FERRUZCA (Marco), TOSSAVAINEN (Päivi J.), KAARTTI (Virpi), « Former les générations futures d'innovateurs de services. Enseignements finlandais », *European Review of Service Economics and Management Revue européenne d'économie et management des services*, n° 2, 2016 – 2, p. 93-113

DOI : 10.15122/isbn.978-2-406-06930-0.p.0093

Ferruzca (Marco), Tossavainen (Päivi J.), Kaartti (Virpi), « Former les générations futures d'innovateurs de services. Enseignements finlandais »

Résumé – Cet article s'intéresse au rôle des institutions d'enseignement supérieur dans l'éducation de la future génération d'innovateurs de service et leur contribution à la croissance des services. Il rend compte de l'état actuel de la formation à l'innovation de services. Il explore ensuite un programme d'enseignement en innovation de services en Finlande, qui fournit des idées pour améliorer l'éducation à l'innovation de service. L'article conclut que des transformations éducatives sont nécessaires.

Mots-clés – Enseignement supérieur, innovation de service, éducation, compétences, cas

Ferruzca (Marco), Tossavainen (Päivi J.), Kaartti (Virpi), « Educating the future generations of service innovators. Insights from Finland »

Abstract – The paper highlights the role of Higher Educations Institutions in educating the future generation of service innovators and their contribution to the service industry growth. First, the current status of service innovation education is discussed. Second, explored is a service innovation programme in Finland. The case provides insights and suggestions to improve service innovation education. The study concludes that educational transformations are required.

Keywords – Higher education, service innovation, education, competences, case

EDUCATING THE FUTURE GENERATIONS OF SERVICE INNOVATORS

Insights from Finland

Marco Ferruzca[1],
Universidad Autónoma
Metropolitana & Laurea
University of Applied Sciences

Päivi J. Tossavainen[2]
& Virpi Kaartti[3]
Laurea University
of Applied Sciences

INTRODUCTION

Service innovation is related to the change of business thinking from industrial logic to service logic. While the majority of the business organisations still apply the mainstream business thinking of the industrial logic, many new firms and industries (besides the traditional service sector) have chosen the service logic as the guiding business logic. This changeover requires new skills and competences within firms. According to Agarwal et al. (2015) more research on the competences

1 Universidad Autónoma Metropolitana, Mexico & Laurea UAS, Vanha maantie 9, 02650 Espoo, Finland. +358 40 3214879, mvfn@correo.azc.uam.mx

2 Laurea University of Applied Sciences, Ratatie 22, 01350 Vantaa, Finland. +358 40 7080537; paivi.tossavainen@laurea.fi

3 Laurea University of Applied Sciences, Vanha maantie 9, 02650 Espoo, Finland. +358 50 5023664; Virpi.kaartti@laurea.fi

needed to foster successful service innovation is required. Moreover, the innovation-employment relationship suggests that high-skilled jobs replace blue-collar employment (Evangelista and Savona, 2010). Service economy is also seen as the main source of opportunities for high-level managers and professionals, not just mediocre "servants" as traditionally understood (Gallouj and Djellal, 2010). This paper argues that instead of a short term solution, in which one can provide a toolset for people to apply it for service innovation, a more permanent change requires larger scale education transformation. There seems to be a number of separate courses available which resembles the toolset approach. Yet, this does not bring the holistic view on subject. This understanding needs to be embedded in various degree programmes to support the ongoing business transformation in societies. We envision more service innovation driven education programmes in future.

Higher education institutions (HEIs) need actively react on this education challenge and go beyond the toolset approach. If education transformation is not achieved, other actors like consultancy firms will move in full speed into this sector. However, for practise-based consultancy companies this can be seen as a business opportunity rather than a transformation of the society. Thus, their work often lacks the pedagogical approach or is not necessarily based on academic research with theoretical and practical contributions.

To work in service innovation requires new holistic mindset. Required multidisciplinary approach comprises all appropriate disciplines and functions (Spohrer et al., 2010). Schilling (2011) has identified the service innovation competences. These are: dynamic and informed decision-making, inter-disciplinary collaboration, boundary spanning, managing tacit knowledge, and constant communication and conceptualization. This demonstrates the challenges in HEIs, in which, the education programmes are typically one-discipline-based.

In future, the collaboration of customers and other stakeholders in order to develop and innovate service is expected (Frow and Payne, 2011; Segelström, 2013; Tossavainen, 2013). In order to achieve service innovation, multiple stakeholders work collaboratively and co-create together the innovative service that fits the needs of both: the customers and the business criteria of the service providers. Innovating service with various stakeholder groups such as customers, users, suppliers, subcontractors,

state or municipal officials, authorities, other professional groups, and the firm's own employees from various expertise areas can be learned (Tossavainen, 2016).

The holistic approach considers, in an integrated way, strategic, system, process and touchpoint design decisions that require interdisciplinary approaches and methods in ever-learning cycles (Tossavainen and Kaartti, 2015). Therefore, in service innovation, the different theoretical logics and constructions alongside the practical methods, tools and techniques, the act of balancing theory and practice need to remain within the professional educators.

The role of HEIs is pivotal, because they have always been an important part in transforming the society. HEIs educate the future generations of professionals. They often develop the pedagogical approaches and aim to include the latest findings revealed through the execution of research. Further, HEIs apply research findings into practice in both working life and in their education programmes. Recently, the role of HEIs was specified also to enable graduates from various disciplines to become T-shaped professionals or adaptive innovators (Bishop et al., 2008; IfM and IBM, 2008; Spohrer et al., 2010). Similarly, the teachers need to continuously learn themselves new skills, use new skills, and teach them to students. This is because the new capabilities related to service innovation are not necessarily evolved within firms and the lack of needed know-how reduces service research impacts in society (Tossavainen, 2012b).

Service innovation is an evolving discipline. Innovation capability, development skills, and productivity knowledge have become a global challenge. Furthermore, service innovation, service development and service design have been identified as interrelated concepts. To simplify the conceptual variation, we use the term service innovation throughout this paper. It entails the service innovation, service development and service design approaches. We argue that incorporating service design approach into service development will enable service innovation.

The purpose of this paper is to highlight opportunities the HEIs have in shaping their education programmes and curriculum. Thus, HEIs need to be able to educate future professionals, i.e. service innovators, whose competences fit better in the changing economy and contribute the economic growth.

The paper continues with the following: first, a view of TOP 50 universities and their offering of service innovation programmes. The lack of holistic multidisciplinary service innovation programmes evoked us to study educational information elsewhere. The exemplary of the service syllabi shows the strong marketing orientation. The service design map shows the design orientation. Second, a single case of the pioneering Master's degree programme in service innovation is presented. Finland has a good international reputation in education in general and especially in the service domain. The case includes the experiences from Laurea University of Applied Sciences. Third, we analyse the findings and suggest considerations for HEIs to develop their curriculum. Finally, conclusions are drawn and future research directions are offered.

I. THE GLOBAL VIEW ON SERVICE RELATED PROGRAMMES

Service innovation has grown considerably as an economic activity. Service innovation is considered to create jobs and employment, to be a main source of company start-ups, to renew industries and clusters, and tackle the societal challenges such social entrepreneurship and new forms of care (Gallouj and Djellal, 2010; Schilling, 2011). This development is the background explaining why, a variety of service topic induced programmes have emerged into higher education to prepare future professionals with new competences. HEIs reach out the society around them; whether it is business organisations, public sector or non-profit organisations. A rich research tradition of university–industry relationships testifies this. For example, the interaction with working life; the activities, the benefits and the barriers of this interaction (Deschamps et al., 2013; Harryson et al., 2007; Jongbloed et al., 2008; Walsh et al., 1997). Moreover, many scholars (Britto et al., 2013; Deschamps et al., 2013) affirm that the initiatives for collaboration exist around the world. Yet, scarce are investigations how these relationships influence on the curriculum development of HEIs.

Roberts (2015) reveals that the higher education curriculum–in general–is shaped by academics' beliefs about educational and contextual influences. Five orientations to curriculum design were identified which provide insights into the influences which shape curriculum and teaching practices, and how they respond to the educational change. These are discipline-based orientation, professional and academic orientation, personal relevance orientation, social relevance–reform orientation, and systems design orientation.

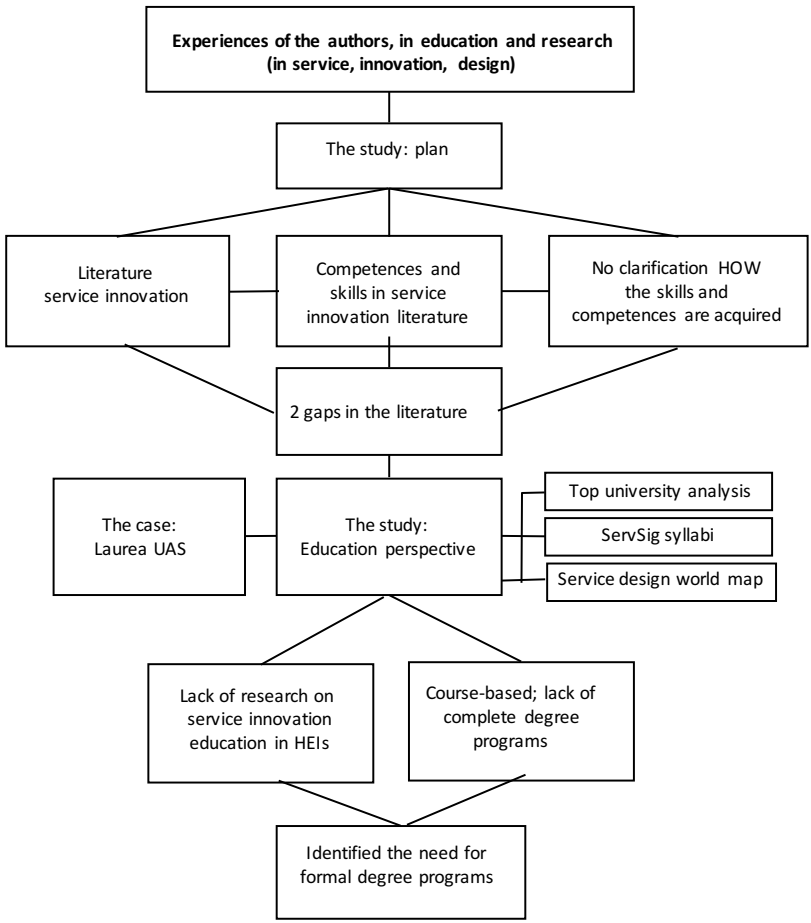

FIG. 1 – Framework of the study.

Figure 1 depicts the framework of the study. To find out how the service innovation education is evolving, a study was conducted (Ferruzca et al., 2016). It revealed a lack of publication on this issue. This experience triggered further analysis. This paper is a first attempt to reduce the gap in the literature. Next, three sources of information are considered to build the overview of the service innovation education: The top 50 universities' offering in service innovation, a syllabi published by a service research community, and an open service design world map. These sources serves only as a reference to illustrate the state of art of the education in relation to service innovation and bring up the challenge of educating innovators for service economy. The response time of HEIs to the changes tend to be slow.

TOP 50 UNIVERSITIES' OFFERING IN SERVICE INNOVATION

The university rankings provide the list of universities that are the best in the world. The premise is that the leading universities also modify their education according to the needs of the society in order to stay on top of the index.

To select the HEIs and their programme offering, the Times Higher Education World University Rankings 2015–2016 (Times Higher Education) for the top 50 universities was analysed. This ranking allows identifying, from an academic point of view, service innovation programmes offered by leading universities. From our point of view, the 50 universities reviewed provide enough evidence to describe the current situation. The web sites of the 50 universities were examined in order to identify service related programmes. Then, the programme description and curriculum was reviewed.

In order to categorize programmes, a matrix was developed (Ferruzca et al., 2016). The matrix reveals the categories that are based on two competences in service innovation: 1) the business and 2) service development and design competences.

The analysis of top 50 universities, in which 13 meet our selection criteria, is based on the type of the programme and its curriculum content. It revealed that all 13 of them offer 30 courses related to service innovation: 7 are offered as executive course, 10 are related to undergraduate programmes and 13 are part of graduate programmes.

The findings of this study indicate that some of the 50 best global universities (26%) offer a service innovation course. Most of them are part of master's degree programmes in several domains like design, business, information systems, information and knowledge management, manufacturing and human computer interaction. Only the executive programmes are completely focused in service innovation. However, those programmes are too short to cover all aspects needed and do not lead to degree.

Also, the most popular topics of study covered in curriculum are those related to user-centric service design and managing the service business. However, only two service design programmes seem to cover all the areas of expertise services designers and developers need.

Finally, geographically, most of the courses are offered by universities in the USA (19 of 30), followed by the United Kingdom (8 of 30) and then Canada, Hong Kong and Sweden offer one course each one. To conclude, the investigation shows that the topic is taught through individual courses and that there is a lack of a holistic and multidisciplinary service innovation programme. The criteria to select 50 universities in this explorative exercise followed a practical approach. It demonstrated clearly the current situation in higher education in which complete service innovation programmes are under-developed.

SERVICE SYLLABI

Service researchers and educators' community and networks–both national and international–have been developing in recent years. One of the forerunner multidisciplinary communities is SERVSIG, which identifies itself as Your Service Research Community. SERVSIG (SERVSIG, 2016) is a well-known platform (www.servsig.org) for those interested in service research in academia or industry. It is an international service research community. The community of SERVSIG has co-created an open syllabi of service logic related courses provided around the world. Although it is mostly marketing discipline related, it is widely known and linked to innovation in service. These are the reasons to explore it with more detail and to complement the previous international comparative study. The published set of 69 service syllabi was analysed. Each of the syllabi published in SERVSIG's website was examined following the same criteria are those described in section 1.1.

The exploratory review of the 69 service syllabi revealed that 57% are related to under-graduate programmes and 44% are part of graduate programmes. Most of the programmes are offered by universities in the USA (71%), and the rest by eight different countries. Noteworthy is that it does not include any emergent economy.

The conclusions of this review indicate that most of the courses are completely marketing oriented (88%) and thus they include more variety in business management and leadership competences. To conclude, this listing provides neither holistic nor multidisciplinary perspective.

SERVICE DESIGN WORLD MAP

The world map provides the current state of service design, which is closely linked to innovation in service. It is driven by the service design community but it is less active than SERVSIG community. However, it indicates that service, innovation and design are closely intertwined and are spreading in the world. The SDWM (Service Design World Map, 2016) is an open and collaborative map on the web where different service design actors like consultancies, schools or companies can be identified. For this study, we focused on HEIs because they are the only to offer formal education programmes in the traditional sense of teaching, although consultancies can also teach service innovation. For each of the HEI identified, a review of its academic website was analysed in order to identify what kind of service innovation programme they offer according to criteria formulated in section 1.1.

The analysis of the SDWM, in which 20 schools meet our selection criteria, offer different types of courses (which have been also reviewed). The exploratory review of 30 HEIs revealed that 20 offer a total of 23 service innovation courses. For the rest of the HEIs, we didn't find any related syllabi. Most of the programmes are offered by design schools in Europe and the USA. However, 2 of them are offered in Brazil and 2 more in Chile. 9 of the courses are full graduate programmes and the rest are part of undergraduate programmes or executive courses.

The findings of this study indicate that most of the programmes are design oriented (88%) and thus service design competences, covering themes like value co-creation and user-centric service design, have a central position in their curriculum. Most of the HEIs offer design education.

II. INSIGHTS FROM THE SERVICE INNOVATION AND DESIGN PROGRAMME IN FINLAND

At Laurea University of Applied Sciences (in short Laurea), the globally pioneering master's degree programme in service innovation and design (in short SID) incorporates business studies with service development competences in order to educate future business practitioners with specific service design skills. Thus, the SID programme aims to provide students with a holistic view with multidisciplinary knowledge.

Laurea operates in the Greater Helsinki Metropolitan area in Finland. It has ca. 8000 students and 500 faculty and staff members. It is the most awarded university in Finland (www.laurea.fi) since the Finnish Higher Education Evaluation Council (FINHEEC) has audited and nominated five 'Centre of Excellence' assessment awards to Laurea in 2003–2012. Laurea has been audited two times: in 2010 and 2016. In 2016 international audit, the SID programme was selected to represent all of the master's degree programmes.

The first SID master's degree programme curriculum was developed in 2008 for the relevant licence application submission to the Ministry of Education and Culture. SID is globally the very first business driven master's degree programme focused on service innovation and design. Therefore, the history of the SID programme is elaborated in detail in several published articles (see for example Ojasalo and Ojasalo, 2009, 2012; Ojasalo, 2012) and not described in detail in this paper.

Prior the SID programme, service innovation, design or development studies could only be found as an individual module or as an additional part in mainstream study units. This is still the case based on the analyses discussed in this section.

To start with, there was no curriculum that could be benchmarked. Therefore, the development of the SID programme was based on an extensive fact-finding exercise that was carried out to examine the significance of service innovation, service development and service design competences, and the future competence needs. As a result of development efforts that included the extensive involvement of both international and regional actors, a curriculum was drawn. It was a good response to anticipating the

new competence needs of the working life. It is also a competence-based curriculum designed to create distinctive contemporary competences needed in society today. The main combination of the competences are a) business competences in service innovations and b) service design competences (Self-evaluation report 2015, internal document).

The master's programme has been implemented since 2009 with the first enrolment of the students. From the start, the programme was subjected to systematic evaluation (Self-evaluation report 2015, internal document). Only some minor adjustments have been done during the annual evaluation of the curriculum in later years.

The development of the programme and later on the evaluation of the programme draw widely on the variety of service-related research in the field, international and Finnish networks, and feedback from students, teachers and other stakeholders. The teachers in the SID programme actively carry out service innovation research, participate in academic and professional conferences and seminars of this field, thus keeping up to date on the latest information and competence needs. Besides conducting research in the field, the teachers maintain broad working life networks. The teaching staff in the programme is experienced in both theory and practice: teachers have a doctorate, a licentiate or a Master's degree in the field with strong working life experience. Moreover, foreign experts are involved in the programme providing specific expertise (Self-evaluation report 2015, internal document). Laurea has also an active role in regional development and further developing the university–industry relationships (Laurea-ammattikorkeakoulu, 2010; Tossavainen, 2007; Tossavainen, 2012a).

The selection of teaching methods and learning environments is guided by the specific learning outcomes of the SID programme and the student feedback in particular. The teaching is based on the pedagogical approach of Learning by Developing (LbD). The LbD approach (Raij, 2007; 2014) places the students in the centre of his/her learning experience. Both individual work and group work is carried out throughout the studies. As the approach is very work life oriented, majority of the learning exercises are based on real life challenges. This provides for each student an authentic case to solve, partnership with professionals in working life, experiential learning opportunities and research-based information building. In keeping with the learning outcomes, the SID

programme favours a variety of creative, participatory methods which allow all participants to benefit from the students' prior learning as comprehensibly as possible. Competence is actively created together (Self-evaluation report 2015, internal document.)

Classroom teaching provides the basis for learning new skills and competences. The creative communal work is emphasized during the contact sessions. The contact teaching is supported by online learning environments. As the digital environment in both business and in education develops quickly, it is incorporated with the studies.

Over the years, effective practices have been established for planning, implementing and evaluating the programme, which ensure its continuous development of the SID programme. As stated previously, the programme has been subjected to systematic evaluation since 2010. The SID programme has participated in two curriculum reviews implemented in Federation of Universities of Applied Sciences, in Finland, (FUAS) cooperation. In 2010–2011, the programme took part in an internal FUAS cross-evaluation of Master's degree programmes. This evaluation comprised an extensive self-evaluation and peer evaluation, and it targeted broadly the objectives, planning, implementation, results and impacts of the programme. In 2011–2012, the SID programme took part in the international FUAS Curriculum Review process. The latest evaluation was carried out in the beginning of the year 2016. The authority responsible for this international audit was the Finnish Education Evaluation Centre (FINEEC). The SID programme was the sample of master's degree education at Laurea.

For each of the evaluations, an extensive self-evaluation report has been produced within the teacher team of the programme supported by the top management and support functions. As part of the self-evaluations, several key strengths and also some areas for development have been identified. Based on the results of the evaluation, the following best practices are identified:

1. A comprehensive feedback collection system that supports programme development: involving students extensively in programme development.
2. Common follow-up indicators and jointly set targets: systematic monitoring of the indicators.

3. Uniform programme processes and clearly defined tasks and responsibilities of the actors relevant to the programme.
4. Competent and committed personnel: a common focus and ability to respond fast as a result of the long-term shared planning and implementation work of the teacher team.
5. Active participation of the teachers in networks of their field and close contacts with SID alumni helps to maintain working life relevance.

To conclude the short tale, the SID programme is a not a traditional one. SID programme is not only a business degree. Further, it is not just a set of methods. It is a truly novel degree programme facing different challenges. Among those are 1) the forerunner's position, 2) the un-developed discipline, 3) the status of the paradigm shift found in service business research, and 4) the participative multi-stakeholders' perspective. Furthermore, SID students play a crucial role in providing feedback of the studies and they return through engaging graduates (alumni) to promote the thinking and the programme. To conclude, the case Laurea substantiate that complete degree program is needed and executed. Moreover, it outlines the challenges but provides insights for other HEIs.

III. SUGGESTED CONSIDERATIONS TO SHAPE THE HIGHER EDUCATION

This section provides insights and suggestions to improve service innovation education. Based on the comparative analysis with wide spectrum of information on HEIs, programs and courses, syllabi, and map, we have provided an extensive view of the current understanding of service innovation education.

Although service innovation and especially service design have gained a foothold in Europe and USA, the review suggests service innovation education offering is scarce in others regions, especially in emerging economies. Only a few service design programmes were identified in

emerging markets (China and Brazil). However, service innovation courses are provided in developed economies like the USA, the United Kingdom and other European countries. Only a few programmes have an integrative orientation that supports developing the required competences for service innovation.

The paper suggests that the educational transformations are required in global viewpoint. The curriculum development is needed to take place in educating the future generation of service innovators and their contribution to the service industry growth. Through the analysis, we have identified some key suggestions to HEIs to consider (see Table 1 below). The first five suggested considerations are categorized by Roberts (2015) albeit aimed at undergraduate curriculum development: discipline-based orientation, professional and academic orientation, personal relevance orientation, social relevance–reform orientation, and systems design orientation. The following considerations are based on the results of the studies presented in this paper.

Table 1 depicts some of the main considerations found during the study. Although we agree on the suggestions by Roberts (2015), we found them too narrow. In general situation, and in undergraduate context, they form a good basis to start the development. In the case of the emerging discipline, such as service innovation, the principles are slightly different. First of all, the HEI should understand the education as a service and apply the basic principles of service logic in the institution. Moreover, to achieve service innovation in HE and in the design of the curriculum means applying those service driven competences and skills with related models, methods, techniques, and tools. As such the service innovation programme needs to be developed holistically, focusing on multidisciplinary, with multiple stakeholders including not only the students but also the representatives from the firms, organisations and the public sector.

SUGGESTED CONSIDERATIONS	NEED 1	NEED 2	EXAMPLE	BENEFITS
Discipline-based orientation	Discipline clarity	Emerging disciplines are more holistic; move away from disciplinary silos to combinations of knowledge	A staff of teachers with different disciplines; service design programmes with an integral orientation	Better university capacity building; better sense of multidisciplinary work
Professional and academic orientation	Provide range of future pathways	Balancing the learning experience with professional and disciplinary knowledge.	Real problem based learning supported by research activities, personnel with academic and professional background support this	Professional practices learned; models, processes, methods, techniques and tools
Personal relevance orientation	Sensing the everyday experiences	Design meaningful learning experiences	Individual and group assignments; learning from each other, co-creation, continuous feedback discussion and feedback, integrations of the studies and working life on personal level	Personal growth; lifelong learning; professional growth
Social relevance –reform orientation	Understanding of social issues and structures, with a view to social reform	Developing service innovation and design programmes for emerging markets	Transformation of society; business approach change from industrial to service logics	Building capabilities to strength the service industry in emerging markets; Foster multidisciplinary work to solve societal challenges
Systems design orientation	Effective and flexible system for learning	Design better educational technologies	Combination of contact and online work, authentic cases integrated to the studies, experimental learning, uniform programme processes	Better digital culture

SUGGESTED CONSIDERATIONS	NEED 1	NEED 2	EXAMPLE	BENEFITS
Reach out through interaction for development	Working life (firms, organisations, etc.) are the best to defining future competence needs	Working life needs to be involved in developing programmes and curriculums more extensively	Engage stakeholders; Establish advisory boards with practitioners; establish regular practices for academia–industry	Improved professional capabilities with future business practitioners
Uniform programme processes	Systemic understanding of the actors, roles, and tasks	Provide information and enable understanding how the education works	Curriculum descriptions, role descriptions, programme description, individual course descriptions	Share information, and create wider knowledge–beneficiary for developing needed competences
Holistic service innovation and design set-up	Theoretical and practical knowledge on service innovation and service design; interrelated courses	Practice methods, techniques and tools with real life problems and challenges	Use same case for several individual study units to improve the learning experience	Service innovation is holistic approach and requires examination on multiple perspectives
Continuous discussion and feedback with students and alumni	Students are the users of the education service and working life is the customer of the education service	To improve the status quo, the students and alumni experiences are valuable in co-creation of the programme	Systematic feedback collection system, regular discussions with alumni	Modify the programme fast in detail level; development based on actual experience
Competent and committed personnel	Continuous learning is a must for the personnel	The latest knowledge injected into education programmes	Encourage research participation of networks, publishing, international joint activities	Continuous improvement actions, up-to-date knowledge, better learning experiences

TAB. 1 – Educational transformations for service innovation teaching.

CONCLUSIONS

Higher education institutes' concern is to have education, facilities, and programmes available that would respond to the changes of the society and competences of future professionals. At its best, this is also closely linked to the good industry practices. Aligning education with industry needs is a topical issue while a mismatch between skills and jobs means that the match between education and employment opportunities can be improved (Moss Kanter, 2012).

Inevitable service economy rise impacts on society at large. This needs to be visible also in higher education. This study addressed how well the current programmes respond to the competence needs described in the literature, and how visible those changes are in terms of programmes and courses provided. This paper introduced a comparative study of the programmes in the emerging field of service innovation education. The analysis has shown that the majority of the service related education is based on individual courses and that complete or holistic degree programs are scarce.

Prior to the SID programme, service innovation, design or development studies could only be found as an individual study module or as an additional part in mainstream study units (courses). The service syllabi by SERVSIG shows the majority of individual courses related to the marketing discipline. Service innovation is a holistic approach and touches other functions of the organisations from marketing, to logistics, production, finance and human relations. Individual course or study units can be a good starting point for a HEI to get involved with a new topic. The SID programme experience shows that in order to provide the required holistic view on service business and service innovation, a complete multidisciplinary programme should be established. This case serves as a trigger to consider, how to embed service innovation in HEIs, strengthen their service innovation capabilities or improve existing programmes.

Service innovation and design education should matter not only to developed economies but also to emerging markets, because its practice in global scale has grown in the last years. Service design has the

capacity to increase innovativeness in product-services also through visualization of the holistic service development process (Tossavainen and Kaartti, 2015). Besides, the service industry in emerging markets has a potential to grow and improve the societies. For example, according to the INEGI (The National Statistics Institute in Mexico), the service sector in Mexico was the main engine of economic growth in 2015. It has had a good performance also in the last years. However, as the rest of Latin America, the third sector needs to be improved. According to REDLAS (The Latin American Network for Research on Services) more efforts are needed to better understand the role of services in this region (REDLAS, 2016).

To conclude, the analysis presented has an explorative character which should be considered as a first attempt to approach the actual state of the art in service innovation and design education and what are the challenges in this domain. Besides, because not all the reviewed syllabi had clear information about curriculum, identifying educated competences was challenging. Nevertheless, this paper can be a useful material for those interested in launching a service innovation and design programme in developed and emerging economies or improving existing ones.

The formal education needs to be modified. For this educational renewal, the authors call for a larger and multidisciplinary community (including service educators, researchers and professionals) to identify and define the baselines for the higher education degree programs. Additionally, more research is needed to identify if existing service innovation and design programmes are included in innovation degrees or in service degrees.

An interesting avenue for future research is to study how the teaching team, in different economies, is educated for the 1) substance, i.e. transformation of service business economy, 2) pedagogical reforms, e.g. competence-based, student-centred education, 3) requisites, i.e. service innovation and design processes, models, methods, techniques and tools.

Finally, it is necessary to do research for understanding the service sector in all markets with the aim to study, how to better introduce service innovation in different countries. The study could reveal different competency needs in emerging markets in contrast to those of developed countries. We foresee that some of the new competences and skills are

similar but differences may appear in research. Additionally, to better understand the progress of the education in service innovation, a survey to gather information from practitioners and scholars could be developed.

REFERENCES

Agarwal R., Selen W., Ross G., and Green R. (2015), "Part II Skills and Capability Building in Service Innovation", in Agarwal R., Selen W. Ross G. and Green R. (eds.), *The Handbook of Service Innovation*, London, U.K, Springer, p. 123.

Bishop K., Bolan G., Bowen D., Cromack C., Evans S., Fisk R. P., Ganz W., Gregory, M., Johnston, R., and Lemmink, J. (2008), *Succeeding through service innovation: a service perspective for education, research, business and government*, Cambridge, UK, University of Cambridge Institute for Manufacturing.

Britto G., Camargo O., Kruss G., and Albuquerque E. (2013), "Global interactions between firms and universities", *Innovation and Development*, 3(1), p. 71–87.

Deschamps I., Macedo M. G., and Eve-Levesque C. (2013), "University-SME Collaboration and Open Innovation: Intellectual-Property Management Tools and the Roles of Intermediaries", *Technology Innovation Management Review*, March, p. 33–41.

Evangelista R. and Savona M. (2010), "Innovation and employment in services", in Gallouj F. and Djellal F. (eds.), *The Handbook of Innovation and Services. A Multidisciplinary perspective*, Cheltenham, UK, Edgar Elgar, p. 376–391.

Ferruzca M., Tossavainen P. J., Kaartti V. and Santonen T. (2016), "A comparative study of service design programs in higher education", 10th International technology, education and development Conference, 7–9 March 2016, IATED, Valencia, Spain.

Frow P. and Payne A. (2011), "A stakeholder perspective of the value proposition concept", *European Journal of Marketing*, 45(1/2), p. 223–240.

Gallouj F. and Djellal F. (2010), "Introduction: filling the innovation gap in service economy–a multidisciplinary perspective", in Gallouj F. and Djellal F. (eds.), *The Handbook of Innovation and Services. A Multidisciplinary perspective*, Cheltenham, UK, Edward Elgar, p. 1–23.

Harryson S., Kliknaité S. and Dudkowski R. (2007), "Making innovative use of academic knowledge to enhance corporate technology innovation impact", *International Journal of Technology Management*, 39(1/2), p. 131–157.

IfM, and IBM. (2008), "Succeeding through service innovation: A service perspective for education, research, business and government", Cambridge,

UK, University of Cambridge Institute for Manufacturing and and International Business Machines Corporation, p. 1–33.

Jongbloed B., Enders J. and Salerno C. (2008), "Higher education and its communities: Interconnections, interdependencies and a research agenda", *Higher Education, Skills and Work-based Learning*, 56, p. 303–324.

Laurea-ammattikorkeakoulu (2010), *Student centered R&D work integrated learning. Application for the centre of excellence in education evaluation starting 2010*, Application report, University of Applied Sciences, Vantaa, Finland.

Moss Kanter R. (2012), "Enriching the ecosystem. A four-point plan", *Harvard Business Review*, March, p. 141–147.

Ojasalo J. and Ojasalo K. (2012), "Creating Competences in Service Innovation and Design. The SID Master's Programme for Practitioners Combines Business and Design Competences", *Touchpoint–The Journal of Service Design*, 3(3, January), p. 58–61.

Ojasalo K. (2012), "Designing and implementing an innovative Master's degree programme: A case study", *International Journal on New trends in Education and Their Implications*, 3(3), p. 136–147.

Ojasalo K. and Ojasalo J. (2009), "Developing Service Design education", in Satu, M. and Mikko K. (eds.), *Designing Services With Innovative Methods*, University of Art and Design Helsinki/ Otava Book Printing, p. 98–119.

Raij K. (2007), "Learning by Developing", *Laurea Publications*, Laurea University of Applied Sciences, Vantaa, Finland, p. 34.

Raij K. (2014), "Learning By Developing Action Model", *Laurea publications/ Laurea Julkaisut*, Laurea University of Applied Sciences: Espoo, Finland, p. 110.

REDLAS (2016), "REDLAS. The Latin American Network for Research on Services", www.redlas.net/, Accessed on 2016, August 4.

Roberts P. (2015), "Higher education curriculum orientations and the implications for institutional curriculum change", *Teaching in Higher Education*, 20(5), p. 542–555.

Schilling A. (2011), *Skills and competences supporting service innovation–a literature review*, Report, VINNOVA, Sweden.

Segelström F. (2013), *Stakeholder Engagement for Service Design. How service designers identify and communicate insights*, PhD thesis, Linköping University, Department of Computer and Information Science, Linköping. Sweden.

Service Design World Map. (2016), "Service Design World Map", https://www.google.com/maps/d/viewer?mid=13kXULRGPZ-6-joWPZEPq-Bcmzb4&hl=en_US, Accessed on 2016, August 4.

SERVSIG (2016), "SERVSIG your service research community", http://www.servsig.org/, Accessed on 2016, August 4.

Spohrer J. C., Gregory M., and Ren G. (2010), "The Cambridge-IBM SSME white paper revisited", in Maglio P.P. Kieliszewski C.A. and Spohrer J.C. (eds.), *Handbook of Service Science, service science: research and Innovations in the Service Economy*, Springer, p. 677–706.

Times Higher Education, "World University Rankings 2015–2016. Institutional data collection under way", https://www.timeshighereducation.co.uk/world-university-rankings/news/world-university-rankings-2015–2016-institutional-data-collection-underway, Accessed on 2016, January 19.

Tossavainen P. J. (2007), "Encouraging to pair-dancing: Dynamic academia and industry relationships in management education", 23rd EGOS conference, Vienna, Austria.

Tossavainen P. J. (2012a), "Learning by developing: service organization in a public sector", Naples Forum on Service 2011 conference proceedings, Anacapri, Italy.

Tossavainen P. J. (2012b), "The service capabilities: Steps to service designed business", AMA ServSig International research Conference, Hanken School of Economics, Helsinki.

Tossavainen P. J. (2013), "Beyond sporadic actions: How to approach multi-party stakeholder collaboration in service development", *Journal of Business Market Management*, 6(4), p. 171–191.

Tossavainen P. J. (2016), "Co-create with stakeholders: Action research approach in service development", *Action Research Journal*, DOI: 10.1177/1476750316641995 vol. 0, 0First Published 24 Jul 2016.

Tossavainen P. J. and Kaartti V. (2015), "Don't the cobbler's children have shoes? a service design lens and visualization tools in action in higher education", ICERI 2015, Rio De Janeiro, Brazil.

Walsh M. E., Graber G. C. and Wolfe A. K. (1997), "University–industry relationships in genetic research: Potential opportunities and pitfalls", *Accountability in Research: Policies and Quality Assurance*, 5(4), p. 265–282.