Service innovation processes in SMEs in Upper Austria

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Due to the increasing global competitiveness, companies have to continuously expand their offer of innovative products and services. Upper Austria is the most competitive region of Austria and one of the most innovative regions in Europe. Despite its success and prosperity, the local SMEs have not yet managed to exploit their full innovation potential. This paper analyses the literature background on the topic of innovation in SMEs in the spheres of management and organization, resources, collaboration, KPIs, and innovation processes, as a part of the Interreg SIP-SME (Service innovation processes for small and medium-sized enterprises) project. Subsequently, the results from the in-depth interviews with Upper Austrian innovation experts are presented and compared to the literature findings. The authors found that the experts confirmed the necessity of formalization of processes, the importance of human resources and know-how, specific organizational and managerial prerequisites, as well as the problematic areas in the measurement of innovation potential and activities. Differences were found in the aspects of company attributes and their effect on innovation success as well as the reasons of employee unwillingness and reluctance to engage in innovation activities. Problematic areas of implementing innovation in local SMEs were identified.

1 Introduction

Upper Austria is considered one of the most prosperous and competitive regions not only in Austria, but also within the European Union. It is Austria’s most export-oriented region and to keep the competitive edge, it needs to keep up with the current developments on domestic and international markets. Even though innovation as a mean to ensure competitiveness and increase prosperity and growth has been in the focus of business and government entities, the regional innovation potential has not been fully exploited. The local Upper Austrian SMEs are characterized by a substantial innovation capacity, nevertheless, their innovation activities are often unconscious and unstructured (Janssen, den Hertog and Kuusisto 2014). This paper introduces the preliminary findings of the Interreg SIP-SME project (Service innovation processes for SMEs). The project focuses on the Upper Austrian and South Bohemian regions and is in cooperation with the University of Applied Sciences Upper Austria, South Bohemian University, Business Upper Austria- Upper Austria Business Agency, and South Bohemian Science and Technology Park (JVTP). This paper examines the preliminary findings on the current situation in Upper Austria with regard to innovation in SMEs, the prerequisites of successful innovation processes, managerial and organizational requirements to introduce and sustain innovation processes, collaboration, and the innovation measurement methods and tools. The aim of this article is to highlight the current issues of SMEs in innovation pro processes, and to identify the disparities between the theoretical background and the actual market practices in the Upper Austrian region as seen by local innovation experts, and to determine potential improvement possibilities to ensure further exploitation of the innovation capabilities of local SMEs.

2 Theoretical background

SMEs are the backbone of economy, helping with knowledge spillover and as job creators (European Commission 2014). Due to their importance, professionals have been increasingly interested in the role of innovation in the context of SMEs, the prerequisites of successful innovation introduction, and its measurement. Although some believe that the limited financial resources might pose a threat to the overall innovation capabilities of the small business entities, other scientists argue that SMEs might be successful innovators, as the most important organizational assets are the employees, and the know-how and innovative ideas they bring to the company (Ahmed 1998; Neely and Hii 1998; Nehmeh 2009; Rosenbusch, Brinckmann, and Bausch 2011; Yesil and Sozbilir 2013). A critical antecedent to ensure full potential of the employee know-how is administered within the organization, the SME has to create an appropriate organization climate and a culture of creativity and learning (Storey et al. 2016). It should be a culture where dialogue, collaborative learning within the team, and knowledge sharing is encouraged (Liu 2009). These activities act as a mean to decrease the feelings of anxiety and fear of the employees and increase their acceptance of possible failures and errors in the innovative processes, which are often characterized by uncertainty and vagueness (Kao et al. 2015).

In the service innovation specifically, managerial service awareness is crucial. It is necessary that the managers realize a service forms a significant portion of the revenue creation and is not only an add-on. This awareness then spreads through the whole organization and other employees adopt the S-D logic and accept new service ideas. Managers further act as motivators, using verbal persuasion and hands-on opportunities to stimulate and encourage subordinates and to create a sense of openness (Chen, Tsou, and Huang 2009; Kao et al. 2015; Visser 2014). The supervisors also need to create a climate of informal communication and fun and give their subordinates a substantial degree of autonomy and job challenge. Giving the employees a possibility to communicate with customers proved to be of advantage as well, as it increases the market knowledge and the ability to assess customer needs and wishes when creating innovative services and products. The market focus and customer centricity needs to be present within the whole organization (Jong and Kemp 2003; Mascitelli 2000; van Riel, Lemmink, and Ouwersloot 2004).

Another organizational prerequisite supporting successful adoption of innovation processes is a formal and entity-wide recognition of innovation practices and processes within the organizational structure. Companies with specifically dedicated roles focusing on a development of new services and products have higher innovation success compared to their counterparts without formally defined responsibilities in the innovation process (Kindström and Kowalkowski 2015; Kowalkowski 2016).

The fact that the company operates on the market for a long time does not necessarily have to have a positive impact on the organization and its innovation potential. On the contrary, younger entities are better at radical innovations. The size of the enterprise might play a role as the newly-established companies might not have enough resources to invest into innovation processes, might not be able to absorb possible innovation failures as their bigger counterparts, or might lack workforce dedicated to innovation activities. Nevertheless, some believe that if the company finds enough resources to devote to their innovation pursuits, their prospects are more optimistic and they tend to have more success compared to bigger companies (Acs and Audretsch 1988; Lee and Chen 2009; Nohria and Gulati 1996; Visser 2014).

Two of the most commonly discussed managerial competences supporting service innovation within a company are communication skills and knowledge management. The enterprise needs to find a proper communication path to be prepared for the innovation implementation without overwhelming the employees. While the decision makers need to be well-informed and the communication flow between all the actors active in the innovation efforts needs to be constant and effective, more information sharing is not always more beneficial, as it can lead to the risk of information overload

(Du Plessis 2007; Rausch et al. 2011; Schilling 2011). A focal point of knowledge management is the integration and applicability of the know-how, as well as its further development (Johannessen, Olsen, and Olaisen 1999).

Even though formalization of services is necessary for standardization and to take advantage of possible repetition and decrease of costs, the complexity of service innovation processes makes it often impossible. Service innovation can develop irrespective of the level of service formalization, however, the revenues from new services and products are higher in companies using well-established processes compared to the companies without a formal innovation process in place; the former report 47% while the latter only 35% (Kindström and Kowalkowski 2015; Lorenz, Burger, and Hottum 2012; Robbins and O'Gorman 2016; Toivonen and Tuominen 2009). If service innovation processes exist, they need to be open and driven by the customer needs. As the knowledge of the particular service provider is essential for the service development and service performance, a knowledge management system might be of significant value. Before the company develops specific innovation processes, it should collect information about its competitors and suppliers, and incorporate the knowledge gained into the process design (Larsen and Lewis 2007; Storey et al. 2016; Toivonen and Tuominen 2009).

A measurement system to assess the innovation potential and innovation success should encompass a multidimensional view of the company performance. The innovation outputs should be linked to the inputs assigned to the specific innovation development. The measurement should be process-oriented and present at various stages of the innovation lifecycle (Cruz-Cázares, Bayona-Sáez, and García-Marco 2013; Dewangan and Godse 2014). However, to define a set of indictors to measure innovation and its success proved to be difficult and problematic due to the complexity and inadequacy of the indicators currently in use (Gotsch and Hipp 2012; Nelson et al. 2014).

"Managers have only a vague sense of their company's overall innovativeness; they have little or no means to assess the effectiveness and efficacy of a particular innovation program. They need tools with which to diagnose impediments—for example, fear of cannibalization within the existing business or a corporate culture that's excessively risk averse—to their innovation processes…" (Muller, Valikangas, and Merlyn 2005, p.1).

Most of the current measurement schemes take into account only products and not ideas or processes, and focus mainly on financial aspects, which might have been sufficient during the industrial era, but are inadequate for the current market environment (Milbergs and Vonortas 2005; Rejeb et al. 2008).

To overcome the possible hurdles faced by SMEs due to their limited resources, it is advisable to collaborate in innovation efforts with other partners, such as customers, suppliers, or universities. Engaging in innovation collaboration helps to bundle finances and knowledge, shortens the time to market, and enables risk-sharing among the organizations (Hertog 2010; Storey et al. 2016; Tyler and Steensma 1998). SMEs usually form relations with customers, who have the role of knowledge providers rather than actual executors of innovation activities (Ordanini and Parasuraman 2010). The evidence also shows that strong relations with suppliers or universities are linked to higher innovation success (González-Pernía, Parrilli, and Peña-Legazkue 2015; Tomlinson 2010). With regard to innovation collaboration with competitors, the evidence is conflicting. Whereas some claim that it enhances the innovation performance of the company, some believe it might have negative effect on the company (Luo, Slotegraaf, and Pan 2006; Peng et al. 2012; Un and Asakawa 2015). A general problem commonly cited is a potential threat of dominance from the bigger partner, who might dictate the terms and conditions of the innovation collaboration process (Rosenbusch, Brinckmann, and Bausch 2011). Collaboration is also one of the key strengths of the innovation potential of the Upper Austrian region as it has been focusing on forming international partnerships to cope with increasing competition (Janssen, den Hertog, and Kuusisto 2014).

3 Evidence from the expert interviews

As a part of the Interreg SIP-SME project, the authors conducted ten in-depth interviews with innovation experts from the Upper Austrian and South Bohemian regions. In this paper, the results from the five interviews conducted in the Upper Austrian region are discussed. In the subsequent project steps, the authors will analyze the comparison of both regions and the application of the findings. The experts from both regions were chosen by the Business Upper Austria and the South Bohemian Science and Technology Park, as these project partners are in long-term cooperation with local companies and experts and can therefore assess and select respondents appropriately. Each interview took approximately 1.5 hours and was conducted at the premises of the specific company. 40 open questions examined the current situation of SMEs in the region, innovation processes, organizational and managerial prerequisites of innovation, KPIs, formalization of innovation processes, collaboration, and innovation measurement tools. To ensure that diverse points of view were encompassed in the expert analysis, the project partners agreed on the following attributes and roles of the experts chosen for the interviews:

• Owner or manager of an SME, which is known for its innovations.
• Innovation leader of a specific industry- not necessarily SME anymore, but someone who has not lost the knowledge about SMEs.
• Innovation policy maker.
• Consultant for innovation processes.
• SME manager who is not known for innovation, but is willing to innovate and represents a “critical voice” in the region.

The experts chosen are professionals in the biotechnology, software, machinery, consulting, and energy industries. The interviews were recorded, and later transcribed and analyzed. The experts identified the most crucial aspect of innovation in the Upper Austrian region to be networking and the human resources. A concern was voiced several times, that in the future, there might be a lack of qualified workforce, and therefore, not enough knowledgeable personnel to perform innovation activities. The experts also identified the three organizational prerequisites supporting innovative activities and capabilities among its employees; resources, incentives, and organizational approach. The most crucial resources to be provided by the company to ensure effective innovation practices were giving enough time for the employee to innovate as well as financial and material support. Another important aspect acknowledged was the incentive system for the employees, which needs to be in place to award innovation activities. Lastly, the organizational approach was recognized as a crucial prerequisite, which means that the company needs to decide if it wants to differentiate through innovation, and if yes, it needs to develop a systematic organizational approach to innovation.

When assessing if the age and size of the company affect its innovation potential, all experts agreed that the actual size does not have any negative influence on innovation, contrary to most of the evidence from the literature (Acs and Audretsch 1988; Lee and Chen 2009; Nohria and Gulati 1996; Visser 2014). Although as some experts stated, innovation can develop through customer intimacy, and it is easier for smaller companies. Nevertheless, the age of the company or the personnel was identified as an important indicator of innovation success. The experts stated that younger individuals in younger companies have a tendency to be more innovative.

Even though the literature review showed that the reason behind the unwillingness of employees to innovate is the feeling of anxiety and fear of ambiguity and errors, the experts stated that the most common reason for employee reluctance is the lack of specific and defined organizational innovation structures within the company (Kao et al. 2015). The experts believed that the most predominant reason employees are unwilling to take part in innovation creation is because it is not an official company objective, as well as not having the innovation activities embedded into the structure of the

company with formal models in place. As the most prevalent motivation to engage in innovation activities, the experts named the actual personality of the employee. In accordance with the evidence from literature, service awareness is crucial, and the lack of it was identified as one of the main organizational hurdles hindering innovation efforts in SMEs (Chen, Tsou, and Huang 2009; Kao et al. 2015; Visser 2014). Moreover, problems with organizational culture were also acknowledged; if there is a resistance towards new processes and ideas, the innovation effort will not flourish in the company. The experts also supported the literature findings showing that the main motivation for SMEs to innovate is their survival. SMEs adopt a rather reactive approach to negative changed on the market (such as decreasing revenue or market share) rather than proactively seeking new possibilities for innovation. In line with the literature findings were also the competencies a manager should have to be able to support innovation within companies. The most important trait of a manager was stated the communication skills (Du Plessis 2007; Rausch et al. 2011; Schilling 2011). Secondly, the manager should have good managerial skills in allocating time and resources for the employees to enable them to innovate. The ability to develop specific capabilities in his own organization, as well as being market-focused, able to assess the capabilities of the organization realistically, being open-minded and a motivator, but not to overpromise to the customers were identified as vital assets as well.

The most common partners to collaborate in innovation activities in Upper Austria are friendly customers and universities. Universities being the easiest to work with as the know-how is kept secure within the company and the processes and activities are science-based. Suppliers were identified as the third most common collaboration partner, followed by complementary companies (such as hardware and software companies working together). According to the experts, it is not common that a competitor is chosen as a collaboration partner due to the overall lack of trust. As the literature suggested, the main reasons to engage in innovation networks is to compensate for the possible lack of resources, to access know-how, share ideas and impulses, as well as because of the fear of missing out. To the problematic areas belong legal problems, strict contracts, the fear of imitation, know-how leakage, wrong selection of a partner, and a lack of project management. Some of the medium-sized enterprises engage in cross-border collaboration as well; the main reason being the overall export-orientated character of the region and the necessity to access new markets. The main problems SMEs face when engaging in cross-border collaboration were identified; language barriers, not knowing any adequate partner in the foreign country, and the lack of information provided about the innovation possibilities of cross-border activities, networking, and funding.

As the literature suggests, formalization of innovation processes increase the performance and success of innovation (Kindström and Kowalkowski 2015; Lorenz, Burger, and Hottum 2012; Robbins and O'Gorman 2016; Toivonen and Tuominen 2009). The experts recommended allocating resources for guidelines and processes formalization, as they give a direction and orientation to the company. To design meaningful processes, one should analyze the daily business of the company, and create a tailor-made solution. The customers should be kept in the focus and the final structure cannot be overly complex. To the most well-known innovation models used by SMEs in Upper Austria belong Design Thinking and Stage-gate. According to the experts, the proportion of SMEs in Upper Austria using well-formulated and conscious innovation processes is difficult to assess. While over half of the companies working with the Mechatronic cluster use some specific processes, the overall regional number is significantly lower. When it comes to the company specifications, only those with 50 and more employees tend to have some innovation processes in place. Some of the experts also doubted the benefit provided to the companies by process formalization if the company is of small size. However, the bigger the company, the more beneficial the process formalization.

With regards to KPIs used by SMEs in Upper Austria, the experts concluded that the proportion of companies applying some indicators to measure innovation success is relatively low. Smaller companies were said to have problems defining what innovation in fact is, and if some KPIs were used, those focused mainly on the financial aspects of the company. Larger companies are more likely to track their innovation potential and success, and use KPIs related to project management,

Kaizen indicators, R&D quota, or a percentage of sales with products that did not exist 3 years ago. The experts confirmed the literature findings with the description of the potential measurement system. It should ideally be structured according to the innovation or product lifecycle (Cruz-Cázares, Bayona-Sáez, and García-Marco 2013; Dewangan and Godse 2014). Moreover, a company should measure the proportion of the changes in the portfolio over the past 3 years or previously mentioned percentage of sales with products not existing 3 years ago. The measurement system to track innovation cannot be too complex and needs to give an overall idea of where the company stands at the moment compared to the market. As also the literature review suggests, the most crucial resource for the local SMEs is the personnel and their know-how. The percentage of the turnover dedicated to research and development activities in Upper Austrian companies was impossible to identify as it depends highly on the specific industry. Lastly, the experts expressed their interest in a tool that would help the local SMEs to measure and understand their innovation potential, as well as give them suggestions how to proceed with their innovation processes would be highly appreciated.

4 Conclusion

The article compared the literature findings and the knowledge gained through in-depth interviews with innovation experts from Upper Austria in the spheres of innovation in SMEs, organizational and managerial prerequisites supporting innovation, collaboration, KPIs, and innovation processes. Although the experts supported the major findings from the scientific articles, such as the importance of human resources and know-how, specific organizational and managerial prerequisites such as communication skills and knowledge management, the importance of processes, as well as the problematic areas in the measurement of innovation potential and activities, differences were observed in the effect of age and size of SMEs on their innovation success as well as the reasons behind employee unwillingness to engage in activities supporting innovation within the company. According to the experts, some of the Upper Austrian SMEs have problem identifying what innovation in fact is. Moreover, there is a lack of information about cross-border collaboration activities in innovation, which is effectively hindering the possibility to use the full regional innovation potential and is often preventing the local SMEs from being present on the foreign markets. Additionally, a substantial proportion of the local companies do not have any well-formulated and conscious innovation processes and structures and do not use any KPIs to track their innovation activities and success. As the experts expressed their interest in an online tool helping the SMEs to measure and understand their innovation activities and potential, as well as giving the them information on how to proceed with their innovation efforts, developing and using a measurement tool assessing the resources, processes, potentials, and problems would be one of the improvement possibilities increasing the innovation capabilities of the SMEs in Upper Austria.

5 Limitations and outlook

The article is a working paper providing an overview of preliminary findings from the literature review and the interviews with the local experts from Upper Austria on innovation in SMEs. Due to the resource constraints, only five experts were interviewed in the Upper Austrian region. Moreover, the self-reported data could not be independently verified. As the SIP-SME project is still ongoing, the authors were unable to provide a comparison of the results of the expert interviews from the Upper Austrian and the South Bohemian regions, and therefore assess the possible differences within the regions with respect to innovation processes in SMEs. The goal of the SIP-SME project is to develop an online tool providing SMEs the assistance in the measurement of their innovation potential. As the literature findings and the actual experience of the experts from the region are in

line with only small disparities, the research proved there are no significant hurdles in the further development of the content of the online measurement tool. The authors will elaborate on the research findings and after encompassing the results of in-depth interviews from the South Bohemian region into the analysis of the market situation with regard to innovation processes and SMEs, the innovation measurement tool will be developed.

Poznámky/Notes

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Kľúčové slová/Key Words

innovation process, innovative product, innovation success, market, SMEs,
inovačný proces, inovatívny produkt, úspech inovácie, trh, malé a stredné podniky

JEL klasifikácia/JEL Classification

M31

Résumé

Inovačné procesy služieb v malých a stredných podnikoch v Hornom Rakúsku

Vďaka rastúcej globálnej konkurencieschopnosti musia spoločnosti neustále rozširovať ponuku inovatívnych produktov a služieb. Horné Rakúsko je najkonkurencieschopnejším regiónom Rakúska a jedným z najinovatívnejších regiónov v Európe. Napriek svojmu úspechu a prosperite miestne podniky ešte nedokázali využiť svoj plný inovačný potenciál. Tento článok analyzuje literatúru na tému inovácie v malých a stredných podnikoch v oblasti riadenia a organizácie, zdrojov, spolupráce, kľúčových indikátorov a inovačných procesov ako súčasť iniciatívy Interreg SIP-SME (Inovačné procesy služieb pre malé a stredné podniky podnikov). Následne sú prezentované výsledky z hĺbkových rozhovorov s inovatívnymi odborníkmi z Horného Rakúska a porovnané s výsledkami z literatúry. Autori zistili, že experti potvrdili potrebu formalizácie procesov, význam ľudských zdrojov a know-how, špecifické organizačné a manažérske predpoklady, ako aj problematické oblasti merania inovačného potenciálu a aktivít. Zistili sa rozdiely v aspektoch atribútov spoločnosti a ich vplyve na úspech v oblasti inovácie, ako aj v dôsledku neochoty zamestnancov a neochoty zapojiť sa do inovačných aktivít. Boli identifikované problematické oblasti implementácie inovácií v miestnych MSP.

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