

REGIONAL REPORTS TO SUMMARIZE THE FINDINGS OF THE CO-CREATION BASED NEEDS ASSESSMENT PROCESS

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1. Introduction

Our project I-CARE-SMART aims to enhance innovation ecosystems for the promotion of smart solutions in elderly care especially in CE regions, which have identified health & well-being as priorities in their regional innovation and smart specialisation strategies.

The project strengthens capacities of participating regions also by supporting the the active approach of a quadruple-helix based, user-focused co-creation process at regional & transnational level for the development of smart elderly care solutions.

But before this processes will be tested in the participating regions within pilot action there was needed to identify the needs of the target groups participating in the innovation development processes especially SMEs and seniors.

According to the previous knowledge and discussion with Regional Quadruple Helix Task Forces (Task4s) consisted by project and associated partners from the respective regions and members delegated by business, academia, care provider, senior and S3 responsible organisations, the particular regions, including Slovakia, have made decision which of the engagement and co-creation tools elaborated in WPT1 will be applied in the near future to collect and analyse user needs and how the process will be implemented (e.g. interviews, focus groups, pools, workshops, etc.)

In the previously published Deliverable D.T2.2.1 Regional roadmaps for the implementation of the co-creation based needs assessment process, can be found research goals which will be met by this regional needs assessment - Deliverable D.T2.2.2 Regional reports to summarize the findings of the co-creation based needs assessment process.

Within D.T2.2.1 you can find stated research goals and appropriate methodologies which was used to get the requested knowledge as well as the time plan for the implementation of proposed activities. The details of particular activities regarding the objectives of the research and selected methodological approach were chosen according to the specific conditions of Slovakia applying the same pattern of targeted development in each project partners' country.

Following document summarize our findings of the co-creation based needs assessment process which were identified according to our communication and cooperation with relevant target groups and present the logic of the supporting services for co-creation process which will be tested in the near future and which we believe strongly support our aim to create fully fledged quadruple helix based ecosystems with sufficient capacities to promote innovation through co-creation.

2. Needs of the target groups

2.1. SMEs

The business environment in Slovakia is created mainly by small and medium-sized businesses, which represent up to 99.9% of all companies, while start-ups also fall into this category. Small and medium-sized enterprises and enterprises (SMEs) provide employment opportunities for almost 75% of the active workforce in the business economy and account for more than 50% of gross output and value added.

To provide helpful and valuable services supporting innovation development especially within SMEs there is crucial to identify their needs and requirements within the new product/service development process including wide range of steps which are necessary for the successful position on the market.

2.2. Seniors

In 2018, nearly one fifth (19%) of the European Union (EU) population was aged 65 and over, while in 2080 it should be almost 30%, of which the share of persons aged 80 or over is projected to increase by two and a half times between 2018 and 2100, from 5.6 % to 14.6 % (Eurostat, 2019). In view of these

ongoing changes, which are likely to become even more significant in the coming decades, it is necessary to reflect on the position of older people in our society and how to exploit their potential.

The opinions of the elderly about their needs are very important. Elderly know best what they need and what problems they face. In this case, it is necessary to distinguish what kind of seniors we are talking about. We can divide the elderly into several groups based on age, a status, place where they live, health status, and family background and so on. Each of these groups of elderly has different needs and problem, and this should be taken into account.

2.2.1. Desk research

2.2.1.1. Sources of information

Within our desk research we have identified and analysed all relevant analytical documents which provides the description of current innovation ecosystem, especially describing the needs and requirements of SMEs which have been identified through several survives as the basis for the documents described below which also serves as one of the knowledge base for our purpose within the needs assessment activity.

Innovation in the Presov Region

The study brought new perspectives of tools to support the innovation potential of Slovakia and specifically the eastern Slovakia - Prešov region, which, however, is very similar in its characteristics to the Košice region. The document provides an overview of innovation trends, policies and strategies at European, national and regional levels, an assessment of the current state of innovation, the regional innovation ecosystem and tools to support innovation. A specific part of the study is devoted to the needs of companies in the region describing the findings of the independent survey.

Analysis of start-ups in Slovakia

Analytical study by the main business support entity in Slovakia - Slovak Business Agency provides the description of the Slovak start-up scene assessing the business environment regarding funding opportunities, business education consulting and mentoring. Companies participating in the survey on which was based this analytical study provides also their feedback about the institutional and legislative framework for the support of start-ups in Slovakia as well as the identification of obstacles in the field of support for start-ups.

Concept for support of startups and development of startup ecosystem in the Slovak Republic

The vision of the Ministry of Finance of the Slovak Republic, the Ministry of Economy of the Slovak Republic and the Ministry of Education, Science, Research and Sports of the Slovak Republic is to support the start-up ecosystem in the Slovak Republic by stimulating the business environment and the state support system to attract Slovak entities and individuals with innovative ideas, make investing in start-ups more attractive and create an exceptional image of the country.

The concept for the support of start-ups and the development of the start-up ecosystem represents the starting point for the design and implementation of individual measures that should help achieve the set goals.

Innovative Slovakia - starting points and challenges

This document deals with selected issues related to the innovation environment and proposes specific measures to increase the innovation activities of Slovak companies, and thus their competitiveness in global markets. Within it, we will find not only an analysis of the actors of the innovation process, but also an analysis of the innovation policies of selected EU countries and it also represents the National Innovation System of the Slovak Republic.

The publication also includes a presentation of the needs of Slovak companies in the field of innovation development, based on a questionnaire survey on a sample of 195 innovative companies. The companies were selected from the database of Slovak Innovation and Energy Agency and they were participants in the Competition for the Award of the Minister of Economy of the Slovak Republic entitled Innovative Act of the Year as well as participants in educational trainings for calls under the Operational Program Competitiveness and Economic Growth within the whole territory of the Slovak Republic.

Analysis of the Current Situation in the Field of Innovation Activities Companies and Academic and Industrial Cooperation Sector - Proposals for Comprehensive Company Support

The study presents an analysis of the current state of innovative activities of companies in the Slovak Republic, as well as cooperation of the academic and industrial sectors and, based on the findings, defines proposals for solutions for comprehensive support for companies.

The findings were formulated on the basis of the results of a questionnaire survey in which 82 small and medium-sized enterprises participated.

Regional innovation strategy of the Košice self-governing region - analytical part

The new understanding of innovation in recent years in the EU has highlighted the importance of a systems approach and led to a more integrated approach to implementing innovation policies under the Lisbon Strategy, which proposed a series of changes to improve the business environment and set up development capacity building in EU regions.

In this spirit, the Regional Innovation Strategy of the Košice Self-Governing Region was developed, which focuses on identifying barriers and opportunities for the development of innovation capacity and innovation culture of the region in the business, academic and public-legal environment. It proposes priorities and measures for KSK for the 2013-2020 programming period in order to move the knowledge economy in selected thematic areas, including innovation and technological infrastructure, significantly forward.

Innovation activity of enterprises in the Slovak Republic 2014 - 2016

This document contains data on innovation activity of 8 675 Slovak enterprises in industry and selected services. Data are the results of the processing of the innovation survey Inov 1-92 in 2016 and are available by NACE Rev. 2 and size class of enterprises according to the number of employees.

The methodology of the statistical survey on innovation was worked out within the framework of the process of implementation of the statistical methodology of the EU member states. It was based on the OSLO manual methodology of OECD/Eurostat and it was harmonized with the Community Innovation Survey (CIS 2016) of the EU member states.

Analysis of the effectiveness of support programs for SMEs

The main purpose of this analytical document is to evaluate and quantify the impact and effects of public support, map the attitudes of small and medium-sized enterprises to the use of support measures, examine barriers to use or compare the status and rate of use of support programs in Slovakia with other EU member states.

Report on the State of Small and Medium-Sized Enterprises in the Slovak Republic in 2018

The submitted publication follows up on the series of Reports on the state of SMEs with current information about the positions and trends observable in the Slovak SMEs environment that has been elaborated since 1993. The Report on the State of SMEs in the SR in 2018 provides information on the current legislative framework from the perspective of approved and expected or implemented initiatives supporting the development of SMEs in the EU and SR and on the development of the economic environment and the position of SMEs in the SR. Next part of the Report is focused on the assessment of implemented measures, initiatives and programs in course of 2018 aimed at supporting SMEs in Slovakia and assessment of significant legislative changes affecting SMEs. The Report also includes an assessment of the conclusions of the analyses and surveys conducted by the Slovak Business Agency.

Attitudes of SMEs to the use of support programs

In order to find out the attitudes of SMEs in relation to the use of support programs for small and medium-sized enterprises in Slovakia, a survey was conducted in 2018 on a sample of 1000 small and medium-sized enterprises. The survey was focused on the following areas:

- opinions about the support programs for SMEs, focusing on evaluating the use of information resources on SME support programs;
- perception of the possibilities of using tools provided by the public sector;
- the clarity of the current system and structure of support programs;
- preferred areas where stronger support for SMEs should be directed;
- impacts of the obtained support on the further functioning of enterprises and determination of the reasons for not obtaining public support, resp. lack of interest in support;
- interest of applying within the support programs for SMEs in the future.

National Strategy of the Slovak Republic for Digital Integration

In accordance with the key EU initiative in the field of informatisation of society, which concerns digital integration and aging, the Ministry of Finance of the Slovak Republic informs about the situation in the field of digital integration in Slovakia, sets priorities, recommends measures and activities that can help solve this situation. and presents concrete steps that will be implemented in the near future for the area.

This document focuses, among other things, on the needs of an ageing population in the information society, opportunities to older people a chance to live more independently and to encourage their active participation in society. Meaningful use of ICT can help seniors improve their quality of life, health and positively influence life expectancy.

National Active Aging Program 2014 - 2020

It is a comprehensive programming document aimed at promoting the human rights of older people through their activation through public support policies. These are not only policies in the field of employment and employability of older people, but also policies in the field of support for their lifelong learning, promoting their independence, dignity, economic and social security, including protection against ill-treatment in all social spheres and relationships.

Active aging Policy Framework

This Policy Framework is intended to inform discussion and the formulation of action plans that promote healthy and active ageing. It was developed by WHO's Ageing and Life Course Programme.

This document is designed to address the problems of seniors and population ageing. It targets government decision-makers at all levels, the non-governmental sector and the private sector, all of whom are responsible for the formulation of policies and programmes on ageing. It approaches health from a broad perspective and acknowledges the fact that health can only be created and sustained through the participation of multiple sectors.

2.2.1.2. Needs and requirements of SMEs

2.2.1.2.1. Cooperation of innovation stakeholders

As we can observe in the best regions within Europe, innovative solutions are always based on the cooperation among the various stakeholders to support transfer of knowledge leading to the goals. Despite the fact, that our region is geographically small area, there is obviously absence of the cooperation within innovative networks and clusters while the reason can be seen in the low awareness of the concept of clusters. There are several clusters which can be seen as a good cooperation example but more initiatives are without common coordination and integration of their activities. To change this potential barrier of innovation development there is needed increase the knowledge about the cooperation forms and its possible advantages to change low interest for establishment of new clusters. Another needed step will be to strengthen institutional position of cluster and support for key clusters while actually there is the absence of industrial policy for clusters and value chains. Such changes could improve sufficient pass-through of research and innovation performance to the creation of value production chains and clusters in the region and support also long-term problem of very low level of cooperation among academic R&D and private sector.

To support the cooperation of the stakeholders is naturally needed also the policy environment which would be motivation factor not a barrier, as today. Constantly changing regulations and policies are creating unstable environment which leads to difficult administrative duties for policy adopters while not only innovation developers needs to support by government via efficient and easy communication of duties but we have identified as one of the important barrier also inadequate system of public procurement for innovation, research and development which prevents public institutions to act as innovation testers and adopters.

Previously described problems shall be solved systematically through the complex innovation policy which shall be created in cooperation of all quadruple helix model as there is actually absence of a comprehensive regional supportive innovation business infrastructure as part of the national innovation ecosystem. Cooperation of appropriate stakeholders shall be improved as interconnection and coordination between national innovation ecosystem and regional innovation ecosystem is today on the

low level. Insufficient coordination and ability to communicate and collaborate between national management and decision-makers responsible for innovation-technology, business and research has led to several problems as delay in the preparation and approval of the Slovak Smart Specialization Action Plan and the delayed following calls for proposals from the Structural Funds, in particular under the Research and Innovation Operational Program which has further deepened insufficient amount of funds to support innovation and regional innovation initiatives what is in the context in the environment with the absence of regionally oriented venture capital funds and credit for innovative firms, the significant barrier of the innovation development process.

Cooperation of SMEs, universities and other R&D organisation

Linking academic research to the practical market needs of the private sector is a traditional engine of innovation in advanced economies, usually based on the initiative of universities themselves. In this way, new innovative projects are created, which take the form of applied research, spin-offs or start-ups. In Slovakia, however, this type of development of the innovation potential of the economy remains largely untapped.

The intensity of cooperation between companies and public research and development organizations can be monitored by several indicators, while one of the most common, which is also used by the Innovation Union Scoreboard (European Commission), is co-authorship of scientific publications. Regarding this indicator, Slovakia achieves one third of the EU performance and half the performance of the Czech Republic and Hungary.

The cooperation of SMEs and universities, or other R&D entities, is currently very lukewarm in the region and rather at the level of mutual "need", rather than awareness of the possible benefits of effective cooperation. Thus, there are only truncated opportunities for the use of the results of the research carried out in commercial practice. The current setting of science funding in Slovakia does not create sufficient motivation for the support of research projects with commercial potential by academic and research organizations.

The low level of cooperation is also observed within the created centers of excellence, which were founded with the help of EU funding and were supposed to be a place of connection between practice and the scientific community, which is currently prevented not only by low levels of cooperation initiative, but also lack of resources for operation and legislative barriers of cooperation, based not on internal operational rules but on the national legislation.

Reasons of low cooperation level

The reasons for the low level of cooperation were identified both by our own and surveys in the recent past by several institutions mapping the business and innovation environment of our region.

The following reasons were identified as important for the low level of cooperation or non-cooperation with universities and research organizations:

- low quality of potential partners - low quality of research and experts at universities,
- lack of awareness of the possibilities and benefits of cooperation,
- distrust in the ability and willingness of the academic environment to cooperate,
- lack of technological capacity of potential partners,
- lack of understanding of the aims and means of communication of research organizations and universities,

- problematic coordination of work,
- low degree of openness to cooperation,
- lack of time and financial resources,
- administrative barriers to cooperation,
- unprofitability of invested funds,
- problematic protection of intellectual property - concerns about threats to trade or trade secrets.

Cooperation within product development process

Despite the overall low level of cooperation, especially between SMEs and R&D sector, there have been also some good examples of Slovak SMEs cooperating with other entities in the new product and services development process according to the conducted surveys describing the innovation processes performed in the recent years.

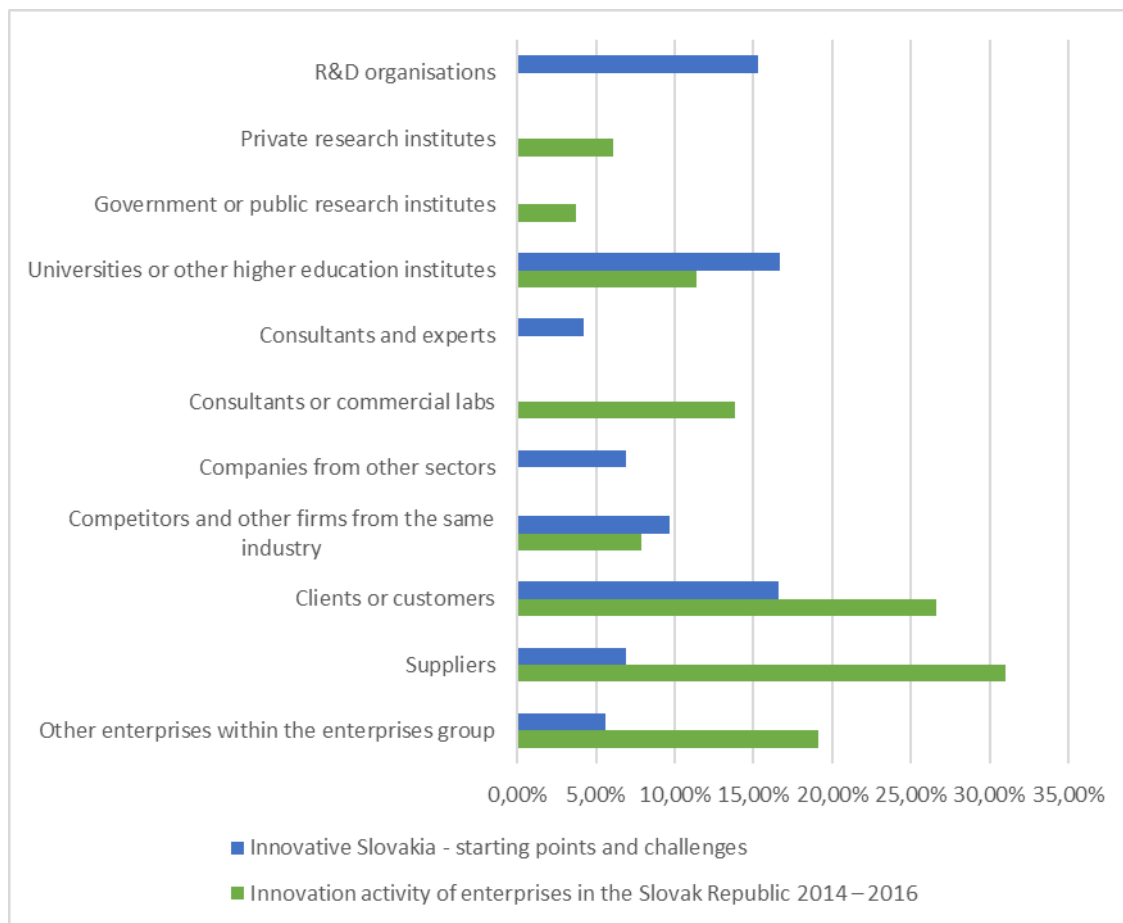
According to the survey - Innovative Slovakia - starting points and challenges by Slovak Innovation and Energy Agency, the innovative process in Slovak companies has become an interactive while 68% of their respondents cooperated with other companies or institutions during the innovation process, compared to 28% of non-cooperating respondents. This indicates that a relatively large amount of innovation is created through the joint cooperation of companies, but also in cooperation with other relevant actors. But the reason of that relative high level of cooperating companies is caused by the fact that 57 companies participating within the survey have been selected from the database of the Slovak Innovation and Energy Agency, as previously cooperating within innovation support activities assisted by the agency.

Another of the survey providing description of the situation in the recent past years have been provided within the analytical report Innovation activity of enterprises in the Slovak Republic 2014 - 2016 according to which on average:

- 40,8 % of product innovations have been developed by the innovating enterprises themselves,
- in cooperation with other enterprises it was 30,7 %,
- by adapting or modifying goods or services originally developed by other enterprises 16,9 % and
- 11,6 % by other institutions.

From the implemented innovation processes, 15,9 % was developed by other enterprises, 18,1 % by adapting or modifying processes originally developed by other enterprises, 35,4 % in cooperation with other enterprises and up to 30,6 % by the innovating enterprises themselves.

Moreover, on average, 42,8 % of enterprises in industry and services that were carrying out innovation activities in the period 2014-2016 was part of enterprise groups and 31,8 % of them had their headquarters abroad.



Picture 1 Cooperation within product development process

Source: own processing according to data from listed resource

To identify the most important partners for R&D cooperation we have compared the findings of the valuable surveys - Innovative Slovakia - starting points and challenges and Innovation activity of enterprises in the Slovak republic 2014 - 2016.

Both of the surveys provides interesting data about the joint R&D activities in the meaning of active participation in joint R&D and other innovation projects with enterprises or non-commercial institutions.

As we can see on the graph, the level of cooperation with suppliers vary according to the survey while the general expectation is the interest for cooperation with the suppliers as they usually can bring to the process very valuable and new relevant information according to their professional experience within the cooperation of the particular company as well as their competitors from the sector.

Regarding competitors and companies from the same field, nearly 10% of respondents cooperate with these entities despite the possible competitive struggles.

The position of universities and other R&D organisation was proved by both surveys but the detail comparison was not possible because of the different categories implemented within the conducted surveys.

Territorial aspect of cooperation

Slovakia as the country is rather small territory within which only small number of entities focus their activities on the particular specific topics. That is the reason of searching for appropriate partners for research activities abroad.

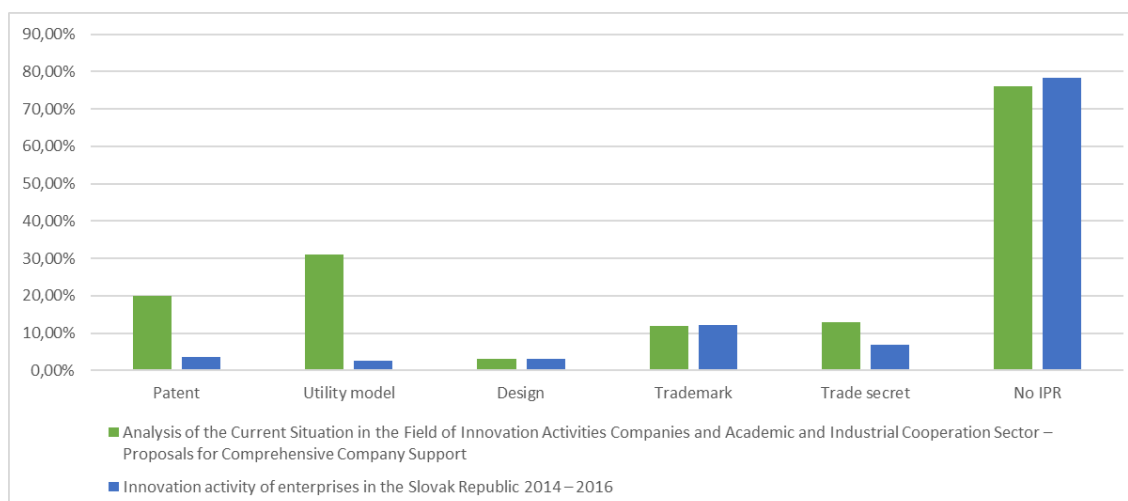
From territorial viewpoint, according to the Innovation activity of enterprises in the Slovak Republic 2014 - 2016, in industry and services, 44,5 % of the cooperation partners of technologically innovative enterprises had their headquarters in Slovakia, 40,1 % in Europe, 15,4 % in other countries. In the service sector, thanks to the line of business, there was a significant share of enterprises with domestic cooperation partner (46,1 %), while in industry this proportion was lower and the majority (56,8 %) of enterprises had foreign cooperation partners.

2.2.1.2.2. Intellectual Property

Another from a range of indicators that helps assess the innovation environment is the activity of companies with regard to the field of intellectual property. As in others, also within this indicator, Slovakia lags behind the EU average, neighbouring economies as well as European innovation leaders, especially in the field of patents.

Generally, based on the low level of innovative activities of Slovak companies, we can observe a low general interest in the field of intellectual property within SMEs.

Within our analysis we have identified two recent studies describing situation of IPR in the Slovak SMEs. As we can see on the chart, the both studies indicate that the most of the Slovak companies does not apply any form of IPR. The situation is even more alarming as the provided shares of used IPR tools are provided by companies which were performing innovation activities. So once we have analysed all of the companies operating in Slovakia, the shares would be much lower.



Picture 2 Level of the application of IPR tools

Source: own processing according to data from listed resource

As we can see on the graph, most companies, which deal with intellectual property in SMEs as an important factor in business, use the form of a utility model. This tool is characterized by a faster and less expensive process and therefore more advantageous in the territory of the Slovak Republic. While

the process of legalization of a utility model can be implemented in the horizon of 8-9 months, the patent solution takes more than 2 years. Moreover, patent protection within the EU is a longer process and requires approval in all countries separately. It is also possible to find a certain percentage of the use of a trade secret, trademark or design in the portfolio of respondents.

The analyses also identified a high share of expenditures on the purchase of foreign licenses, which may indicate in the economy on the one hand an increased effort to catch up with it, on the other hand the inability of the domestic R&D base to meet this need. Slovakia still lags behind in the share of innovative small and medium-sized enterprises (SMEs) that cooperate in innovation with other actors, but shows a higher value than Poland and Hungary.

Slovakia has the worst position in the economic effects of innovation in the case of the indicator of income from the sale of licenses abroad, in which Slovakia shows minimum values according to the Innovation Union Scoreboard, which is directly related to low patent production of domestic research and development.

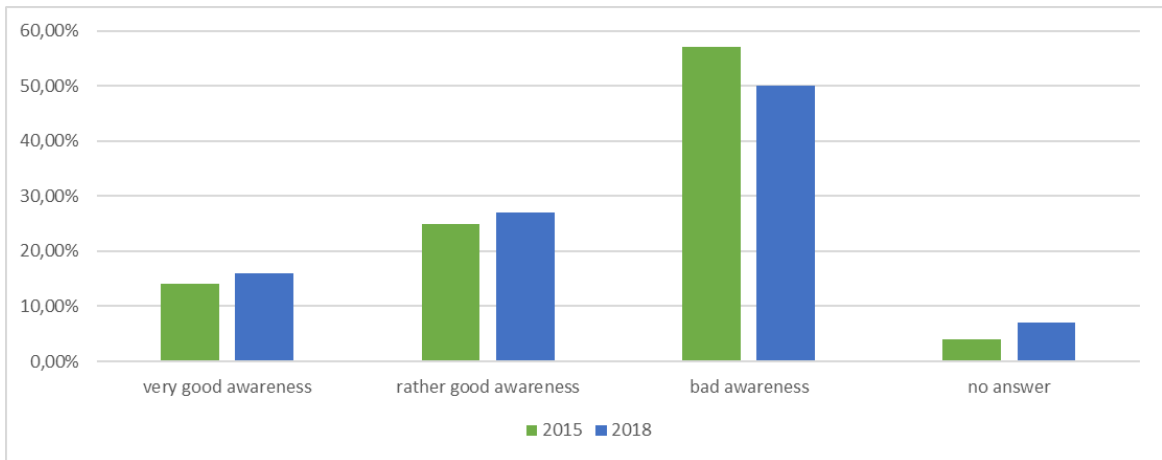
2.2.1.2.3. Supporting tools for innovation development

Awareness

Supporting tools for innovation development provided by national or international grant schemes, are important tools for many SMEs. However, one of the important aspects of their effectiveness is awareness of their existence.

This aspect was the objective of the Analysis of the effectiveness of support programs for SMEs, as well as Attitudes of SMEs to the use of support programs. As both studies claim 4 out of 10 entrepreneurs (43%) declared sufficient information on the possibilities of using support programs intended for small and medium-sized enterprises. Of these, 16% of the surveyed entrepreneurs stated that they certainly have enough information and 27% rather have enough information. On the other hand, every second entrepreneur (50%) feels the lack of information on the possibilities of using support programs intended for small and medium-sized enterprises, and 7% of the addressed entrepreneurs could not comment on this issue.

In comparison with the results of a similar survey conducted in 2015, it is possible to observe positive trends. In the period 2015-2018, the number of entrepreneurs who have sufficient information about the possibilities of using support programs increased (from 39% in 2015 to 43% in 2018) and, conversely, the number of entrepreneurs who feel the lack of information about the possibilities of using support programs decreased. (57% in 2015 to 50% in 2018).



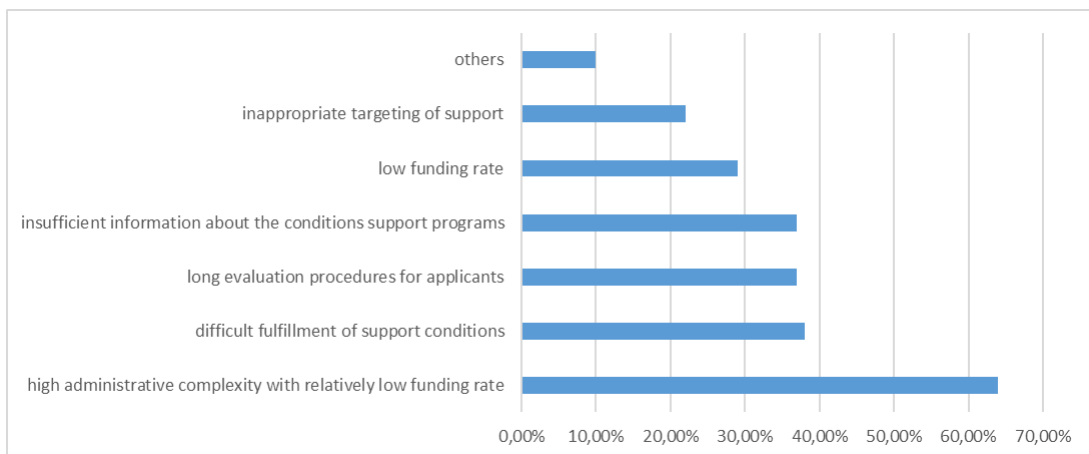
Picture 3 Awareness of supporting tools

Source: [8]

According to the findings presented in Attitudes of SMEs to the use of support programs, in terms of size categories of enterprises, the rule is that the larger the enterprise, the better the availability of information on support programs. On the contrary, the lack of information on the possibilities of using support programs is felt mainly by micro-enterprises (63%). Within medium-sized companies, almost one third of entities (30%) experience a lack of information. The survey also showed that SMEs in the maturity phase (48%), with a length of business of more than 10 years (47%), have sufficient information.

Barriers to the availability of public support for SMEs

According to the analytical study (Attitudes of SMEs to the use of support programs), almost 64% of small and medium-sized enterprises perceive high administrative complexity with a relatively low level of financing as the most significant obstacle to the availability of public support for entrepreneurs and more than one third of SME representatives perceive the difficult fulfillment of support conditions (38%), long evaluation procedures for applicants (37%) and insufficient information about the conditions of support programs (37%) as obstacles.



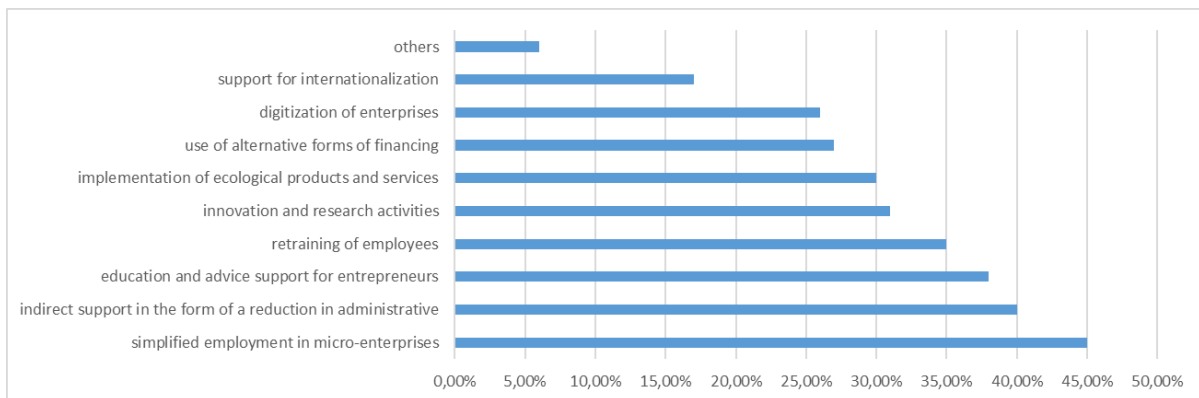
Picture 4 Barriers to the availability of public support for SMEs

Source: [10]

Preferred focus of supporting tools

Topics to which small and medium-sized enterprises would give priority to support from the public sector were identified within the analysis presented in the Attitudes of SMEs to the use of support programs according to which 45% of SMEs express their interest to support simplified employment in micro-enterprises, reduction of administrative and regulatory burdens (40%) and education and counseling of entrepreneurs (38%).

More than one third (35%) of representatives of small and medium-sized enterprises would direct support to retraining employees. Support for the implementation of innovation and research activities would be preferred by 31% of respondents, the introduction of ecological products and services by 30% of respondents, the use of alternative forms of funding by 27% of respondents, support for digitization by 26% of respondents and support for internationalization by only 17%. According to 6% of respondents, support should be directed to other areas.

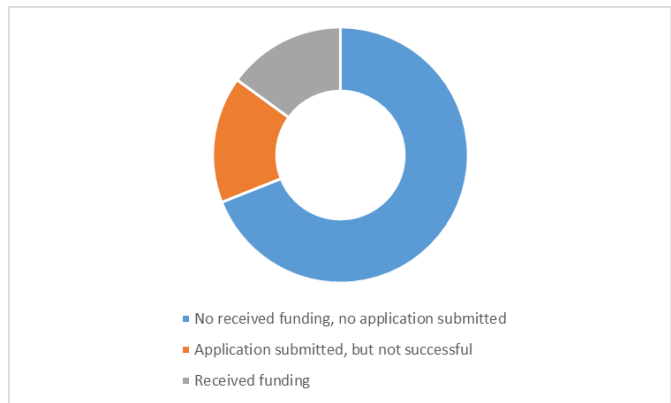


Picture 5 Preferred focus of supporting tools

Source: [10]

Use of supporting tools

According to the results of the survey the finding of which were presented in Attitudes of SMEs to the use of support programs, 16% of small and medium-sized enterprises have used some type of public support in the previous 12 months (e.g. subsidies, loans, guarantees, EU funds, consultancy, mentoring, information services). Another 15% of small and medium-sized enterprises have tried to obtain public support for their business in the previous 12 months, but without success. More than two thirds (69%) of small and medium-sized enterprises have not tried to obtain public support for their business at all in the previous 12 months.

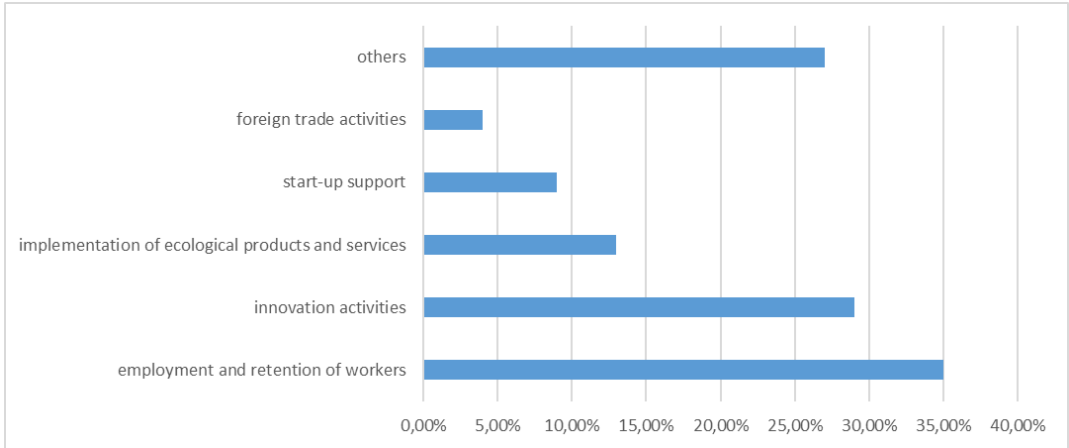


Picture 6 Use of supporting tools

Source: [10]

The detail analysis of the answers shows that in the last 12 months, medium-sized enterprises (28%) used public support the most, while the use of support increased in proportion to the size category of SMEs.

Regarding the use of the received funding for their business in the previous 12 months, more than one third (35%) was used to employ and retain workers while 29% of small and medium-sized enterprises used that finance to support the implementation of innovative activities. For the implementation of organic products and services, support was primarily used in the case of 13% of respondents while almost every tenth entrepreneur (9%) used the obtained support in their beginnings when starting a business.



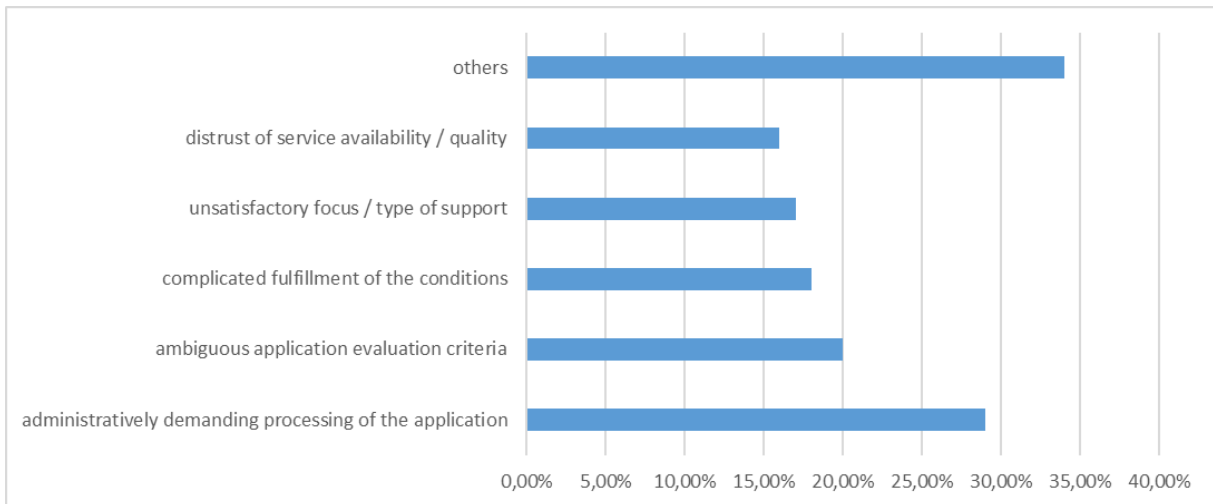
Picture 7 Use of the received funding for their business in the previous 12 months

Source: [10]

Reasons for not being interested in public support for business

The administratively demanding processing of the application for public support was the most frequently cited reason for the lack of interest in public support for business according to the survey presented in Attitudes of SMEs to the use of support programs. In the survey, it was mentioned by almost one third of respondents (29%) who had not tried to obtain public support for entrepreneurship in the previous 12 months.

The unclear criteria for evaluating the application was the reason why one fifth (20%) of small and medium-sized enterprises did not apply for public support. Another 18% of respondents stated that the reason for not applying for public business support was complicated fulfillment of conditions for obtaining support, 17% of respondents stated unsatisfactory focus / type of support and 16% distrust of the availability / quality of the service.



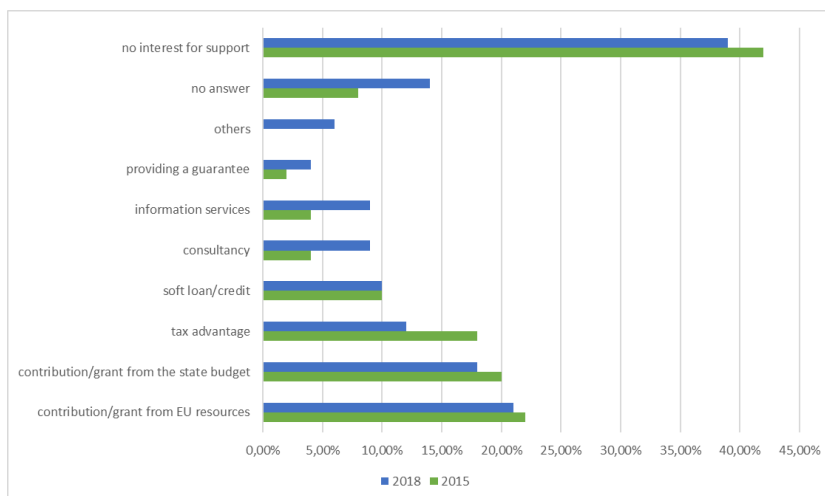
Picture 8 Reasons for not being interested in public support for business

Source: [10]

Other reasons for lack of interest in public support for business were given by one third of respondents (34%), with the most frequently mentioned being: support was not needed (13.6%), poor information (3.9%), or corruption (1%).

Future Interest of SMEs regarding supporting tools

Almost two thirds (61%) of small and medium-sized entrepreneurs in Slovakia plan to use public support for their business in the future according to the survey by Slovak Business Agency (Attitudes of SMEs to the use of support programs). On the contrary, more than one third (39%) of entrepreneurs, according to the results of the survey, expressed a lack of interest in public support for entrepreneurship in the future.



Picture 9 Future Interest of SMEs regarding supporting tools

Source: [10]

More than one fifth (21%) of respondents plan to use a contribution/grant from EU resources in the future while 18% of representatives of small and medium-sized enterprises plan to use the contribution/subsidy from the state budget in the future. 12% of small and medium-sized businesses plan to take advantage of a tax advantage in the future, a 10% soft loan, a loan, 9% advice and information services and a 4% guarantee.

6% of small and medium-sized enterprises plan to use other types of public support in the future and 14% of respondents could not specify exactly the planned type of public support in the future.

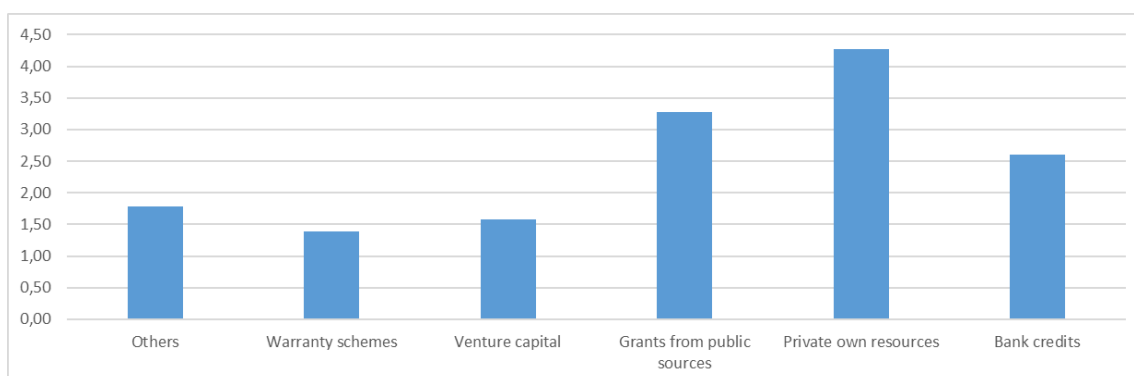
2.2.1.2.4. Access to finance

SMEs in Slovakia, as within other European countries, use various sources of financing to cover the financial needs of their innovative activities what is the reason that the availability of financial resources is very crucial and critical factor in accelerating the innovative efforts of companies.

Financial support for small and medium-sized enterprises in the Slovak Republic is implemented by several entities (from central state administration bodies, specialized agencies, banking institutions and funds, as well as interest, union and professional organizations), while the support can take various forms.

To the access of finance were focused several surveys conducted on national and international survey. Findings of one of them were presented in the Innovative Slovakia - starting points and challenges published by Slovak Business Agency.

As we can see on the graph below, the most important source can be considered own resources, which were identified as important and critical for the financing of innovation activities in the most of participating SMEs. Grants from public sources are the second most important source of financing, followed by bank loans. Venture capital sources and guarantee schemes were identified as insignificant in the largest number of responses. Paradoxically, it is guarantee schemes and venture capital funds that are emphasized as promising forms of support for innovative activities. The low utilization rate of venture capital resources is largely due to the specificities of this form of financing for innovation, which is not accepted by domestic businesses.

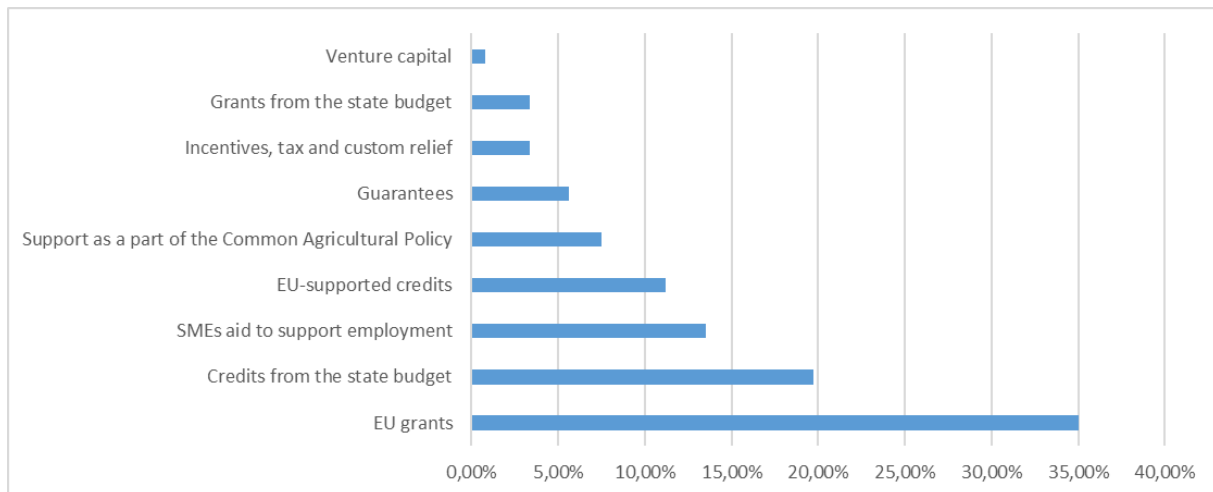


Picture 10 Sources of financing innovations

Source: [4]

According to the findings of Slovak Business Agency in 2018 (Report on the State of Small and Medium-Sized Enterprises in the Slovak Republic in 2018), in terms of the structure of financing forms, the most significant form was the EU grants with a share of 35%, followed by credits from the state budget with a share of 19.7% and for employment support with a share of 13.5%. EU-supported credits accounted

for a significant share of SME financing in that year with a share of 11.2% of the total amount of funds drawn to support SMEs. The total amount of support for SMEs reached almost the amount drawn two years ago.



Picture 11 Sources of financing innovations

Source: [9]

2.2.1.2.5. Lack of skilled labour

The staff of the company is one the core aspect for the success on the market as they are the main source of the created value. In the recent years we have been observing the reports from various fields highlighting the lack of skilled workers.

This problematic topic was also mapped within the survey presented in analytical study Innovations in the Prešov region according to which 31% of companies said they have their own development team, but would need to expand it with more people, 20% have a sufficient number of developers, 20% outsource development activities and 29% focus on day-to-day operations and do not currently develop new or upgrade existing products or services.

But the result, on the base of the survey, proved the problem with a qualified workforce, which is needed to the creation of innovations. When companies are looking for suitable employees to implement development and innovation in the company, in more than 82% cases, the labor market cannot provide people with required skills and knowledge. This is related to the attractiveness of the region, the level of salaries, the education system both in the region and throughout Slovakia, etc. In recent years, companies in almost all EU countries have faced a lack of suitable qualified and committed employees. While individual companies are unable to influence this situation, it is essential that they learn how to fight for an available workforce, how to attract it, how to set up a corporate culture so that they are the best choice for the best people available in the labor market.

2.2.1.2.6. Networking

As identified within previous sections there are several needs which shall be covered by supporting services. In addition to them support activities should place great emphasis also on networking activities. These are often of significant benefit especially to start-ups in terms of exchanging know-how and experience and also in terms of gaining contacts with potential business partners. Moreover,

they can also serve as a tool for better interconnection of innovative entrepreneurs and investors leading to long-term relationship supporting innovation development.

As the Slovak market is already very small and successful start-ups often need to be promoted at the European or global level, these networking events should be international in nature with the participation of start-ups, investors and mentors at least at the level of Central European countries. In terms of implementation, however, ensuring traditional quality of services outside Bratislava has so far proved to be a traditional obstacle in expanding the activities of the start-up ecosystem to the regions.

Effective support for start-up projects from the regions and the capital could also take the form of covering their international presentation - either through the organization of networking events or contributions to their participation and presentation at foreign events and exhibitions. The qualitative survey of a sample of Slovak start-ups, presented in the Analysis of start-ups in Slovakia by Slovak Business Agency, revealed an interesting suggestion pointing to a significant lag of this form of support activities in comparison with other countries.

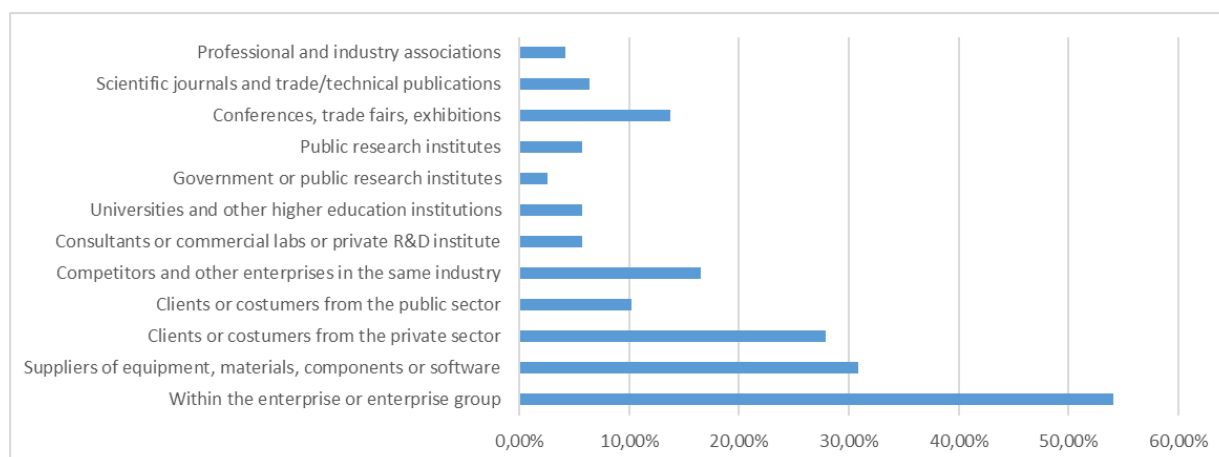
The need of support was identified also within another survey presented in the analytical study Innovation in the Presov Region within which 51.28% of entrepreneurs feel the need to strengthen contacts with other entrepreneurs, universities, research and development institutions to help them with the development of new products and innovation of existing ones and 53.85% would appreciate contacts with other entrepreneurs and institutions to help them win contracts.

2.2.1.2.7. Sources of knowledge

Sources of information for innovation can be found both inside or outside the enterprise while we can categorize them as: internal sources, market sources, institutional sources and other sources.

Main sources of information for innovation within SMEs were analysed and described in the report Innovation activity of enterprises in the Slovak Republic 2014 - 2016.

For 54,1 % of enterprises with technological innovation, were main source of innovation knowledge information acquired within the enterprise or enterprises group (internal sources). It was followed by market sources, of which information from suppliers of equipment, materials, components or software were marked with high level of importance by 30,9 % of enterprises with technological innovations and information from clients and customers from the private sector (27,9 % of enterprises).



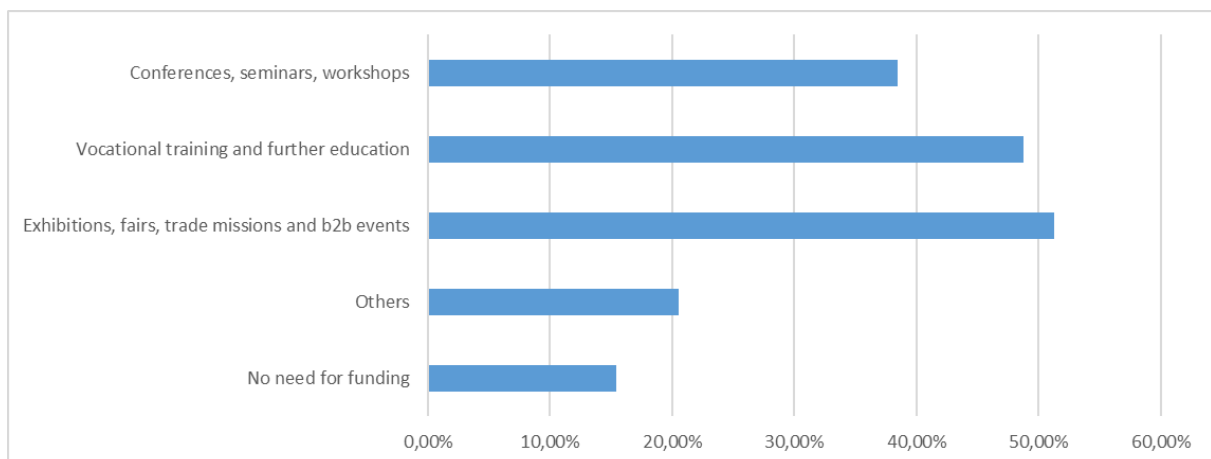
Picture 12 Sources of information for innovation

Source: [7]

Institutional sources (from universities, government or public research institutions and private research institutions) are considered highly important only by marginal number of enterprises with technological innovation. Other sources of information include professional conferences, trade fairs, exhibitions, scientific journal and trade/technical publications, professional and industry associations are considered highly important by 13,8 % respectively 6,4 % and 4,2 % of enterprises.

Following these findings the question of needed support comes out. According to the Innovation in the Presov Region are needs for traditional knowledge sources following - 30.77% of entrepreneurs are able to finance information sources in the form of databases, publications and magazines finance by themselves while 46.15% expressed the need for funding for databases, 33.33% for publications and 33.33% for periodicals.

The same study also identified needs for covering costs for networking as follows - entrepreneurs feel the need for events for exhibitions, fairs, trade missions and b2b events (51.28%), vocational training and further education individuals (48.72%) and conferences, seminars, workshops (38.46%). Only 15.38% of companies stated that they can secure participation in these events from own resources.



Picture 13 Needs for covering costs for networking

Source: [7]

2.2.1.3. Needs and requirements of seniors - desk research

The desk research is a tool that will be used to complex evaluation of Košice region in terms of elderly care based on qualitative and quantitative information about the elderly care system in Kosice region.

Desk research of the Košice region is focused mainly on the following topics:

- analysis of demographic situation and trends in the Kosice region and Slovakia
- elderly care system in the Kosice region and Slovakia
- communication and digitalization trends in the Kosice region and Slovakia
- collection of best practices in the field of elderly care
- elderly social and cultural activities

EGTC Via Carpatia organized the focus group discussions with elderly within the activity D.T1.2.4 Toolbox for Senior Engagement. Information and outputs of this activity will be also included in this part of survey.

2.2.1.3.1. Demographic information about the elderly

The concept of active aging aims to maintain good health for the elderly, thereby reducing the cost of health and social care, creating an environment and an opportunity to remain in employment for as long as possible, thereby reducing pension costs, as well as supporting senior participation in social and political life.

In 2018, nearly one fifth (19%) of the European Union (EU) population was aged 65 and over, while in 2080 it should be almost 30%, of which the share of persons aged 80 or over is projected to increase by two and a half times between 2018 and 2100, from 5.6 % to 14.6 % (Eurostat, 2019). In view of these ongoing changes, which are likely to become even more significant in the coming decades, it is necessary to reflect on the position of older people in our society and how to exploit their potential.

In the region of Košice, the share of people aged 60 and over is 21%, which means 5% increase in the last decade. This trend matches the overall development at the national level at the same time.

Permanently living population on 31 December 2018 (Person, %)		2008			2018		
		Total	Men	Women	Total	Men	Women
Region of Košice	Total	775 509	376 275	399 234	800 414	391 138	409 276
	60+ years	123 405 (16%)	47 937 (13%)	75 468 (19%)	169 448 (21%)	70 182 (18%)	99 266 (24%)
Slovak Republic	Total	5 412 254	2 629 804	2 782 450	5 450 421	2 661 077	2 789 344
	60+ years	924 612 (17%)	366 023 (14%)	558 589 (20%)	1 239 705 (23%)	517 977 (19%)	721 728 (26%)

Table 1: Permanently living population on 31 December 2018 (Number of persons, %)

Source: Statistical office of the Slovak Republic¹

Intensive aging of the population will bring a radical increase in the number and the proportion of the population of the post-productive age. As shown in the projections of Eurostat in the Table 2, the share of people aged 60 and over will be nearly double in 2050 compare to 2018. The data are not available on the regional level but we can assume the similar trend. The shift in the age structure is also related to a strong population year in the second half of the 20th century. The impact of an aging population in Slovakia is significantly increasing. We observe a persistently low birth rate, increase of the average life expectancy at birth, changing age pyramid, decline in the share of working-age people and an increase in the number of pensioners, with consequences for the functioning of the labour market, pension system, health and long-term social care.

¹ We were primarily interested in collecting data on the level of the Kosice region, age (60+ years) and gender (total / men / women). If any these data were not available, we used data on the national level. This is applicable for all the following tables.

Population (Person, %)	2050			2080			2100		
	Total	Men	Women	Total	Men	Women	Total	Men	Women
Total	5 087 967	2 488 486	2 599 481	4 294 987	2 115 108	2 179 879	3 916 753	1 943 375	1 973 378
60+ years	1 888 201 (37%)	859 319 (35%)	1 028 882 (40%)	1 660 722 (39%)	773 261 (37%)	887 461 (41%)	1 541 237 (39%)	730 426 (38%)	810 811 (41%)

Table 2: Population projection 2050, 2080, 2100 (Number of persons, %)

Source: Eurostat

Due to demographic development and low income, older people are exposed to one of the greatest risks among all age groups - the risk of poverty. The current position of seniors in Slovakia compared to EU member states is critical because their income is among the lowest. In Košice region is the total income below the national average and we can assume looking at the national data situation that the cluster of seniors 60+ years from the Kosice region might have even lower income.

Average equalised net income	2017		
	Total	Men	Women
Total Slovak Republic	624	630	619
60+ years	604	628	586
Total Region of Košice	608	-	-

Table 3: Average equalised net income per month (Average number per month)

Source: Eurostat, Statistical office of the Slovak Republic

The health status is mainly influenced by lifestyle, impaired quality of life and environment in some regions, unemployment, social situation and unsuitable housing. The trend of the health development in Slovakia is not very favourable. The average Slovak population is beginning to suffer from serious health problems around 57 years of age. Thus we rank among the European nations with the least healthy years of life.

In the Košice region as well as in the Slovak Republic, the median age tends to increase for both men and women in the long term, although the growth rate is slow. However, within EU, we are still among the countries with the lowest life expectancy at birth.

2.2.1.3.2. Elderly Care System

The Ministry of Health of the Slovak Republic is the central body for the health care, the public health insurance, the health protection, the state health supervision, natural healing baths, natural healing resources, natural mineral waters, the education of health workers and pricing policy in the field of healthcare prices. The health care system is financed from the state budget in the form of the public health insurance. Health care institutions providing institutional care are financed by payments from health insurance companies and partly through the state budget through some capital expenditures. The hospital facilities in Slovakia are mostly state-owned.

Individual types of services that may be used by senior can be divided into health and social.

- General, faculty, university and specialized hospitals provide acute health care. Patients receive daily medical and nursing care, accommodation and food.

- Long-term healthcare is provided by established healthcare facilities: hospitals or long-term care centres, nursing homes, home nursing agencies (ADOS) and hospices.
- Social services are also provided in the competence of the municipality: a nursing service, a day care centre, a relief service, nursing facilities, facilities for seniors.
- Social services provided within the scope of the Košice Self-governing Region: homes of social services and specialized facilities. (National Health Portal, 2019)

The elderly care system can be divided into professional public and private social care providers. Looking at the distribution of social service providers and their capacities, public providers dominate. Real numbers of service beneficiaries are not available. We can assume that provided capacities are fully utilised. Although the numbers may seem satisfying to us, there are many applicants on the waiting list, who urgently need to be placed in one of the aforementioned facilities. The waiting period is already several months, even years, and we can expect a significant increase in the number of seniors in the future.

	Public care provider				Private care provider	
	Region of Košice		Municipalities			
	Number	Capacity	Number	Capacity	Number	Capacity
Facilities for seniors	5	340	9	805	37	1232

Table 4: Facilities for seniors in the Košice self-governing region

Source: Central register of social service providers

The state also promotes the social inclusion of persons with severe disabilities in the society by providing them with one-off and multiple financial contributions to compensate for severe disabilities. Available are financial contributions for the personal assistance, the purchase, use training and adjustment or repair of the medical device, the purchase of lifting equipment, the purchase or modification of a passenger motor vehicle, the adjustment of an apartment, house or garage, the transportation, the compensation of increased expenditures or nursing services (Ministry of Labour, Social Affairs and Family (MoLSAF SR) of the Slovak Republic, 2019).

2.2.1.3.3. Elderly's social and cultural activities

A healthy exercise contributes to maintaining health, high quality of life and reducing health and social care costs. In addition to green areas, cycle paths, outdoor sports facilities, indoor and outdoor pools, sports and rehabilitation centres, sports and recreational facilities and numerous group exercises suitable for or dedicated to seniors are used to develop health and fitness.

The aim of the Košice region is to create conditions and the offer of activities for seniors, to make sports facilities and sports areas accessible to the general public, to create conditions for their technical development and expansion, to build and operate sports areas and facilities, undemanding playgrounds, cycling, cross-country skiing, boating routes, to support projects aimed at building suburban sports and recreational areas, zones with undemanding multipurpose sports equipment in the natural environment. To ensure the completion and modernization of sports facilities in the open country as the part of tourism and recreation centres (The Region of Košice, 2007).

In addition to sporting activities, the Košice self-governing region offers seniors a wide range of cultural and leisure time activities provided by several theatres, cinemas, libraries, museums and galleries,

cultural institutions (e.g. Cultural Centre of the Košice Self-governing Region, Kasarne / Kulturpark, etc.), daily centres, senior clubs and organisations (e.g. Senior house (non-profit organisation)).

2.2.2. Discuss sessions and questionnaire survey

One of the most important parts of the needs assessment process is the identification needs of the elderly and other relevant stakeholders by discussions sessions and questionnaire survey. Discusses sessions and questionnaire survey was organized during the informational seminar organized by EGTC Via Carpatia and Technical University of Kosice. These seminars took place not only in Košice but also in other cities of the region such as Michalovce, Spišská Nová Ves and Rožňava. Seminars were aimed to reach opinions and feedback of representatives of stakeholders of all quadruple helix members - academic sector, industry including public and private senior houses, government and citizens represented by NGOs especially those dealing with seniors. These events providing opportunity to jointly discuss the most important problem of seniors in the Košice region and possible solutions based on the cooperation and co-creation of participating stakeholders.

Thanks to the wide variety of participants, we were able to identify various experiences and knowledge about the topic, and they brought a new point of view on the problematic issues of seniors in our region. This form of communication allowed us to create new networks and connections among different kinds of institutions dealing with elderly care supporting the knowledge transfer and innovation potential thanks to the future cooperation based on the developed contacts. All findings was summarized in the minutes from the sessions which provided us very valuable source of information for future activities, not only I-CARE-SMART service development process, describing quantity and quality of goods and services for seniors in our region.

EGTC and Technical University organized 4 information seminars where a discuss session was held and a questionnaire survey was organ implemented. The cities for seminaries were selected based on their locations and other factors in order to cover the whole Košice region and all stakeholders.

	Information seminar	Date	Number of participants
1.	Michalovce	17.07.2020	16
2.	Košice	09.07.2020	12
3.	Rožňava	09.07.2020	12
4.	Spišská Nová Ves	03.07.2020	8

Table 5: Information seminars organize by EGTC

Source: own processing

2.2.3. Discuss sessions

Discuss sessions are a very important tool for reaching the opinions of the target group and stakeholders about the needs of seniors in the Košice region. Discuss sessions will be focused on the identification of the most important problem of seniors in the Košice region and discuss possible solutions to these problems. Importance of discuss sessions steams from the involvement of several stakeholders and different kind of institutions and target groups. Each of these institutions has different experiences and knowledge about the topic, and they can bring a new point of view on the needs and problem of seniors in the Košice region. This form of communication allows us to create new networks and connections between different kinds of institutions dealing with elderly care, and it can be a starting point for future cooperation between them.

Discuss sessions were held in an informal way, so all participants felt free to share their experiences, opinions and suggestions in the field of elderly care in the Košice region.

Discussion sessions focused of following field of elderly care:

- healthcare
- transport services
- day hospital services
- access to information
- access to technology
- access to education
- catering services
- housing
- centres for seniors

2.2.3.1. Michalovce

Participating institutions

- City of Michalovce, Department of social affairs
- centre for seniors
- retirement homes
- Slovak Union of the Hearing Impaired
- Municipalities
- Local action group
- Slovak Red Cross, Michalovce
- Office of Labour, Social Affairs and Family

Summary of the discussion:

Each organization participating in the discussion had specific needs and opinions about the needs of seniors and the problems they face. It is caused by their different perspective on the topic, the target group they focus on and the region where they operate.

Representatives of all stakeholders summarized the needs and problems of seniors in their regions as follows:

Local action groups:

- lack of educational activities, more lectures and training courses for seniors are needed
- better cooperation with universities of the 3rd age is needed (in the past, there was no interest from universities to cooperate and organize activities for seniors in the city)
- the problem is that seniors do not want to travel (have a lack of options to travel) to Košice, where the activities and services for seniors are at a higher level

Slovak Red Cross, Michalovce:

- delivery service of lunches or other goods for seniors is needed, there is a big demand for this kind of service, but there is a lack of capacity/people who could deliver lunches
- mainly for seniors who live alone
- lack of transport services and technical equipment for seniors
-

The municipality of Trhovište:

- design and management of activities and vents for seniors is needed
- The municipality bought an old fire station that was renovated and the centre for seniors was created there, but the person/body responsible for organizing activities for seniors is missing.

Slovak Union of the Hearing Impaired:

- there as a lack of guide services for seniors
- courses focused on working of seniors with PC, and other technologies are missing (there is a lack of technical equipment such as computers, tablets and so on)
- seniors are interested in attending cultural events such as cinema, theatre and so on, The problem is the absence of hearing aids, and there are no subtitles at events
- Seniors are interested in organizing "creative work" for seniors, various activities where seniors could share their skills

Centers for seniors:

- sports and creative activities for seniors are missing (Olympic Senior Day)
- They would propose the promotion of mobility for the seniors - visiting seniors in other centres, cities, abroad, exchange of seniors between centres for the elderly and so on
- The problem is transport connections for seniors to centres for seniors (they have to take a taxi)
-

Department of Social Affairs of the City of Michalovce:

- The city supports seniors' clubs (financial support)
- specific groups are created within the clubs (seniors interesting in dance, sports, education and so on)
- training courses and courses focused on working with a PC are needed
- volunteer activities of seniors are organized in the city - painting the kindergarten, arranging public areas of the city and so on

Michalovce senior's house:

- barrier-free spaces and entrances to public institutions and buildings are needed
- there is also a shortage of specialists and staff working with seniors

- there is a lack of specialized facilities for the seniors and homes for the seniors must provide other services (they replace the role of hospices), which are not of good quality, so they cannot accept seniors on whom they focus
- long waiting time for admission of a senior to specialized facilities for seniors
- lectures and courses for seniors must be organized directly in centres for seniors
- for immobile seniors who cannot attend, it is necessary to provide a video recording of lectures and courses
- there is a lack of equipment (PC, tablets, internet connection) - seniors cannot communicate with their families
- some services for the elderly should be provided directly in the facilities for the elderly - hairdresser, manicure, massages and so on

Office of Labour, Social and Family Affairs:

- it is necessary to help seniors who are looking for a job

2.2.3.2. Košice

Participating institutions:

- centre for seniors
- Košice self-government region, Department of social affairs
- City of Košice
- Union of the Blind and Visually Impaired of Slovakia
- Kontakt, Facilities for Seniors and Specialized Facilities
- Seniorcentrum Svätej Alžbety n.o. Rozhanovce
- Social services facility Ďurd'ošík

Summary of the discussion:

- monitoring equipment / bracelets for seniors are needed (it is expensive for centres for seniors and the seniors themselves), these devices provide information about heart rate and temperature of seniors - important information for doctors, it also provides function SOS for seniors living alone
- education and training of seniors in working with computers is needed, providing / donating PCs for centres for seniors
- Overview of innovations and new technologies for seniors - courses for seniors on working with new technologies
- seniors are interested in cultural and sports activities, trips, recreation, etc., but in Košice, these services are not provided to a sufficient extent
- services for the elderly should be provided directly in the facilities - cutting, hairdressing, etc., cooperation with secondary vocational schools should be developed in this way

- provision of transport services for seniors is needed - travel of seniors from the countryside to centres for seniors
- activities and events for seniors, their relatives and kinds are needed, cooperation between centres for seniors and nursery schools and primary schools or companies' events/teambuilding in centres for seniors could be one of the solutions
- one common centre for seniors on Košice is needed

2.2.3.3. Rožňava

Participating institutions:

- Center for seniors
- Social enterprise
- The city of Rožňava
- Slovak Red Cross, Rožňava
- Regional Public Health Office, Rožňava
- Association Affected by Diseases of Civilization
- SocioCentrum , Rožňava
- Rožňava Retirement Club
- Social services home

Summary of the discussion:

- the need to raise the awareness of seniors about the activities and events they can attend (for example Rožňava Fair for Seniors (organized by the town hall)
- it is necessary to provide tools and equipment for providing first aid (such a device as a defibrillator or barometer) for centres for seniors and other institutions that work with seniors
- distribution a "Senior Boxes" for seniors with basic needs and tools for seniors (drug dispensers, etc.) is needed
- it is necessary to increase the awareness of seniors in the field of health care and social services
- Retirement clubs would welcome meetings with doctors and courses on basic health care for seniors/immobile patients (over 80)
- Support for local governments which do not have enough funding to provide basic care for seniors is needed
- the problem is lack of facilities for seniors, overcrowded facilities for seniors, long waiting times, few volunteers/volunteer institutions that help seniors
- raising awareness of social service vouchers of social enterprises that can help seniors is needed
- some services for the elderly should be provided directly in the facilities for the elderly - hairdresser, manicure, massages and so on
- the legal aid for the elderly is needed - assistance in applications, writing forms, appeals, representation at court hearings - similar to field social work

- It is necessary to support and promote volunteering activities for seniors

2.2.3.4. Spišská Nová Ves

Participating institutions:

- Local action groups
- City of Spišská Nová Ves, Department of Social Affairs
- Centers for seniors

Summary of the discussion:

- lack of services for cancer patients, seniors have to visit doctors in other cities
- there is a lack of assistants for seniors
- there is no barrier-free access in public buildings
- it is necessary to organize joint activities of seniors, children, young people such as trips for seniors and other activities
- it is necessary to provide tools and equipment for providing first aid (such a device as a defibrillator or barometer) for centres for seniors and other institutions that work with seniors
- distribution a "Senior Boxes" for seniors with basic needs and tools for seniors (drug dispensers, etc.) is needed
- connecting clubs for seniors and other institutions that work with seniors is needed
- it is necessary to improve communication with seniors themselves, not with representatives of retirement houses
- support and assistance to seniors at their home is needed
- providing rooms where seniors can meet and communicate with each other and showing their skills to other seniors

2.2.3.5. Summary of discuss sessions

Based on the results of all discuss sessions, we were able to summarize the most important findings. Although various stakeholders and institutions from different regions of the Košice Region took part in the discussions, several common needs and problems of seniors of all participants and regions were observed. There was a problem in the low level of awareness of seniors about health and social services, which are provided in the Košice Region. Problem is also the lack of capacities of centres for seniors, long waiting times and lack of barrier-free entrances to public buildings.

The most important needs of seniors identified from discuss sessions can be included into the following categories:

1. Education

Seniors in Košice region need education and training courses for working with new technologies such as a computer, tablet, internet and other communicational devices. For seniors, it is very important to

regularly communicate with their family, so mentioned devices help a lot. These courses should take place directly in centers for seniors.

2. Providing technology for seniors

A lot of seniors are interesting in working with new technologies. But a lot of centres for seniors and other institutions that work with seniors do not have enough (or no) technological devices for seniors. These institutions usually have no more money to buy these devices. Therefore, it is necessary to help these institutions to secure sufficient technological equipment.

3. Networking of institutions working with seniors

There is a lack of communication and cooperation between institutions working with seniors and institutions providing elderly care. Better communication between these regional stakeholders could improve the quality of goods and services for seniors in the Košice region. According to the participants of discusses sessions, each institution does not cooperate with other ones, so it has not enough resources and capacities to ensure quality event and activities for their seniors. With the cooperation of several institutions, more quality events and activities for seniors could take place in the region. Therefore, it is necessary to network these institutions and build cooperation between them.

4. Activities, event and services for seniors

There are lack of activities and events organized especially for seniors in Košice region. According to the participants of discusses sessions, there is a high demand for these activities from the seniors' side. Seniors in Košice region need to have more cultural and sports activities, trips, recreation and so on. Another important needs of seniors are services provided directly in centers for the elderly such as hairdresser, manicure, massages and so on.

2.2.4. Questionnaire survey focused on seniors and institutions dealing with seniors

This approach includes the questionnaire designed for seniors and all relevant stakeholders. The questionnaire contained optional questions and open-ended questions. The aim of the questionnaire was to identify the opinions of seniors and stakeholders and their needs in the field of elderly care and development goods and services for seniors.

Through the questionnaire survey, it was possible to identify the most important problems and needs of seniors, products and services for seniors which are a priority and which are missing in the Košice region, procedures that should be chosen in development necessary products and services, most important local actors who want to cooperate in the development and improving elderly care in the Kosice region. Questionnaire survey provided quantitative and qualitative data and information, and it allowed better understanding and evaluating of needs of seniors. In the analysis and evaluation of quantitative parts of the questionnaire, a 7-point Likert scale was used. The mode, median, inter-quartile range and mean were used to evaluate the responses. The questionnaire was distributed among the target group at information seminars and promotion events organized by EGTC Via Carpatia and Technical University of Košice, and also in electronic form. We reached 48 responses from important stakeholders and target group in the Košice region.

The questionnaire contained questions related to the following issues:

- willingness to cooperate and participate in the design and development of products and services for seniors in the Košice region
- evaluation of the quality of provided products and services for seniors in the Košice region
- sorting the listed products and services for seniors within the Košice region according to its importance
- opinions on what products and services for seniors are mission and should be developed in the Košice region
- opinions on what approaches would be chosen in developing proposed products and services for seniors
- opinions on the role of regional actors in developing, and providing goods and services for seniors

2.2.4.1. Cooperation in supporting the creation of products and services for seniors

Within the questionnaire, we identified institutions and persons who are interested in participating in the support and creation of products and services for seniors in the Košice region.

Following institutions want to cooperate and be active in developing goods and services for seniors in the Košice region:

Michalovce	<ul style="list-style-type: none"> - Slovak Union of the Hearing Impaired - Slovak Red Cross, Michalovce - Michalovce senior's house - The municipality of Trhovište - City of Michalovce, Department of social affairs - Local action group Zeplín - Office of Labour, Social Affairs and Family
Košice	<ul style="list-style-type: none"> - Social services facility Ďurďošik - City of Košice - Seniorcentrum St. Alžbeta, Rozhanovce - Union of the Blind and Visually Impaired of Slovakia - Day hospital St. Helena - LaViena - ARCUS - specialized facility for the elderly
Rožňava	<ul style="list-style-type: none"> - Slovak Red Cross, Rožňava - Sociocentrum, Rožňava - City of Rožňava, Department of Social Affairs - Suburbium Rožňava - Day center for seniors Rožňava - Regional Office of Public Health in Rožňava - Association Affected by Diseases of Civilization, Rožňava - Buzgó, social enterprise

Spišská Nová Ves	<ul style="list-style-type: none"> - City of Spišská Nová Ves - Slovak Association of the Disabled, District Council - Lipa - Retirement Club - Union of pensioners in Slovakia, municipal organization
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Table 6: Institutions that want to cooperate and be active in developing goods and services for seniors in the Košice region

Source: own processing

The survey also found out how often they would be willing to meet/communicate and discuss the issue of elderly care. We also found out what form of communication they prefer. Most stakeholders agreed to regular monthly meetings where they will discuss the level of products and services for seniors in the Košice region. The most preferred form of communication was personal meetings and mail communication. There was a very low interest in online meetings and phone calls. The reason for the high demand for a personal meeting was the fact that it is the most effective form of communication.

2.2.4.2. The importance of products and services for seniors in the Košice region

Participants of the meetings evaluated the importance of individual products and services for seniors in the Košice region. Selected fields of products and services for seniors were rated on a scale from 1 to 9, where 1 means that it is the most important field and 9 means that it is the least important field. The evaluation of this part of the survey was made by using the average of responses for each field of elderly care. Table below shows products and services sorted by importance for participants of seminar in Michalovce. Participants of the seminar in Michalovce consider health care services as the most important field of elderly care in the region. The second most important field of services for seniors are catering services. There is a high demand for catering services and food delivery from seniors in Michalovce. Problem is the lack in capacities and resources to meet these needs. Another important area of services for the elderly is the services of retirement homes and centres for the elderly. Participants pointed out mainly the lack of capacity of these devices and long waiting times. The participants identified the access of seniors for education and technology as the least important area of products and services for seniors in Michalovce.

No.	Field of products and services for seniors	Average
1.	Health care services	1,86
2.	Catering services	3,46
3.	Retirement homes services	3,72
4.	Day hospital services	4,92
5.	Transport services	5,00
6.	Seniors' access to information	5,23
7.	Housing	5,77
8.	Seniors' access to education	7,00
9.	Seniors' access to technology	7,62

Table 7: The importance of products and services for seniors in Michalovce

Source: own processing

Table below shows products and services sorted by importance for participants of seminar in Košice. Participants of seminar consider health care services, seniors' access to information and retirement homes services are the most important services for seniors in Košice.

There are quite a lot of events, activities and possibilities for seniors on Košice, but it often happens that seniors do not know about these activities. Therefore, informing seniors about these events and activities is very important. Retirement home services are also important, especially because of the low capacity of these facilities and the high demand for these services. This is related to the increase in the number of seniors over the age of 60 not only in the Košice region but also throughout Slovakia. In Košice, as well as in Michalovce, the least important are services related to the access of seniors to education and technologies.

No.	Field of products and services for seniors	Average
1.	Health care services	1,75
2.	Seniors' access to information	3,17
3.	Retirement homes services	4,20
4.	Housing	4,60
5.	Catering services	4,67
6.	Transport services	5,14
7.	Day hospital services	5,2
8.	Seniors' access to technology	7,00
9.	Seniors' access to education	7,43

Table 8: The importance of products and services for seniors in Košice

Source: own processing

Table below shows products and services sorted by importance for participants of seminar in Rožňava. Stakeholders participated in the seminars held in Rožňava also consider as most important health care services, and retirement homes services. Another important field of services in Rožňava are day hospital services. There are a lot of seniors who live alone, or their relatives are at work, and they are bored at home. Therefore, they need to have a place to spend free time and engage in various activities and meet other seniors. The least important are services related to the access of seniors to education and technologies.

No.	Field of products and services for seniors	Average
1.	Health care services	2,60
2.	Retirement homes services	3,50
3.	Day hospital services	3,75
4.	Transport services	4,44
5.	Catering services	4,78
6.	Seniors' access to information	5,11
7.	Housing	5,13
8.	Seniors' access to education	7,38
9.	Seniors' access to technology	8,25

Table 9: The importance of products and services for seniors in Rožňava

Source: own processing

The situation in Spišská Nová Ves is similar to previous cities. The most important services for seniors in this city are related to health care services and catering services. An important finding is that transport services are an important service for seniors in this city. Many stakeholders pointed out that the several type of specialist doctors are missing in the city and many seniors must travel to another cities to visit doctor. Therefore it is very important to have good and properly secured transport connections and service for the elderly.

No.	Field of products and services for seniors	Average
1.	Health care services	1,00
2.	Transport services	3,50
3.	Catering services	4,00
4.	Seniors' access to information	4,25
5.	Retirement homes services	5,25
6.	Housing	5,75
7.	Day hospital services	6,00
8.	Seniors' access to technology	6,60
9.	Seniors' access to education	7,50

Table 10: The importance of products and services for seniors in Spišská Nová Ves

Source: own processing

Based on results of survey in all previous cities, we elaborated the summarization of all obtained information. Several differences between the importance of products and services in all cities were observed. But the health care services were evaluated as the most important services for seniors in all cities. The most respondents pointed out that quality health care is the crucial factor that can improve the life of seniors. Several activities and tools were suggested to improve health care services in the Košice region. Respondents mentioned mainly the health monitoring bracelets that watch the most important vital functions of seniors such as heart rate, temperature, blood pressure and so on. The bracelet can warn relatives of seniors and doctors in case something happen. The second most important field of elderly care for participants are retirement homes services. Regarding this field of services, respondents pointed out that it is important to secure quality services of retirements houses. It includes quality staff, equipment and activities for seniors. One of the very important services for seniors is also catering services. A lot of seniors live alone, and a lot of seniors are immobile, and it is problematic for them to cook, go shopping for groceries and other things. The delivery of lunches and food would help them a lot.

The least important area of services for seniors concerns access to education and technology. It is a bit surprising, as the respondents in the discussions pointed to the insufficient technological equipment of facilities for seniors and the low level of ability of seniors to work with new technologies. It may be caused mainly by shortcomings in other areas of products and services for seniors in the Košice Region, which need to be developed as a matter of priority.

No.	Field of products and services for seniors	Average
1.	Health care services	1,86
2.	Retirement homes services	4,03
3.	Catering services	4,13
4.	Seniors' access to information	4,69
5.	Transport services	4,70
6.	Day hospital services	4,80
7.	Housing	5,40
8.	Seniors' access to education	7,25
9.	Seniors' access to technology	7,52

Table 11: The importance of products and services for seniors in Košice region as a whole

Source: own processing

2.2.4.3. The quality of products and services provided for seniors in the Košice region

Respondents of seminars consider goods and services for seniors in the Košice Region to be of good quality and gradually improving, but there are several problems in this field. The evaluation quality of goods and services for seniors can be divided into two perspectives. In the case of active seniors, products and services for this group of people are relatively high quality and sufficient. In the case of inactive or immobile seniors who require special care and approach, there are more problems in goods and services that are provided in Košice regions.

The most mentioned problems and shortcomings are as follows:

- shortcomings in meeting seniors, education, and listening to their views
- few specialized facilities and insufficient capacity for seniors and poor availability of specialists
- a big problem is the lack of barrier-free access in facilities for seniors and public buildings and institutions
- institutional services are developing well, but the quality of provided landscaping services is lower
- seniors are insufficiently informed about these products and services
- insufficient information about possible activities for seniors
- it would be appropriate to expand both field and residential services
- weak interconnection of institutions dealing with the issue of seniors

In this part, the respondents evaluated the quality of individual products and services for seniors in the Košice region. This part of the survey was carried out in the form of a scaled questionnaire. In this section, was used the seven-point rating of Likert's scale. The scale was designed as follows: 1 - the lowest quality, 7- the highest quality. The evaluation of this section was carried out using the mode, median, inter-quartile range and average ratings. There were assigned coefficients from 1 to 7 for each point of the scale and multiplied the values obtained for individual field of products and services by the respective coefficients. Based on this, the mode, median, IQR and average was calculated for each field. Products and services were then ranked according to the calculated average of the rating by importance. The table below shows particular fields of products and services for seniors sorted by quality.

Respondents consider the products and services of retirement homes and catering services for seniors to be of high quality. Respondents also consider these kinds of services as the most important in the Košice region. Services related to seniors' access to technology, education and information were evaluated as low quality. Seniors' access to information was evaluated as a very important field of services for seniors in previous part of questionnaire. Results of discuss sessions show that according to the respondents, seniors' access to education and technology are very important services that should be improved in the Košice region. Therefore, the focus should be given on support of these kind of services.

	Mode	Median	IQR	Average
Retirement homes services	6	5	3	4,70
Catering services	5	5	1	4,59
Housing	3	4	2	3,91
Day hospital services	3	3	2	3,83
Health care services	4	4	2	3,71
Transport services	3	3	1	3,39
Seniors' access to information	4	3	2	3,23
Seniors' access to education	3	3	2	2,90
Seniors' access to technology	3	3	2	2,76

Table 12: Particular fields of products and services for seniors sorted by quality.

Source: own processing

2.2.4.4. Development of products and services for seniors in the Košice region

Respondents evaluated products and services for seniors that should be developed and supported in the Košice region.

The most mentioned products, services and activities for seniors are as follows:

- development of accommodation facilities for the elderly
- cultural events, creative and hobby activities for seniors
- help for seniors directly in the household, home care for seniors
- delivery of food, medicines and medical devices
- more specialized facilities for seniors and support for the availability of specialist doctors are needed
- support of voluntary activities for seniors
- expansion and support of hospice care for seniors
- support for activities and programs of universities of the 3rd age
- services for the elderly from social enterprises
- transport and consulting services for seniors
- providing services such as hairdresser, pedicure, manicure, makeup directly in facilities for seniors
- providing services such as hairdresser, pedicure, manicure, makeup directly in facilities for seniors
- sports activities for seniors, dance classes and so on
- social and legal counselling services for the elderly
- senior boxes (with basic needs for seniors)
- community support system for the elderly, networking of organizations covering the elderly care

- SOS bracelets and monitoring devices

2.2.4.5. Products and services for seniors that are missing in the Košice region

Respondents evaluated products and services for seniors that are missing in the Košice region.

The most mentioned products, services and activities for seniors are as follows:

- there is a lack of simultaneous translation and subtitles for the hearing impaired at cultural events, in theatres, cinemas and so on
- low capacity of retirement homes for seniors
- nursing service
- hospice care for seniors that would relieve facilities for seniors
- help for seniors living alone
- cooperation of facilities for seniors with universities of the 3rd age from Košice, which would prepare activities for seniors in the region
- seniors' clubs
- There is no information system for seniors and relatives and potential clients on the availability of social services (overview of facilities for seniors, vacancies, etc.)
- monitoring devices for seniors (smart bracelets)
- positioning chairs for immobile seniors

2.2.4.6. The process of developing products and services for seniors

In this part of the survey, respondents suggested procedures to be chosen in the development of products and services for seniors in the Košice region.

The most mentioned processes and tool are as follows:

- better coordination and cooperation of institutions dealing with the issue of seniors at the regional level
- creating a council of elders within the region to help determine priorities in this area
- create a page with information about what can be provided to seniors (what services)
- networking of institutions, the cooperation of companies, schools, Košice self-governing region
- the need to collect and evaluate information about the situation of elderly care and facilities for the elderly in the region
- creation of a network of counselling services for seniors, raising awareness of seniors and their relatives about services for seniors in the form of leaflets and brochures
- cooperation with seniors, identification and mapping of their needs in cities and municipalities (through questionnaires), implantation of obtained information into a local and regional action plans

- creation of a strategic document for the development and support of elderly care

2.2.4.7. Representative survey among seniors within Košice Region

The survey was prepared according to the international quality standards ESOMAR, the standards of the Slovak Association of Research Agencies. A quantitative method of data collection was used and respondents were contacted by telephone. A total of 700 respondents took part in the survey. The survey was conducted in the period from 18.9. to 1.10.2020. The research sample is representative of the population of the Košice Region aged 45 and over in the quotas of the district, sex, and education.

ECONOMIC ACTIVITY OF SENIORS OVER 60 YEARS

94.8% of seniors over 60 are retired in the Košice Region, 3.6% are still working, 1.4% are in business, and 0.2% are unemployed (although they are not yet retired).

In the group with the age of over 45 years, 73.3% of respondents are retired.

THE WAY OF LIVING OF SENIORS OVER 60 YEARS

Most of the seniors over 60 - almost half (42.7%) live in a household with a spouse or partner. Another quarter (28.4%) live in households with several other family members in addition to spouses. However, more than a quarter (28.6%) of seniors over 60 live alone! There is probably only a small proportion of seniors of this age living in facilities for the elderly. There is probably only a very small proportion of seniors of this age in facilities for the elderly - in our survey they accounted for only 0.4% (despite great efforts, the directors of these facilities did not find enough of their clients who would be mentally able and willing to become respondents).

Women over 60 years (33% of them) are more likely to live at home than men (17% of them). 53% of men, but only 39% of women live with their spouses.

Up to 45% of seniors over the age of 80 live alone at home, 33% with their spouse, and 23% at home with other members of the household.

FAMILY BACKGROUND OF SENIORS HOUSEHOLDS

Seniors over 60 who live at HOME are most often two-member (30.1%) or three-member (30.1%) households. 24.5% of seniors over the age of 60 who live at home live in four-member households.

PRESENCE OF SENIORS OVER 60 YEARS IN HOUSEHOLDS OF PEOPLE AGED 45-60 YEARS

Almost half (42%) of households of people aged 45-60 also live with seniors over 60!

Younger people aged 45-60, in whom older relatives (over 60) do not live in their households, almost half (43.1%) of their senior relatives live alone in their households, and 14.7% of them live in their households with spouses. Another 17.2% of them live in their households with other family members besides their spouses. Only 1.7% of younger respondents declared that their older relatives over the age of 60 live in facilities for elderly.

Almost a third (29.3%) of people aged 45-60 from the Košice Region declared that they have NO relatives over the age of 60.

MOBILITY OF SENIORS OVER 60 YEARS

The ability or disability to move independently is almost the same for seniors over 60 years for both men and women.

Three quarters (74%) move independently without support, a quarter (24.6%) need a walking stick or crutch, 1% use a walker. 0.4% of our respondents declared that they are completely immobile - they are moving in a wheelchair.

However, the situation with mobility is different for "younger" seniors (60-80 years) and "older" seniors:

- 83% of the younger seniors do not need support when walking, the older ones only 46% need support.
- 16% of younger seniors and 52% of older ones need a walking stick or crutch when walking.

THE NEED FOR CARE FOR SENIORS

20% of respondents over the age of 45 in the Košice Region take care of a senior relative or acquaintance who needs care. Another 7.8% declared that they would have such an obligation soon. Such care is (will be) focused on parents (44.8%), spouses (31.3%), other relatives (13.6%), mother-in-law (13.1%), other persons (1.5%).

26% of the respondents aged 45-60 take care of seniors and another 6% will have to take care of them soon.

INTEREST IN THE CENTER OF HEALTH AND LEISURE ACTIVITIES FOR PEOPLE OVER 60 YEARS

Approximately a quarter (26.8%) of respondents over the age of 60 from the Košice Region declared interest in such prepared facilities. 4.2% would consider their interest according to the price of the activities, 4.5% are currently unable to assess their future interest. However, 64.5% answered I am NOT INTERESTED (64.5%) in the services of the Center for Leisure Activities for Seniors.

A more detailed analysis showed that women are slightly more interested than men. Interest is rising with increasing education. Interest is also higher among those seniors who are still working (39%) and then among those who are no longer working and are fully retired (27%). Higher interest (30%) was also declared by seniors who live at home alone or at home with their spouse, compared to those who live at home with several members of the household. Even those who move with crutches/walking sticks declared some interest (23%), compared to those who move without support (29%).

AWARENESS OF SERVICES FOR SENIORS IN THE REGION

Almost half (45.6%) of all respondents declared that they had enough information about what services for seniors are currently available in the Košice Region. However, the lack of information (partial or complete) was declared by almost the same percentage of respondents (42.3% in total).

Information is missing:

- more often for people aged 60-80, the least for people over 80;
- more often for men than women;
- to rather less educated;
- to respondents living alone at home;
- to respondents who live in the districts of Sobrance, Košice II, Košice III, Michalovce.

The information is not needed at all (according to them) by seniors living in facilities for the elderly.

AWARENESS OF SPECIFIC SERVICES FOR SENIORS IN THE REGION

According to the results of our survey of respondents over the age of 45, awareness of specific services for seniors in the Košice Region is VERY LOW! As many as 70.9% could not spontaneously mention any specific service for the elderly.

Specific spontaneously mentioned services as "Senior Retirement Clubs" (11.3%), "Retirement Homes" (3.4%), and "University of the Third Age" (2.8%) were relatively the most frequent.

Some of the spontaneous responses were probably only an assumption of the provision of the service, not specific knowledge of the service provided.

THE NEED FOR OTHER ADDITIONAL SERVICES FOR SENIORS IN THE REGION

Respondents could first choose which of them would need other services for seniors in addition to those already provided.

About a quarter (26%) said they did not need any additional services!

For those who need additional services, the order is as follows:

- | | |
|------------------------|-------|
| - Health services | 54.3% |
| - Social services | 26.7% |
| - Cultural services | 17.2% |
| - Sports services | 12.2% |
| - Educational services | 11.1% |

A more detailed analysis revealed that:

- The order of needed services is about the same for men and women;
- Cultural services are slightly more often requested by people with secondary education;
- The older the age, the less they need other additional services;
- Health services are more often needed by seniors in the Košice 3, Rožňava, Spišská NOVá Ves regions.

THE NEED FOR OTHER ADDITIONAL SERVICES FOR SENIORS IN THE REGION

However, a relatively large proportion of respondents failed to specify the need for services in defined areas.

The most common among those who identified their requirements were the following:

- Health services: better treatment, priority treatment; I DON'T KNOW 28%
- Social services: higher pensions, more caregivers; I DON'T KNOW 37%
- Cultural services: theaters, meet ups - debates; I DON'T KNOW 33%
- Sports services: group sports games; walking; I DON'T KNOW 34%
- Educational services: language courses; PC courses; I DON'T KNOW 48%

EVALUATION OF THE SUFFICIENCY OF SERVICES FOR SENIORS IN THE REGION

Satisfaction with the sufficiency of services for seniors is different in different areas within the Košice region.

The order according to satisfaction with the services is as follows:

- Access to information 47.8%
- Catering services 43.5%
- Healthcare 42.6%
- Transport services 36.5%
- Access to technology 29.8%
- Access to education 26.7%
- Retirement Homes 17.6%
- Day Centre for Elderly 15.5%

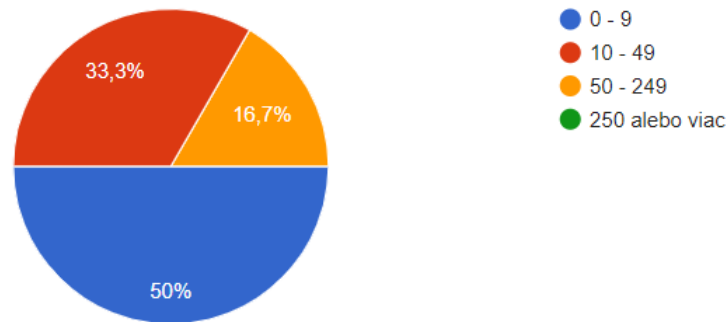
In the case of Day Centre for Elderly, survey found that up to 48% of respondents have no information and therefore cannot assess it, and another 23.5% consider it completely insufficient.

There is also a high proportion of Retirement Homes who rate this service as insufficient or not existing (28.5%).

2.2.5. Questionnaire survey focused on SMEs

In cooperation with Slovak Chamber of Commerce and Industry in Slovakia, we contacted almost 1,000 Slovak companies while 6 of them shared with us their opinion about the main urgent needs and

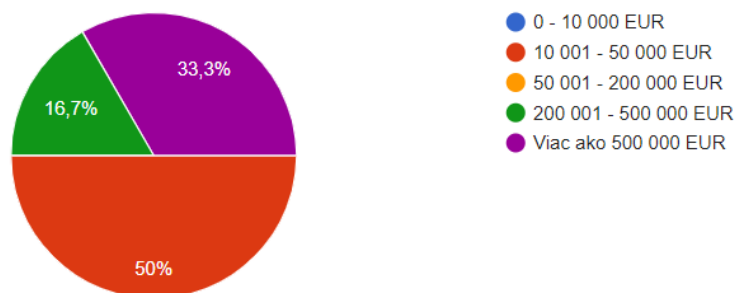
requirements in the process of innovation development and especially cooperation with the future customers and R&D institutions in the process of new products and services development.



Picture 14 Number of employees

Source: own processing

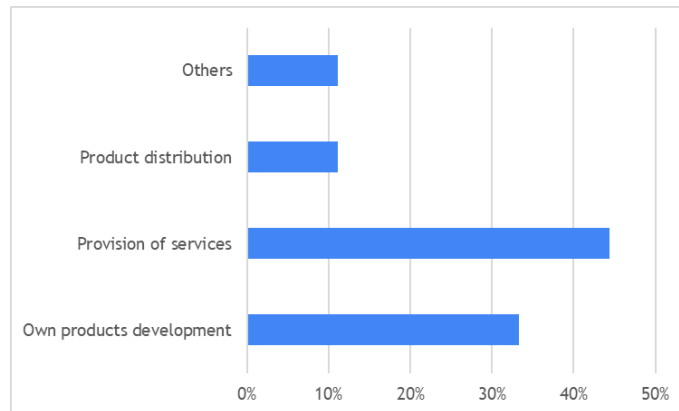
Within our survey provided their feedback mainly the micro and small companies, as we can see on the graph below (Picture 14) and according to the number of employees is their yearly revenues.



Picture 15 Yearly revenues

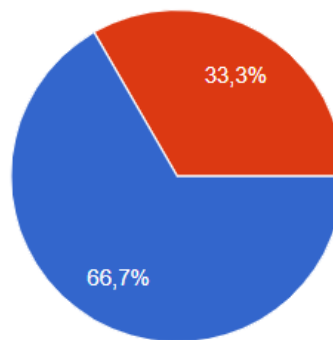
Source: own processing

The most of the participating companies is focusing on the provision of services and own products development what while 66,7% of them are developing their own products and services (60%) what means that they can provide us very relevant feedback about the needs within the innovation process.



Picture 16 Activities of interviewees

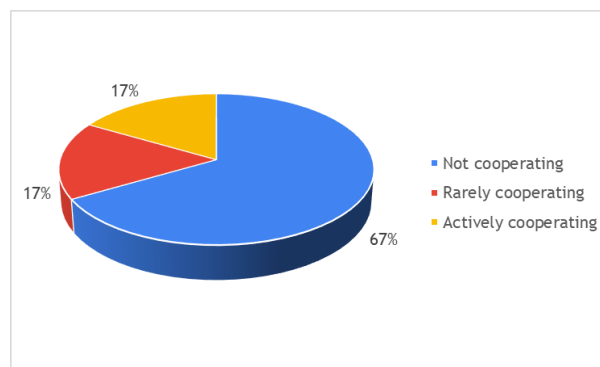
Source: own processing



Picture 17 New products and services development

Source: own processing

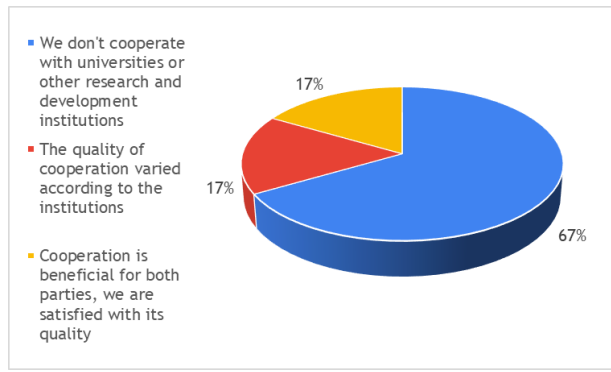
As we have described in the previous part of this document one of the most problematic part of the innovation process in Slovakia is cooperation of SMEs with universities and other R&D institutions what proves also our survey within which 67% of respondents are not cooperating with these stakeholders.



Picture 18 Cooperation with universities and other R&D institutions

Source: own processing

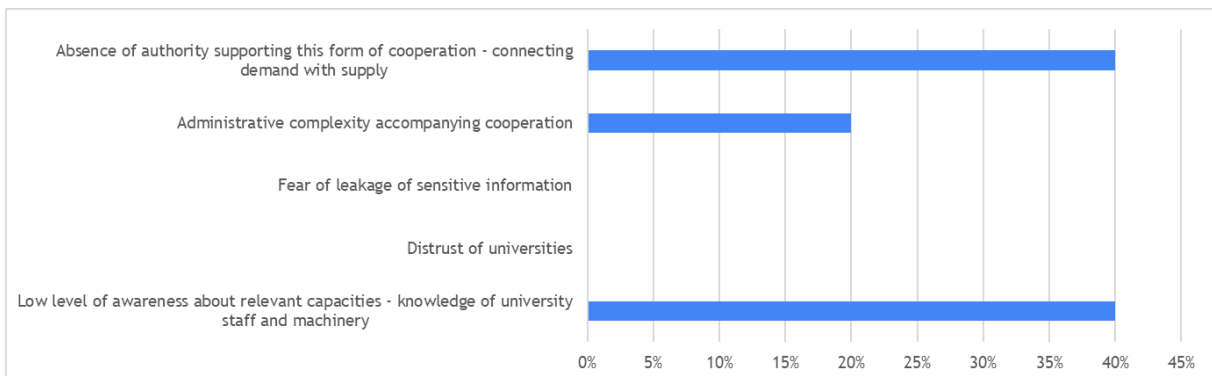
On the other hand there is positive information that interviewees expressed their satisfactory with the quality of cooperation once it was implemented. But, as we can see, 20% respondents stated that today, they don't need to cooperate with universities or other R&D stakeholders what makes us thinking about the potential reasons.



Picture 19 Quality of the cooperation with universities and other R&D institutions

Source: own processing

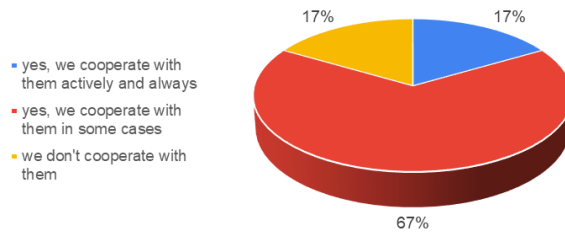
To effectively support the co-creation of innovative products and services, there is needed the first step to be done - to identify the barriers for this cooperation. The mainly expressed problematic aspects are the low level of awareness about the available technical infrastructure and expertise within the R&D institutions as well as the absence of the authority promoting and supporting the cooperation of stakeholders. Moreover, there is still some doubts about the administrative process leading to the cooperation regarding the time needed to fill all administrative request what probably comes from the fact that there is no clear description of such a process.



Picture 20 Barriers of co-creation of innovations

Source: own processing

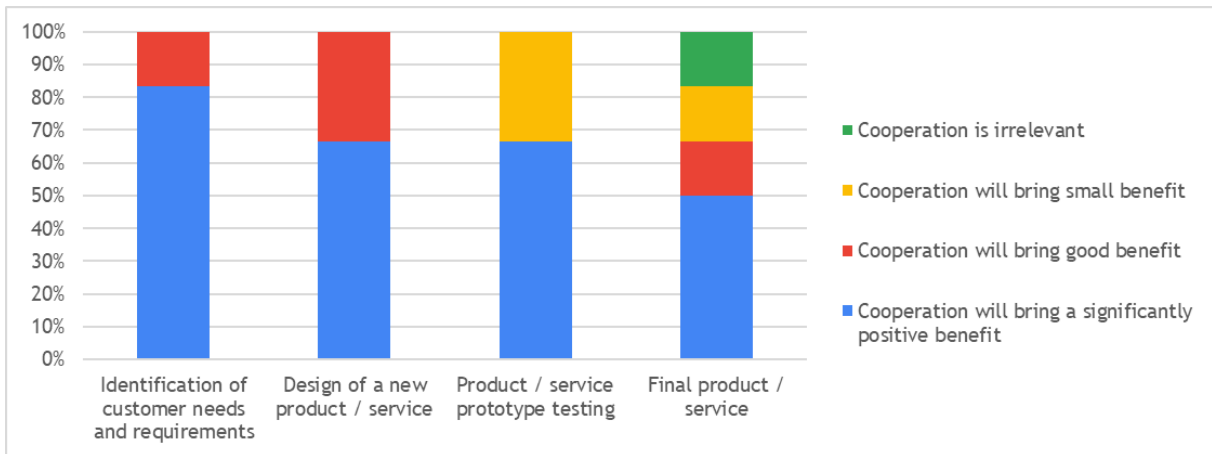
According to our survey there seem to be much more popular cooperation with customers as 84% of the included companies cooperate at least in some cases with them while 17% cooperate actively and always with the customers within the development of new products and services.



Picture 21 Cooperation with customers

Source: own processing

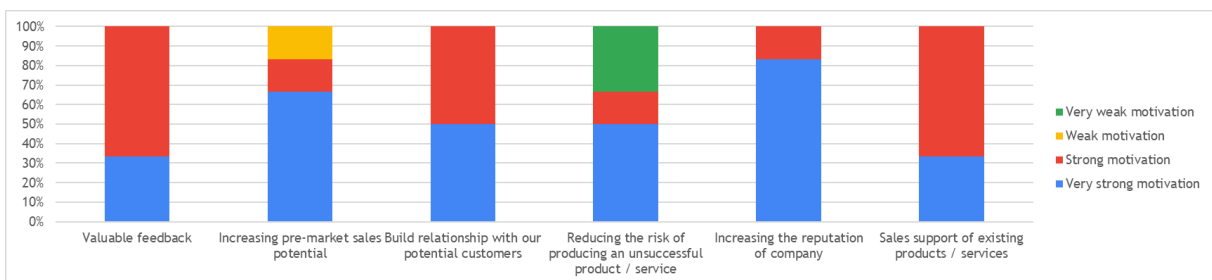
As we can see on the graph below as the most beneficial was assessed the cooperation with customers in the phase of identification of customer needs and requirements as well as the phase of new product/service design and testing of the prototypes.



Picture 22 The most important phases of co-creation

Source: own processing

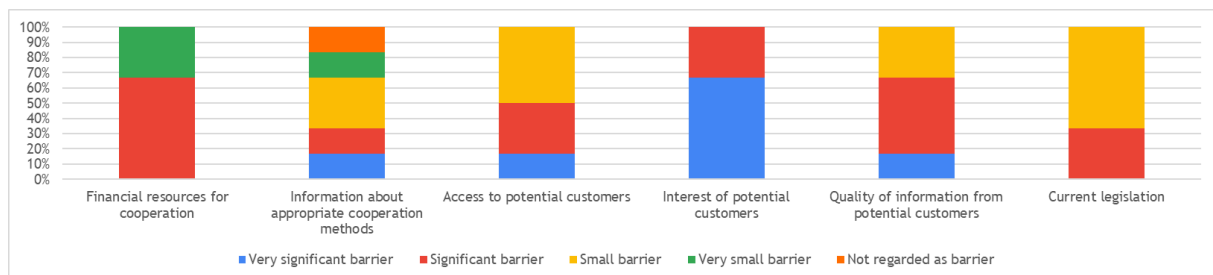
Another very important factor for design of supporting services is the motivation of the target groups as they represent the potential value which shall be brought by the assisting services. As we can see, according to the opinions gained within our survey, innovation developers see the biggest motivation for cooperating with the customer is the chance to support good reputation as well as increase pre-market sales potential.



Picture 23 The motivating factors for co-creation

Source: own processing

Once, we would like to support cooperation of SMEs and customers, we shall help to remove barriers. As the most problematic seem to be ability to motivate potential customer to cooperate within the design and testing processes, as well as the expertise of the most appropriate methods which shall lead to the high level of quality of the information obtained by the participating potential customers.



Picture 24 The barriers of co-creation

Source: own processing

2.2.6. SeniorHUB bussiness model

2.2.6.1. Customer segments

The SeniorHUB, as the communication and cooperation supporting platform, will serve to all representatives of following target groups, according to the concept of quadruple helix cooperation:

- Industrial sector
- Academic sector
- Public government
- Civil society

The services will be promoted and provided to the all of the mentioned stakeholders but according to the characteristic of the services and identified needs of the target groups within desk research as well as our surveys, as the most interested and most active, we expect our major clients as following:

- **Future users of innovative solutions** - for them will be provided services to found and maintain long relationship with our team to motivate them and provide them the value so they will be willing to actively participate in the co-creation processes by providing their time and energy for discussions through which SeniorHUB team get the knowledge about their needs and requirements according to their specific professional and personal life style
 - Seniors
 - Relatives of seniors
 - Care-givers
- **Innovation developers** will be offered to get our help in the process of co-creation and general innovation development. Identified were following sub-segments:
 - Start-Ups and Spin-Offs (early-stage companies)
 - SMEs - small (up to 50 employees)
 - SMEs - medium (up to 200 employees)
 - Academic teams

According to the findings we don't expect the interest by the large enterprises as they usually have their own professional capacities and there is usually no intention to find the external expertise but in the case of interest we will cooperate in the proposed projects once there will be in line with the proposed goals of SeniorHUB.

2.2.6.2. Value proposition

Value for Innovation developers: to create the most helpful, effective and sustainable concept of the SeniorHUB we will be providing the assistance leading including the following values which reflect the needs and requirements of the target group:

Opportunity to cooperate with relevant industrial and academic partners: According to the proved experience, the most of the innovative solutions are based on the cooperation among the various stakeholders to support transfer of knowledge leading to the goals. Despite the fact, that our region is geographically small area, there is obviously absence of the cooperation within innovative networks and clusters while the reason can be seen in the low awareness of the concept of clusters. As described in the analytical part of this document, there are several clusters which can be seen as a good cooperation example in our region but more initiatives are without common coordination and integration of their activities.

According to the identified reasons for the low level of cooperation among SMEs, academic and other R&D institutions, we can say that the planned concept of SeniorHUB will provide the valuable service as we will identify, contact and initiate the cooperation of these stakeholders which is usually problematic as it requires quite a lot analytical and communication efforts. Thanks to our team work we will be able to provide specific opportunities for cooperation with identified relevant trusted partners who will be identified and invited for cooperation only once they will meet all required qualitative indicators based on their thematic experience and capacities.

Effective cooperation with relevant industrial and academic partners: The quality and quantity of outputs generated in the cooperation process depends on many factors. The expectation and priorities of the joint activities can be different among the partners and even within the team of each stakeholder. And even there was everything stated by consensus the cooperation is sometimes not effective as the method for particular step of innovation development was not appropriately chosen.

Thanks to our coordination based on the broad knowledge and previous experience of our experts we will be able to create the cooperation platform within which will be created teams for cooperation composed by the representatives of the particular stakeholders who will be led by our supporting team responsible for effective communication and coordination based on the project management principles but modified according to the specific goals of each project. As the cooperation will be facilitated by SeniorHUB as the trustworthy third party setting the precise regulation of intellectual property rights there will be significantly lower level of risks in comparison with classic bilateral or multilateral cooperation without our coordination and enable the participants to save time and energy which would be devoted to the analysis of these risks and finding for the most appropriate ways of their reduction.

Information about open and relevant grant calls: Supporting tools for innovation development provided by national or international grant schemes, are important tools for many SMEs. However, one of the important aspects of their effectiveness is awareness of their existence. As proved by several

surveys aimed at this topic there are still many stakeholders who expressed that they don't have enough information about the relevant opportunities to finance development of new products and services what can be regard as significant barrier for innovation development.

Our team will be regularly analysing all relevant grant schemes and identify calls which can be used for the projects of our clients. Our service will include not only providing the valuable information but according to the expertise and experience of the concrete stakeholder we will be able to provide more detail analysis of concrete aspects of particular projects as well as identification and networking of relevant partners in our region.

Access to potential future customers: Seniors are one of the most vulnerable groups in our society. Unfortunately, also in our region can be sometimes observed the sad cases when the companies with the aim to sell some products or services use the communication techniques which generally shall not be used, not even for seniors. According to this problematic situation there have been set the legislation measures prevent from that as well as there are regular initiatives educating seniors to prevent this abuse.

In this context is access to seniors quite problematic even the intention is good and potentially lead to the improvement of their life conditions. Once we would like to get the valuable feedback by seniors we need to devote our time capacities to the several time-consuming activities as analysis of potential communication channels, study of the most appropriate communication and cooperation methods etc.

And also other sub-groups of potential future customer of developed innovative solutions, including relatives of seniors and professional care-givers, are quite narrow target groups what requires a lot of sources for building relationship.

Via our assistance the innovation developers will be able to connect with their potential future customers in easy and fast way thanks to our community composed by these target groups which will represent not only the required target group according to the demographic and thematic criteria but another important characteristic of them will be the will of cooperation as SeniorHUB will be providing them values which will motivate them to participate actively one they will be invited.

Moderating of the cooperation with potential future customers: According to the findings of the researchers based on the many experiments we already know that the process of communication and cooperation with potential future customers is quite complicated process. The quality of information about the needs and requirements of the target groups significantly depends on the method which is applied.

Generally, all specific customers have wide range of characteristic which is needed to think about when we are designing the process of co-creation but when we are aiming at seniors this fact can be even more crucial for success.

Thanks to SeniorHUB assistance, there will be no need for innovation developers to invest their efforts to build the expertise of effective co-creation as our team will analyse the specific situation for each project idea and propose the best co-creation method which will be applied in our SeniorHUB including the members of our community who will provide feedback to proposed new products or services.

Value for seniors:

Beside the value for innovation developers, according to the planned concept of SeniorHUB, we will be creating and providing values also for the potential futures users of innovative products and services - Seniors, Relatives of seniors and Care-givers.

Seniors themselves can significantly benefit from our activities. The most significant value that SeniorHUB brings to seniors will be based on the opportunity to attend events and activities organized within the HUB and on the opportunity to directly participate in the creation of products and services that can improve and make their lives easier. Seniors will learn about new products, services that are available to seniors, activities and events for seniors and other opportunities for seniors in the fields of education, leisure, and healthcare and so on. Seniors will also gain practical experience and skills in working with and using new technologies, devices and equipment for seniors.

An important aspect that SeniorHUB will bring to seniors is socialization, as seniors will have the opportunity to meet other seniors, attend social events and make new friendships. Seniors will also have the opportunity to share their experiences, knowledge and skills with others.

Value for elderly care providers:

An important target group of HUB are the elderly care providers. They will benefit from cooperation within the HUB by obtaining information about new technologies and procedures in the field of elderly care. They will also have the opportunity to participate in events for seniors and organize activities for seniors.

Value for relatives of seniors:

Relatives of the elderly will have the opportunity to obtain information about home care for the elderly, about technologies and devices that can help them in caring for the elderly who live in their household. At the same time, relatives of seniors will have the opportunity to attend courses and training, in which they will learn to work with these technologies.

2.2.6.3. Channels

The channels for communication and cooperation were selected as the quickest, most efficient with the least amount of time and finance investment required while we will use the combination of internal and external infrastructure.

As the main online channel will serve the online SeniorHUB website serving as communication and cooperation platform providing also the description of all our services as well as news about our activities in the relevant sectors so its visitors can get the knowledge about all of our expertise with the examples of their real case implementation to better understand the content and value of our services.

With the aim to spread the knowledge about the foundation of SeniorHUB and offered services there will be needed to promote the hub via various communication channels. The implemented will be classic communication campaign in the form of promotion via social networks, media and within various kind of events situated in the meeting points of selected target groups.

Future users of innovative solutions - Seniors/Relatives of seniors/Care-givers:

- Media - local/regional TV and radio, newspaper
- Social networks - Facebook thematic groups
- Meeting points - café and restaurants, medical centres, senior centres
- Thematic events - conferences, workshops and seminars

Innovation developers

- Social networks - Facebook and LinkedIn thematic groups
- Meeting points - start-up centers, incubators, co-working centers
- Thematic events - conferences, workshops and seminars

As another offline channel will serve SeniorHUB center which will be built in the Kosice city thanks to the funding of the project Active ageing - Improve the quality of life for Slovak and Hungary seniors (implemented thanks to the Interreg Slovakia - Hungary Cooperation Programme). Our ambition is the create the reputation of the center as the main meeting point of the all stakeholders dealing with the senior topic - seniors, their relatives, care-givers, SME active in this sector, government representatives and all other interested representatives. With the aim the reach this goal the most of the thematic sessions and meetings will be held in this center located in Kosice.

2.2.6.4. Customer Relationships

With the aim to support long-term productive relationship with our clients they will be served via personal assistance which will be provided by the experts of our team.

The structure and the content of our services will be standardized but according to the identified needs and requirements of each client their specific composition will be developed to fully cover all the relevant needs of the client within their specific situation.

The monitoring of the feedback by clients will be performed and regular sessions for co-creation of our services will be done to constantly improve our services in cooperation with our clients.

Special attention will be devoted to the development of the community which will be formed on the base of quadruple helix model including not only our clients but also the regional and national level of government and civil society. Our aim is to maintain long-term relationship with the community thanks to the providing the value to its members.

2.2.6.5. Revenue Streams

Thanks to the funding provided within I-CARE-SMART project we will be able to finance to composition of services and their initial testing within the pilot action in our region.

After the project implementation period there will be needed to find another sources to cover financial costs of SeniorHUB while there will be three main financial sources:

1.Grants: Especially in the first period of the SeniorHUB existence will be very difficult the persuade potential customers about the value of the offered services and expertise of our team. That is the reason of the need to find other financial sources while one of the most promising are the grant schemes on the national and international level.

Regular analysis will be performed with the aim to identify all appropriate funding calls for the operation and development of SeniorHUB center or provision of the services to our potential clients.

2. Donations: In the last period thanks to the knowledge sharing many companies have started thinking about their role not only on the market but also in general in our society, in the environment where they operate. They have become social-responsible and are willing to support various initiative aiming to the regional development while we believe they can be interested also in the topic of innovations for silver market.

According to experience from other regions inside and outside of Slovakia we believe that also social-responsible companies can provide us financial support so we can perform our activities. According to the findings gained thanks to the study visit in the European LivingLabs the specific profiles of the most potential donors will be defined and the marketing campaign will be targeted on this base.

3. Service fee: Provision of our services to the clients will be payed via the prices negotiated for particular customer as all services will be modified according to the needs and requirements of our clients.

2.2.6.6. Key Resources

1. Human resources - the quality of our services will be highly dependent on the expertise of our team members. To provide services leading to the long-term productive cooperation there will be crucial to compose the team of internal and external experts covering all steps of the innovation development and especially co-creation process as well as communication managers which will be responsible for the relationship with the community members according to the proposed goals of the SeniorHUB.

2. Technical infrastructure - there are two different level of technical infrastructure (hardware and software) which will be needed to maintain our operations and develop our expertise which can be offered to the clients:

- **basic IT infrastructure:** including classis PCs and common office facility which will enable us to perform our daily tasks
- **advanced IT infrastructure:** which will be needed to provide special analytical services, especially identifying the target group preferences and behaviour in the specific situation within the co-creation process.

3. Meeting point - SeniorHUB - the physical space is the needed resources to perform our activities, as e.g. sessions or co-creation workshops. Thanks to the funding provided by the project Active ageing - Improve the quality of life for Slovak and Hungary seniors (implemented thanks to the Interreg Slovakia - Hungary Cooperation Programme), there will be created SeniorHUB spot which will serve as the main meeting point what helps us a lot to form our identity and spread the knowledge within the region.

4. Financial resources - to cover all our costs financial resources will be one of the crucial resource required to perform our activities.

5. Brand - according to the proposed business model we are coming to the market with highly innovative services what leads to the facts that our target segment will be quite narrow. Our position on the market is even difficult as we are starting as new entity without formal reputation. These facts lead to the need for brand which will represent our credibility based not only on the expertise of our team but also thanks to the support of the most popular innovation stakeholders operating in our region. The cooperation and good reference by these stakeholders can be the factor which will strongly help us especially in the first period of our operation.

2.2.6.7. Key Activities

According to the identified segments of customers we will apply the same pattern and two main following groups of activities will be defined:

1. Activities for serving innovation providers: with the aim to support our customers the wide range of activities supporting innovation development will be provided to them. To the new-comers will be provided mainly education activities explaining the basic facts about the silver market, particular segments and actual trends based on the most urgent needs and requirements. SeniorHUB will be not providing general business development education and assistance as there are several stakeholders in our region with broad experience and according to this situation we will be focused on the thematic specific services.

For the more advanced stakeholders special market research studies will be conducted and according to our previous experience and specific project features consultancy services will be provided with the aim to identify the core success factors and identify potential risk factors and weaknesses of the proposed products and services for silver market.

2. Activities for attracting future potential customer: with the aim to attract and motivate potential future customers of innovative solutions which are being designed and tested within SeniorHUB we will need to create the value which will be delivered to this target group in various forms according to the preferences of particular sub-segments, as e.g. for seniors will be provided free time activities like lectures devoted to the relevant topics, joint movie nights, concerts etc. For their relatives will be organized thematic training and workshops giving them knowledge how to take care of seniors and what they can do to create for them good living conditions even if they are in their homes or care centers. According to the identified target sub-groups we will be focusing our activities also on care-givers to whom we will be bringing especially new knowledge for their profession and provide them capabilities to share their experience with the aim to support knowledge transfer and cooperation.

2.2.6.8. Key Partnerships

For the effective operation of SeniorHUB center providing services in the innovation development process the partnership with all quadruple helix model members will be very important so we can facilitate value-generating cooperation process based on the expertise from various fields based on the knowledge and previous experience.

But also within the quadruple helix model will level of priorities differ according to the specific target groups while the most important for long-term operation of SeniorHUB will be:

- **Innovation developers** - Start-Ups and Spin-Offs (early-stage companies) / SMEs - small (up to 50 employees) / SMEs - medium (up to 200 employees) / Academic teams
- **Business development entities** - Slovak Chamber of Commerce and Industry / Slovak Business Agency / University Science Park Technicom
- **Future users of innovative solutions** - Seniors / Relatives of seniors / Care-givers
- **Strategic partners for communication** - thematic clubs and hubs

2.2.6.9. Cost structure

The overall cost of the SeniorHub will be composed by following costs groups:

1. Staff costs which will be based on the:

- operational costs (rather fixed): salaries of team members providing basic information and facility service of the SeniorHUB
- service costs (variable): composed by the staff costs of experts providing special services to the particular clients according to their specific needs and requirements
- development costs (variable): which will be highly dependent on our internal preferences of the development activities as e.g. preparation of application call for new project, promotion activities, development of new partnerships etc.

2. Utilities:

- fixed costs: for our basic facility to operate as the SeniorHUB
- variable costs: which will be generated according to the services provided to our target groups

3. Development costs: as one of our core resource to provide HG services is the skilled staff there is natural need to constantly develop their skills what will lead to the financial cost for our team. Within this section will be calculated costs for conferences, learning courses etc.

4. External services: as we will be providing wide range of activities with the aim to attract and motivate potential future customer of innovative solutions which are being tested within SeniorHUB we will need the external services to perform these events, as e.g. catering, speakers for lectures etc.

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