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Preconditions for Future-Orientated Innovations in the Security-Field

Tarja Meristö*

Laurea University of Applied Sciences / FuturesLab CoFi
c/o ElektroCity, Tykistökatu 4 B, 20520 Turku, Finland
E-mail: tarja.meristo@laurea.fi

Jukka Laitinen

Laurea University of Applied Sciences / FuturesLab CoFi
c/o ElektroCity, Tykistökatu 4 B, 20520 Turku, Finland
E-mail: jukka.laitinen@laurea.fi

Anneli Manninen

Keski-Uudenmaan koulutuskuntayhtymä (Keuda)
Sibeliuksenväylä 55 A, 04400 Järvenpää
E-mail: anneli.manninen@keuda.fi

* Corresponding author

Abstract: BOAT is an ongoing project of which objective is to support networking of companies, universities, development organisations and authorities in Baltic Sea area. The project is funded by the European Regional Development Fund (2012-2013) and it is coordinated by HAMK University of Applied Sciences (UAS). Laurea UAS's specific focus is on the cluster of security business related to technology industry. In this paper the results of the web surveys to the actors of safety and security actors in Finland are reported. The time line to the future is mostly 5 years ahead and the opportunities for radical innovations are rare. According to web survey, technology development is the key for the innovations, and all e-based solutions in the society, e.g. eHealth, are drivers for new solutions. Holistic service platforms are a critical future issue, too.

Keywords: innovation; security; safety; future; foresight

1 Introduction

Futures research and foresight activities have several advantages: they create flexibility to the strategy, support risk management and generate ideas for innovations. By utilizing the foresight activity to support the innovation process the company can create readiness, competences and agility to its innovation process. The role of foresight activity is to offer the essential information concerning the future development to the innovation process.

The foresight process can be divided into four main stages, which are 1) information collection, 2) information processing, 3) structuring alternative futures, and 4) selecting/evaluating alternative futures. Each of these four stages includes several tools and method which can be chosen case-specifically. One of the most essential methods is scenario analysis, which supports the innovation process by illustrating the alternative future developments related to market potential and needs, societal requirements and technological feasibility (Meristö et al. 2009).

The security industry is a growing and still partly unorganized branch not yet having the ecosystem of its own (Kupi et. al 2010). The demand for safety & security services and products is globally recognized as one of the most potential business areas. The actors in security field are both public and private by nature. Public areas are e.g. related to broad security and police activities. Private sector is more wild by nature and new enterprises will occur to the field from other industries, e.g. from real estate business. Also, companies vary in size and growth intensity, only a few have business strategies for international markets. According to Santonen and Paasonen (2012) a big question is how the companies in security field can be successful in the future if innovation activities and innovation rate will stay at the low level. In this paper the security industry cluster is defined and the preconditions for the future-oriented innovations are discussed.

2 The aim and research questions

The aim of this paper is to identify key drivers for the future, to recognise the skills and competences relevant in the security field, and also market needs with suitable service and product innovations. On completion of the project the new ecosystem for cluster will be constructed.

The research questions of this study are as follows:

1) What are the drivers for the future innovations in the security field?
2) How can a company renew its supply for alternative scenarios?
3) What are the challenges of the innovation process model in a multi-actor context?

3 Framework and methods

The paper is based on an ongoing project called BOAT of which general objective is to support networking of companies, universities, development organisations and authorities related to the technology industry in the Baltic Sea area. Our research group's specific focus is on the cluster of security business related to the technology industry. The project is funded by the European Regional Development Fund (2012-2013) and it is coordinated by HAMK University of Applied Sciences (UAS), other research partners are Laurea UAS, Turku UAS and Kymenlaakso UAS.

In the research we applied Learning by Developing (LbD) model (Raij 2007) of which idea is closely related to the Triple Helix model. LbD model is a pedagogical approach in which learning is linked to applied research, development projects and regional development. Main components are social interaction, knowledge and competence sharing, researching and problem solving. LbD improves mobilization of talent resources allowing new ways for innovative knowledge creation. Learning, research and development practices meet and add value to the model. For the companies

LbD offers the knowledge, creativity and the contact network of the universities including their students and staff.

As a framework for the future-orientated innovation process we applied a model which combines futures research, risk management and conceptualization when seeking new business opportunities and solutions for future markets. The visionary concepts clarify the future market, societal and technological development for the creation for successful product, service or business concepts. This way they enhance the company's ability to respond to the future challenges. It also improves the company's agility to seize on the new opportunities (Meristö et al. 2009).

4. Research process

The research process began in January 2012 with literature review. Based on this review the preliminary questionnaire for thematic indepth interviews were formulated. Before the interview round, the workshop with 25 participants consisted of experts from different security and safety field were organised: 14 of them represented business and 11 academia. The research continued after the workshop with the thematic interviews during spring and summer 2012 when altogether 18 people were interviewed. The interviewees were security company representatives, but also some specialists from related services such as logistics and financial services as well as trade and leisure industry (Figure 1).

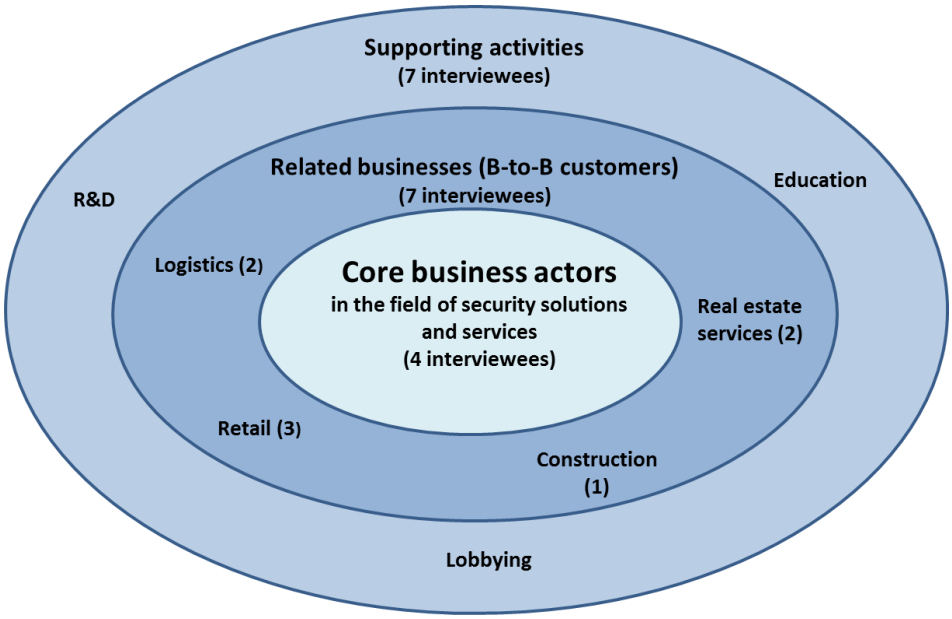

Figure 1 The background of the interviewed persons.

Preliminary hypothesis were formulated based on literature review, workshop and interviews and the results were complemented with two different web surveys in October and November 2012. In the first survey a group of 20 students from the university of applied sciences participating as part of their study during autumn 2012 according to LbD

principle integrated into the research process. The second round of the web survey received 42 answers, 16 of them being from company representatives, 14 from public sector or from other organisations, 8 were students and 4 teaching staff.

In spring 2013 the analysis towards future-oriented innovation process within the safety and security field has been worked further, and in the near future, i.e. autumn 2013 an innovation workshop with a case company will be organized in order to create future driven service and product concepts for the alternative scenarios.

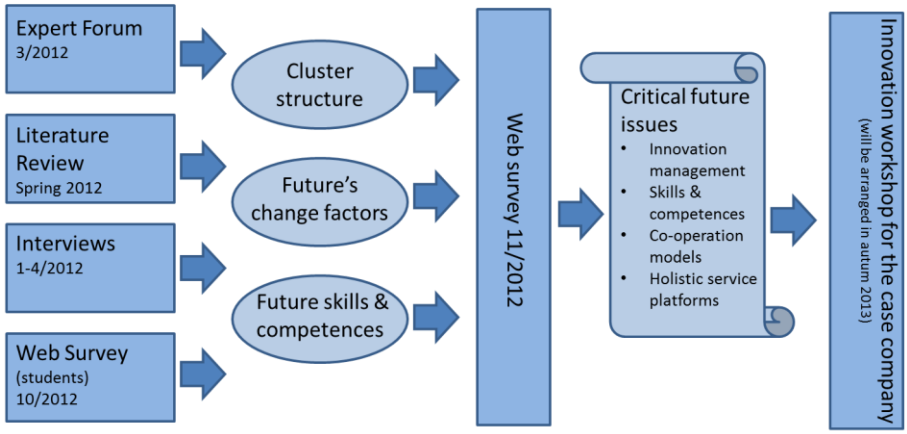

Figure 2 The phases of the research process.

Figure 2 will summarize the phases and information sources as well as methods and tools used in the research process as a whole.

5 Results and practical implications

The web survey revealed that 68 % of respondents described the future as one to five years. On in five considers it to be 10 years and 10 % said it was less than a year. This means, that there is place mostly only for incremental innovations with shorter time horizon and with instant implications in practise, and only a few opportunities for radical innovations, jumping out of the box and seeing further into the future.

The survey results show, the most critical challenges will come from technology development side, and the business opportunities from this perspective have to create and develop further. New opportunities based on public-private partnership were strongly recognized, and innovations following open innovation paradigm in a multi-actor network will create competitive advantages and are a source for business renewal, too. The changing market situation and the growing needs for services in this branch requires more and more new innovations. For example, increasing eCommerce and mobile business will lead to the demand of new type of information safety and security services even in our everyday life and the customers will expand from business-to-business side to consumer side, too. Also, the megatrend ageing population together with eHealth solutions is recognized as an growing business area for safety and security field, too.

Based on ageing megatrend several minitrends are formulated (see Vanston&Vanston 2010).

Thus, the safety and security branch is not well-known as an innovative sector, rather more from traditional business models following the regulations in the field. A big challenge will be how to change the corporate culture towards innovations in open network, including actors from different sectors, and at the same time to maintain the special features in this field, e.g. need for privacy and to keep business secrets. In any case, all the actors in this field have to move from management culture to leadership and especially small enterprises have to create new networks based on open innovation paradigm (Chesbrough, 2008). Otherwise the whole branch cannot be develop and stay competitive in a rapidly changing environment.

But how to do this? According to our survey results there is a lack of business skills and competences in safety and security field in Finland. Also, Paasonen & Paasonen (2012) reported similar results in their survey, where they on one hand found the unorganized education in this field; on the other hand they reported, that only a few of the companies in this field are interested in growth and renewal and the most of the private companies in safety and security branch are running their business on domestic base without seeking new opportunities (Santonen and Paasonen 2012). Based on our survey, the business skills were reported as the most important part of competences necessary for future success. Also, interdisciplinary skills as well as a holistic view were recognized as top issues in this field. Innovation is defined as a commercialized solution, not only as a new idea without market perspective (Meristö et. al. 2009). Probably therefore, business skills are ranked so high in our survey, too. Krupp´s model for innovation definition will take into consideration not only market and technology, but also society as a part of complete innovation, as presented in Figure 3.

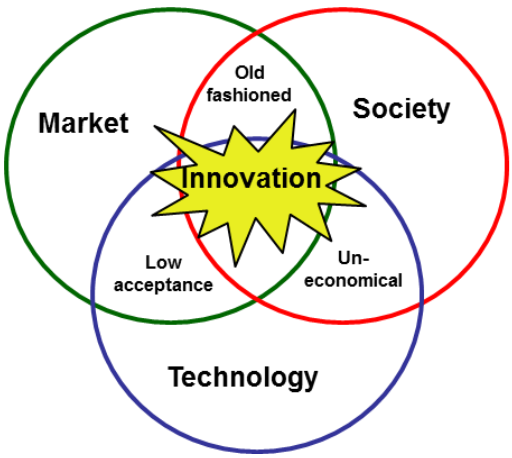

Figure 3 The successful combines market, society and technology perspectives [Adapted from EIRMA Interim report, 1976].

Holistic view with interdisciplinary skills is a useful platform for innovations across the boarders, including a lot of local buzz (Bathelt et al. 2002), which is important for new ideas, too. When approaching not only business to business customers, but also end-users and consumers, the new innovation process models are needed. Co-creation (see e.g. Perks et al. 2012) will bring the customer orientation as a living part of the innovation

process, and also the time from the development phase to the commercialization phase and to the market will shorten. In international business environment, when working with new customers, new partners and also with new cultural features in the society, the personal skills and attitudes are important: how to meet the unknown, how to deal with uncertainty and how to work together with people from different backgrounds are a part of the high ranked customer- relationship skills, which include the entrepreneurial minded requirements mentioned in the survey results, too.

As a conclusion from delfoi survey, we summarize the results as follows: First, development of technology will open new opportunities for the whole branch. It will require offensive strategy and aggressive open innovation activities to be successful in the rapidly changing business environment. Second, eSociety and mobile solutions in different sectors will increase the demand for safety and security services generally, and especially in eHealth connections. Third, only network based innovation models are agile enough in rapidly changing international world, where multidisciplinary skills are needed.

6 Conclusions

The security and safety branch is an industry in a transition phase, first forming the cluster and its ecosystem. Future-orientated innovation process has not yet been tested in an industry branch still in transformation phase where the uncertainty for the future is high. It is a dynamic process, where the coordinates are changing, but also the position of the origin is not stable. A visionary concept design as a part of a company's R&D&I activities will be applied as a case study in the next phase (autumn 2013) and the recommendations based on these experiments will give new insights both at industry branch level as well as at company level for innovation management.

Figure 4 will present our idea of extended product and service definition (Meristö 2009), where in the core are the traditional elements of products and services i.e. physical elements, knowhow elements and service elements of the solution. The next level is a part of solution´s financial model, including e.g. leasing or other access type solutions. The third level consists of key-customers and co-operation with them. The fourth level will be an open innovation paradigm forming the whole ecosystem for the continuous process towards success now and in the future.

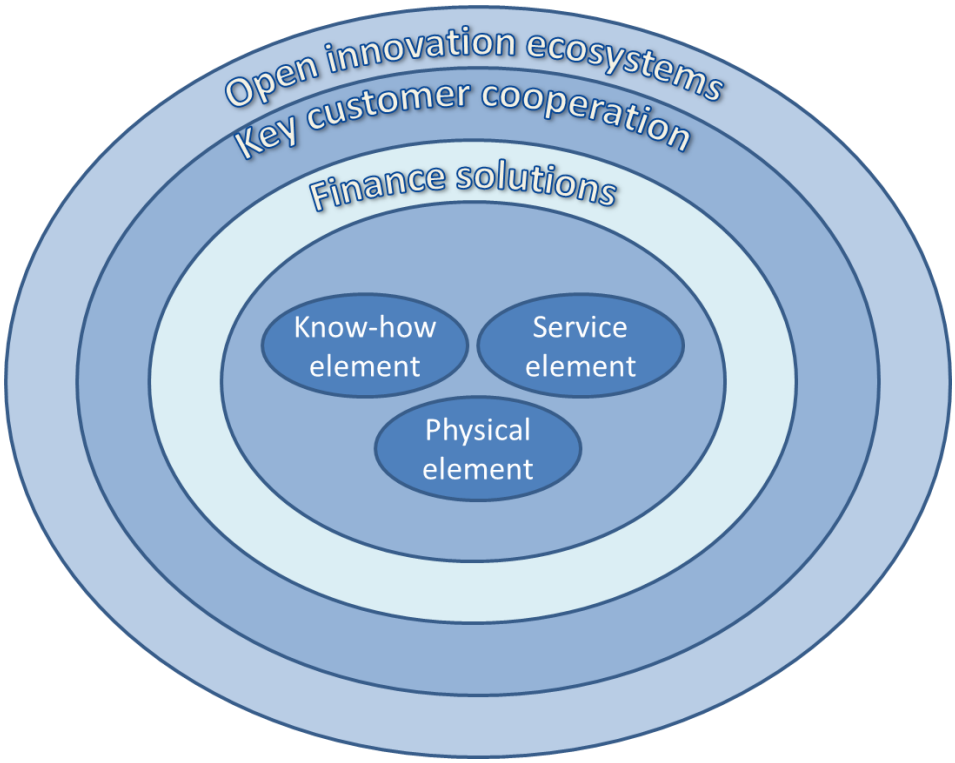

Figure 4 The extended definition of product and service (Meristö 2009).

The safety and security field is difficult to define because of its internationality and divergence and as it has not been interesting enough for researchers (Paasonen and Huumonen 2011). The development is heading towards multiservice and holistic service approaches with multiple uses of technologies. Statistics do not give clear information about the field.

The benefits of this study are various. For the companies the research produces information of the relevant trends (Manninen et al. 2012) affecting the future business environment as well as ideas for new service and product concepts. The decision-makers receive information of the future educational needs related to the safety and security cluster. The students involved in the research process received an opportunity to combine their studies to the real world problem solving. Finally, for the technology industry community in the Baltic Sea Region this will bring new visions, e.g. roadmap as a tool towards to the future (Meristö et al. 2013).

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