Service Management and Engineering @ CELS

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Introducing the University of Bergamo






Where are we? The Lombardy Region

- Lombardy is situated in the heart of Europe, in the northern part of Italy.
- The territory extends over a total surface area of **23.863 square kilometres**.
- It is the Italian region that has the highest concentration of people, businesses and wealth: it represents 15,6% of the overall national population with approximately **9,3 million inhabitants**.
- The Lombardy economy represents one-fifth of the Italian one, with a GDP of 270 billion Euros and a **GDP per inhabitant of 29.525 Euros**.
- The **contribution** made to the regional economy **by the industry is almost 36%,** while **services** represent approximately **62%** and **agriculture totals 2,1%.**

University of Bergamo – Facts & Figures

- 6 Faculties
- 15 BA courses
- 17 MA courses
- 1 Full cycle course (MA+BA, 5 years)
- 11 Specialization courses

- 12 Departments
- 5 Research and Education Centres
- 14 PhD's

- 339 Professors and Researchers
- 231 Members of the Technical and Administrative Staff
- 182 PhD students
- 41 Research Fellows

- 15,415 Enrolled students
- 4,404 Newly enrolled students (1st year)
- 1,735 BA graduates
- 468 MA graduates
- 14 Graduates in the full cycle course
- 91 Graduates according to the former university system
- 107 Erasmus grants for studying abroad
- 200 Incoming foreign Erasmus students

- 7,194 Available seats in the lecture halls
- 275 Available seats in the libraries
- 502 Available seats in the canteens
- 159 Available bedrooms in residential halls
- 428 PC workspaces

Master degree in Service Management Enginnering

Service Chain Management

Innovation Management

Project Management

Welfare and Market Regulation

Transportation Economics and Management

Service Marketing

Service Economics

Software Engineering / ICT Service Management

Internationalization program

The International program at UNIBG:

- Three MSc programs entirely taught in English:
  - **Tourism Management**
  - **Business Administration**
  - **Managerial Engineering**
- 14 Ph.D. programs taught i lish
- Growing percentage o ently 5%)
- International faculty, n rofessors from 15 countries actively invo
- Flexible terms for visiti

- Operations Management
- Supply and Service Chain Management

CELS Research Team

Sergio Cavalieri
Full
Professor

Stefano Ierace
Research
Fellow

Fabiana Pirola
Research
Associate

Paolo Gaiardelli
Assistant
Professor

Sergio Terzi
Assistant
Professor

Roberto Pinto
Assistant
Professor

Stefano Dotti
Assistant
Professor

Giuditta Pezzotta
Research
Fellow

Barbara Resta
Research
Associate

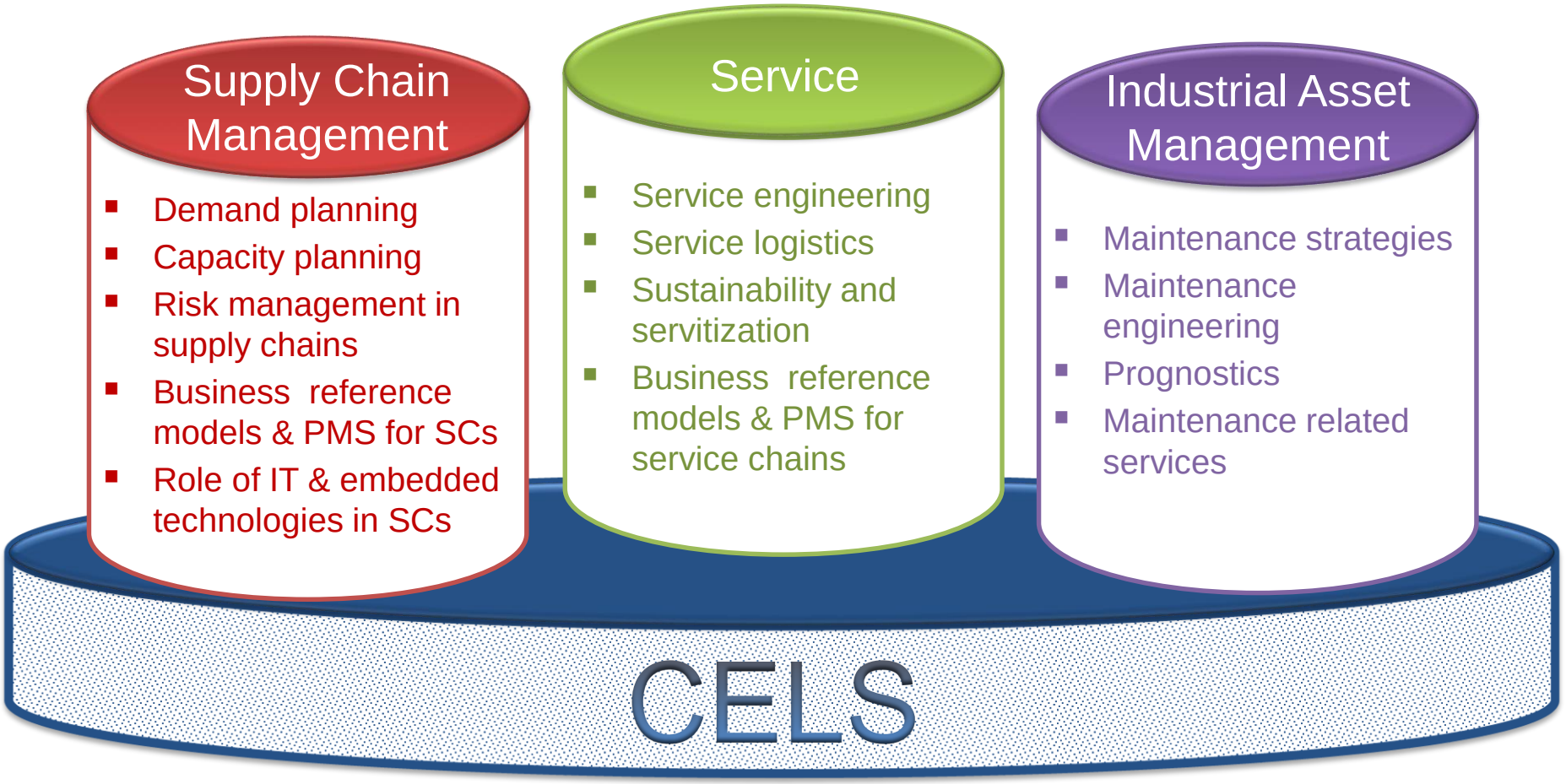
Nicola Pedrali
Research
Assistant

Emanuele Dovere
Research
Assistant

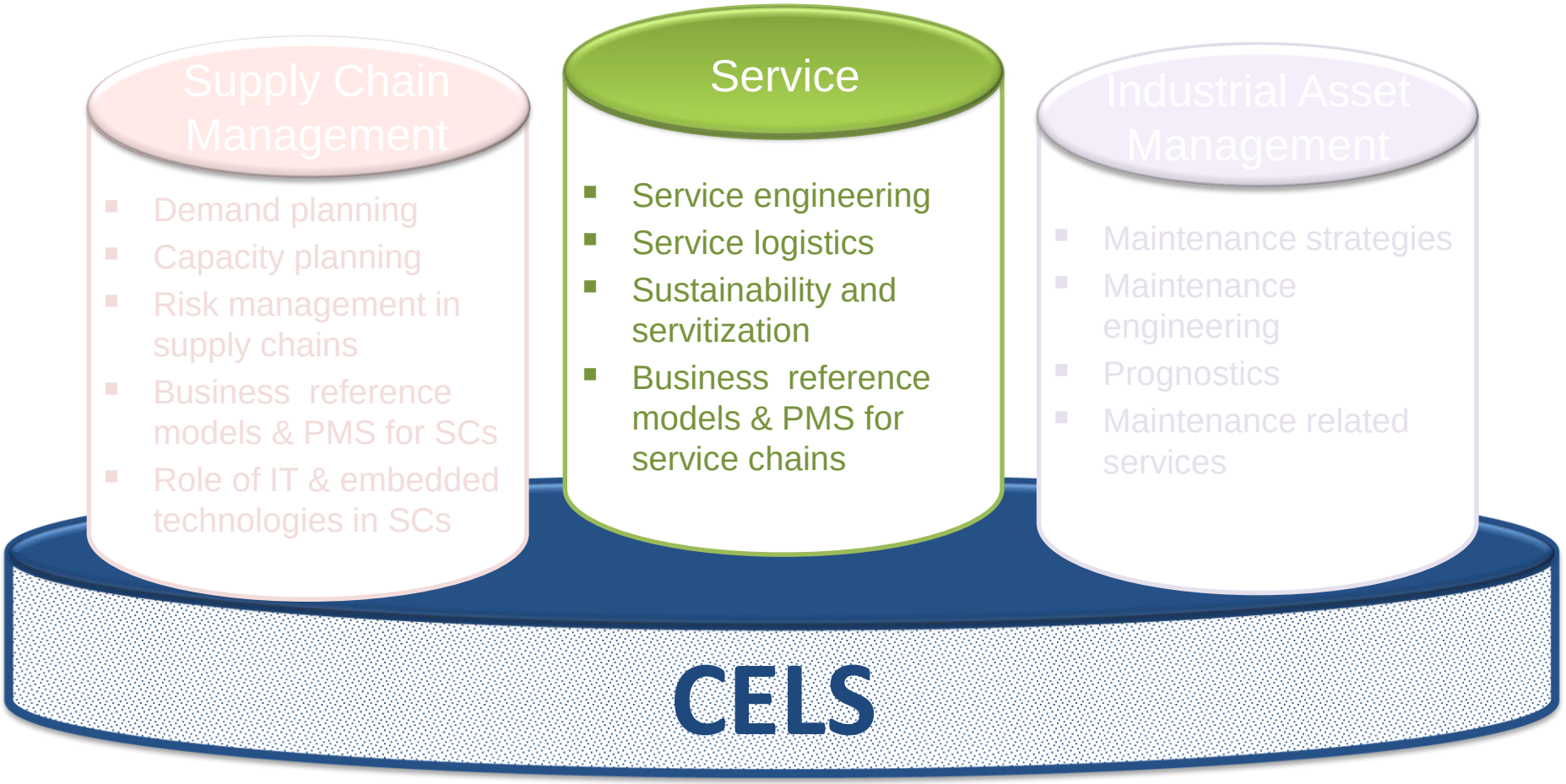
Enrico Cagnoni
Research
Assistant

Francesca Sandionigi
Communication &
Administration

The three pillars of CELS



The three pillars of CELS



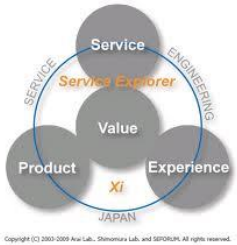
Service Lab

We are setting up a Service Lab at the Engineering Campus of the University of Bergamo, located in Dalmine (BG)

The main activities carried out in the Lab are:

- Research projects
- Master students and PhD theses
- Industrial projects

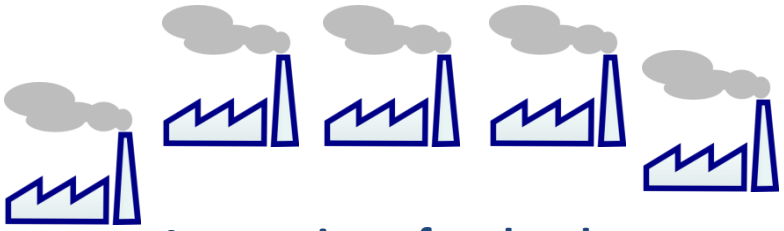
interfacing.
BPMN MODELER



Arena® Simulation Software

TECNOMATIX
SIEMENS

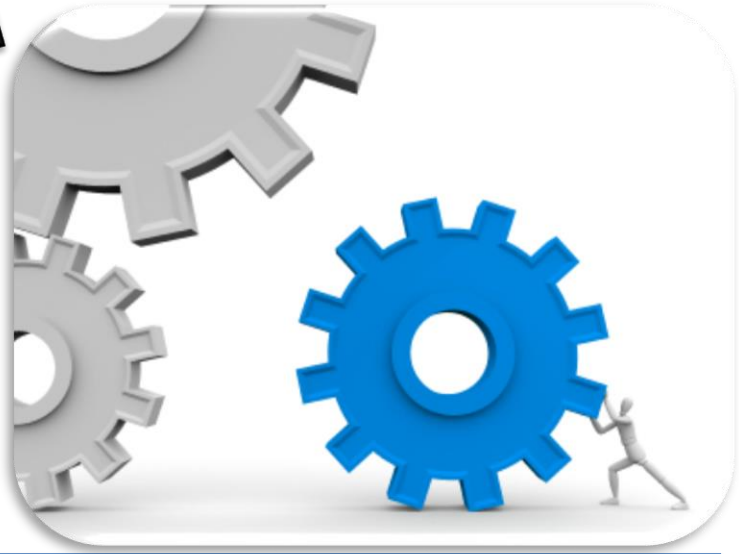
The manufacturing context

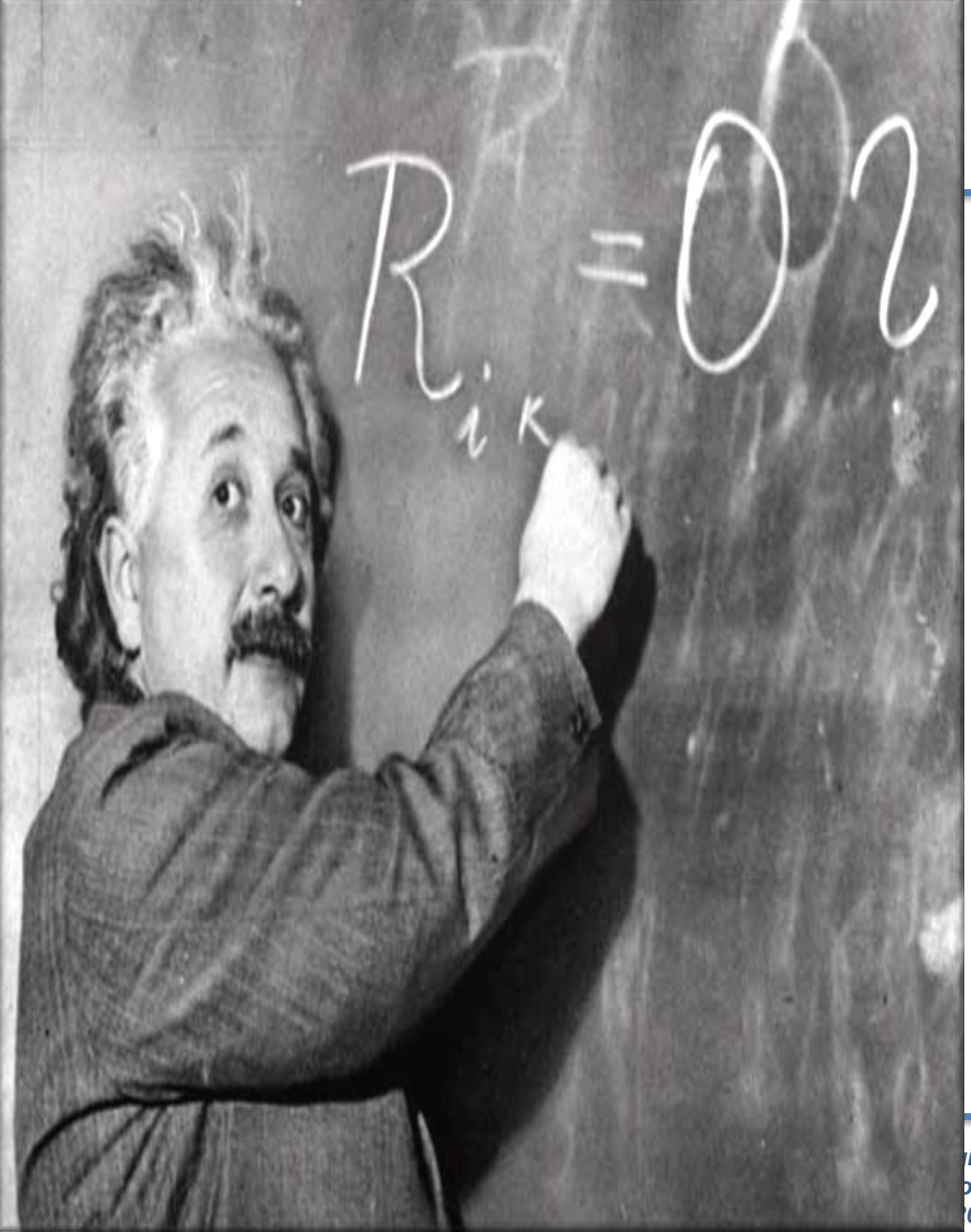


Innovation of technology
Globalisation
Industrialisation of emerging economies
Fierce competitive pressure
New customers' needs

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.



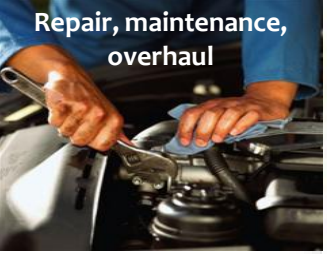


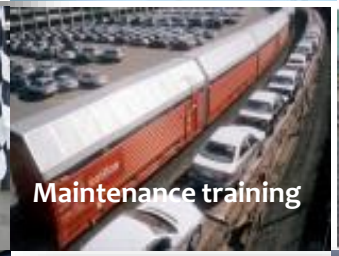
Why servitization?

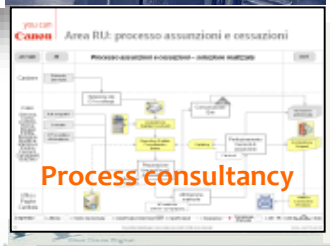
The expected benefits

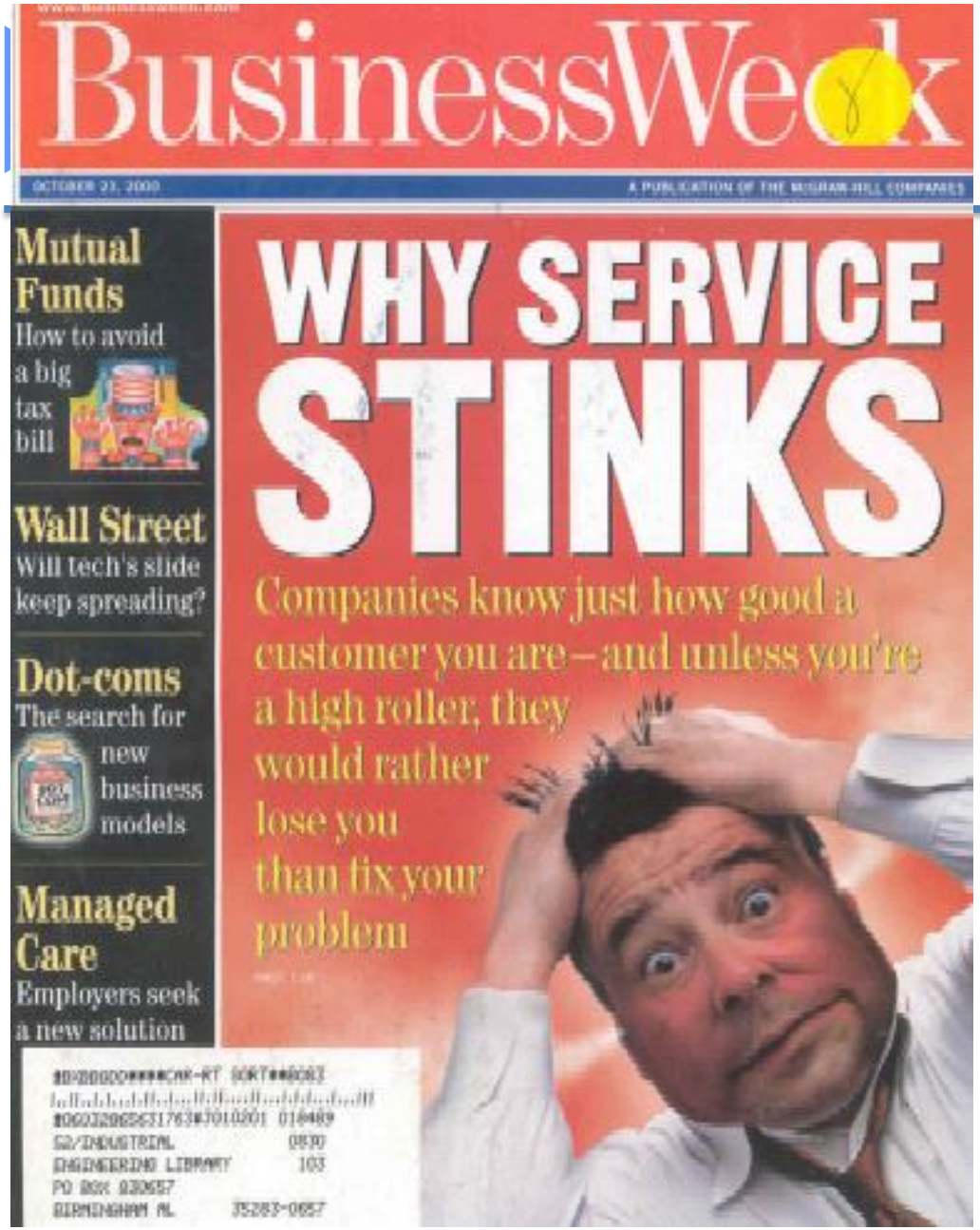
1. Economic rationale
   - Profitability of services
   - Stability of service revenues along the entire product lifecycle
2. Competitive rationale
   - Differentiation
   - Lock in customers and lock out competitors
   - New customer needs
3. Environmental rationale
   - Dematerialization (functional economy)

A business in transformation





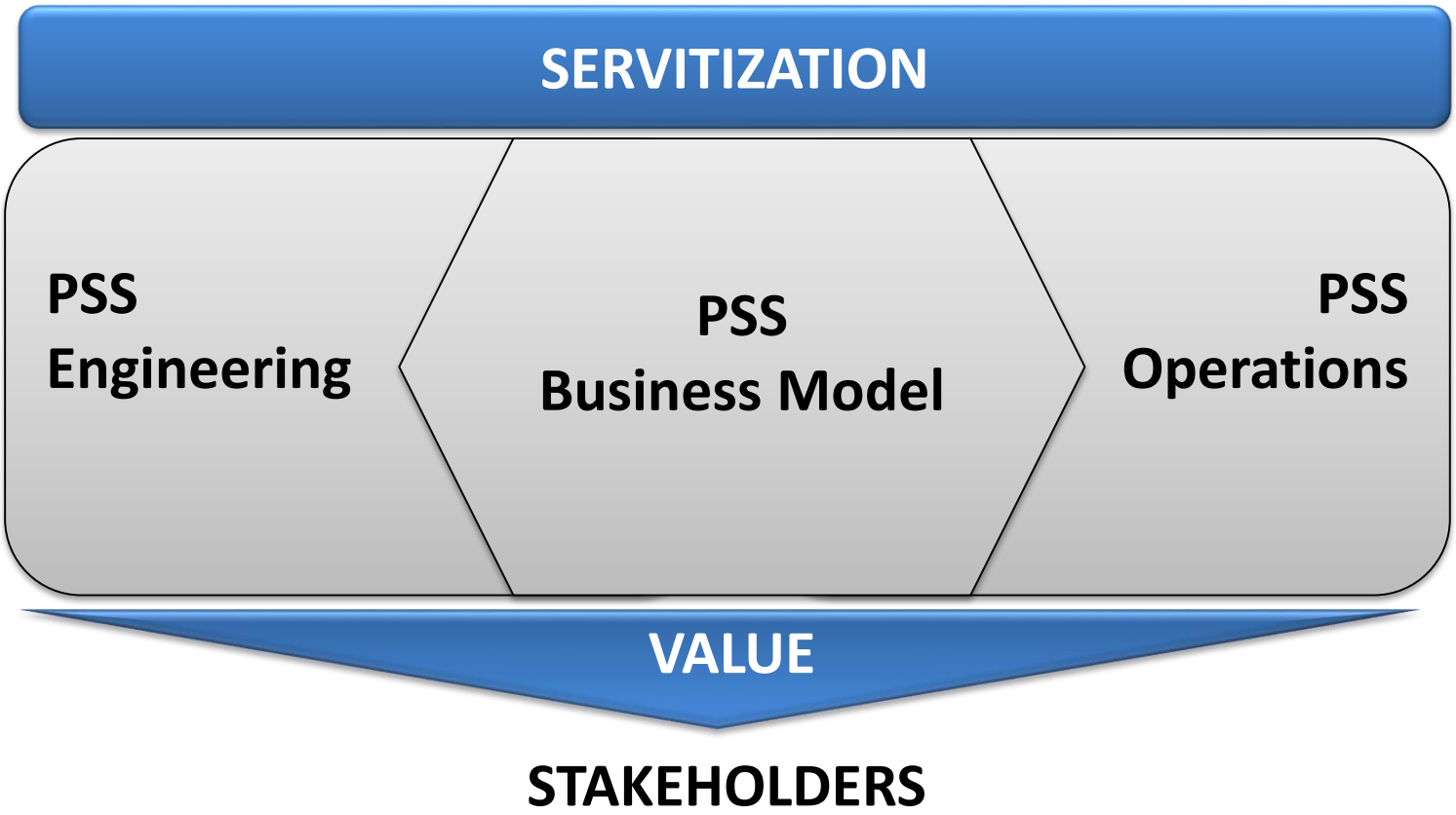




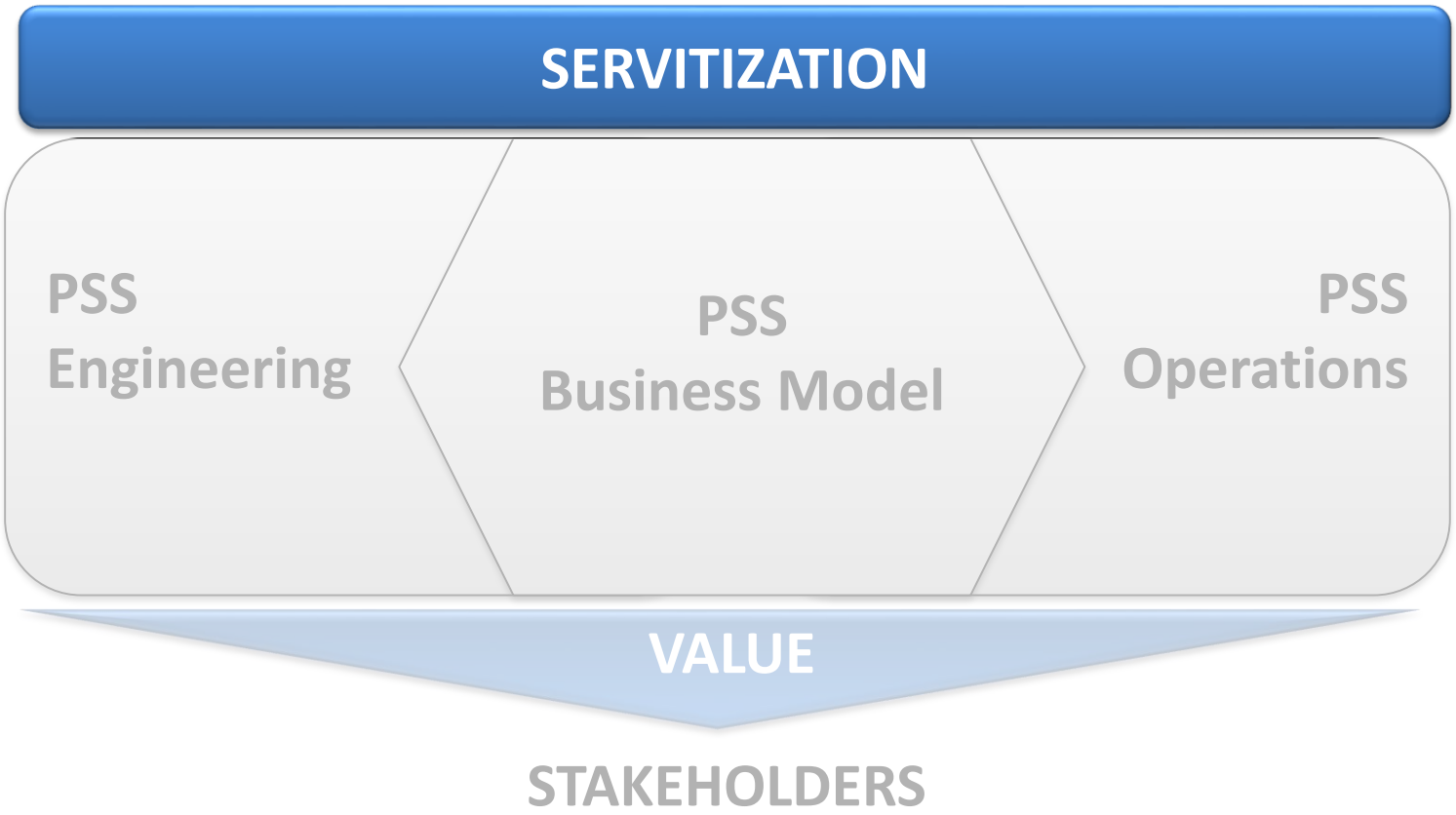
Why do problems with services arise so often?

How to make services pay off?

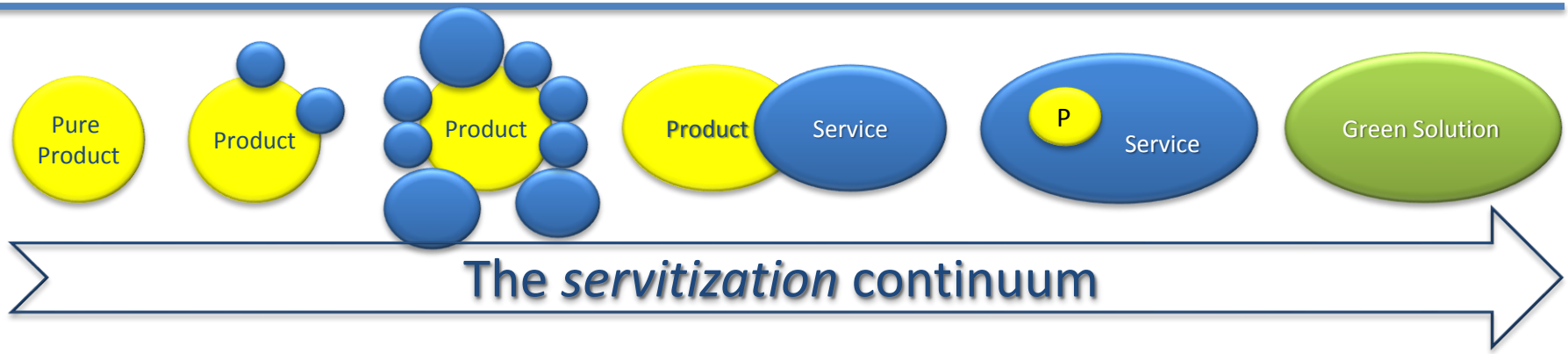
The Product-Service research framework

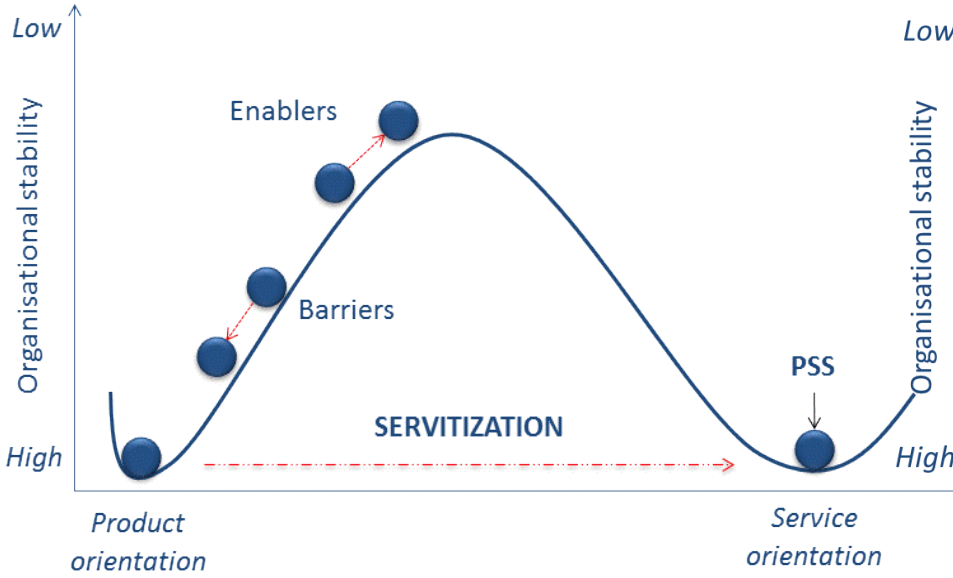


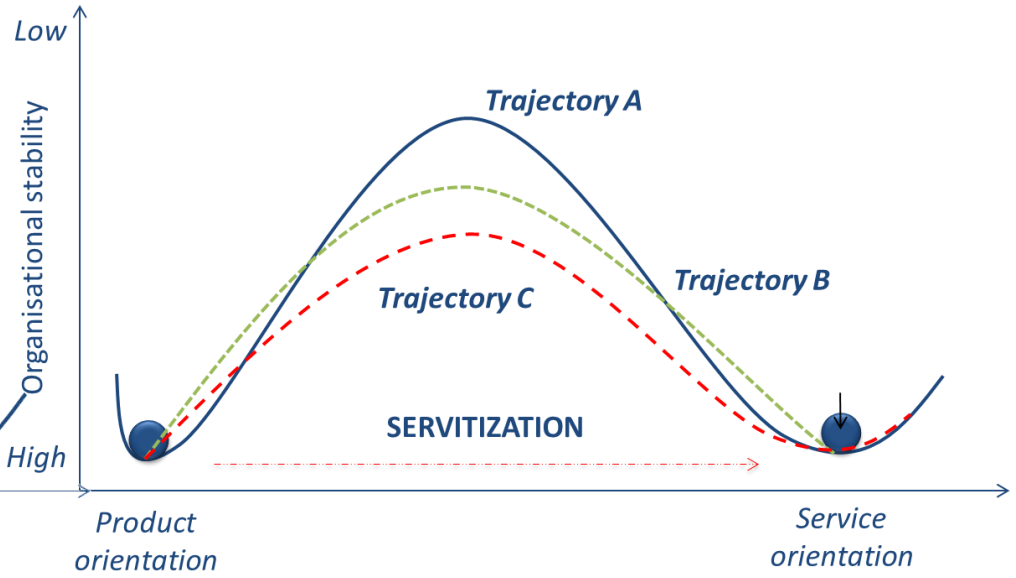
The Product-Service research framework



Servitization







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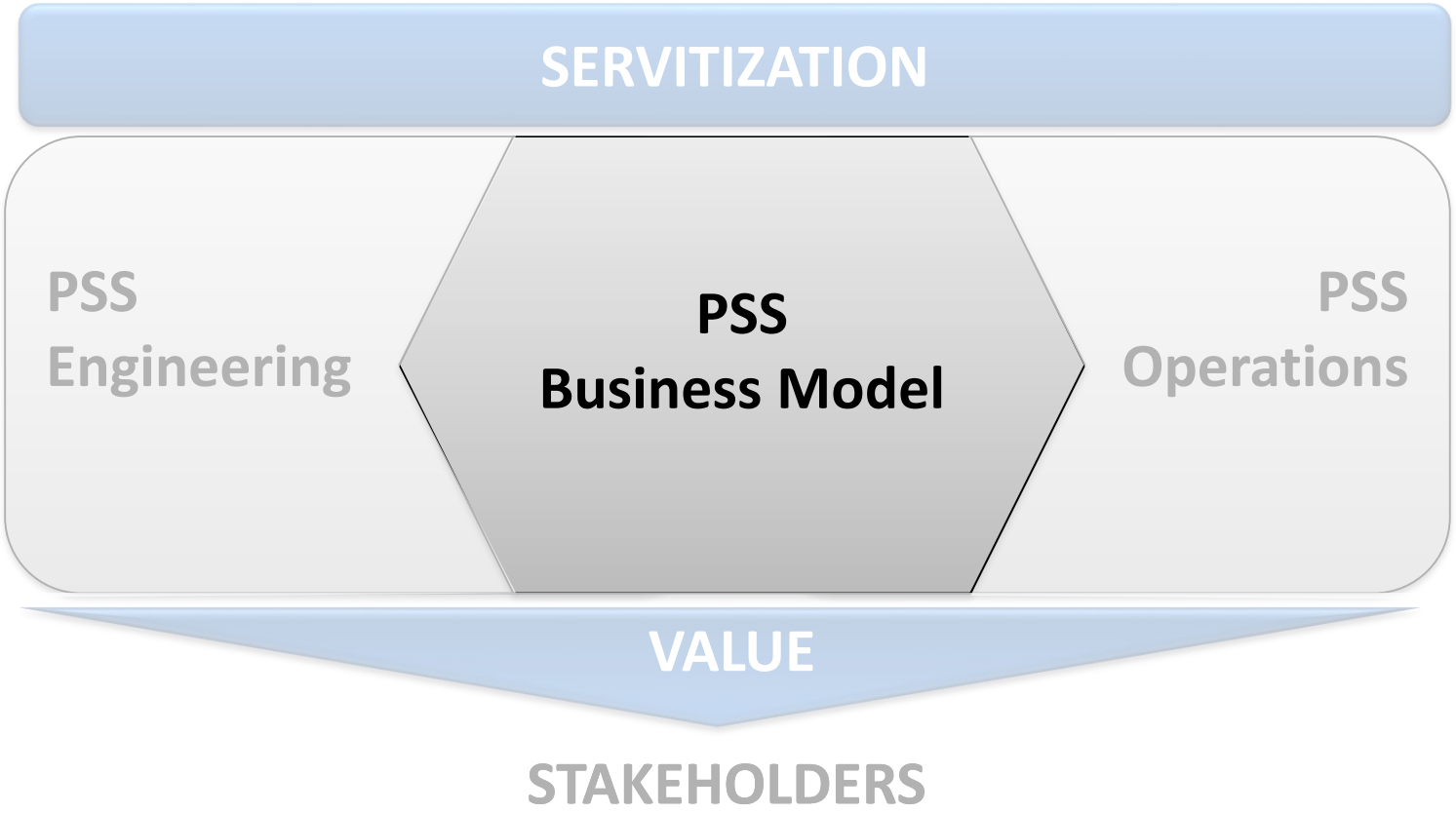
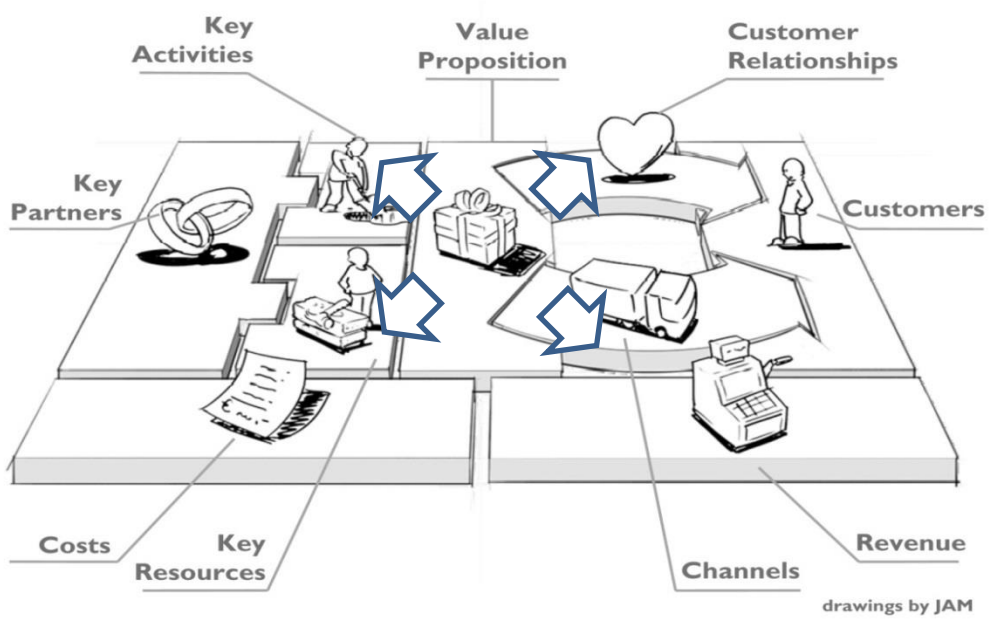


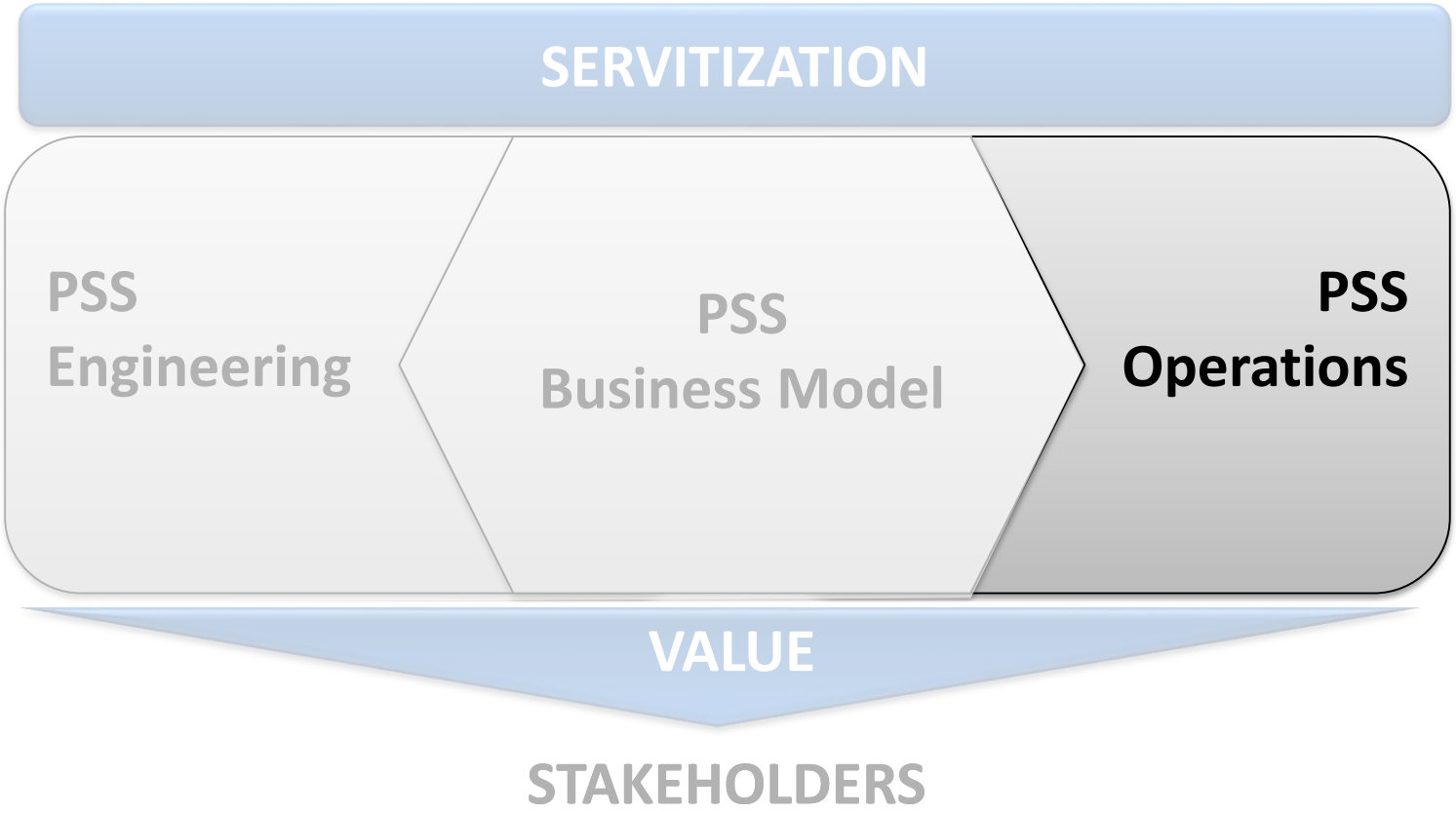
PSS Business Model



[Osterwalder and Pigneur, 2010]

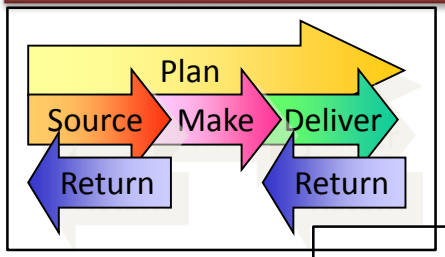
Identification of the constituent elements of a PSS and the relationships among them in order to develop a framework that helps companies to become a product-service provider

The Product-Service research framework

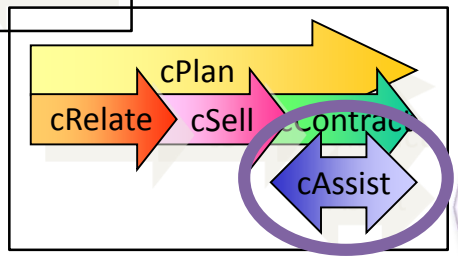


PSS Operations
Process optimisation & Measurement

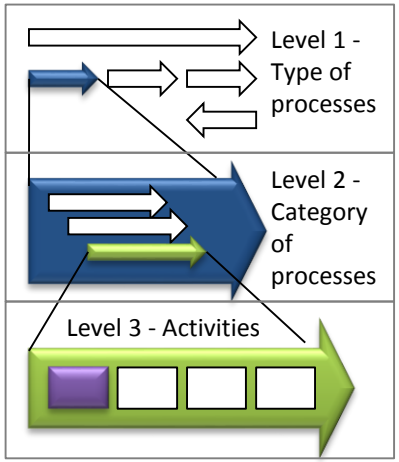
1. The methodological approach

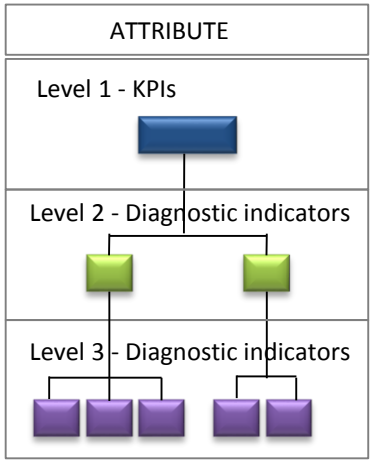


The SCOR model
(Supply Chain)

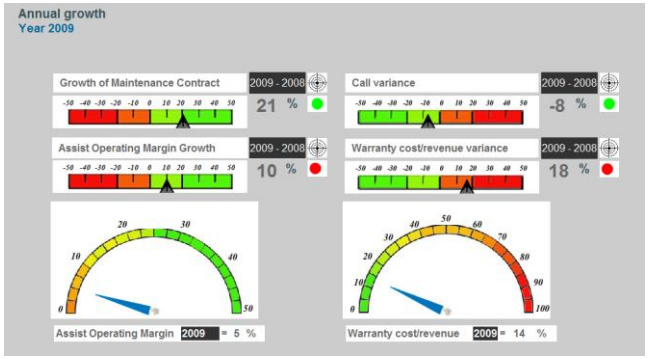


The CCOR model
(Sales&Support)

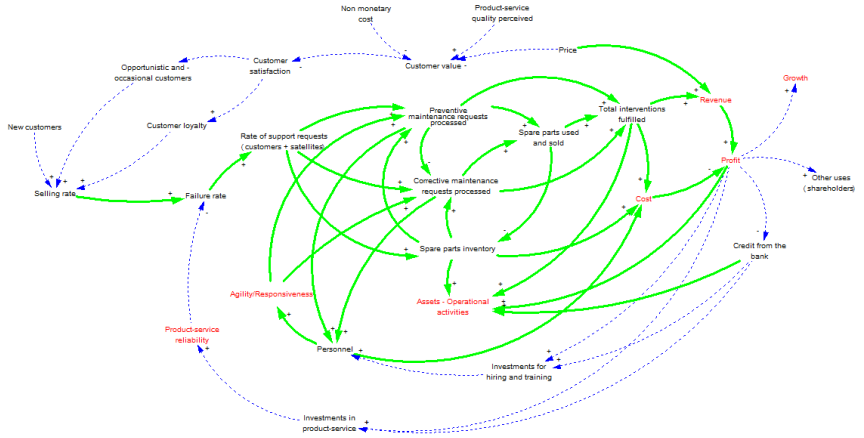




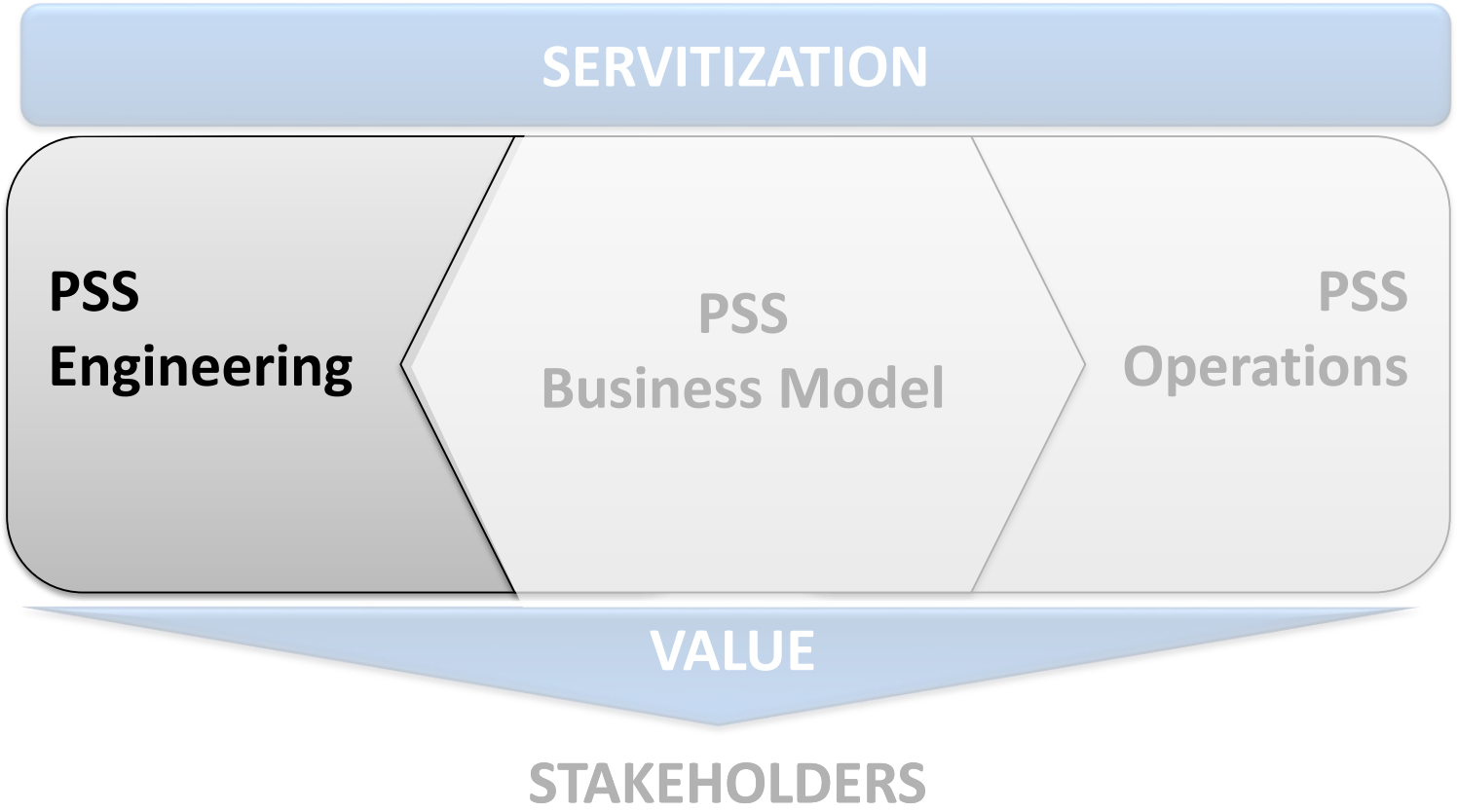
2a. Static analysis: Monitoring & controlling results



2b. Dynamic analysis: Improving results



The Product-Service research framework



Service Engineering
Manufacturing point of view

Manufacturing companies adopt approaches based on a traditional engineering perspective to design and develop their integrated solutions.

Engineer the "tangible" part

"Something methodologically and systematically approached"

Adopt intuitive processes and methods to develop the "intangible" elements

"Something rudimentally developed"

The value obtained is not optimised

Research Framework

SIMULATION

- Simulation model development
- Simulation model analysis

IDEA - Customers and service selection

- Customer analysis
- Service categories
- Service Relevance

Service provision processes analysis

VALUE	PROCESS
Functional Model	Service Blueprinting map
QFD	Blueprinting - Value link

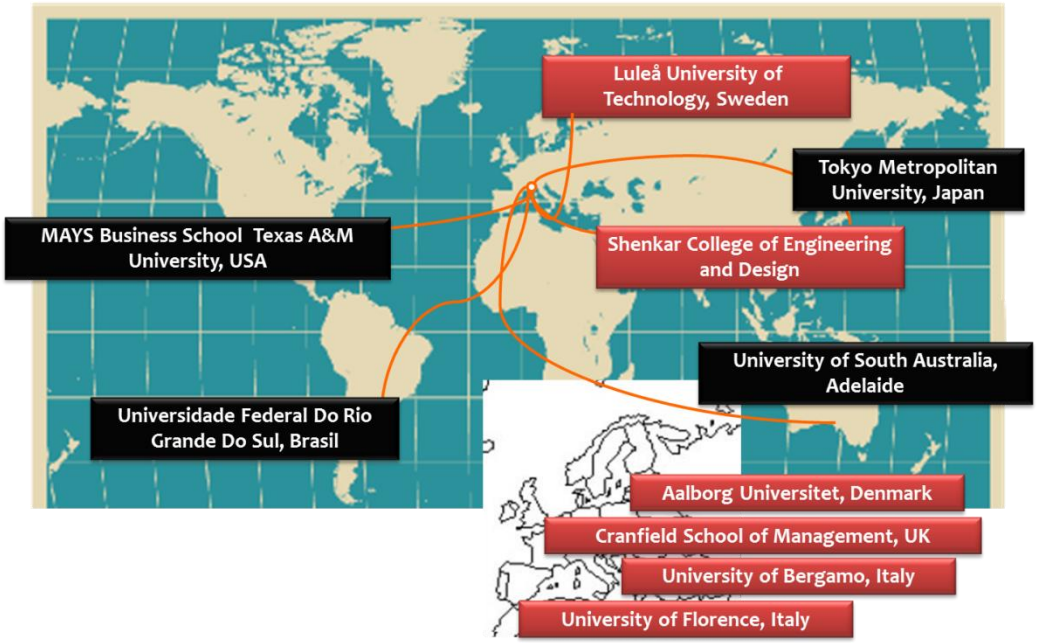
Improvement actions identification

Research Grant (2013) : Engineering And Assessing Condition Based Maintenance Product Service Solutions

ProSSaLiC - Mobility EC Founded Project

Product-Service System across Life Cycle

The **ProSSaLiC exchange program** aims to facilitate the deployment of a collaborative scheme focused on the **exchange of the knowledge** required to develop new methodologies, models, methods and ICT tools to support a Product-Service System throughout its Life Cycle phases.



Industrial and Research collaborations

ASAP Service Management Forum

To promote service culture and excellence of the service management by means of research, practice, education and technological transfer

ASAP SMF
Service Management Forum

ASAP SMF – Consortium

AUTOMOTIVE

TRW
ARVAL BNP PARIBAS GROUP
DUCATI
DAF A PACCAR COMPANY
IVECO
Mobil Delvac 1
VOLVO
Ferrari
BMW
Volkswagen
PORSCHE

MACHINERY

LEONARDO technological system integrator
AIC
FACCIN
FIDIA
PORTA SOLUTIONS
Mazak Your Partner for Innovation
MCM
REA ROBOTICS
caprari pumping power
COSBERG
EA MECCANICA PI.ERRE TRIM & MACHINING TECHNOLOGY
TESMEC
Balance Systems

HOUSEHOLD APPLIANCE

CANDY·HOOVER GROUP
DeLonghi Living innovation
stelav
Electrolux Professional
ARISTON THERMO GROUP
Miele
IMETEC
SAMSUNG
RIELLO
Electrolux
MEDIAMARKET
Beretta
arneg
Installo
Miele PROFESSIONAL

DIGITAL SYSTEMS

EPSON EXCEED YOUR VISION
océ Printing for Professionals
Ricoh
Canon
Selex ES A Finmeccanica Company
KYOCERA

Hope to see you in Bergamo!

Thank you for your attention !

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