Summary

In this course, we teach how to define the requirements for an IT service that would best serve the needs of an organization. The course is taught using a non-conventional style in which the students learn mostly through the stress of a series of concrete experiences that mimic real-life situations.

Content

The goal of this course is closely related to IT, but a substantial part of the material is related to business, as well as to systems thinking. Even if some visual programming is taught, the course can be taken by non IT-students. The course can be especially useful for students interested in business analysis, IT consulting and in the specification part of IT development.

Detailed contents:

1) **Business Part (4 weeks):** practical experimentation and theoretical understanding of the key business processes of a manufacturing company: tendering, product development, manufacturing, quality management and accounting.

2) **Business / IT Part (7 weeks):** specification of an IT application that provides after-sales service. We do a critical analysis of BPMN. We then teach the following techniques: interviews & contextual inquiry, analysis/design of the business services and of the IT services. The specified solution is implemented in a commercial tool (Software as a Service). The underlying theory to business and IT service design is system thinking.

3) **IT Consulting and Strategy Part (3 weeks):** IT strategy and its impact on technology selection, enterprise architecture to coordinate IT technology, tender process applied to IT development. In this course, the students have to do a critical analysis of some "classics" of the IT literature.

Keywords

Tender process, quotation, purchase order, leadtime, bill of material, development process, V process, spirale process, quality system, traceability, ISO 9000, financial statements, year-end book closing, ERP, BPMN, business process reengineering, interview, contextual inquiry, business service, IT service, requirements engineering, SEAM service modeling, SEAM motivation modeling.

Interpretivism, model / reality, homeostasis, appreciative systems

Learning Outcomes

By the end of the course, the student must be able to:

- Describe business domains (sales, engineering, manufacturing, quality, accounting)
- Coordinate reply to a tender
- Design quality system based on ISO 9000
- Analyze business stakeholder perceptions and motivations
- Assess / Evaluate existing business processes
- Conduct overall business/IT alignment project
- Design specifications of business services and IT services
- Implement prototype on a SaaS

**Transversal skills**
- Continue to work through difficulties or initial failure to find optimal solutions.
- Use both general and domain specific IT resources and tools
- Write a scientific or technical report.
- Collect data.
- Make an oral presentation.
- Summarize an article or a technical report.

**Teaching methods**
Experiential learning and group work

**Resources**
Virtual desktop infrastructure (VDI)
No

**Bibliography**
ISO9001:2015
https://www.iso.org/standard/62085.html

OMG (2004), Introduction to BPMN


Regev, g. et al. (2016) What We Have Unlearned Since the Early Days of the Process Movement ?, Enterprise, Business-Process and Information Systems Modeling, 113-121
https://infoscience.epfl.ch/record/218733

http://dl.acm.org/citation.cfm?id=203365

http://dl.acm.org/citation.cfm?id=291229

Markus M.L., Keil M. (1994). If We Build It, They Will Come: Designing Information Systems that People Want to use, Sloan Management Review; Summer 1994; 35, 4; ABI/INFORM Global pg. 11

https://infoscience.epfl.ch/record/191270

Regev, G. et al.(2011) Service Systems and Value Modeling from an Appreciative System Perspective,
Exploring Services Science, 82, 146-157, 2011
https://infoscience.epfl.ch/record/163961

https://hbr.org/2003/05/it-doesnt-matter

http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=5387107

Ressources en bibliothèque

- Contextual design / Beyer