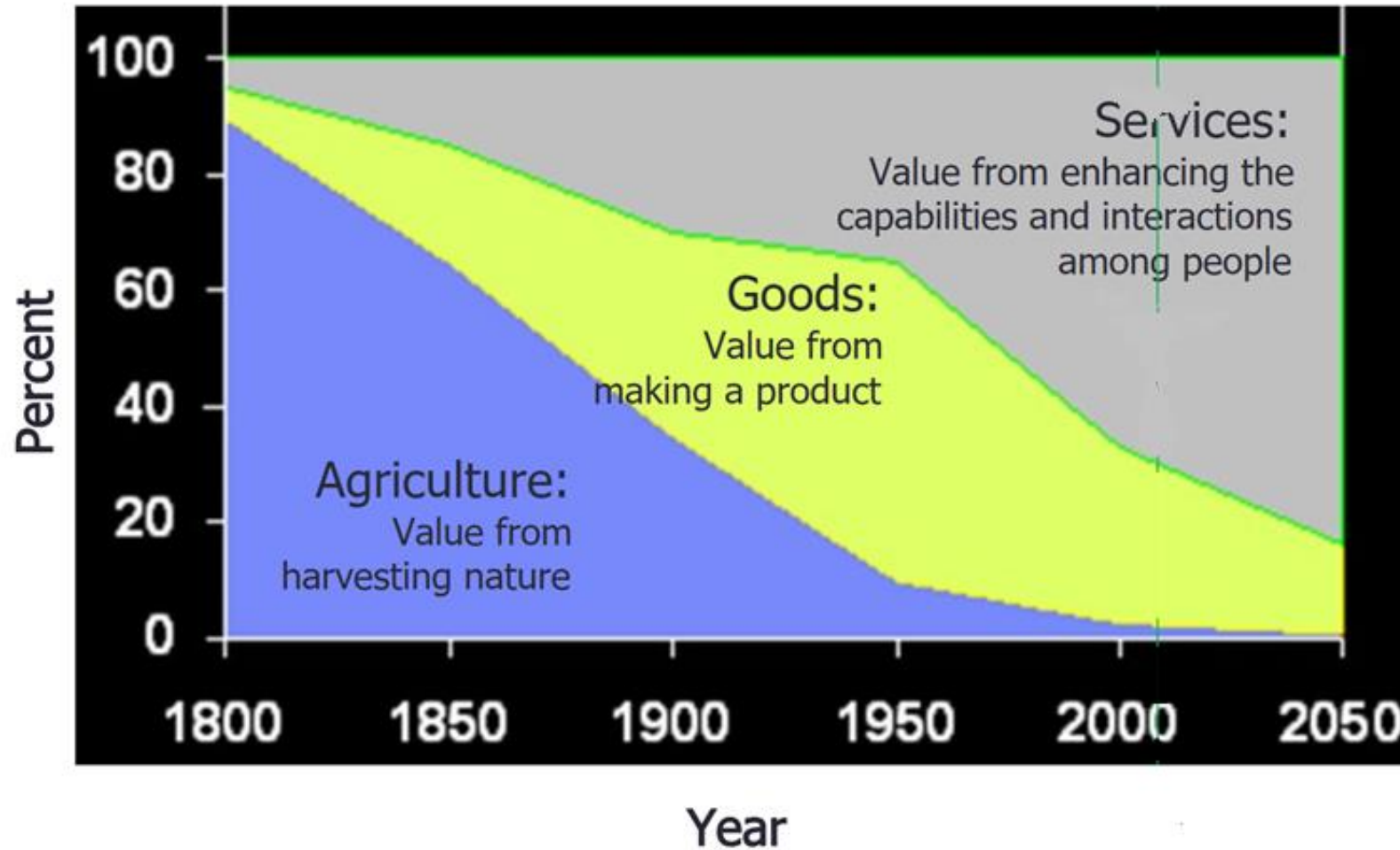


% of World GDP



Source: World bank 2019

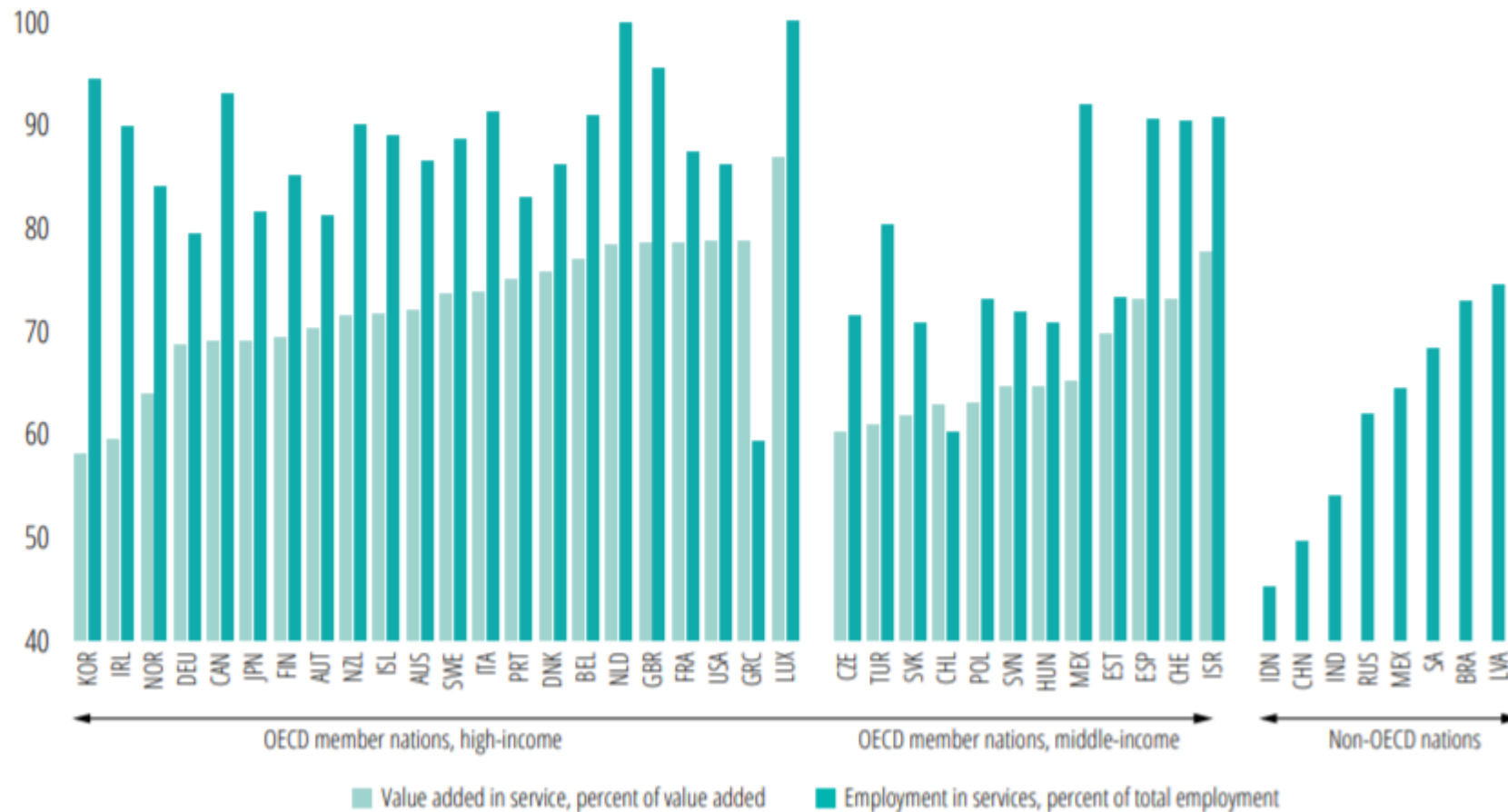
Services are growing dramatically



Services account for much of the value added and most of the employment in OECD countries



Contribution of services to value added and employment, OECD and other selected countries (percent, 2017)



Source: Deloitte 2018

Service: a definition



“Any activity or benefit that one party can offer to another that is essentially intangible and does not result in the ownership of anything”

[Kotler, 1997]

“A service is an activity or series of activities of a more or less intangible nature that normally, but not necessarily, take place in interactions between the customer and the service employees and/or physical resources or goods and/or systems of the service provider, which are provided as solutions to customer problems”

[Grönroos, 1990]

Service: key features



1. *Services are acts, they are intangible but highly visible to the customers*
2. *Most services contain a mix of tangible and intangible attributes*
3. *Services have customer contact*
4. *Service performance can be affected by workers' personal factors*
5. *Services are created and delivered at the same time and are not consumed but experienced, cannot be inventoried.*
6. *Services are idiosyncratic*
7. *Everyone is an expert on service*
8. *In service business quality of work is not quality of service*
9. *Services have low barriers to entry*
10. *Services are perishable*
11. *Location is important for service*

Service: key features



12. Services are inseparable from delivery

13. Service requirements are variable

14. Services tend to be decentralized and dispersed

15. Services are consumed more often than products

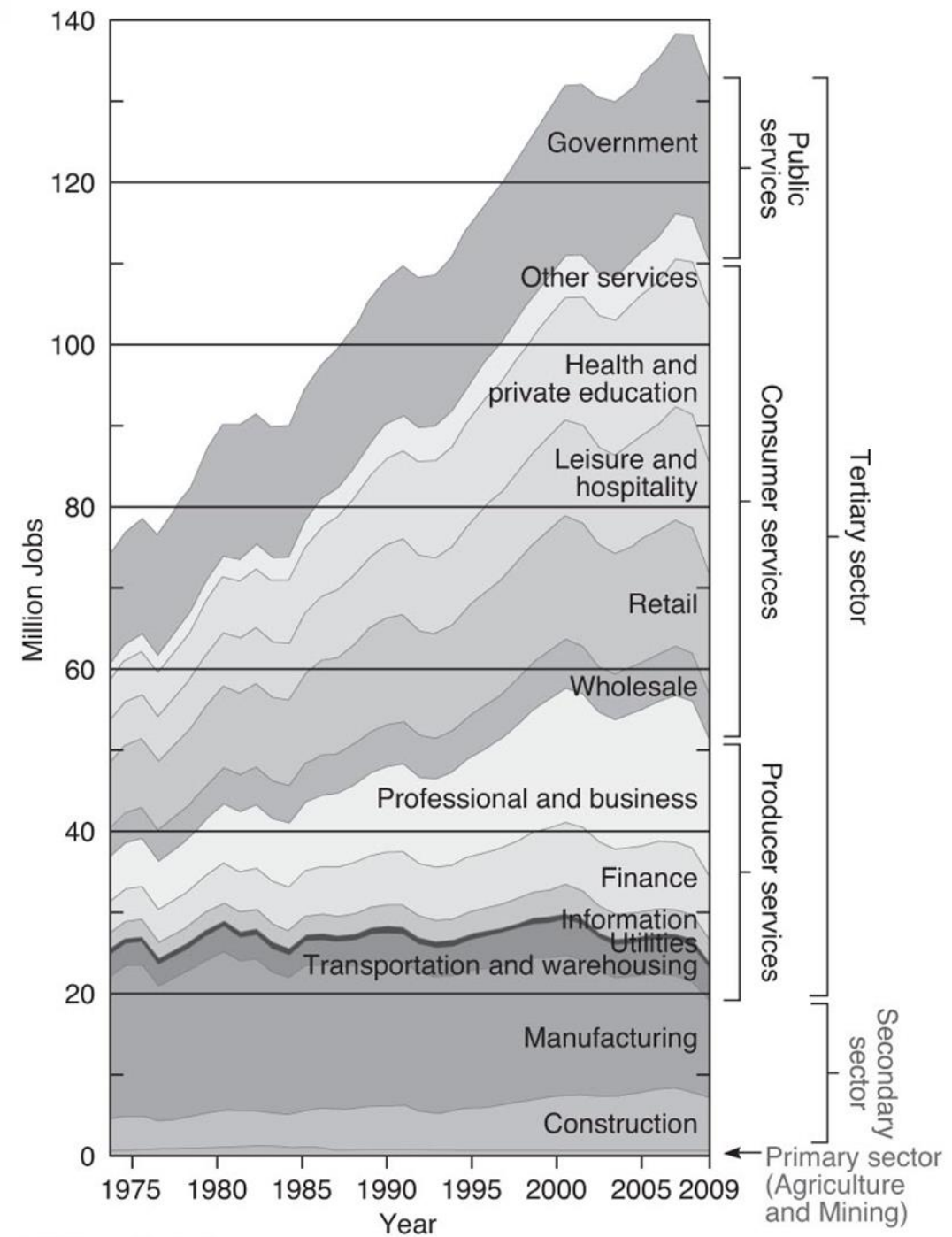
16. Services can be easily emulated

Typical service industries



- *Transport and distribution*
- *Telecommunication*
- *Hospitality/tourism*
- *Restaurant and food*
- *Mass media*
- *Healthcare/hospitals/pharmacy*
- *Information Technology*
- *Waste disposal*
- *Banking*
- *Insurance*
- *Financial services*
- *Legal services*
- *Marketing services*
- *Research & Development*
- *Government*
- *Administration*
- *Consulting*
- *Gambling / Entertainment*
- *Retail sales / Franchising*
- *Real estate*
- *Education*

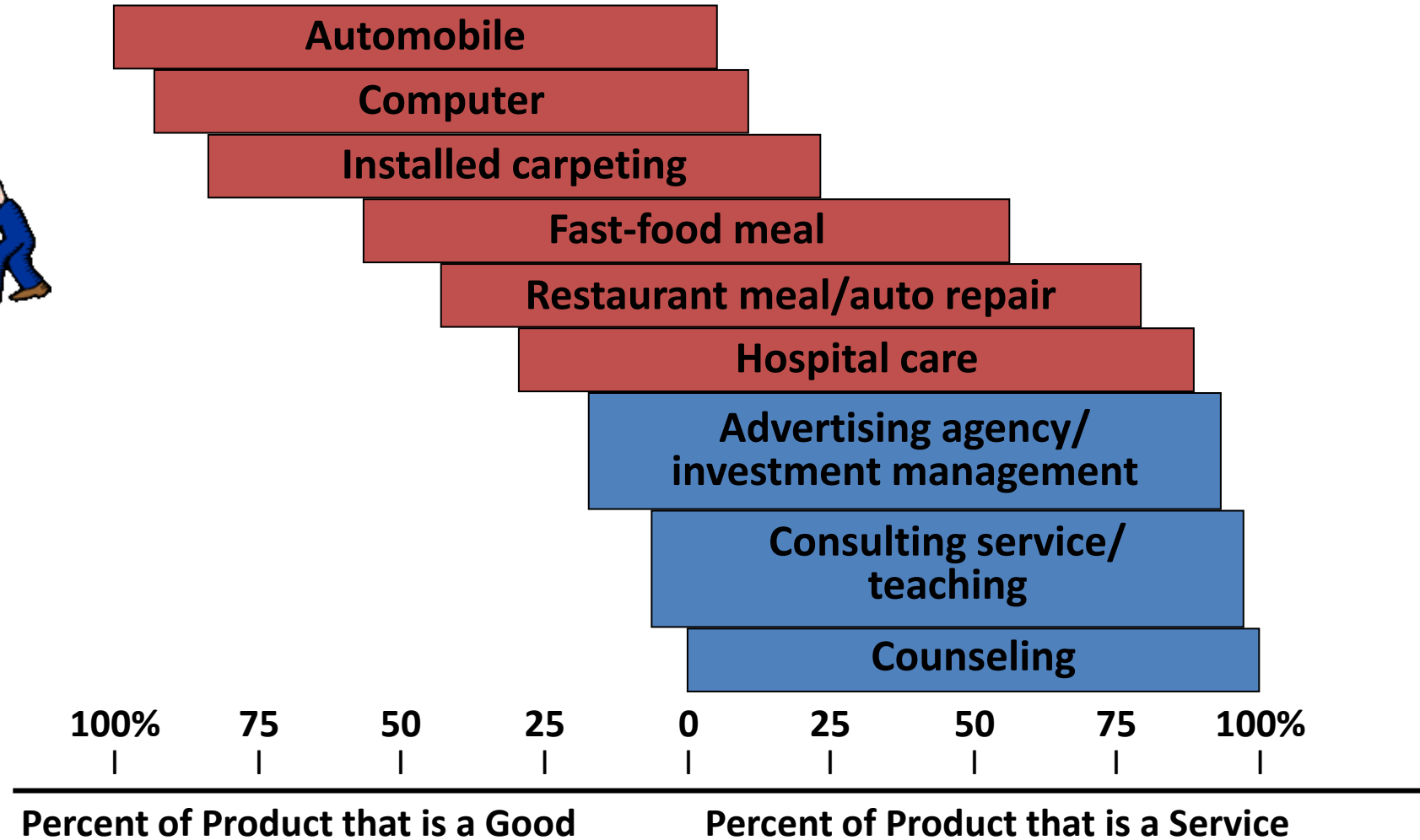
Main areas of service employment



Goods and services



Goods and services



The central notion of services

Variability / Heterogeneity

Services are not standardised.

The customer-providers interaction opens up possibilities of variation

Simultaneity / Inseparability

The realisation of a service implies the presence of provider as well as customer



Perishability

Services can not be kept in stock

The result of a service is a process or an act

Features of services



Intangibility

- Can't be seen, tasted, felt, heard, or smelled before purchase.

Inseparability

- Can't be separated from service providers.

Variability

- Quality depends on who provides them and when, where and how.

Perishability

- Can't be stored for later sale or use.

Source: Kotler et al. 2003

Intangibility

- Services cannot be inventoried
- Services cannot be easily patented
- Services cannot be readily displayed or communicated
- Pricing is difficult



Intangibility



- *Practical implications for customers:*
- High risk associated with services. It is difficult to evaluate service before the experience. Lack of tangibility after the experience. Use price as a basis for assessing service quality
- *Management response:*
 - “Make tangible” the intangible
 - Create strong organization image
 - Create tangible clues
 - Engage in post-purchase communication
 - Stimulate “Word of Mouth” & Publicity

Perishability



Production and consumption happen at the same time



Supply and demand in service are dependent on capacity management

It is difficult to synchronize supply and demand with services

Services cannot be returned or resold

- **Capacity and demand management**

- Managing demand

- Understanding demand patterns
- Price, Shift demand
- Reservation, Overbooking
- Create promotional events

- Managing capacity

- Cross-train employees
- Schedule downtime during periods of low capacity

Inseparability



Practical implications for customers:

- Being co-producer of services
- Being co-consumer of a service with other customers
- Often travel to the point where service is sold

Management response:

- Attempts to separate production and consumption
- Management of consumer-producer interaction
- Improvement in delivery system

Implications of inseparability



Production and consumption happen at the same time



The customer has to be present where the service is provided



Direct interaction between service provider and customer

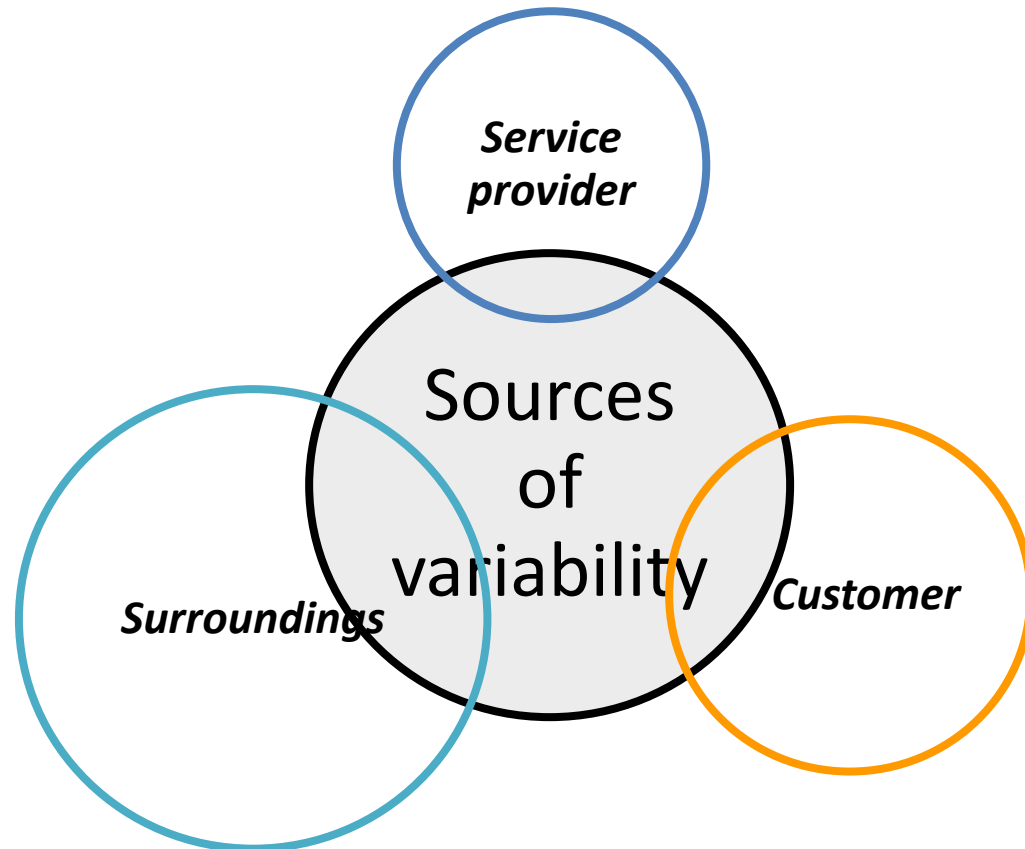
Services are place dependent

Services are human-relationship dependent

Variability



- Service delivery and customer satisfaction depend on employee and customer actions
- Service quality depends on many uncontrollable factors
- There is no sure knowledge that the service delivered matches what was planned and promoted



SERVICES PERFORMANCE

Depends on service variability

- Service provider mood / skills
- Customer behaviour
- External factors



1. *Adopt a strict service quality monitoring*
2. *Improve service process, spur standardization*
3. *Introduce a risk analysis*
4. *Work on employees skills and competences*

Variability



- *Management response:*
 - Managing consistency
 - Standardized procedure: industrialize service and cutting interaction (e.g. franchise operations)
 - Customized: taking care of individual
 - Educate customers
 - Train contact and non-contact employees
 - Manage and monitor quality

Services vs goods



Source: A. Parasuraman, V. A. Zeithaml, and L. L. Berry, "A Conceptual Model of Service Quality and Its Implications for Future Research." *Journal of Marketing* 49 (Fall 1985) pp. 41–50. Reprinted by permission of the American Marketing Association.

Goods	Services	Resulting Implications
Tangible	Intangible	Services cannot be inventoried. Services cannot be easily patented. Services cannot be readily displayed or communicated. Pricing is difficult.
Standardized	Heterogeneous	Service delivery and customer satisfaction depend on employee and customer actions. Service quality depends on many uncontrollable factors. There is no sure knowledge that the service delivered matches what was planned and promoted.
Production separate from consumption	Simultaneous production and consumption	Customers participate in and affect the transaction. Customers affect each other. Employees affect the service outcome. Decentralization may be essential. Mass production is difficult.
Nonperishable	Perishable	It is difficult to synchronize supply and demand with services. Services cannot be returned or resold.

Driving forces behind the growth of services



- The impact of income changes on buying behaviour
- Sociological and demographical changes
- Technological developments
- The growing importance of producing services

Driving forces behind the growth of services

- The growing importance of producing services

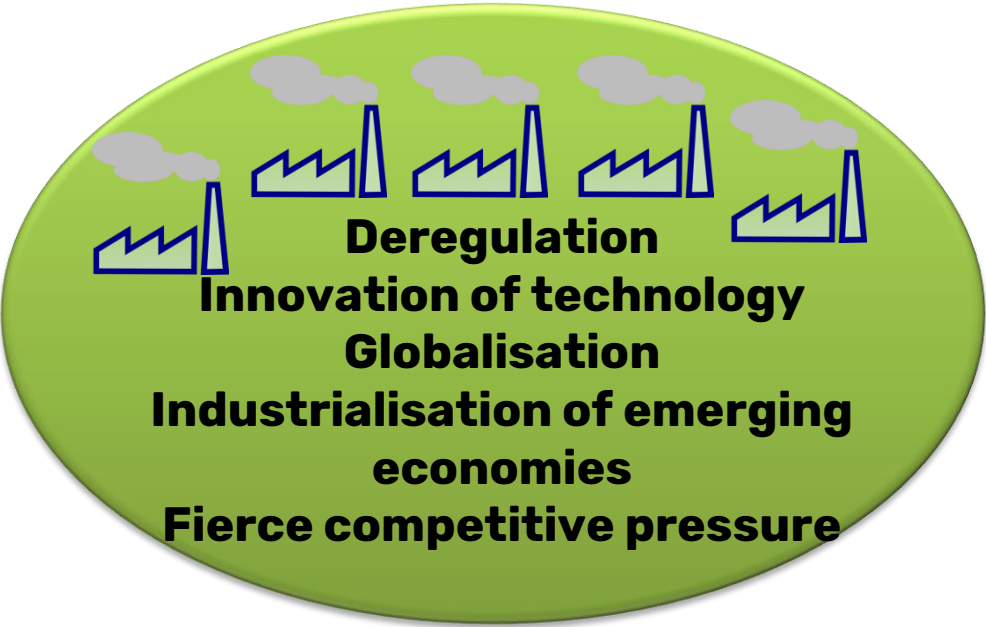


- Goods provision
- Product-based organisations

- Integrated solutions
- Services (consulting, legal, accounting, R&D, transport, surveillance, cleaning) supporting complex organisation and business models



The new manufacturing context



To survive manufacturing firms can rarely remain as pure manufacturing firms ...



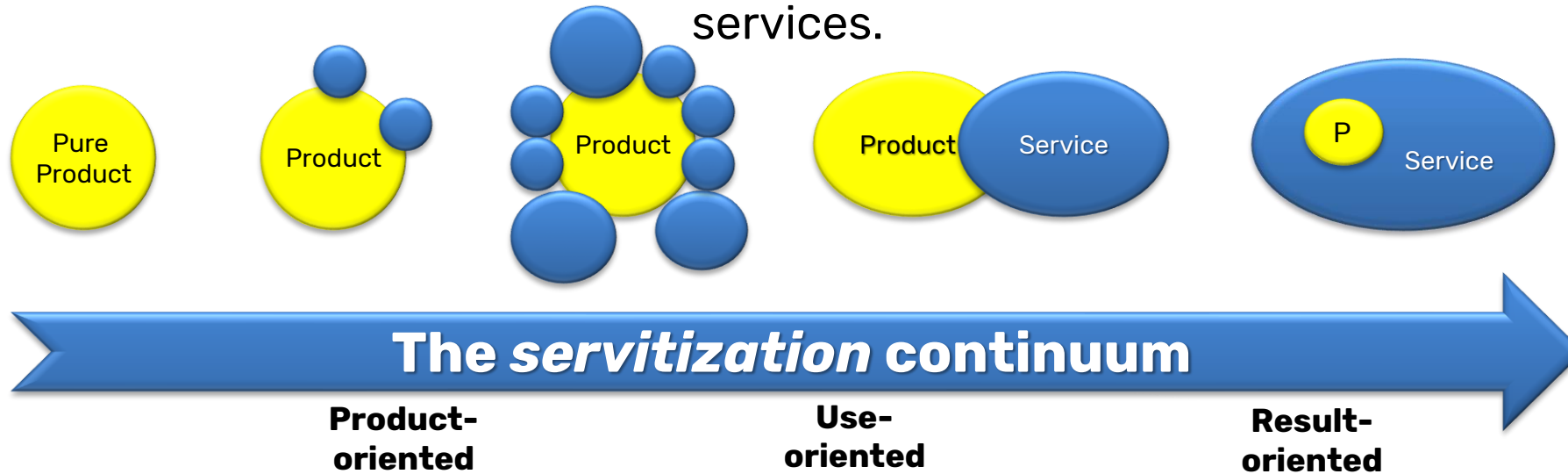
...they have to move beyond manufacturing and offer services and solutions, delivered through their products.



The servitization phenomenon

[Video](#)

Servitization is the evolutionary phenomenon of the **business model** of a **manufacturing company**, moving from a product-centric perspective towards **Product-Service Systems** (PSSs), based on the provision of integrated bundles consisting of both physical goods and services.

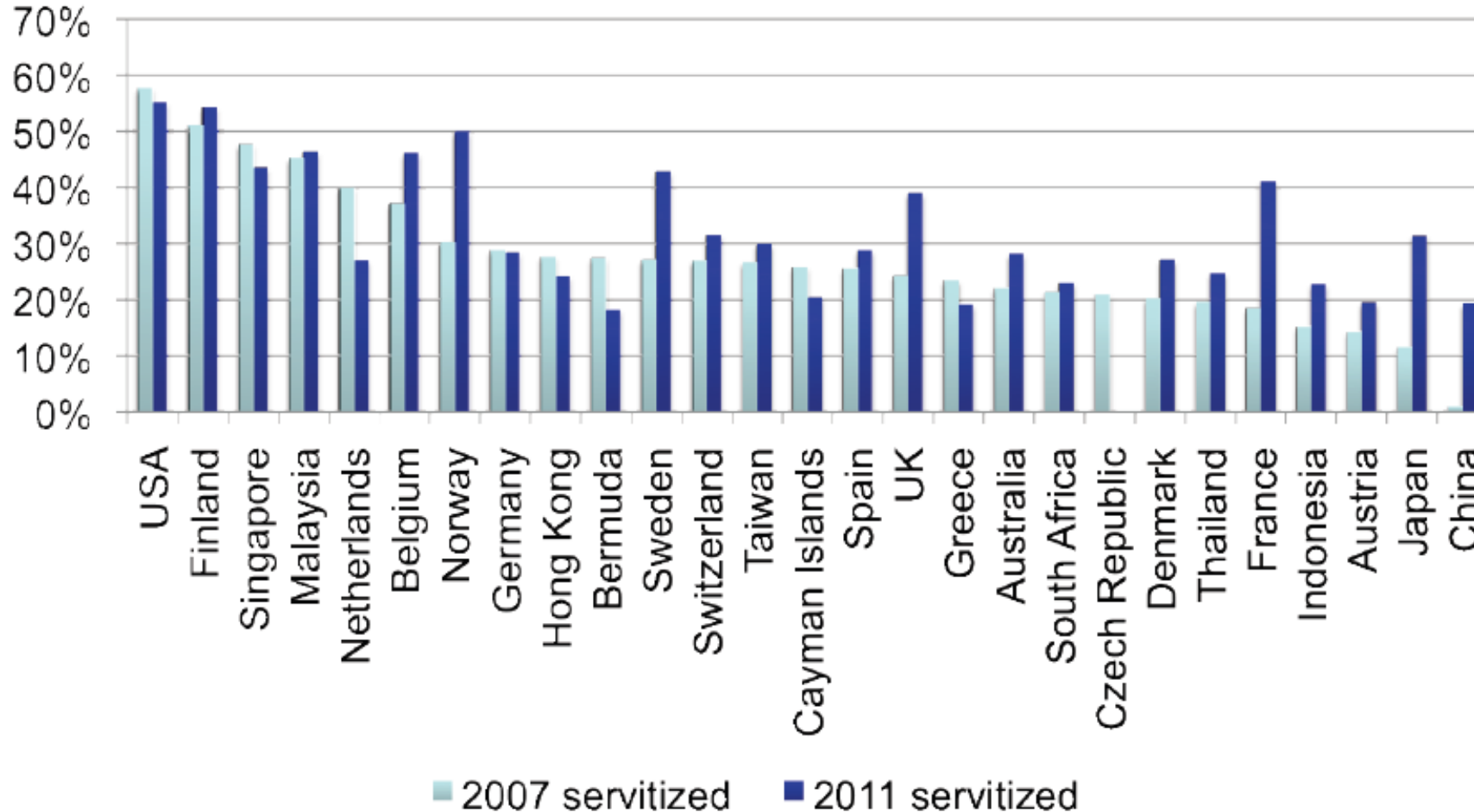


Vandermerwe, S. and Rada, J. (1988). Servitization of business: Adding value by adding services. *European Management Journal*, 6 (4), 314-324.

The servitization phenomenon



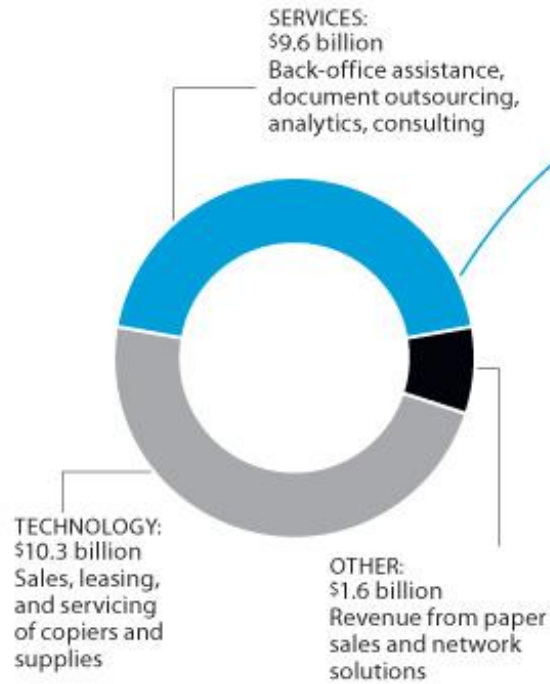
The servitization of manufacturing – by country



[Neely et al., 2011]

Xerox: from product to PSS

REVENUES BY BUSINESS SEGMENT



XEROX SERVICES

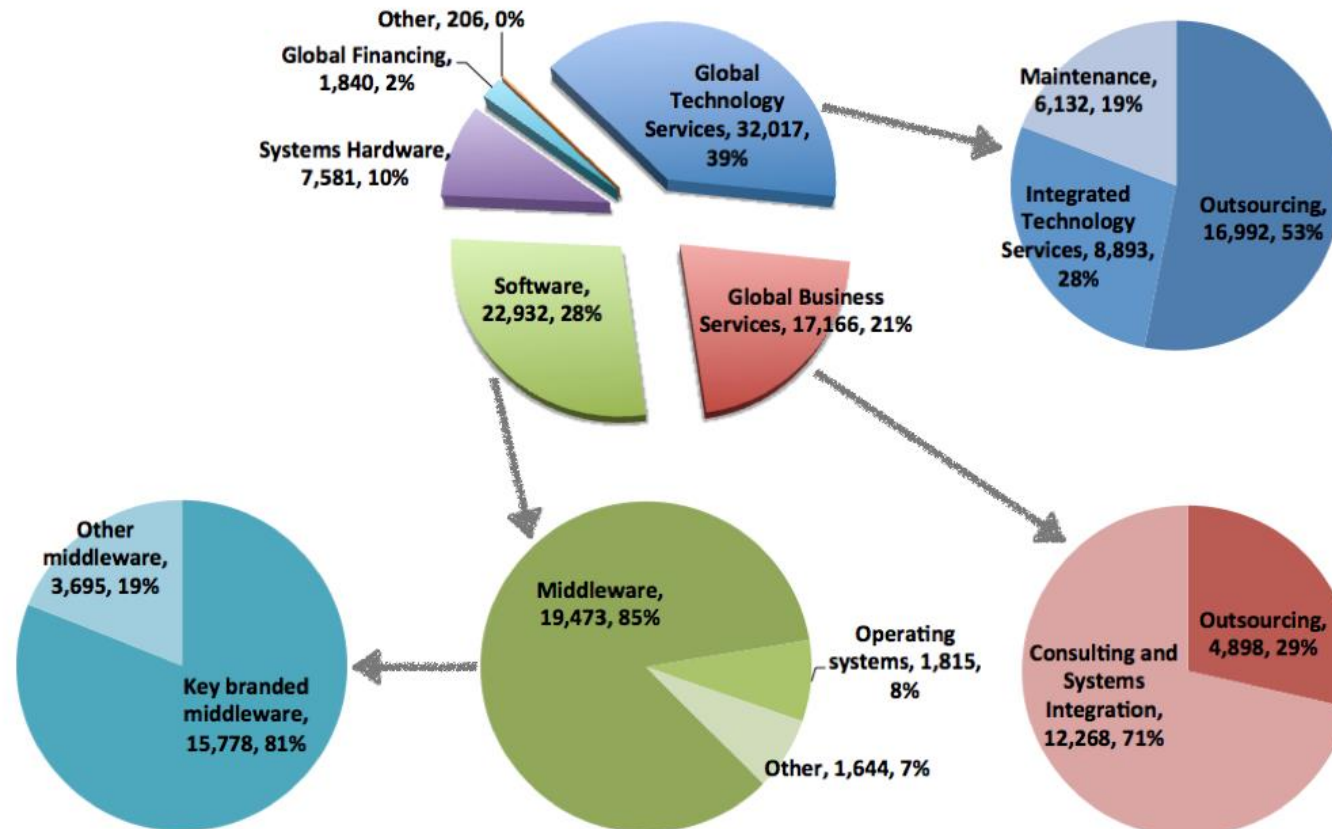
With the ACS acquisition, the copying giant is now immersed in eight new fields of competition.



Fonte: Xerox 2010 Annual Report;
Xerox Corporate Communications

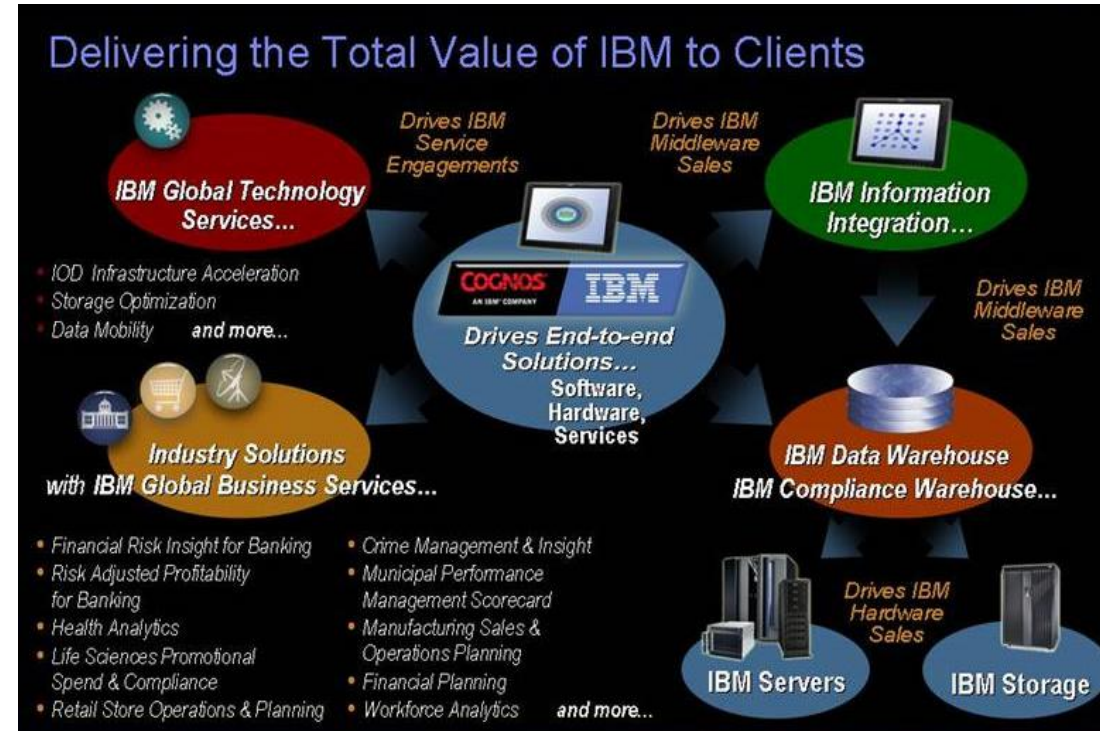
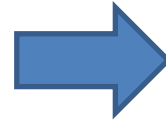
IBM: from product company...

IBM Business Segments Revenues and Revenue Share - 2015



* Revenues in US \$ Millions

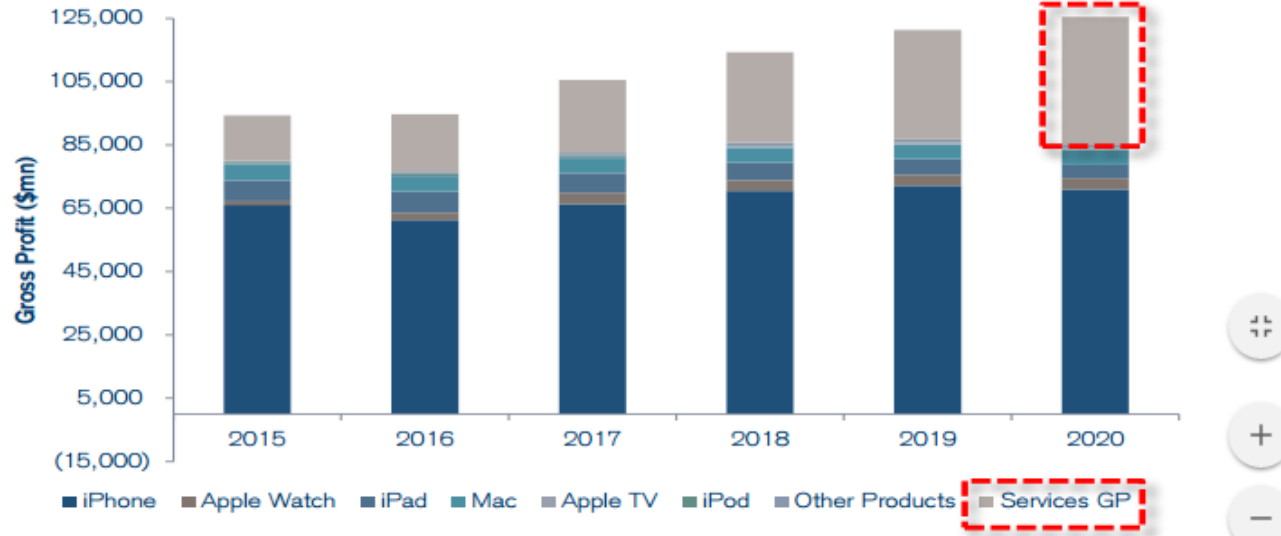
IBM: ... to service company



Apple: product or service company?

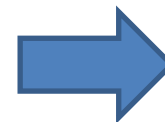


Figure 2: Services alone could become 30% of GP by 2020



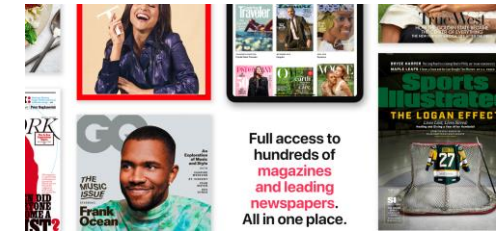
Source: Company data, Credit Suisse estimates.

"The size and growth of these services tied to our installed base compare favorably to other services companies you're familiar with." Cook



Amazon
Facebook
Google

Apple news



Apple Arcade

Coming to the App Store this fall.



Some successful examples

ICI-Nobel

FROM
producing explosives...



...**TO** providing “rock on
the ground”



Rolls Royce

FROM
selling aircraft engines...



...**TO** providing
functionality
(“Power by the hour”)

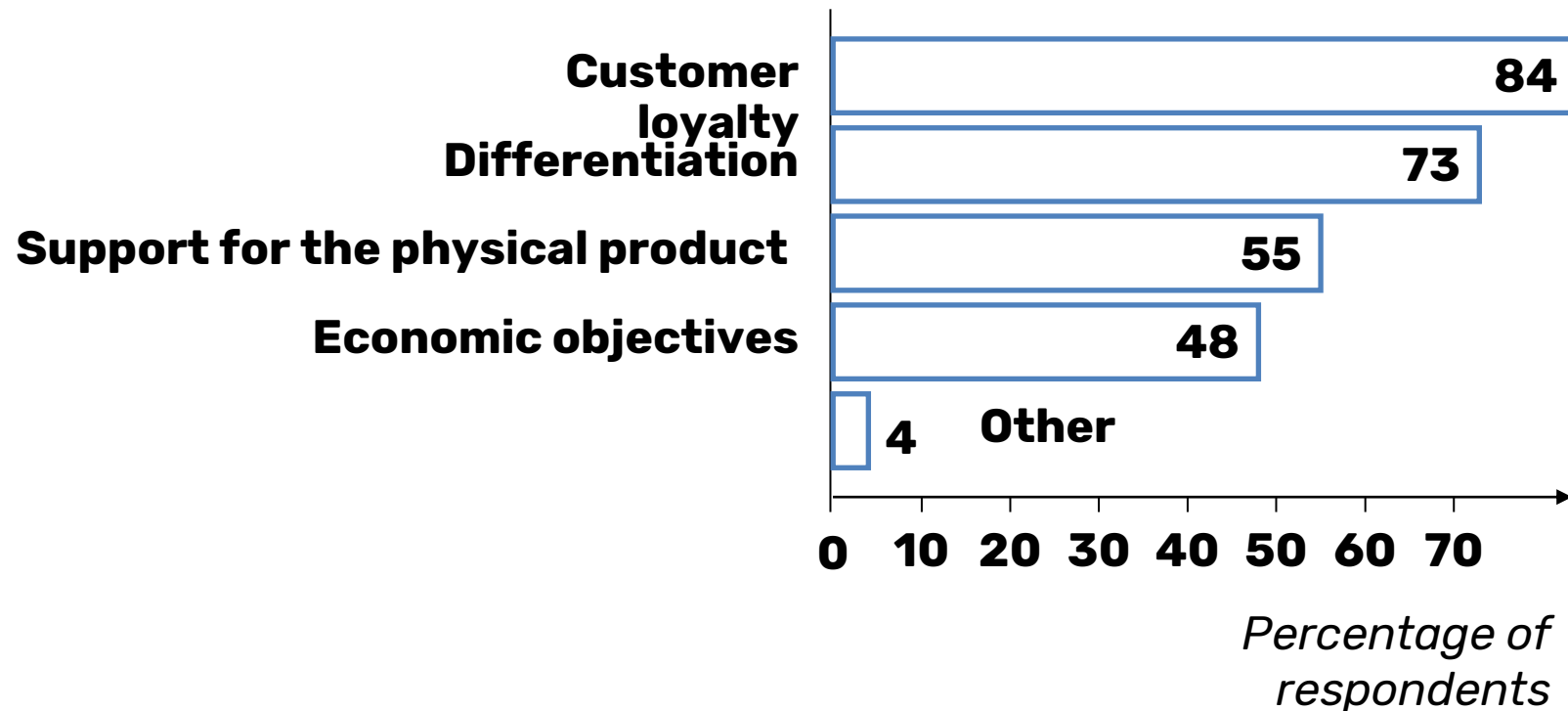


[The Economist, 2009]

The expected benefits



What are the main reasons for offering product-support services?



The expected benefits



1. Economic rationale

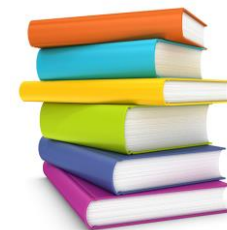
- Profitability of services
- Stability of service revenues along the entire product lifecycle

2. Competitive rationale

- Differentiation
- Lock in customers and lock out competitors
- New customer needs

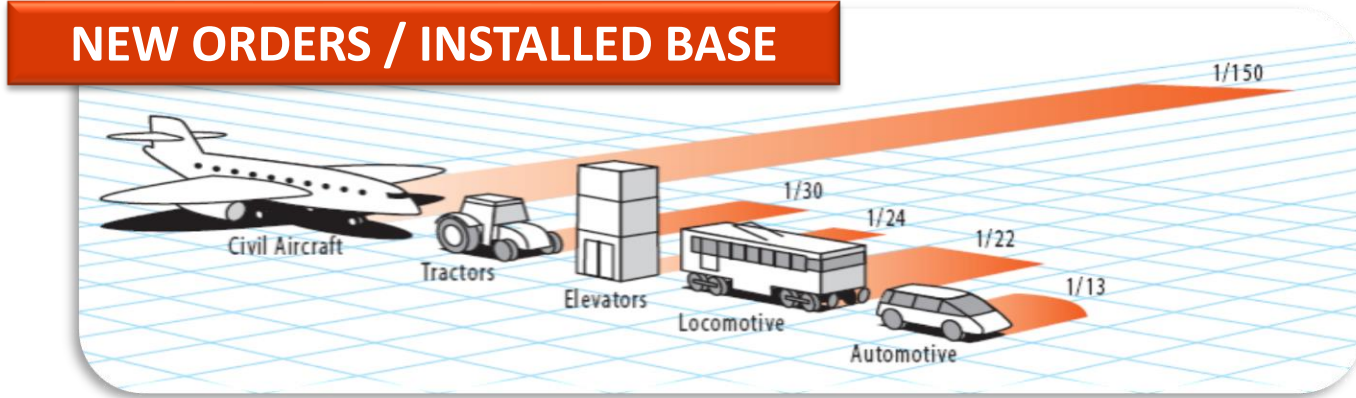
3. Environmental rationale

- Dematerialization (functional economy)



[Mathieu, 2001 (pp. 455-460)]
[Baines et al., 2009 (pp. 556-558)]
[Mont, 2002 (pp. 237-238)]

Economic rationale



MARGINS PRODUCTS VS. SERVICES

INDUSTRY	MARGIN IN OEM BUSINESS	MARGIN IN SERVICE	MARGIN LEVERAGE ¹
Paper Machines	1-3%	10-15%	5
Power Equipment	2-5%	15-20%	4
Metallurgy Equipment	-3 - +6%	15-20%	4
Rail Vehicles	3-6%	8-10%	2
Machine Tools	1-12%	5-15%	2

Note: 1 Margin Leverage = Margin in Service / Margin in OEM-Business

Source: Annual Reports, Expert Interviews, Monitor Analysis

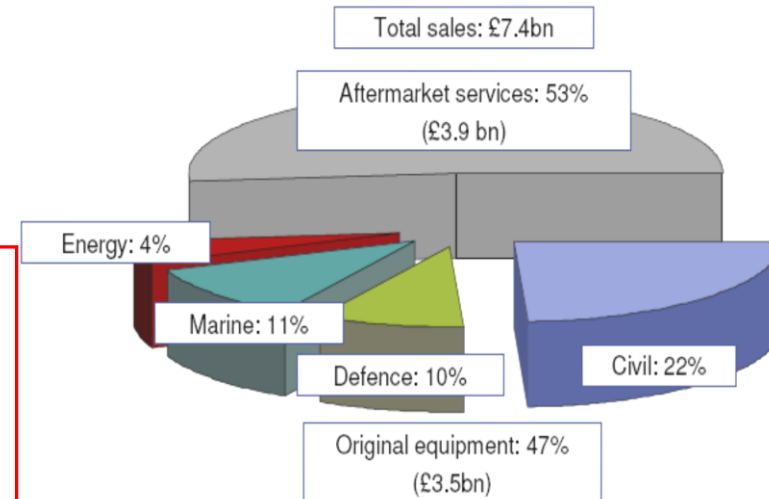
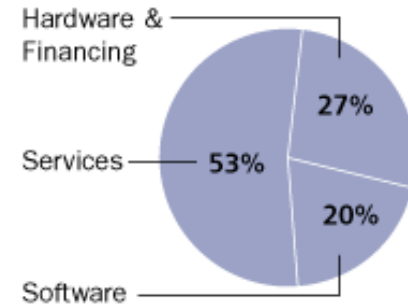
The expected benefits



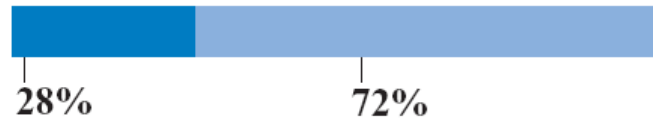
Economic rationale



Revenue Mix



Revenue Stream



Approximately 28% of our revenue comes from equipment sales, from either lease arrangements that qualify as sales for accounting purposes, or outright cash sales.

The remaining 72% of our revenue, "Post sale and financing," includes annuity-based revenue from maintenance, services, supplies, and financing, as well as revenue from rentals or operating lease arrangements.

Competitive rationale

- ***Differentiation***
- ***Lock in customer-lock out competitors***
- ***New customer needs***



On Demand Manufacturing
(e.g. takeover of production)



Services to Enhance Customer Productivity
(e.g. services to increase machine productivity)



Services to Enhance Availability
(e.g. SLA, Remote Services)



Consulting Services
(e.g. projection, financing, configuration)

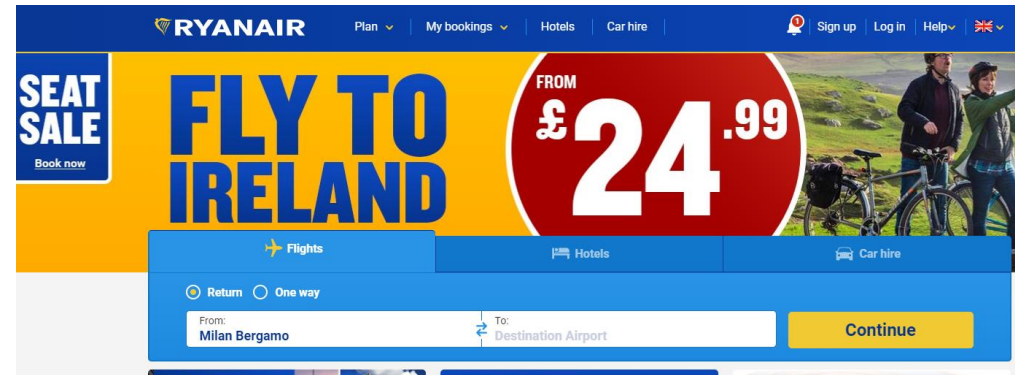
Basic Services

(e.g. spare parts, maintenance, complaints, trainings)

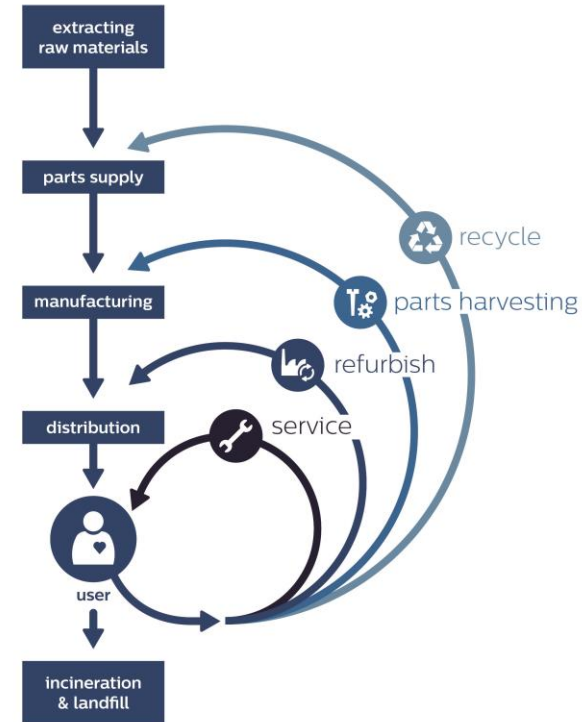


Competitive rationale

- **Differentiation**
- **Lock in customer-lock out competitors**
- **New customer needs**

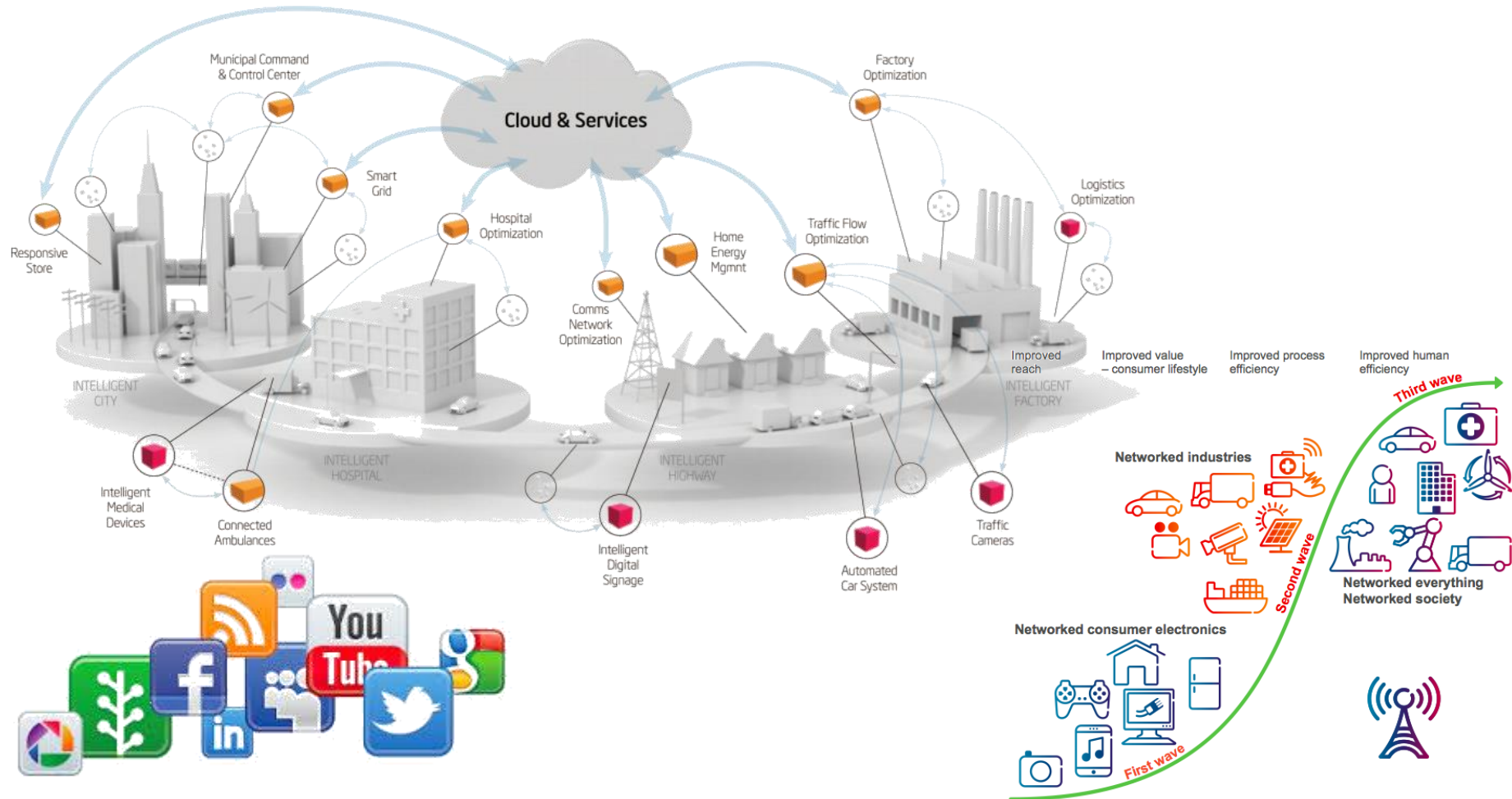


Environmental rationale

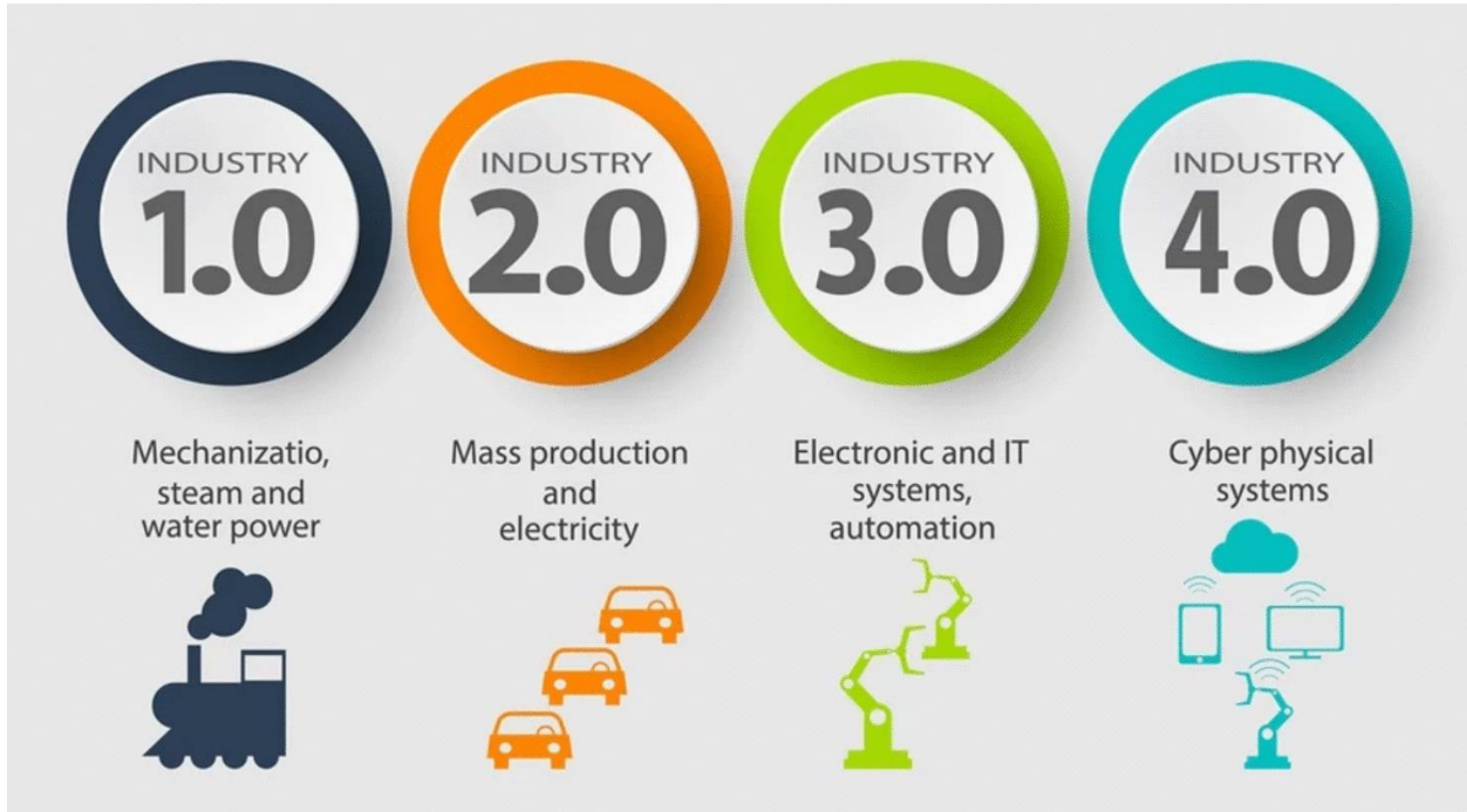


the
circular
economy

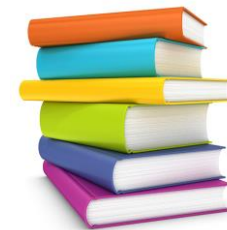
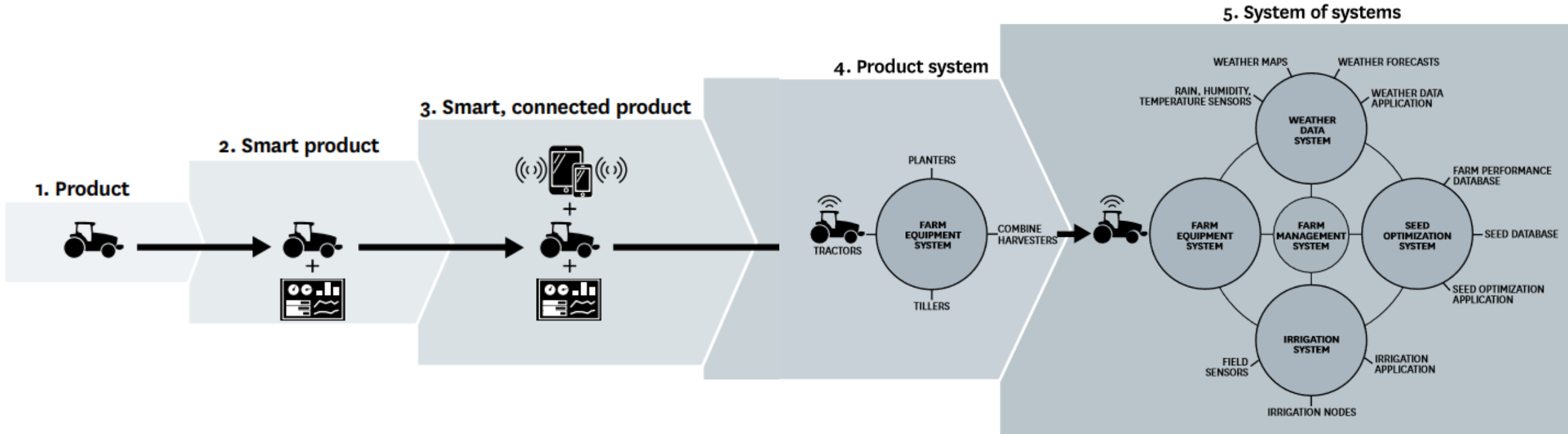
The future is... «SMART» & «Connected»



The advent of Industry 4.0

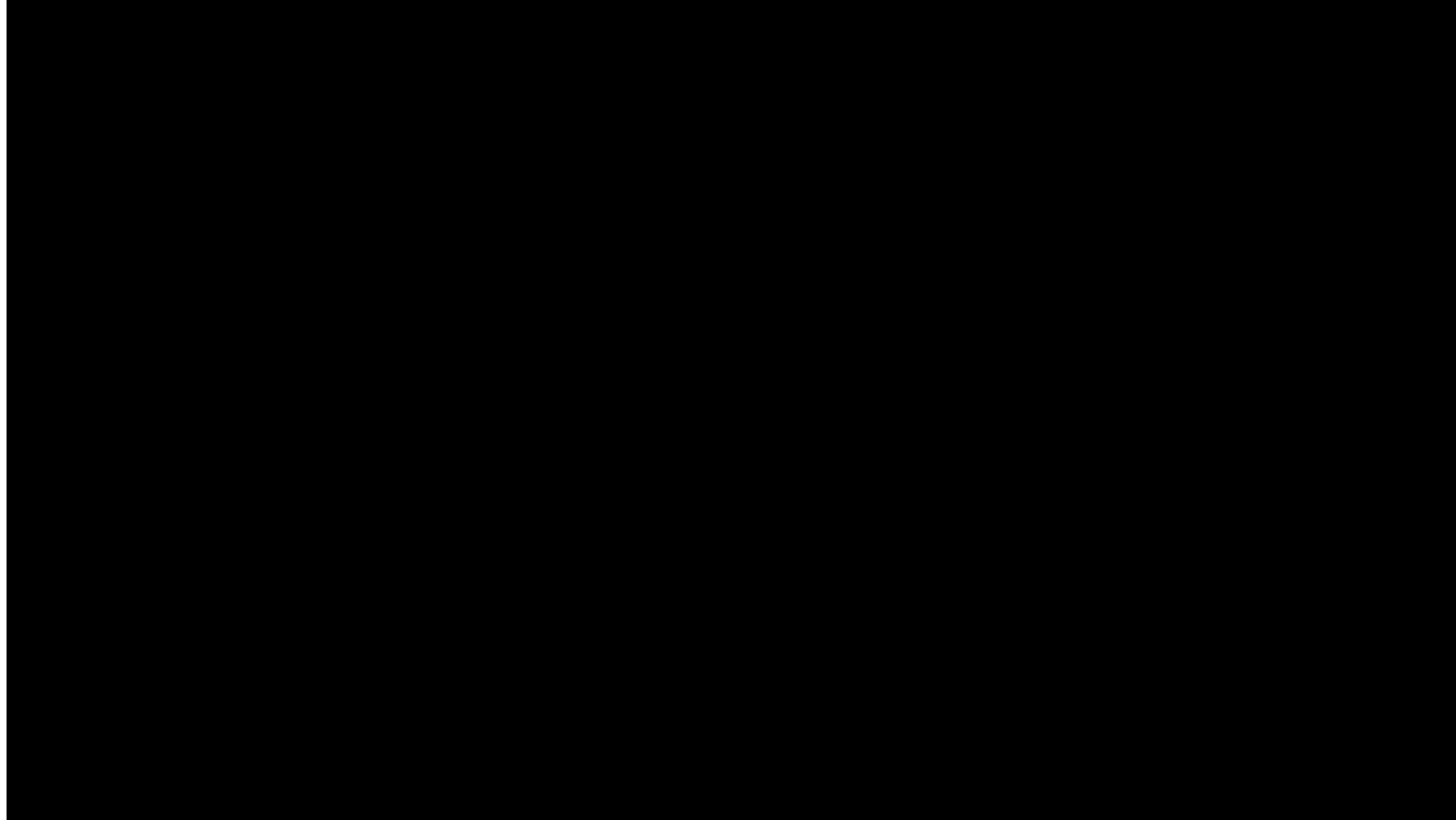


Services and technology



Porter and Heppelmann, 2014

Service and technology



Customer value co-creation

Services and technology



New business models



Car manufacturer



Mobility supplier



Supplier of mobility system

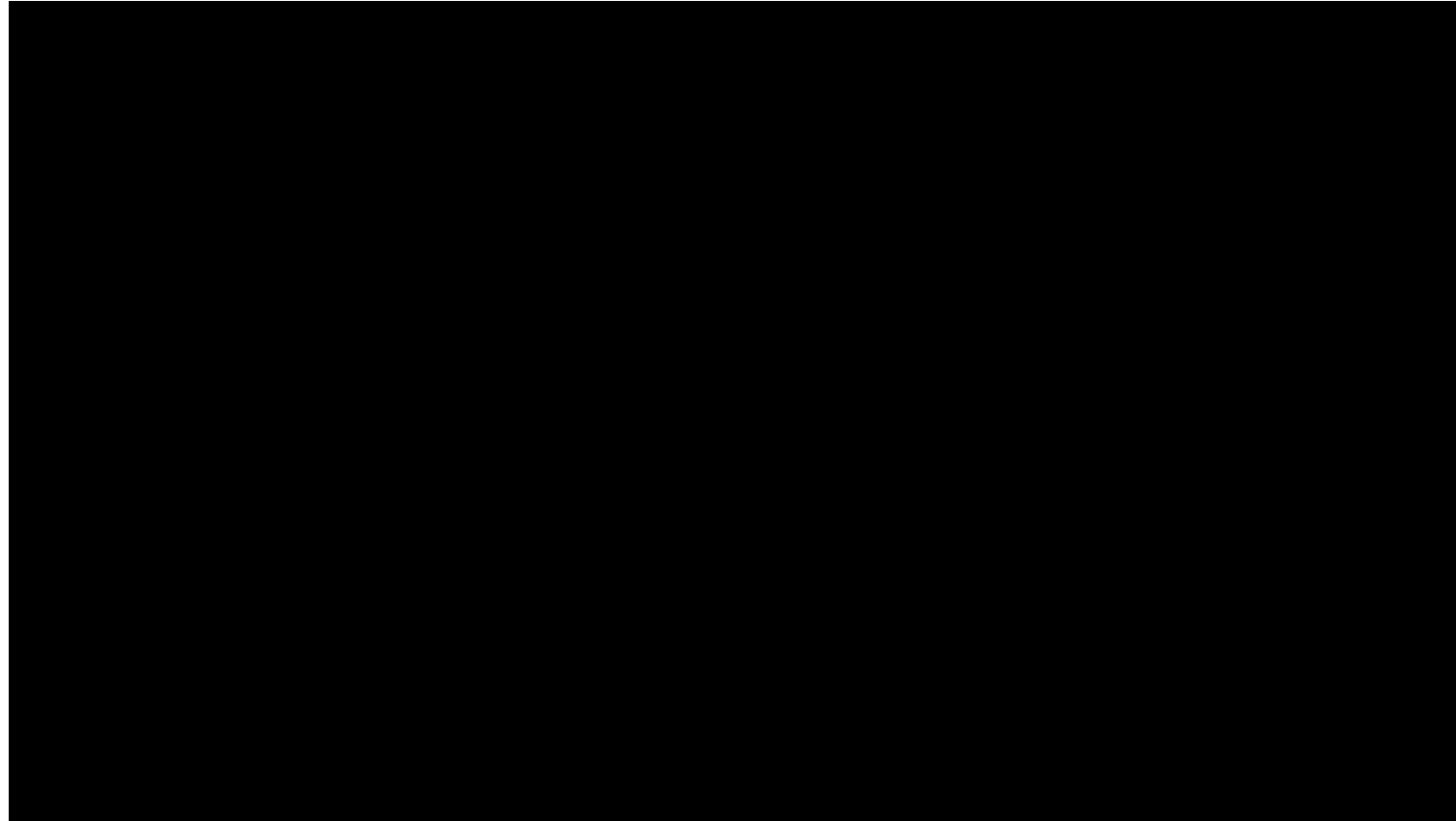


Intelligent car supplier



Supplier of a connecting platform

Services and technology

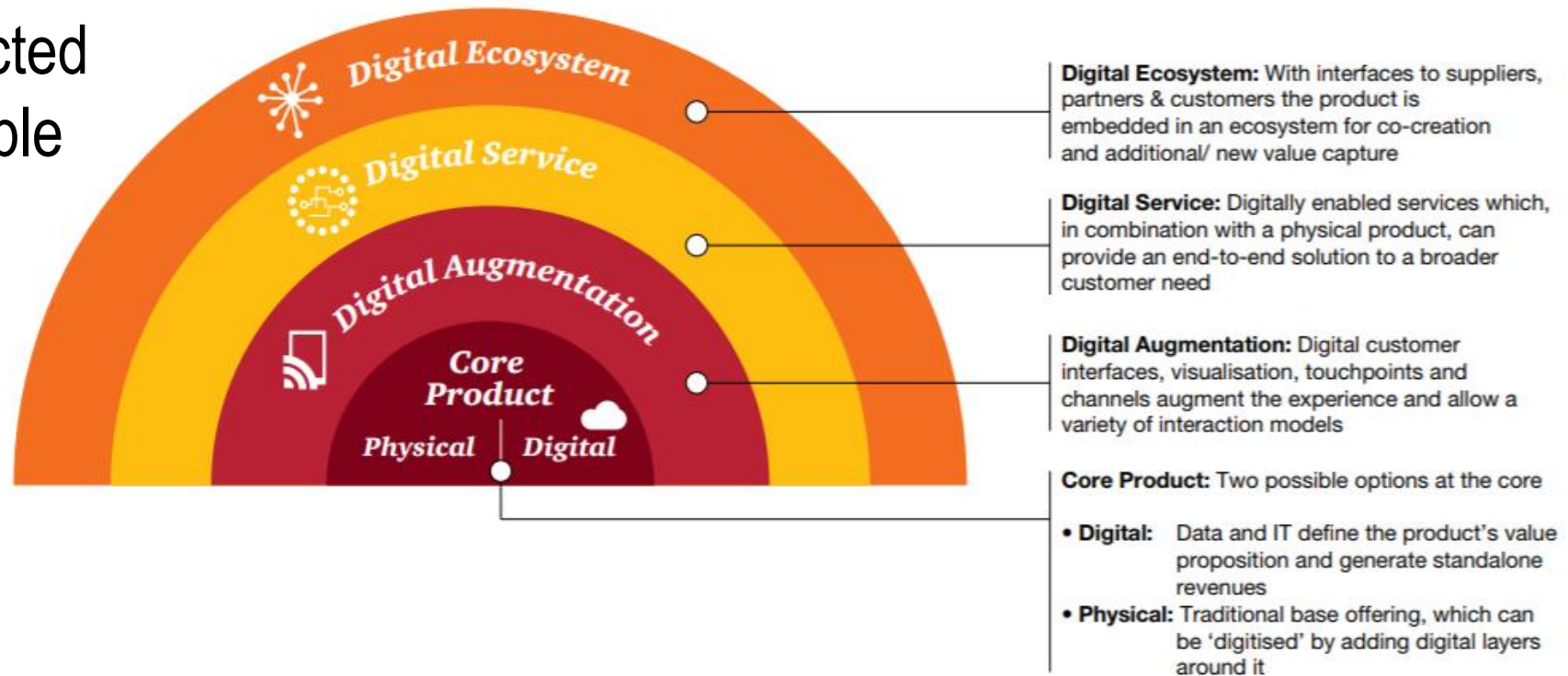


Improving product functionalities

New technologies enabling services

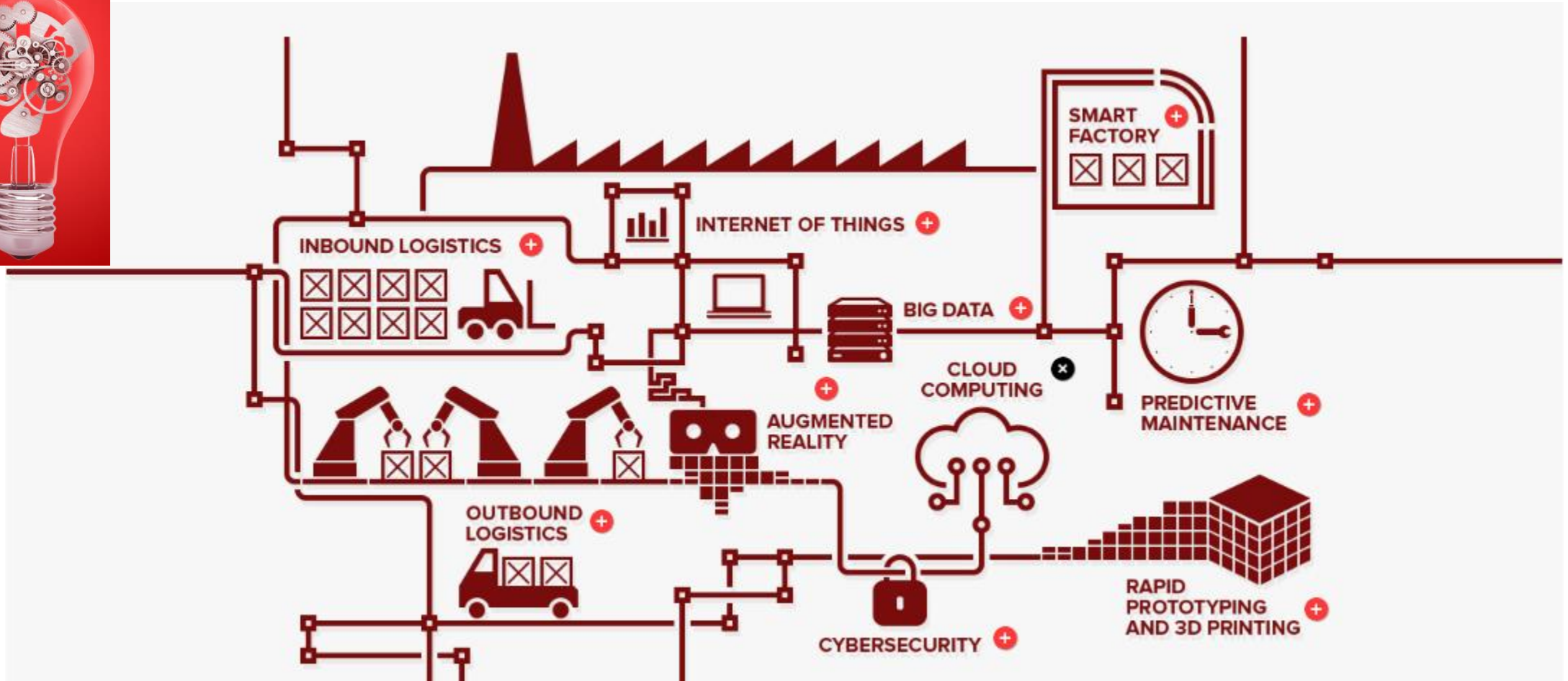


- Smart connected products enable new services



Pwc, 2016

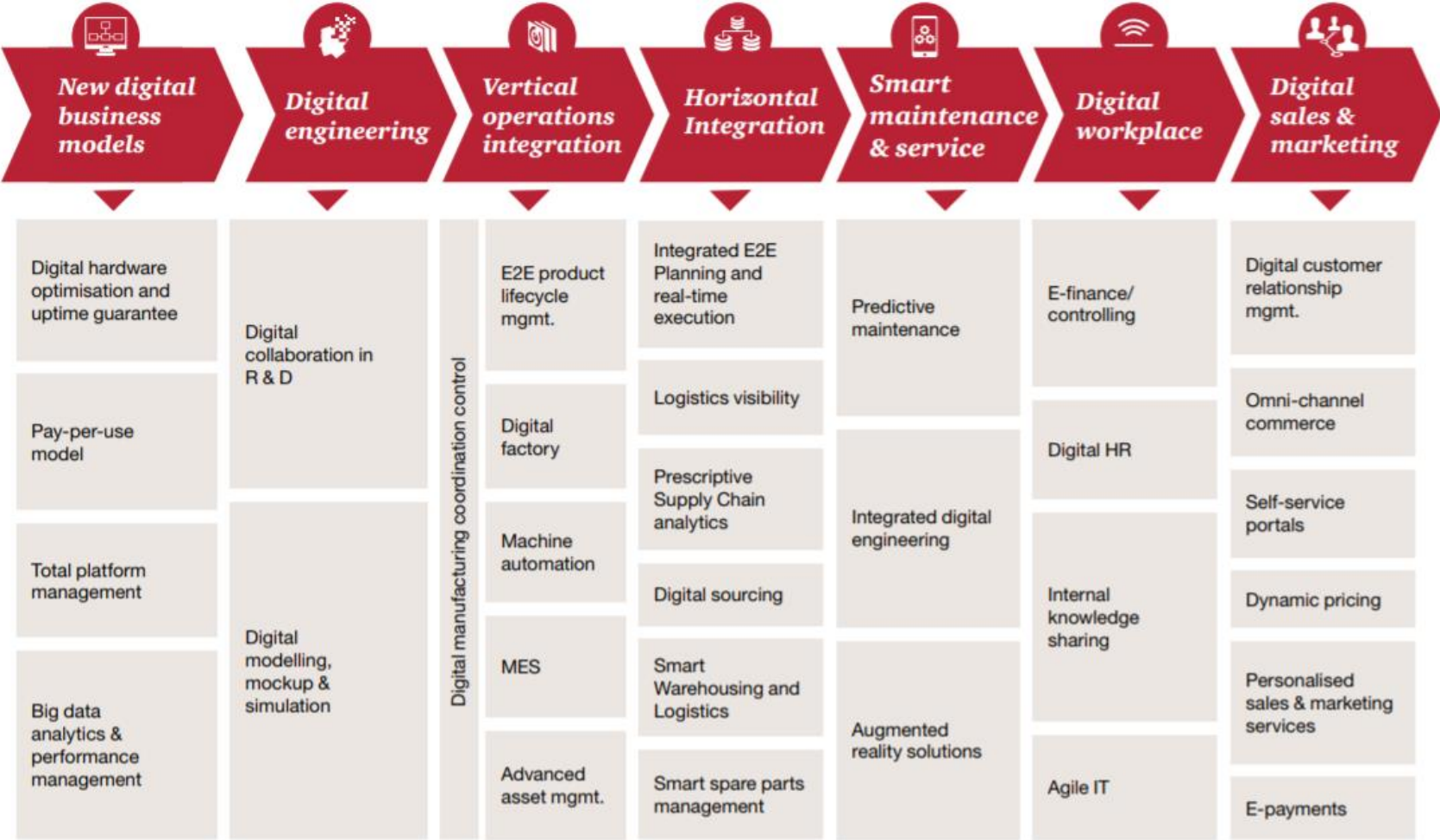
Industry 4.0 Landscape



A plethora of service opportunities



Industry 4.0 pilot opportunities exist along the full vertical and horizontal operational value chains



Pwc, 2016

References



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