PA194 - Introduction to Service Science

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UNIVERSITAS MASARYKIANA BRUNENSIS

INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

Organization

- The lessons are voluntary
- Written test at the end of semester
  - 50% open and 50% optional questions
- Knowledge presented here will be examined at state exam
- Information are important to understand other lessons in context of servicies

- To adapt to new conditions
- IT is the most dynamic branch

Why introduction to Service Science

- Service Science is trying to interconect IT and „the rest of the world“

What is service?

- services are processes, performances, or experiences that one person or organization does for the benefit of another
- In all cases, service involves deployment of knowledge, skills, and competences that one person or organization has for the benefit of another, often done as a single, customized job (Lusch & Vargo)

Characteristics of a service

- Services we speak about are information and knowledge intensive
- Output is intangible, hard to quantifiable and measurable
- Non-storable
- Lack of mobility
- Consumption runs simultaneously with the supply
- The customer is presented on the production
- Hardly specifiable

What is science?

- to help service managers to achieve standardization
- assembly of standardized modular service elements in several "customizable" but highly predictable permutations
- customers seeks for value standardization because it reduces variability and usually helps bring prices down
- services in the digital economy employ standardization and mass customization
- a new service definition might focus on the technical nature of modern day service

Key Trends

ome a driving force in economics around

- – Services represent more than 70% of global GDP.
- – The services sector in EU accounts for almost 70% of EU GDP.
- – Also manufacturing industries include more and more services. There are becoming part of tangible and intangible products
- Services are more and more knowledge and information intensive
- **Service innovation is recognized as key for the economic growth and competitiveness**
- Academic programs and research activities in engineering and business schools didn‘t meet the needs of this sector.
- – Universities, governments and industry start to work together to ensure that service become a distinct and legitimate area for research and teaching.
- **ICT plays a major role in services innovation and realization**

Industry request

- Industry signals that most of entry level engineers lack necessary skills especially in soft skills and in legal and economical framework.
- In detail:
  - Ability to communicate effectively to technical and non- technical audience
  - Ability to self educate
  - Ability to work in heterogenous teams
  - Willing to take risks, experiments, and to be innovative
  - Global engagement

History of Service Science (SeS)

- Founded by IBM (2004)
  - On the field of IT
  - To understand how provide IT services
- Basic principles
  - IT is a service
  - No matter if it is internal or external
  - Basic motivation is to understanding of needs of those who are final „recepients“ of the service

Relation to information

- Work of informatics specialists is about work with information
  - Do they know all semantics and consequences?
- SeS is the reaction to one serious problem on IT market

Example of the problem

- Status
  - Organization has a problem
  - This problem can be solved by a IT solution (tools)
  - There is a lot of IT companies able to supply this kind of solution
- Questions
  - How would IT expert recognize the right identification of customer‘s problem?
  - How does customer recognize the IT expert offers the right solution for his company?

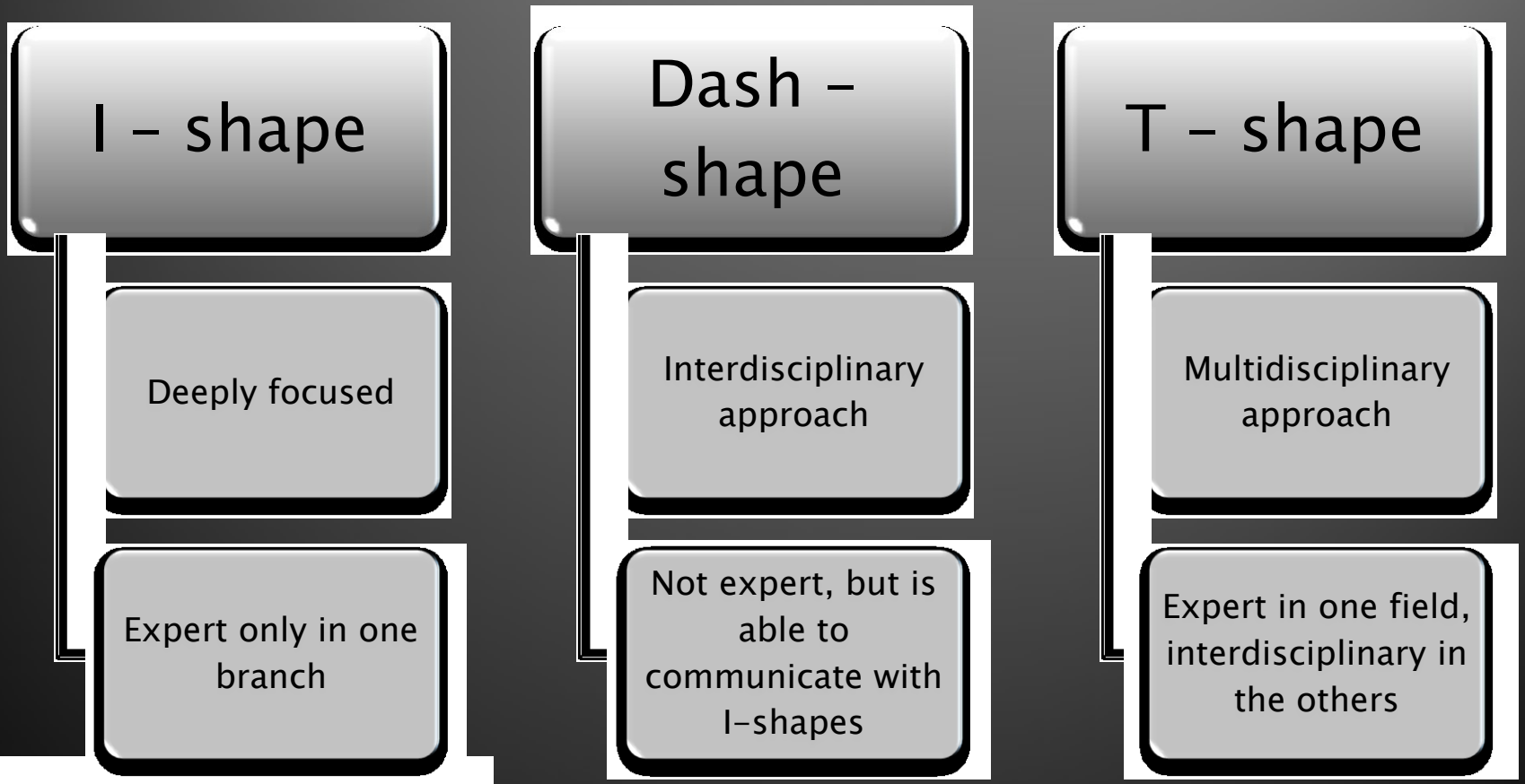
Solution of problem

- To be able to answer both questions we need:
  - IT expert that has knowledge from both sides
    - Is able to analyze problem on customer‘s side
    - He knows proper IT tools
    - Has multidisciplinary knowledge
  - IT expert is able to act on any side of the market (customer or supplier)
- This expert shoud be a Service Science educated

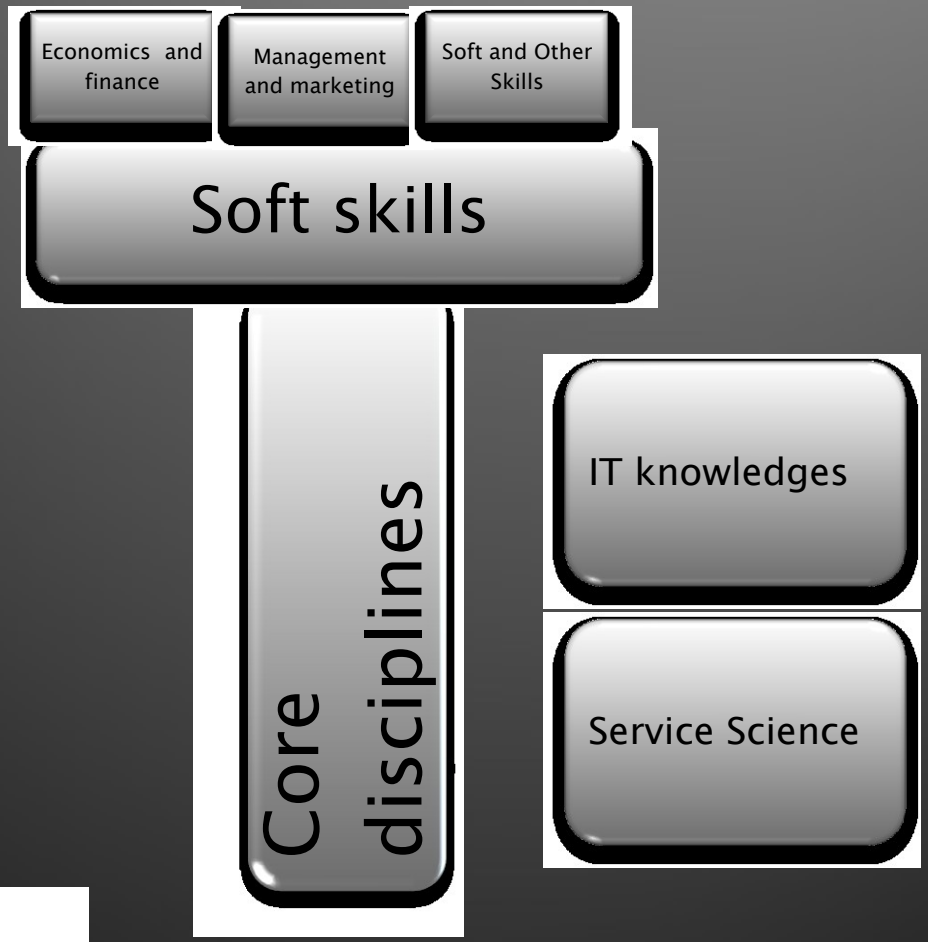
What (dam) is the Service Science?

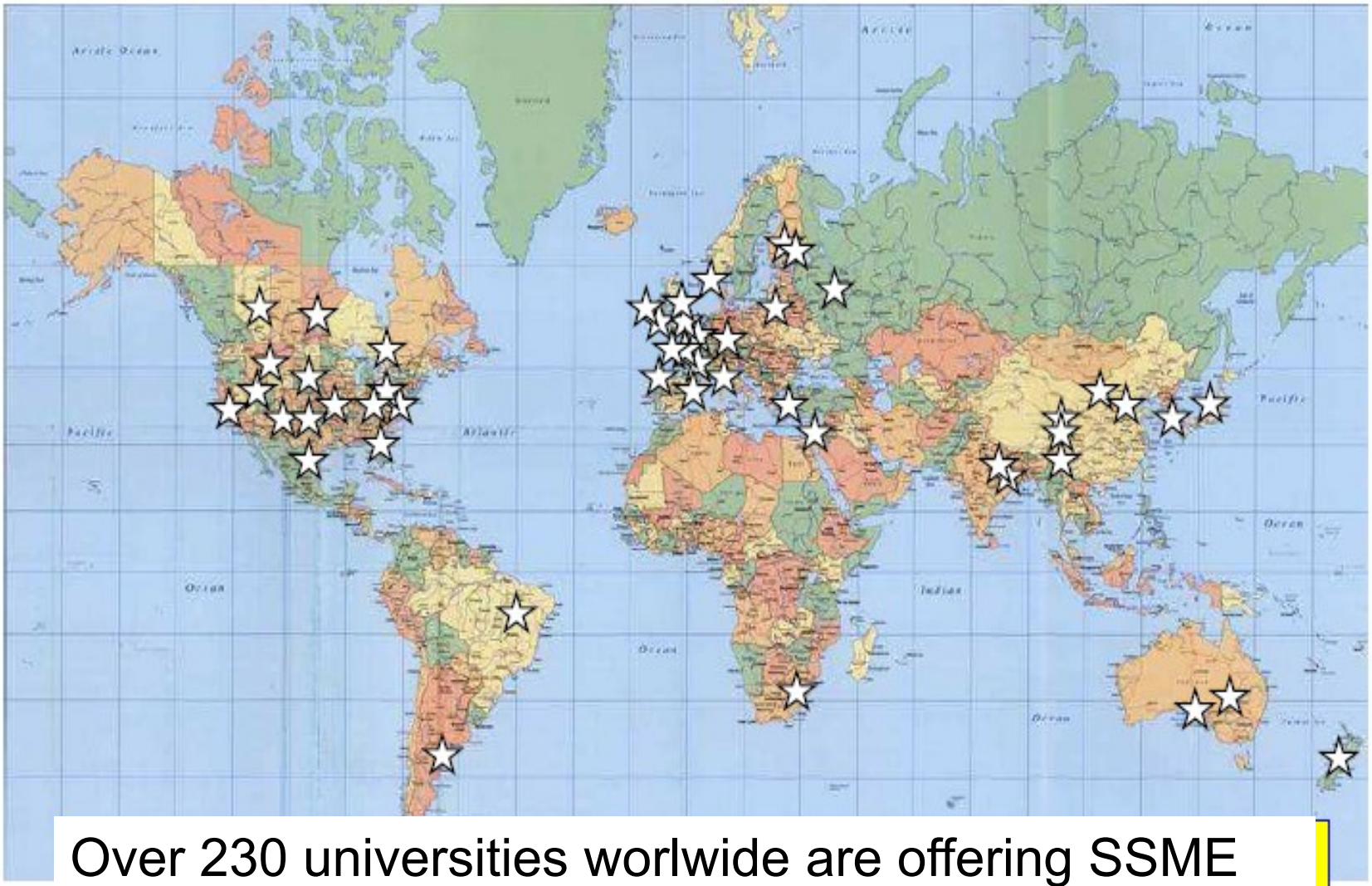
- Service Science means curricula, training, and research programs that are designed to teach individuals to apply scientific, engineering, and management disciplines that integrate elements of computer science, operation research, industrial engineering, business strategy, management sciences, and social and legal sciences, in order to encourage innovation in how organizations create value for customers and shareholders that could not be achieved through such disciplines working in isolation. (U.S. National Innovation Investment Act, 2007)

Multidisciplinarity



T – shape professionals





Over 230 universities worlwide are offering SSME curricula and courses

Samples of universities teaching SSME.

- Note – IBM doesn't prescribe what to teach but rather As the result, different universities are teaching SSME in different programs – some in Business, some in Engineering, some in IT Management.
- **US:**
  - CMU – IT Service Mgmt (School of CS)
  - U Maryland – Business Marketing and Management
  - Arizona State – Service Marketing
  - Michigan Technology University – Service Systems Engineering
  - Missouri State – ITSC
  - NCSU – MBA Concentration in Service Science
  - Rochester Institute of Technology – MS Service Mgmt
  - UC Berkeley – OR and IS
  - Stevens Institute – Masters IT
- **LA**
  - Universidad del Salvador, Argentina – Masters in Global Services
  - ITESM, Mexico – Service Management

- **EMEA:**
  - University Exceter, UK, MS Service Sci and Mgmt
  - University of Manchester, MS Service Technology & Innovation
  - Karlstads Universitet, Germany, MS CS, IT
  - Universitat Karlshrue
  - University of Porto, Portugal – Service Eng & Mgmt
  - University Trento – Organizational IS
  - Scoula Superiore Sant Anna MAINS, Italy, MS Business
  - Helsinki Polytechnic Stadia, Master in Service Management
  - Masaryk University, CZ, Brno
- **AP**
  - Tsing Hua, China
  - Peking University – School of Software and Microelectronics, Master of Software Engineering
  - Sogang Grad School of Business, Korea
  - Royal Melbourne – Masters Business
  - Singapore Management University – SSME

Academics reaction to Service Science

- Mostly taken by economics universities and faculties
  - New way of marketing
  - Easily viewed potential
  - New tool for service analysis
  - Service Science succumbed to effort to cut the relation with IT
    - Economs are concentrated to service analysis
    - IT tools are not in the center of their interest
  - Positive – developing Service Dominant Logic (Vargo + Lush, 2004, 2006)
    - The center of interest is user and his needs, not a product he is using for their satisfaction

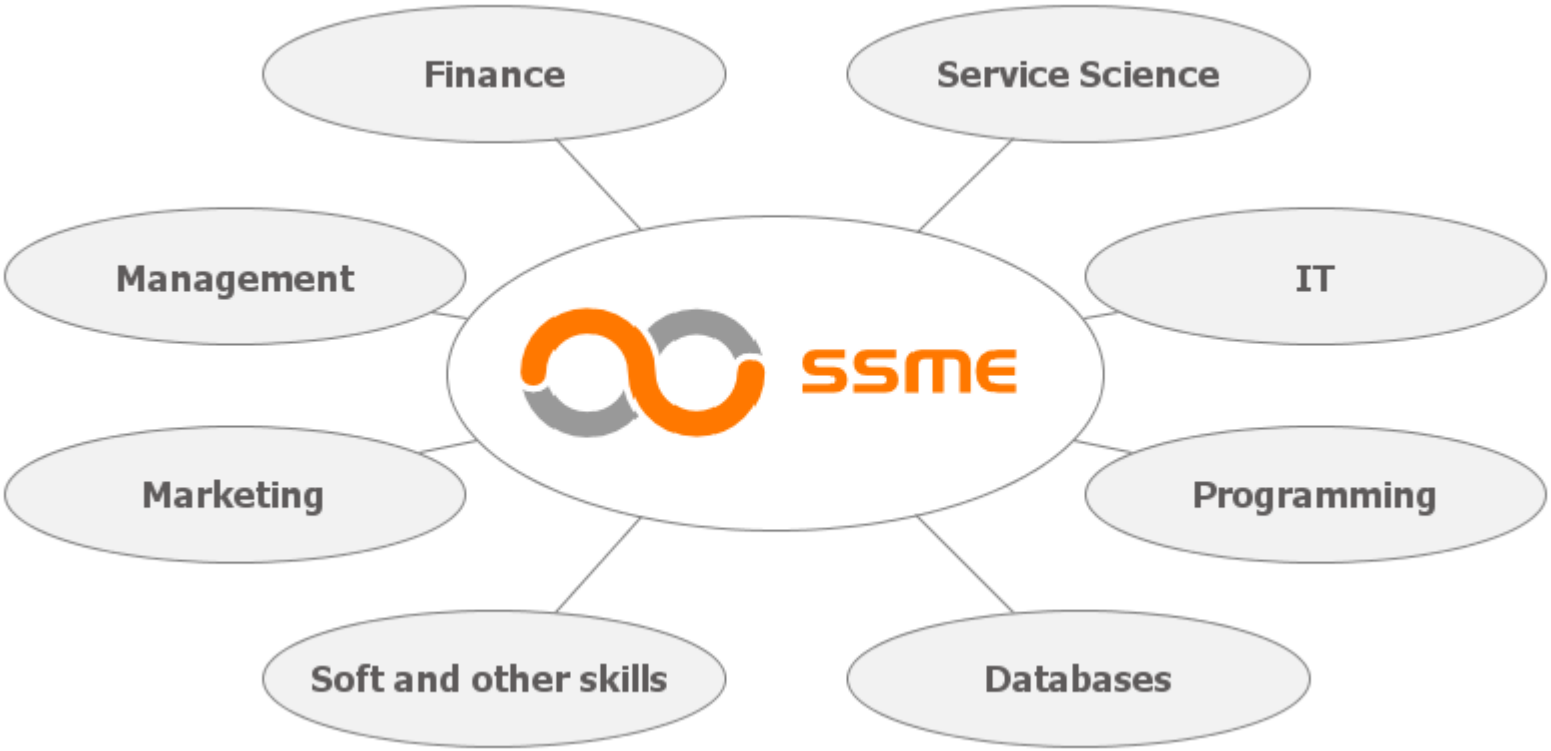
Service Science on Academics Field

- Informatics faculties
  - Different approaches
  - Mostly one lesson or course, added to existing programs
  - Only few discovered the potential and offers whole study program, designed and oriented to Service Science
- Question
  - Is Service Science more IT or more Economic, Social, Managerial ...?

Why should SeS have dominant IT?

- Unique relation between Services and IT
  - No one is able to provide knowledge and information intensive service without using IT.
- Accounting principles are the same for more than 300 years
- And marketing and management principles and approaches are changing in period of 10 – 20 years
- In opposite IT is extremely dynamic branch
  - Technology is changing all time
    - Smart phones, tablets
    - Clouds, big data, security
- Therefore providing services needs a **knowledge about the most actual IT tools, techniques and their optimal usage**
- Service Science is a great enrichment of IT and brings new challenges and perspectives to IT

Service Science, Management and Engineering master study program



T - shape

- Multidisciplinary education
- Four pillars of the branch
  - Information technologies
  - Economics and finance
  - Management and marketing
  - Soft and other skills
- The deep pillar (a leg of the T-shape) is IT
  - Databases
  - Programing
  - Security
  - Networking
  - The leg should be more dynamics than the roof

Interim project

- Why?
  - To proove the knowledge and its structure
- Unique – comparing other study programs
- Long term internship for the students – to gain real experience
- Business
  - For business partner
  - 5 months, 4 days per a week
- Research
  - For research or university partners
  - 10 months, 2.5 days per a week

Content of the course

- Goods and Service Dominant Logic
- Role of information in in GDL and SDL
- Service systems and imperfect information
- Service system
- Dual service system
- Dynamic service system
- IT in SDL
- Software as a Service
- Marketing concepts in SDL
- Service Science, Management and Engineering

Why Service Science and IT

- IT is a service
  - Outside and inside the company
- The main task of IT as a Service
  - To propose, implement and run the amount of tasks, supporting the realization goals of economics subjects
- The graduates of FI need to know more than IT
- They need to orientate in real problems

Conclusion

- Service Science is strongly related with IT
- Service Science changed the service market
- Service Science means different approach to the education
- T-shape education is necessary for the success on labor market