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Experiences of service science projects in research and/ or education

Learning by developing (:) service organization in a public sector

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ABSTRACT

The paper discusses a research project done during the education of bachelor's students. The case organization is changing itself into a service organization. This requires changes that somewhat challenge the "industry" traditions. The case organization consists of 7 semi-autonomic units and has over 400 employees. Based on the strategic decisions, service orientation is brought into the organization. The organization aims to strengthen its position within the value network, improve customer relationships, develop a coherent service delivery model, understand the role of the customer in service value-creation processes, and modernize the organization accordingly. This work is supported by the students. The students work in a project, which is based on a pedagogical model called Learning by Developing (LbD). The students' objective is to learn and create new knowledge with and for the case organization. This paper reveals that both students and case organization professionals learned the service science principles from each other and by developing a service organization.

Keywords: service, service-dominant logic, service development, learning by developing

1 Introduction

Service science as an academic interest has grown intensively. The discussion has arisen from service-dominant logic, to service systems, to service science, management and engineering (SSME), to include also the design aspect on SSME, i.e. SSMED, to the unified service theory (UST) building (Vargo & Lusch 2004, Vargo & Lusch 2008, Lusch, Vargo & O'Brien 2007, Spohrer & Maglio 2008, Spohrer & Kwan 2008, Sampson 2010). The discussion has also led to opening up further avenues to explore, such as service system worldview and service economy in general (Spohrer & Kwan 2008, Géczy et al 2010).

Service science is therefore taken into educational programs worldwide (Vargo and Lusch, 2008) and experiences in teaching service science mount up. Albeit the ever increasing discussion, we need more evidence, information, and experiences of service science projects **in education**. Géczy et al (2010) support this note by suggesting that educational institutes should educate new professionals with service-oriented mindsets. This paper focuses on service science learning created by a novel learning model that incorporates research, development, and education. This is in line with Ostrom et al (2010), who call for wider collaboration across diverse stakeholders and approaches that combine real-world with the theory of generating new knowledge.

This paper is derived from an ongoing project experience in creating service orientation and mindset in a case organization. The paper discusses a project related to the education of bachelor's students. Experiences of the project work, service science elements, and educational objectives are included.

The project authors report is set in a public sector organization (hereafter: case organization). The authors note that the case organization is changing itself from traditional to a service oriented organization. However, this requires changes that somewhat challenge the "industry" traditions. The case organization aims to strengthen its position within the value network, improve customer service and relationships, develop a coherent service delivery model, understand the role of the customer in service value-creation processes, and modernize the organization accordingly. These elements cover the key principles of service science. Also, it provides an excellent environment for students to analyze and evaluate the needs and challenges faced by the case organization. The purpose of the project is to support the case organization to reach the objectives and improve the current situation. The project is seen as a learning environment.

The paper provides information of a new model that can be used to improve service and service education. Laurea University of Applied Sciences (hereafter: Laurea) has developed a new operating model for higher education pedagogy (Pirinen and Rajamäki 2010). As a teaching innovation, the LbD model means development-based learning that provides a novel learning experience for the students, faculty, and other stakeholders. Furthermore, it facilitates student collaboration and project management (Vyakarnam et al. 2008) that are important skills for future careers. Our results indicate that LbD is appropriate model, because it also incorporates education, research, and theory on a set context. This paper argues that the LbD model is suitable for education of service science. The paper further argues that the participatory organization, i.e. the case organization learns the service science content as well.

However, instead of using the term 'service science project' or term 'LbD project', this paper uses simply the term **project**. Experiences of the project and its content elements will be discussed. Therefore, this paper provides insights of service science experiences in educational context. This paper continues as follows: first, we describe the theoretical framework and the recent literature. Then, the context of the project and the research methodology are introduced. Next, we discuss the preliminary results. This paper ends with the conclusions chapter, in which we provide implications to academia and industry.

2 Concise literature overview

The discussion of service-dominant logic (SDL) and service science itself has been vivid in the recent years. Similarly, educational models have been developing. In this chapter, the authors provide a concise review of

recent literature in relation to the selected service science topics and the selected pedagogical model. The authors also highlight the importance of academia-industry collaboration within the educational programs.

2.1 Service science and service-dominant logic

For decades, different aspects of service have been discussed. In marketing and management, customer focus has been researched (Zeithaml et al. 2009). In the Nordic School of Marketing the tradition of service research has been strong in the co-creation discussion (See for example Grönroos 1979, 1982, Gummesson 1995, Helkkula 2010). However, it was not until the applied researchers at IBM investigated service-dominant paradigm and service science from their point of view that brought the topic interesting for academic at large. Vargo and Lusch (2004) published the first ever article on service-dominant logic in 2004. In their introductory article to SDL, Vargo and Lusch took the marketing perspective: Marketing history recaptured and evolving further. The article provides a definition for service, discusses operand resources vs. operant resources, and also provides 6 differences between goods-dominant logic (GDL) and SDL. Continuing on building 8 foundational premises (FPs) for the emerging new SDL. Later, Vargo and Lusch (2008) explain and discuss the SDL mindset. Further, they remove overly managerial approach; provide some modifications to previous work: for example, changes in wording FPs, and pave a way to service science. Lusch, Vargo and O'Brien (2007) include in their discussion the customer expectations, 6 factors to promote participation in co-production. Further, their research embraces the employees changing role and provides managerial implications.

Theoretical development requires critical argumentation to evolve. Recently, Grönroos (2011) discussed critically on the value co-creation in service logic and foreground the interaction concept to the theoretical focus. Based on the previous discussion, the SDL perspective includes the three primary notions: co-creation of value, relationships, and service provisioning. The modern thinking behind services dominant logic of economic exchanges is that service is value co-creation: provider can and customer needs to interact to 'co-produce' value. The discussion of the fundamentals of service-dominant logic, service marketing and management, service design and related practicalities (for example Grönroos 2003, Lusch et al 2006, Maglio and Spohrer 2008, Payne et al 2008, Hyötyläinen and Nuutinen 2010, Maglio et al 2010, Miettinen and Koivisto 2009) clearly illustrate the widespread interest: The interest in service science principles. Even a quest for a common theory has arisen. Sampson (2010) discusses of the Unified Service Theory (UST), which is build on various approaches on service related paradigms. He suggests the UST as a useful paradigm because it (1) provides a reasonable scope, (2) justifies disparate service business under a unified science, and (3) it may integrate and connect wide variety of disciplines that contribute to service science.

There also has been interest in analyzing the service science research areas (Chesbrough & Spohrer 2006, Ostrom et al 2010) in attempt of increasing insights, identify priorities for research, and integrating disciplines into and building of academic field of service science. This shows that the service science and the service orientation have established their presence in center of the academic discussion.

Spohrer and Kwan (2008) note that despite the ever increasing interest in service science and the dominance of service jobs, few students graduate with any formal understanding of service systems and underlying value propositions or governance mechanism. Macaulay et al (2010) identified preliminary classification of skill profiles: specialist, generalist, T-shaped, π -shaped and wedgies. Accordingly, each of these skill profiles require combinations of generic and specialist skills, managerial and entrepreneurial skills, ICT technology skills and other than ICT technical but professional skills. As a conclusion of this discussion, we conclude that "Service science is an interdisciplinary effort to understand how service systems interact and co-create value" (Vargo et al 2010). How this is embedded in education is discussed next.

2.2 The collaboration with industry and academia with a project model LbD

Industry and academia are typically seen as two different worlds However, collaborative and appreciative relationships between these worlds exist (see the following figure). This is due to the exchange of human, intellectual, and social capital among other things. There always has been different rationale for the collaboration. From the corporate point of view, this includes access to new information (models, theories,

know-how), expertise (researchers, students, faculty) or competence development opportunities. From the academia point of view, this includes access to world-life situations (context, data), research opportunities and cooperation, and partnerships (programs, consultancy).

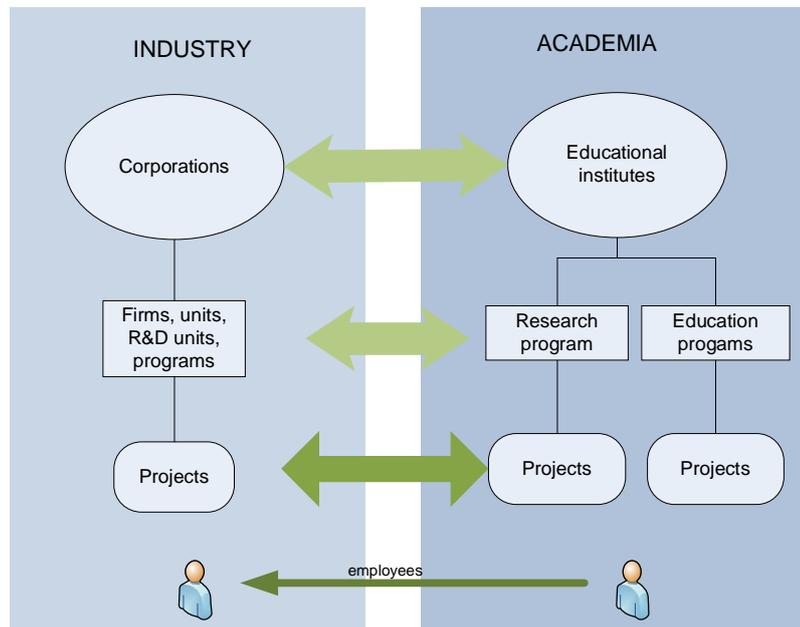


Figure 1. Collaboration between industry and academia

Figure 1 depicts the customary levels of industry and academia collaboration. Although, the approaches of open innovation (Chesbrough 2003) and other novel ways of working has increased the collaborative efforts and closing the gap between these two worlds, the financial instruments, legal aspects (ownerships, IPRs), differing interests or administrative efforts somewhat can hinder the progress.

At the level of bachelor's degree, the collaboration with working-life is mandatory for the learning perspective. According to the Bologna process, bachelor's level of education in Europe takes place in two educational institutes: universities and universities of applied sciences (UAS). The role of UAS is to bridge scientific and vocational a dichotomy, i.e. between the academic world and the industrial world (see Finlex 2011). This paper focuses on the universities of applied sciences. The role of UAS is defined in the Polytechnics Act 351/2003 (Finlex 2011) and states that they are closely linked to the world of work, the research focuses on developing workplace competences, and the nature of research-based knowledge is pragmatic. At Laurea, this is done by developing and applying the LbD model during the past decade.

The LbD model requires students to undertake projects rooted in the world of work aiming to produce new practices or solutions. The project aims to produce new practices to the work environment. The progress of the project requires collaboration between teachers, students and workplace experts (Vyakarnam et al. 2008, Vyakarnam & Illes, 2009). This means also that the LbD model is **a new way of collaborating academia and industry**. Learning takes place on individual and community level. Authenticity, partnerships, experiences, creativity, and research are the key characteristics of the model. During the projects, the students learn to apply theoretical learning into practice.

The LbD model has been introduced to a wider audience in over 100 publications (see Kallioinen 2008, Piirainen 2008, Vyakarnam et al 2008, Laurea 2010c, Laurea 2011) and presentations including the international LbD conferences held at Laurea in 2008, 2009, and 2010. Furthermore, an external evaluation of the LbD -model was carried out in 2007-2008 (Vyakarnam et al. 2008). It compared the LbD model with other project and problem based learning models. This evaluation defined LbD as a hybrid learning model. The evaluation shows that the LbD model is useful because it is 1) value driven, 2) provides a holistic view of students 3) encourages action i.e. development, 4) enables investigative and social skills to be developed,

and 5) provides an early and valuable experience of a real work-life situation. The development of LbD model is continued in an international collaboration with other higher education institutes.

Macaulay et al (2010) point out that each educational construct deliver differing levels of awareness, knowledge, understanding, practical project work, experimental learning, workplace practice and research. The LbD as a model supports this. The LbD model combines two traditions of the higher education pedagogies learning and developing. According to the Laurea (2007, 2010), the LbD model provides higher impact in individual learning and concentration of know-how. A recent follow- up report (Vyakarnam & Illes 2009) noted that the shift in LbD: less talk about the pedagogy and more about action with particular emphasis on research and development. Therefore, this pedagogical/ development/ research model is particularly suitable for students at universities of applied sciences. It is also suitable for dissemination the service science principles within the higher education institute and their partners.

3 The context of the experiences

This paper focuses on service science learning created in a project that incorporates research, development, and education. Therefore, there are also three different groups of stakeholders: students, faculty, and case organization staff. The students undertake projects that are rooted in the world of work; here the case organization provides the context.

The project facilitates the collaboration between the industry and academia. The figure 2 shows the overview of the project. The project as a learning environment is a real development project. Typically, the starting point is the needs, challenges or problems identified in a firm. A firm, community or institute approaches Laurea faculty with a challenge. A teacher makes the decision to include project into his/ her study module. The teacher is also responsible in defining the project content with the case organization to fit the learning objectives of the module. The teacher plans the schedule with the case organization, and the overall study module schedule. The teacher is also responsible of acting as a coordinator with the students and the case organization staff. The students should be motivated to participate the project. The teaching faculty is responsible of the results of the development work for the case organization.

The LbD model is an overarching method that can be useful in combining knowledge from various disciplines. This chapter continues as follows: first, Laurea is introduced. The case organization introduction follows. Then, the focus is on the project brief. Lastly, the project overview is provided.

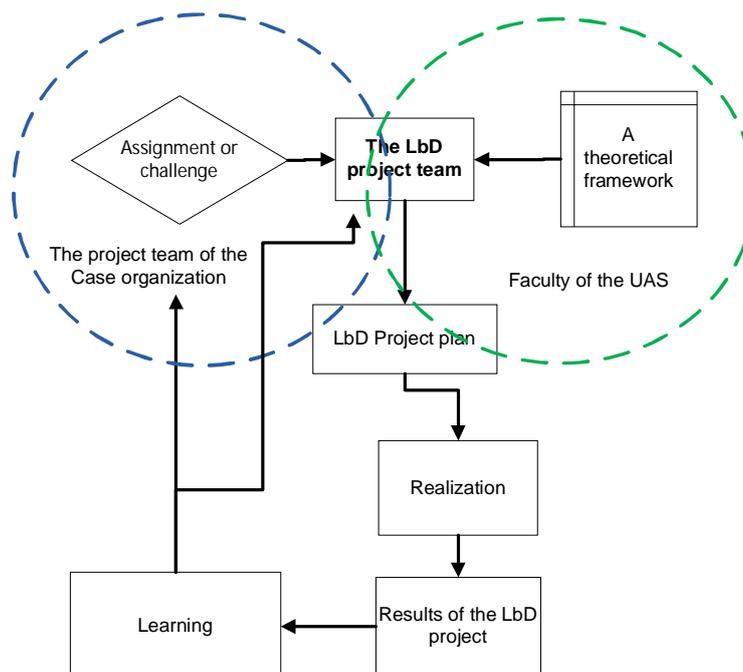


Figure 2. Overview of the project

3.1 Description of Laurea

Laurea is part of the Finnish higher education system. It operates in the Greater Helsinki Metropolitan area in Finland. The following Laurea introduction is based on Laurea's internal information, strategy documentation (Laurea 2007, 2009, 2010a, 2010b) and information available on Laurea web pages: www.laurea.fi. Laurea has ca. 8000 students and 550 faculty and staff members. The focus area is service business. Service business is understood in a larger context and it is not industry dependent. Laurea specializes in service innovations.. Furthermore, Laurea's profile includes:

- Service innovations and value networks
- Internationally acknowledged and productive research, development and innovation activity
- LbD as an operating pedagogical model that promotes the development of working life by integrating learning and R&D

Laurea is also the most awarded university in Finland (www.laurea.fi). The Finnish Higher Education Evaluation Council (FINHEEC) has nominated the following awards to Laurea: Centre of Excellence in Education for the years 2005 and 2006 (Salminen & Kajaste 2005) and Centre for Excellence in Regional Development for 2003, 2006-2007 (Käyhkö et al 2006), Centre of Excellence in Education for the years 2005 and 2006 (Saarela et al 2009), Centre for Excellence 2008–2009: Security management (Auvinen et al 2010), and Centre of Excellence for student-centred R&D integrated into learning for 2010-2012 (Auvinen et al 2010). Furthermore, Laurea passed the mandatory FINHEEC of the quality assurance system audit 2010. The strategic choice of focusing on the service business education and research is visible in everyday life. This paper reports experiences from a project that was carried out during the education of bachelor's students at Laurea.

3.2 Description of the case organization

The working life challenge was identified by the case organization. The case organization can be described as an organization working in a public sector. The case organization is a city-based and located in Metropolitan of Helsinki. There are several similar organizations around. Majority of the income is received from the Finnish government, while the case organization provides tasks and duties defined in the law on the half of the government. The case organization has also the taxation rights, which provide a part of the income. However, the process area under development is funded by the government. Regardless of the public sector status and the governmental money supply, the profitability of the case organization calls for attention. The case organization estimates that in future, the money supply will be more limited and the current way of working is not possible. Reforms need to be made in order to become more financially oriented and profitable organization.

The case organization consists of seven (7) semi-autonomic units and has over 400 employees. Each unit is geographically bound. Each unit is lead by a person with own staff and relative monetary independence. Although the units are consolidated into a group company, relatively much freedom is given to units. Therefore, the management style can be described as decentralized. Some control and coordination mechanisms exist, and the separate units also borrow human resources and building spaces to each other.

The case organization established an internal project team that focuses on this development area. The project team is divided into **steering group** and **larger project group**. The steering group is the operational working group consisting of the case organization (group) CEO and representatives of three units. The teacher was also invited into the steering group as an external expertise. The steering group started in January 2011 and has planned a meeting once a month until June. The larger project team consists of employees from affected departments and units (ca. 40). The role of the larger project team is to first provide the insight information of the current state, what are the challenges and problems noted, and where effort should be driven. Much of the information is verbal and there is serious lack of process descriptions. Therefore, the first task of the project is to form an overview of the current situation. Moreover, a large number of key employees are soon reaching the age of retirement. The professional expertise and knowledge need to be collected. The larger project team gathers 3 times during the spring with specific focus: 1) kick off and background information

collection, 2) discussion of the current state and various solutions, and 3) own new model selected from various scenarios provided by the student teams.

There was a liaison person between the project teams (Laurea) and the case organization. The liaison person visited three times at Laurea providing background materials and other information to the project teams. She also discussed and provided answers to specific questions during her visits. Other times, she provided information via email/ phone to the teams either directly or via the teacher.

The development focus is on one central customer service process of the case organization. The process operations are divided into the central unit and sub-units depending on the customer. The process and the work tasks are traditionally organized with traditional approach. Old habits have been taken slowly into use the past 30 years. The operations are partly legally guided. Although an individual person is the focus of the process in question, customer centricity in processes is limited only to the personal interaction.

The operational environment is changing and will affect the case organization: competition is increasing with new competitors and networks. There are new service providers that are competing with the case organization's operations. There is an internal need to clarify the work tasks, processes, and organizational roles. The processes need to become more customer-centric and based on customer needs. Service in various units, work tasks in various situations, structural changes such as ICT needs to be developed to support each other. All service provided by the case organization need to run more smoothly from the point of view of the case organization, customers and other stakeholders in the network. The case organization conducted a survey in their units in autumn 2010. This provided preliminary information. The work schedule was from January 2011 and the results should be discussed in May 2011. Based on the findings the case organization will continue with the change and implementation planning. Execution of the implementation plans would start in later in 2011.

3.3 The study module and project overview

The student group is **3rd year** Bachelor of Business Administration (BBA) **students** from the degree program of business management. The project was linked to the study module 00513 Customer relationships in networks, which is a voluntary course. It provides 10 credit points. The running time of the study module is a semester ie.17 weeks. The module consists of weekly lectures, independent work, project work, and written examination of the course book. The course's **main learning goals** are to highlight the service science approach: The students learn to 1) estimate the importance of customers for the firm. 2) Create current state analysis as a basis for customer study. 3) Develop customer groups and actions based on them. 4) Manage customer information as a tool for beneficiary to the business. And 5) develop customer centric management systems. The formative assessment is divided into written exam, 40%, and the project work, 60%, of the grade.

25 students out of 34 participated the project: 5 men and 20 women. The rest of the students executed another project assignments. The students first self-organized themselves into 5 projects teams. Each team had 4-6 members. Each project team selected themselves a focus area into which it focuses during the project. The focuses areas were: 1) profitability and financial aspects, 2) service leaflet update, 3) network and interfaces, 4) ICT and its usability, 5) customer service process. Each project team carried out first the current state analysis of the case organization before focusing on the specific challenge. The challenges noted in prevailing practices are solved in the project. The project work results in a final report and its oral presentation. The final report includes current state analysis, challenge identification and proposed solutions.

The table 1 illustrates shortly the tasks for the project teams, i.e. students, case organization tasks, and the faculty.

Month	Student tasks	Case organization tasks	Faculty's tasks	Information created
January	Divide into project teams and select focus area, participate lectures, learn service science and case organization	Development project kick off, plan content and schedule, provide information to the LbD project – written and oral (visit)	Create the project, plan content and schedule, participate project meetings, lecturing	Drafts: current state analysis, process description, current blueprint model of the service.
February	Participate lectures, create current state analysis, challenge analysis	Provide information to the project teams – written and oral (visit)	Lecturing, guidance for the project work, participate project meetings (consult)	Report with the current state analysis process description, current blueprint model of the service
March	Lectures, exam, and modify the current state analysis, start focus area work	Larger project meeting, provide information for the project teams, plan survey & interviews	Lecturing, guidance for the project work, follow-up the progress, participate project meetings (consult)	Modified CSAs, improved process descriptions and improved blueprint models
April	Focus are work, various scenarios, Surveys and interviews carried out	Participate interviews, and surveys, provide information	Ensure the research methods use, follow-up progress, guidance	Focus are descriptions with blueprint/ process descriptions, survey / interview results reported
May	Presentation of the final report consisting of current state analysis and scenarios for implementation	Larger project team meeting, selection of the new model, plan implementation	Fine tune project presentations; synthesis, consultancy, grading the course.	A new service system model for the focus areas with 1-3 scenarios

Table 1 Timeline based introduction of tasks and information created

4 Preliminary experiences from the service science project

This chapter provides preliminary experiences of the project. They can be evaluated only partly at the time of the paper submission. The final feedback of the study module is collected after it is finished, i.e. end of May. The final experiences from the case company employees can also be collected in May. Therefore, the paper presents only preliminary results.

4.1 Research methods applied

The paper has taken a qualitative research approach. Due to the complex nature of the LbD model, the research focuses on two stakeholder groups: students and case organization employees. The observer is the teacher. The empirical data from the students includes project, learning, and service science feedback. The researchers have used observation as the primary research method.

The observations

The qualitative data was collected through observation of the students in classrooms, through counseling, and through informal discussions with the students. Project management guidance was given as teacher response, either in plenary sessions, lectures, or during the counseling of each team. The researcher participated the steering team meetings and larger project team meetings. Observations were made also during the information discussions. The applied research methods support active participation and observations. Information acquired through participation and observations has been used throughout the research process.

Secondary sources of information

Secondary sources are useful for their historical value, for evaluating primary data, for establishing chain of events, and for establishing comparisons. Internal secondary data included the case organization internal documentation and materials. Other secondary sources included presentations, process descriptions, plans and schedules produced during the projects. This material is by nature both formal and informal, including personal notes and comments. Secondary sources of information included also informal discussions with students and case organization employees. Internet information was made available and interview opportunities were also provided for the students.

To analyze and evaluate the LbD fit with the challenge and the experiences of the project, a short survey was carried out. The survey is considered as a secondary source of information and would be cross-verified based on the observation. To collect data an electronic survey instrument, e.g. a questionnaire, was created. The data collected with the survey was used to evaluate the experiences based on the the model. The survey link was distributed by email to the participants of this project.

The survey instrument consisted of 4 sections. The first section included 4 question about the realization of the project. The second section included 6 questions around the characteristics of the LbD model. The third section had 10 questions about the service science contents. The last section was 6 open end questions and feedback. The survey instrument included a total of 26 questions, of which 25 were mandatory and 1 non-mandatory. Two types of questions were presented: Likert scale (19) and open-end format (6) . The 5-point Likert scales were mainly used to capture the perceptions of the respondents. Technically, the questionnaire was distributed electronically via Intranet. In order to influence positively the response rate, an invitation to participate the survey was sent to all student participants. The respondent filled in the survey on the Intranet and the researcher received automatically the results into a separate database. Then the data were transferred to Excel format for further analysis. The responses were anonymous. The study assumes that learning takes place also after the project. The results provided in this paper are preliminary, while the project is ongoing until May 2011.

4.2 Research results

The present study aims to understand what kind of experiences various stakeholders had during the service science project. This research argued that the LbD model is suitable for education of service science principles in an UAS context. The paper further argued that the participatory organization, i.e. the case organization also learns the service science principles. The empirical evidence was collected in different methods including discussions, documentation, observation, and the survey instrument. This paper provides new information on the service science project experiences of research and education due to the pedagogical model of LbD. Both elements research and education are heavily incorporated in the model. Service science provided the content for the project. Experiences of the project work, service science elements and educational objectives are thus included.

The observation of the student teams revealed that while the LbD should have been familiar with the students, some of them lacked the understanding of the model. Most of the students treated the project work as typical team work. Therefore, they did not participate the lectures. Their motivation was low. They hardly participated the plenary sessions or other opportunities to discuss with the case organization. Those students who participated the weekly lectures, utilized the discussion opportunities, and counseling sessions understood that their own assumptions towards to work were changing. Active students provided questions and ideas during the lectures. They also posed questions to case organization liaison person. Based on the observation of the students, the work load of other courses and part-time jobs hindered the full commitment to the project.

The observation with the case company revealed more positive results. There was a significant change in understanding the role of customers, the centrality of the customers, and the need for change. The larger project meetings were very hands on. Several different service design methods were used in meetings. During the project meetings, small teamwork task were done. This allowed employees to discuss the matters

with each other. The opportunity to share own experiences first had an important meaning to the employees. The teacher gave short lectures and synthesis of the student work, which provided a wider knowledge sharing opportunities. A generally open minded group attitude was observed and the understanding for the changes was high. The active role of employees as an information provider was noted. The motivation grew stronger and change resistance reduced over time.

The observation of the steering team resulted in growing interest in making the processes and related systems more customer-centric. There was a clear change in the steering team to work together towards the common goal. Relatively quickly the steering team started to discuss on the various scenarios and their implications. The common 'mind set' was visible and division of work was reached quickly. The consultative role of the teacher helped the steering team as well as the larger project team to focus on matters of importance. The presence of the outsider helped the employees first to reveal all their experiences and then build on common understanding of the future.

The survey response rate was relatively low: out of 25 students only 11 provided this voluntary information; this gives the response rate of 44%. The student responses towards to whole course; lectures, guidance, project work and exam shows that even though the students were less satisfied with the course content in general (average 2.8), they believe that they can utilize the learning well (average 3.6). The assessment of the LbD model revealed that students were generally satisfied with the LbD model characteristics. However, the students responded content questions with very positive attitude. The students admitted that they were only somewhat innovative (average 3.6) in their own work. They understood well why the processes need to be develop customer-oriented (average 4.6). Furthermore, the high understanding the role of networks (average 4.36), customer importance (4.36), and customer centricity (4,27) was clear. It was interesting to note that the student respondents did not think that the case organization would get much of the new information based on this project. Whereas the case organization members felt that they have received a lot of new information. Co-creation and collaboration within the teams and with the case organization was seen positive.

The experiences included the strong perceived feeling of authenticity. The working life challenge was a typical development challenge many of the firms face today when changing from the traditional the product or production oriented firm into service-oriented firm. Many of the students got stuck with the nature of the business of the case organization. Therefore, the typicality of the challenge was not so clear to them. The research orientation divided students: some students considered the project to be just a desk top study. The others sought actively new information widely. The study reveals that both students and case organization professionals learn from each other and by developing a service organization.

The study suggests that LbD supports the education of service science principles. It demonstrated the students in practical way, how a traditionally led organization can be transformed into a service-oriented organization. It demonstrates how the service-driven logic needs to be implemented in the organization to create a new mindset. After this, the development with various service design and other methods can be implemented. It also educated the case organization. During the information sessions with students, teacher, and project members of the organization, knowledge was shared and new learning took place. New service design methods were introduced.

5 Conclusions and discussion

This paper is based on a practical development of a working life challenge and the observation of the project work that has been carried out at Laurea UAS and the case organization. It elaborates the experiences of the LbD. What were the experiences of the different stakeholders and what learning took place during the project.

Based on the strategic decisions, service orientation was built in the case organization. The organization aims to strengthen its position within the value network, improve customer relationships, develop a coherent service delivery model, understand the role of the customer in service value-creation processes, and modernize the organization accordingly. The students work in a pedagogical model called Learning by

Developing in order to create new knowledge and solution suggestions to the case organization. The study reveals that both students and case organization professionals learned from each other and by developing a service organization. The study revealed that the collaboration took place with the students, teaching staff, and the case organization.

This paper extends and supports the theoretical discussion on service research. Both of the parties e.g. students and employees learn new skills and new information. The student learning and experiences were more limited with the time and motivation they gave for the project. However, the employee motivation was strong due to the knowledge sharing.

The case introduced in this paper provided new experiences of service science project execution in education. The formal educational part consisted of written examination of a service science book and the project. The literature was also lectured during the period. The students were also required to read themselves. The service science research took place in teams. The team work motivation varied between the students. Generally, the more motivated the students were to participate the course, the better feedback and results they got. There was a strong division of the motivation between the students. Therefore, the LbD model needs to be emphasized. The case organization, however, benefitted the most from the project. They were clearly eager and motivated to learn new mindset. The customer centricity and value co-creation perspectives of the organization were very limited before the project. The project provided the case organization an objective background to work together with the UAS and also better within the divided case organization. In summary, the service science project experience was positive in all parties.

5.1 Implications of the research

This paper also described how research and development is applied in education of service. The research makes several contributions: The research extends the service-dominant logic application in a unique setting in a organization in a public sector. Furthermore, it extends the LbD model use into service science projects. The research contributes to understand the change and the challenges in developing a service system. This paper provides a case of creating service orientation and mindset in an organization. Measured with the LbD characteristics 1) Authenticity was supported with the working-life challenge and modeling of the case organization. 2) Experiential nature was supported with try and error process. 3) Research orientation was supported with current state analysis work and background information research. 4) Creativity was supported especially with the use of service design methods. 5) Partnership was supported with continuous interaction with the case organization. Furthermore, individual learning and community learning took place during the team work and working with the case organization.

The project provided unique information for the case organization to consider and use in their decision making. For managers, this research provided new information on service research, discussion opportunities, analysis, and development approach for a service system. The project work resulted in value network mapping, service processes blueprints, customer interfaces, and customer perspective. The results show that a collaborative project can educate more service-oriented mindset for all stakeholders. This can encourage firm to participate more on student projects.

The value of this paper is three-fold: Firstly, the value for the case organization/industry: Development of the service-dominant logic mindset and culture, and development of the service system, and service processes. The research shows a possibility to involve both students and firms in service development. Secondly, the value for academic discussion: application of academic service propositions into a real-life situation. Thirdly, the value for the education: The students learn to develop service value and principles that can be applied across the business. They have practiced several sets of skills required in their future professions in practice with a real- case. They have seen in action, the impacts of their suggestions. They have learned to understand that the development context is larger than the organization itself. They learned and understood the meaning of the service system.

5.2 Concluding remarks

The students learned by developing service orientation with the case organization in a public sector. The case organization employees learned by participating the project. And from each other. For the students, the teaching of service science without a real-life example is challenging. With the actual challenges to be solved, the students learn the theoretical concepts and what they mean in practice. The case organization employees receive new information and knowledge. The information format and content may be easier to be accepted when coming from the UAS project.

From the teacher's perspective, the service science project provides lot of opportunities to motivate students to learn and demonstrate basic research skills. While the service science is a huge area, it is beneficiary to limit the focus of the project. The experiences of the project and its contents were discussed. Therefore, this paper provided insights of service science experiences in an educational context. This paper has therefore provided evidence, information, and experiences of service science projects in education. Therefore, the claim of learning by developing the service organization in a public sector is supported.

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