

THE REFLECTION OF SENIORS' NEEDS IN THE BUSINESS MODEL FOR THEIR OCCUPATIONAL ACTIVATION VIA THE SERVICE E-MARKETPLACE PLATFORM IN POLAND

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ABSTRACT

The authors address the issues of activating elderly people and improving their quality of life in the context of the possibility of increasing their effectiveness through the use of modern ICT solutions. The concept of the service e-marketplace platform for occupational activation of elderly people is presented and set in the context of Polish market conditions. Those entry data were gathered using three research methods: the extensive literature study, in-depth direct interviews and the survey dedicated to elderly people in Poland. On that basis the business model for implementation of such a platform for Polish market is proposed, what constitutes the main aim of the paper. The model includes the values provided to its users, the planned ways of achieving them, key market stakeholders and financial aspects following the Business Model Canvas methodology. Finally, the applicability of the business model in the light of the identified users' needs has been proven by collating the model details with the particular needs. The results of the research could be a guide for institutional stakeholders of the market on their way to reach their strategic goals in the area of activation of elderly users.

KEYWORDS

Occupational Activation, Elderly People, Service E-Marketplace Platform, Business Model, Market Analysis

1. INTRODUCTION

The dynamic development of the information society influences the way of satisfying needs of a daily routine. The intensive expansion of information and communication technologies (ICT) determines also the development of electronic markets for the exchange of goods and services. While the e-market for goods has already reached its maturity, the service e-market is still in the development phase and looking for new development strategies, new business

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models. The service can be meant as the process of contributing a context-specific value (Vargo and Lusch, 2016). This value is generated by the cooperation of service providers and customers within a common ecosystem, involving people, organizations, technology, and information resources (Maglio et al., 2015). The phenomenon of service economy is emerging, which introduces its unique operating patterns, spatial distribution and the requirements of corresponding institutional environment (Zhou, 2016). It requires market entities to take a number of innovative activities in the face of emerging social and business challenges (Gallouj et al., 2015). The consequence of these changes is the development of the Life engineering discipline, which together with Business engineering strive to ensure the highest efficiency in meeting consumer needs (Oesterle, 2014). One of the tools that can play a key role in stimulating the synergy of these two disciplines are the service e-marketplace platforms (Kutera et al., 2017).

One of the key challenges for the next several years is to face, especially in highly developed countries, the problem of aging (Moody, 2013)(Rowe and Kahn, 2015)(Szymańczak and Ciura, 2012) and its impact on the general quality of citizens' life. There are many factors that may affect the perception of the quality of life, including health conditions, financial status, social relationships and occupational activity. This last factor is very important and is conditioned by the other ones. It plays key role in shaping the national social and economic policy, in particular the pension system, where more and more people will be subjected to it in the coming years. Innovations in these areas require collaboration between government institutions, local governments, academics, and business practitioners. They are related in particular to the need for building new or redefining existing services and the corresponding business models (Kleinschmidt and Peters, 2017) (Witell *et al.*, 2016) (Kleinschmidt *et al.*, 2016). These services, provided in a traditional way (direct meeting of both sides at the concrete place and time, brick & mortar services) or electronically (e-services) should provide a certain value to consumers in many dimensions. Consumers may not only be the final beneficiary of the service and get tangible results (work done), but they may also be involved in the value creation process, for example by working on a volunteer basis. The determinants and the way of creating values in a conceptual dimension define business models. A business model can be defined as "a simplified and aggregated representation of the relevant activities of a company. It describes how marketable information, products and/or services are generated by means of a company's value-added component" (Wirtz *et al.*, 2016). In particular, it can describe the potentially provided values and the planned ways of achieving them (planned activities, forms of communication), key market stakeholders (customer segments, partners and competitors) and financial aspects (costs and revenues). This structure is compliant with the Business Model Canvas (BMC) methodology that becomes the part of the canon of tools for analysts, managers, and researchers (Osterwalder, 2004). Moreover, it has become the basis of many modifications aimed at further identification and presentation of a business concept, for example the triple layered BMC, in which, apart from the strictly economic dimension, the environmental and social dimension of business emerges (Joyce and Paquin, 2016). In the light of the rising importance of Corporate Social Responsibility trends, both dimensions are of particular importance for the positive perception of new business initiatives and for building competitive advantage in a dynamic and highly unpredictable market.

The authors address the above-mentioned issues of activating elderly people and improving their quality of life in the context of the possibility of increasing their effectiveness through the use of modern ICT. For this purpose, economic, social and technological

determinants have been identified and described (Gryncewicz *et al.*, 2015)(Łysik *et al.*, 2015)(Leszczyńska *et al.*, 2016)(Butryn *et al.*, 2015), the model of delivering an IT solution for activation of elderly people (Kutera *et al.*, 2016) and the implementational aspects in the context of non-functional (Kutera and Gryncewicz, 2016) (Maciaszek *et al.*, 2016) and functional requirements (Rot *et al.*, 2017), has been defined on the basis of the target group analysis in the pilot implementation in Switzerland and Germany.

The aim of this paper is to present, describe and prove the applicability of the business model prepared for the Polish market using the BMC methodology. This model was created as a result of the author's research work and the conclusions obtained from in-depth direct interviews and surveys with representatives of the target group.

The results of the research could be a guide for state and local governments, social organizations and businesses, being the main stakeholders of the market, on their way to reach their strategic goals in the area of activation of elderly users.

2. RESEARCH METHODOLOGY

The research presented in this paper is an integral part of a three-year international project aimed at developing and launching a service e-marketplace platform. This platform serves to:

- offer services dedicated to the elderly,
- offer services by the elderly,
- matchmake volunteers working for the elderly
- activate elderly people through the support of social organizations.

The whole study is carried out in cooperation with existing organizations and verified on the basis of pilot implementations within them. The project covers both the technical part of developing and testing the proper software, as well as the business part aimed at creating a business model and the concept of commercialization.

Project research is carried out in accordance with the Consortium Research (Oesterle and Otto, 2010)(Otto and Oesterle, 2010) methodology, which assumes the cooperation between researchers and practitioners within the framework of long-term research projects. The method is focused on the generation of scientific artefacts and their verification within iterative implementations. Each next iteration is enriched with previously created artifacts. Based on this method, the functional and non-functional requirements said in the Introduction are produced.

In addition, three methods were used in parallel for the purpose of the research task that was related to the development and validation of the business model for the Polish market.

The first method was an analysis of academic and professional literature in order to build a broad spectrum of knowledge about business model development as well as to expand the context with the latest statistics about research area (Butryn *et al.*, 2015).

The second method used to develop the proposed concept of the e-marketplace platform in Poland was in-depth interviews (Brinkmann and Kvale, 2015) conducted directly in the form of meetings with seniors affiliated with senior clubs and Third Age Universities. This method was of a qualitative nature. Its purpose was to deepen the recognition of the opinions of people aged 50+ about the possibility of activating seniors, ensuring their independence and improving the overall quality of life using ICT. This part of research concerned exclusively the Polish market.

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The study was conducted in twenty groups of 10 people according to the requirements and principles used in in-depth direct interviews. The surveyed groups consisted of active users of information technologies (primarily the Internet and mobile devices) or people who declared their willingness to participate in such activities. It was important to know the specifics of this type of activity and the barriers to its development. Only then it was possible to obtain interesting and valuable feedback, based on which the concept of the business model of e-marketplace platform application in Polish realities could be developed.

Therefore, the main objectives of the second research method were related to:

- recognizing the needs and expectations of seniors for the use of ICT in their daily lives,
- identification of the main causes of the use of the Internet and mobile devices by seniors,
- Identification and evaluation Internet capabilities most commonly used by seniors,
- identifying barriers to using the computer and the Internet what are important for seniors,
- determination the range of services that activate seniors and ensure their independence and quality of life.

It should be noted that the qualitative research in the form of interviews had adjunctive and preparatory dimension to the next stage, i.e. quantitative surveys. The results of in-depth direct interviews proved to be very useful while building the final version of the business model of the e-marketplace platform in Polish realities.

The obtained results of qualitative research have also become the starting point for creating the questionnaire which was used in quantitative research. It was the third research method aimed at evaluating the developed concept of business model of service e-marketplace application in Polish realities. The questionnaire was addressed to people aged 50+ and included 20 questions about living and infrastructure conditions, Internet usage level and the perception of social and employment activation using ICT.

A detailed plan was defined and the study was finally performed between October and December 2016. The survey was conducted among seniors affiliated with senior clubs and Universities of the Third Age. The population of the sample was 50+. According to the Central Statistical Office, their number was 13 994 300 in 2016 (Central Statistical Office, 2016). It was assumed that the confidence level α was set at 95 percent (means a 95% probability that the measurement result is true), the fraction size was at a universal level i.e. 0.5 and the maximum measurement error could equal 5 percent. On this basis, it was calculated that the required number of people in the study was 384 respondents. This requirement was met because the final number of properly completed questionnaires was 406. The main research objective was to determine the suitability of application the service e-marketplace platform business model in Polish market conditions.

3. KEY FINDINGS

The following conclusions were reached on the basis of the qualitative research, which took the form of a series of in-depth direct interviews with people over 50 years of age:

1. Modern-day Polish senior citizens want to activate themselves in communities and they want to plan and organize meetings, events and collective activities together and in an efficient way.
2. Senior citizens are eager to use ICTs; however, due to their age, they do not possess sufficient digital competences. In the majority of cases, adults learn new ICTs in the course of their professional career and modern-day Polish senior citizens lacked the opportunity to familiarize themselves with the aforementioned technologies in this way (Frąckiewicz, 2007).
3. Senior citizens own internet-enabled mobile devices but a vast majority of them use their smartphones only in a traditional way, i.e. they make voice calls and write text messages. A large group of elderly people do not use the Internet functions because they lack the necessary skills and knowledge. Furthermore, they do not trust the mobile Internet.
4. Senior citizens would like to use platforms in the presence of somebody who will provide them with the technological and factual support and who will give them proper training so that they could operate freely in this environment (communication, shopping, transport, health services etc.). Senior citizens are usually wary of new solutions, in the case of which the acquired indispensable knowledge almost immediately proves insufficient to use another novelty which appears on the market.
5. Senior citizens have both the equipment and the Internet access at home; however, they are reluctant to use them because they are afraid that their safety and privacy will be violated (frauds, internet thefts).
6. People over 50 years of age who participated in computer trainings adopt a considerably more open attitude and they have fewer fears as to the ICT usage. There exists a need of and understanding for the issue of self-improvement in this field among the research participants. Senior citizens wish to develop their skills mostly in the area of the usage of the Internet and mobile devices.
7. Organisations such as senior citizens' centres and Third Age Universities in the majority of cases have such premises and organizational infrastructure in which it is possible to implement and use ICT platforms. What constitutes the problem is the shortage of technological infrastructure (equipment, software, Internet access). Therefore, it is necessary to acquire additional financing so that the organizations which supervise the activities of senior citizens' communities and those whose statutory objectives cover the activation of senior citizens (Marshal Offices, Labour Offices, Social Welfare Centres etc.) could provide the said infrastructure.
8. Polish senior citizens have a lot of free time. This results mostly from the fact that their children have left their family home. What has been noticeable in Poland in recent years is the phenomenon of social mobility, which can be organised in two categories. The first one is a relatively high wave of emigration of young people. The second phenomenon, which is as negative as the first one, is a "two-way flow" of people: those in the working age migrate from towns and villages to big agglomerations whereas elderly people migrate in the opposite direction. Such a trend has continued for over twenty years now; therefore, it is possible to observe in the Polish society the emergence of a social group composed of often lonely elderly people, who are socially alienated, impoverished and weakened from the political and professional perspective (Śliwiński, 2014). What constitutes another factor which results in the fact that senior citizens have a lot of free time is the lack of employment available for retired people. Therefore, modern-day Polish senior citizens willingly and actively gather in communities and declare the

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intention of mutual assistance. This can take the shape of volunteering and casual labour due to the fact that in the vast majority of cases senior citizens' basic financing is secured in the form of their pension or retirement pension.

9. In the contemporary Polish society it is common to retire when a person is still intellectually and physically fit to perform their duties. Therefore, senior citizens have a significant intellectual capital, professional experience and skills, which can be applied in a creative manner and yet not in the form of a full-time employment (Leszczyńska et al., 2016).
10. Senior citizens have needs regarding various services designed to support their self-reliant lives at home. Nevertheless, they are unaware of the fact that they can fulfil these needs by ordering such services via the Internet. They are afraid of potential frauds committed by service providers. It is important for them that somebody verify service providers in terms of their trustworthiness.

On the basis of the foregoing research conclusions, leading assumptions have been formed concerning the creation of a business model of the application of the service e-marketplace platform in Poland. It is necessary:

- to provide senior citizens with a safe environment in which they will use the ICT platform,
- to activate senior citizens within the framework of the existing structures (senior citizens' centres, Third Age Universities),
- to guarantee the continuing access (in person or by phone) to technical and factual support trainers in the area of the application of ICT,
- to secure financing of the technological infrastructure (equipment, software, Internet access) designed to ensure the continued use of the platform by seniors for free,
- to use senior citizens' natural need to self-organize and to provide mutual assistance,
- to enable senior citizens to offer their services in the form of casual labour,
- to enable organizations trusted by senior citizens (senior citizens' centres, Third Age Universities) and senior citizens themselves to verify the providers of services for the elderly through opinion systems in which the customers evaluate the service and leave their comments after its performance,
- to create mechanisms of secured forms of payment made by senior citizens to service providers via a third party.

The assumptions underlying the construction of the business model presented above have also been reflected in previous research achievements, which are described in the next section.

4. RESEARCH CONTEXT

A number of elementary science artefacts were developed so far to organize knowledge in the areas of service economy, social and economic policies, business model development, software engineering and integration, human-computer interaction. That work constitutes the basis for the preparation of the business model for occupational activation of elderly people. It is worthwhile to mention the work aimed at creating a profile of an IT product that activates and supports elderly people in Poland (Gryncewicz *et al.*, 2015). Using the PEST method, the macro environmental factors, in particular political, social, economic and technical ones were analyzed on the Polish market in the context of their impact on the profile of the IT product

dedicated for the elderly people. On the basis of PEST analysis, the Authors observed that the strongest positive influence on such a product has a phenomenon of a high level of informatisation in Poland. Due to the existence of a developed infrastructure and due to the falling costs of its use, elderly people have an opportunity of a better access to modern IT products and to the Internet. Furthermore, the national and European policies support pro-senior initiatives by providing the source of financing of developing ICT solutions. Thus, IT companies are more willing to provide senior citizens with a free access to their products and services. Another important conclusion is the fact that the SaaS model is gaining importance as a form of software delivery (Butryn *et al.*, 2015).

Extending the period of professional activity in Poland, resulting from raising the retirement age, creates the need for elderly people to seek and take up work. That is why it is particularly important to provide them with support through IT tools.

At the same time some factors, which have a negative influence on the analysed environment, were identified. While creating the profile of the IT product dedicated to elderly people biological, psychological, social and legal entry barriers should be taken into consideration. Therefore, it is important to create suitable IT products which will respond to the needs and perception of elderly people. Efforts should be undertaken to get them acquainted with technology and with measurable benefits from using them. This will allow senior citizens to benefit from their intellectual capital, life and professional experiences as well as their skills. Furthermore, this will help to eliminate the generation gap as well as the digital exclusion of elderly people.

Furthermore, on the basis of the strategic PEST analysis the IT product delivery model dedicated to activate and support senior citizens in their independent everyday lives (Kutera *et al.*, 2016) has been developed. The roles and functions defined in this model constitute the response to the factors selected in PEST analysis and are designed to indicate the most important elements of the efficient delivery of the IT product which is suitable for the needs of the analysed target group.

In the next stage, the research team has gathered and identified a set of functional requirements. First of all, while surfing the Internet people are using different tools: desktop computers (PCs), laptops, tablets, smartphones and other mobile devices. That is why applications for electronic services have to work on various platforms, not only web platforms, but also mobile ones. Also the process of coordinating the place, time and choosing the actors needed to realize a given bought service is crucial. Major functional requirement, directly connected with previously mentioned one, is the support for manual and automatic dispatching of appointments to proper performers. Another significant requirement is the mutual confirmation of service delivery, the recommendation possibility, the need of being able to see appointments in different calendars and the flexible pricing policy. It's also very important in service e-marketplace, to offer the functionality of notifications about changing the state of the appointment to shorten the waiting time as much as possible.

On the basis of functional requirements the architectural requirements were developed and the final shape of the service e-marketplace architecture was proposed (Kutera and Gryniewicz, 2017). This architecture was validated in the series of pilot implementations performed in compliance with Consortium Research method, which has been used throughout the whole project. The results of evaluation show that the architecture is flexible enough to handle specific requirements of different territorial settings and business context (from commercial services to voluntary help).

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The idea of the platform was in principle developed on the basis of research conducted in Western European countries. However, the research results described in the first sections of this paper show that the concept corresponds with a current trend of the Polish society. This concept assumes the integration of service providers and consumers through an IT solution, involving an intermediary that coordinates communication between transaction sides and secures the transactions from the organizational and financial point of view.

The functional structure of the system is constituted by three modules (Leimeister, 2012):

- The Serve the community module enables customers to participate by offering their informal support to other community members (informal volunteering work). The service e-marketplace platform provides its users with easy access to this integrated service portfolio and supports providers in the transactional processing of service orders (from coordinating the appointment, to documentation and feedback, to invoicing and payment handling).
- The Flexible occupation module brings together local service providers with golden workers and active retirees, who want to engage in part-time jobs and occupations. Consequently, potential performers can manage their desired work level according to their current situation while service providers can profit from a pool of part-time workers with diverse skills and abilities.
- The Get involved with organizations module aims to bring together people for social projects, e.g. as part of corporate volunteering programs. The module also helps individuals, who are willing to take over voluntary or honorary duties in organizations, to find institutional volunteering work opportunities.

The realization of the determined tasks and objectives of the platform translates into the structure of its users. There are three main groups within it. The first one involves consumers (requestors or volunteers), i.e. elderly people offering on the platform their voluntary or commercial work (on-demand or part-time). The second group consists of professional service providers as well as employers who offer the opportunity to work on a voluntary or commercial basis through the platform. In turn, the third group of users includes an intermediary who is meant to bring together end users with service providers and employers. That role includes such tasks as supporting the elderly in using the platform (technical support, live assistance) and their initial training in the use of the platform. The intermediary may also negotiate prices and carries out financial settlements throughout the entire user community.

The above-mentioned groups of platform users, as well as other 3rd party stakeholders, will be presented below in the proposition of the business model in the Polish market conditions. Identification of their characteristics as well as indication of the main relationship between them will be described.

5. BUSINESS MODEL

The research artefacts produced so far and the assumptions concerning the business model based on the direct interviews allowed to define a high-level concept of the business model designed to activate senior citizens with the application of the service e-marketplace platform. The concept specifies:

- the main roles of stakeholders engaged in the activation of senior citizens,
- key relations between the roles, including the activities performed by one of the parties for the other, and all the financial flows facilitating proper functioning of the model under market conditions.

A graphic depiction of the model is presented in Figure 1.

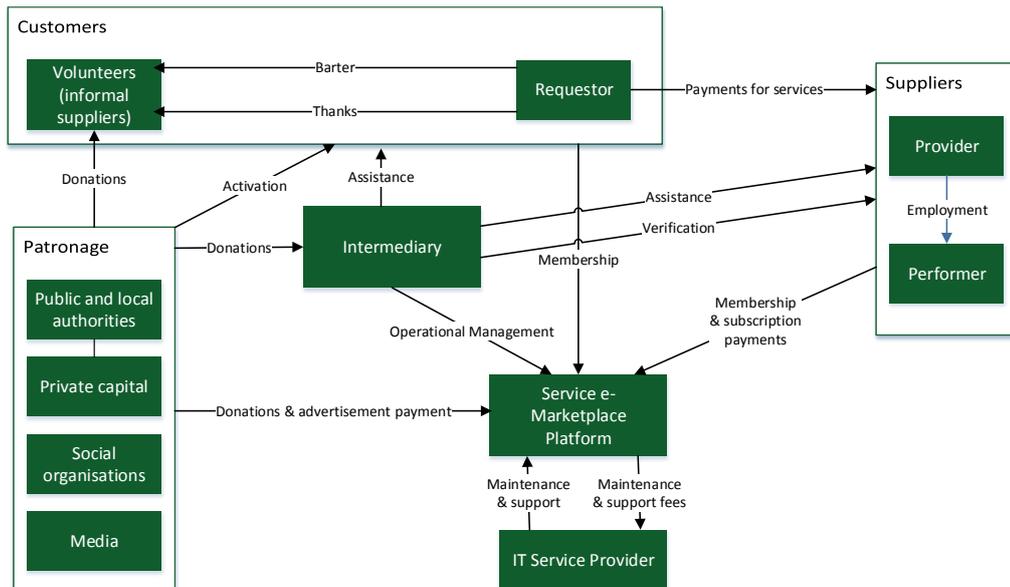


Figure 1. The proposed concept of business model for occupational activation of elderly people with service e-marketplace platform

What constitutes the central part of this model is the service e-marketplace platform, which is provided by the IT Service Provider - a vendor of particular cloud Software-as-a-Service (SaaS) solution (Maciaszek et al., 2016). This entity is responsible for the preparation and configuration of the platform, the on-going technical support and system maintenance within the framework of its server infrastructure. In return for the work performed, the IT Service Provider receives proper remuneration. Importantly, the platform constitutes an integrated solution, i.e. it offers the possibility of easy, non-invasive integration to external Internet services (the so-called client services) designed to provide information about job opportunities and offers of services. The platform is responsible for the aggregation of data from various customer services. It provides key functionalities connected with browsing, ordering, coordination of appointments, performance and verification of services. It also facilitates the management of membership and identity via its authentication service, which is compliant with the Single Sign On standard (Kutera and Gryniewicz, 2016). Suppliers provide elderly people with professional services they need and they obtain from the platform concrete benefits in the form of the possibility to use business management IT tools. The platform also gives them the access to a wide group of potential service consumers. In return, suppliers are obliged to pay the subscription or commission fee. In this group, service providers represent the management of the organizations which perform services and they are responsible for

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defining both the services and the conditions of their performance. They are also in charge of the staff management and of allocating tasks to performers, who are responsible for performing the service to a given requestor. Requestors and volunteers constitute a group of customers, who are primary users of the platform in the planned business model. These are mostly elderly people or people working to the benefit of elderly people within a given framework, e.g. their children who are their care givers. Requestors attempt to acquire a service which will match most accurately their expectations and which will be performed in a given place and time, established in the process of appointment coordination and in cooperation with the other party (supplier). On the other hand, volunteers search for the possibility to engage themselves in volunteering projects or to perform a free of charge one-time service to the requestor, who specifies their need for a particular work/task. It is worthwhile to mention that the roles of the requestor and of the volunteer may be performed interchangeably by the same person, depending on the context. In the case of tasks whose performance is hampered by the health condition, an elderly person uses the services provided by professionals or volunteers and, at the same time, he or she provides other elderly people with voluntary services which correspond to his or her current state of health.

It is the intermediary who plays a crucial role in this model. Intermediary's key task is to create a safe environment for senior citizens, in which they can use the ICT platform. Furthermore, the intermediary organizes the market by supporting the customers and suppliers in particular transactions. They also provide technological and factual support for independent orders and they are responsible for the performance of the party's duties. In the second case, the intermediary, while acting on behalf of the consumer, orders the service via the platform and they negotiate the conditions of performance as well as define the demand for the service and choose the most adequate provider among the volunteers. The intermediary, apart from rendering short-term assistance, plays a significant role in administrating the Internet platform and in verifying the quality of professional services and service providers. They also participate in the process of stimulating the market by carrying out promotional activities on and outside the platform. The function of intermediary may be performed by the already existing communities and organizations activating senior citizens, such as senior citizens' centres and Third Age Universities. To make this possible, it is necessary to ensure public and private sources of funding. Apart from the funds obtained from subscription fees, the resources are contributed by the patronage group composed of the public and local authorities and by private donors, whose statutory objectives match the objectives of this business model by focusing on the professional activation of senior citizens. This group, together with the media and social non-governmental organizations, plays a very important role in promoting and activating elderly people with the cooperation of the intermediary.

Such a business model takes the subjective dimension of the market centred around the service e-marketplace platform and is designed to activate elderly people in their professional careers. Defined roles and relations make it possible to understand the functioning of the market. However, what constitutes an intrinsic element of each model is a unique set of values provided by the said model in the form of services, as mentioned in the introduction to this paper. Therefore, it seems appropriate to complement the model with its formal representation, which helps to identify and systematize information in its key areas. The aforementioned BMC tool has been applied here (see table 1).

Table 1. The business model canvas for occupational activation of elderly people with service e-marketplace platform

<p>Key Partners</p> <p>Service providers</p> <p>Social organisations</p> <p>Public/local authorities</p> <p>Private sponsors</p> <p>IT service provider</p>	<p>Key Activities</p> <p>Assistance in matchmaking requestors with volunteers and suppliers</p> <p>Membership management</p> <p>Buying and selling services</p> <p>Operational management</p> <p>IT maintenance and support</p> <p>Recruiting volunteers</p> <p>Verifications of quality of services</p> <hr/> <p>Key Resources</p> <p>Intermediary employees</p> <p>Volunteers</p> <p>Performers</p> <p>Intermediary office and equipment</p> <p>Provider offices and equipment</p> <p>Technical infrastructure</p> <p>Donations</p>	<p>Value Propositions</p> <p>Selling own skills, Lifelong learning</p> <p>Additional incomes from helping others, “Good feeling” and positive reputation</p> <p>Support in necessary works,</p> <p>Social participation and inclusion</p> <p>Independency, Improved quality of life.</p>	<p>Customer Relationships</p> <p>Intermediary office with personal assistance</p> <p>Remote assistance via call center</p> <p>Complaints handling</p> <hr/> <p>Channels</p> <p>Web site</p> <p>Intermediary office helpdesk</p> <p>Service</p> <p>Cold calling</p> <p>Word-of-mouth marketing</p> <p>Social events</p>	<p>Customer Segments</p> <p>Elderly people</p> <p>Volunteers</p>
<p>Cost Structure</p> <p>IT Support & maintenance fees</p> <p>Intermediary employees’ salaries</p> <p>Operational costs</p>		<p>Revenue Streams</p> <p>Donations</p> <p>Membership & subscription payments</p> <p>Advertisement payments</p>		

Customer segments gather groups of people who share similar characteristics and who are targeted by activities. In this model, reaching retirement or pre-retirement age constitutes the criterion of similarity for one of the groups and it entails the need of professional activation in order to maximally prolong the professional life. The second group gathers volunteers (people who wish to help others). This group consists not only of seniors but also of younger people determined to support those who need their assistance in the performance of daily duties.

Customers are offered a certain value, i.e. a set of services important for the customer. What is particularly noticeable is the possibility to sell one's own skills acquired in their professional lifetime, abundant in experiences. The fact that the platform facilitates the performance of services for elderly people results in the possibility to generate an additional income and, most of all, to develop a good feeling through helping others and to build one's own reputation in the immediate surroundings. Belonging to the community centred around the platform makes it possible to avoid social exclusion. On the other hand, thanks to the platform, elderly people who are in need can find a person or organization who will render the necessary assistance to them. Thus, they will be able to maintain a high level of independence (from the availability time of the people living in their household) and they will be able to improve their quality of life due to the possibility of getting help, both chargeable and free of charge, in the areas where they aren't self-reliant irrespective of the reason of the dependency.

Channel is the way in which a value is offered to a customer. There exist communication channels, distribution channels, sales channels; in other words channels are points of contact between the customer and the platform/intermediary. What constitutes the key channel from the platform's perspective is a webpage designed in such a way that its message is attractive and noticeable. Available interactive tools facilitate a direct contact with the intermediary and

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help to solve possible problems. Furthermore, there also exists a helpdesk available by phone in order to support all the users: not only customers but also service providers. The platform operator - the intermediary runs an office in which direct customer service is provided and in which customers who do not have the access to the Internet and computer at home or who are afraid to use the application on their own in their domestic environment can easily utilize the platform. This meets the need of a continuing access (in person or by phone) to technological and factual support of customer assistants who are specialized in the area of the ICT. The platform is also promoted with the application of many communication channels, including cold calling. What is created is the content aimed at autonomous promotion among the users in the word-of-mouth marketing model. Social events are organized, during which the platform is presented to the elderly people in direct contact with them. They are also encouraged to join the community gathered around the platform.

Another area covers the characteristics of the relations formed with the customers when value propositions are being presented to them. From the perspective of the platform, two basic forms of contact are proposed: personal and direct relations with the customer service employees in the office and a remote contact via the helpdesk centre (by phone or e-mail). It is very important to listen carefully to the customers and pay attention to their opinions. Such an approach results in the possibility to report complaints connected with the services and in the quick decision path of handling such complaints.

Providing the customers with a proper value proposition should generate revenue streams. It should be underlined that the business model is of a pro-social character and therefore its primary users, namely the elderly people, will not pay for the platform usage. The fees in the subscription or commission model will be paid by professional service providers. However, it needs to be emphasised that donations from the public and local authorities as well as from those companies whose objectives in the field of Corporate Social Responsibility match the objectives of the platform will make up a significant part of the budget.

In order to function properly, each business needs tangible and intangible assets, which are necessary to produce and offer a proper value to their customers. In the platform's case, these are mostly people, who provide customer service and who perform services for the customers. Given the need for the existence of the customer service office (a physical object), it is necessary to rent premises and purchase the office equipment. Furthermore, the computer equipment (including servers) and software constitute a significant asset which facilitates the functioning of the platform in the Internet environment and which meets all the formal requirements concerning both executing and monitoring financial transactions as well as handling personnel and payroll settlements.

Apart from the resources, each business model needs proper activities necessary for its functioning. Selected key activities tending toward creating and offering to the customers our proposition of values are presented here. What comes to the fore is supporting the end users in the process of selling or buying services or in recruiting to volunteering projects by providing tools for searching through the offers, ordering (or applying in the recruitment process) and coordinating the dates. All the parties can manage their calendars and the service providers gain a set of tools for defining the offer and for personnel management. What is important is the fact that the application is now enhanced with the tools for the intermediary, who can actively participate in the purchasing process through matchmaking the service providers and recipients. Moreover, the intermediary is responsible for the operational platform management and for responding immediately to all the market incentives and technological incentives (e.g. failures of the application). To this end, the intermediary will use an extended

administration panel with a wide range of configuration capabilities. Furthermore, verifying service providers and the quality of services performed by them constitutes the essential activity conducted by the intermediary. Thanks to the application and due to authentication solutions, the users can manage their digital identity in a complex and safe way. For elderly people, the sense of security is an important determinant when it comes to the usage of the Internet applications.

In the light of the model assumptions, the support given to the partners – entities, whose broadly understood participation is necessary to offer value propositions, is very important. They play two crucial roles in the model: on the one hand they provide resources, especially financial ones, necessary for the functioning of the business model in practice (public and local authorities and private investors) and on the other hand, they support the process of activating elderly people (public and local authorities, social organizations, the media). The IT Service Provider is also an important partner as they provide both the application and its maintenance, and, if the need arises, they develop the application further.

When the customers generate revenue streams, the internal resources and activities generate the structure of costs. The expenses in the business model are mostly and directly related to the technological development and maintenance of the application and to the cost of salaries paid to employees engaged in the work for the business venture. The costs of the office equipment and of renting the premises are lower. There is no need to finance the promotion of the platform as such expenses are borne by the partners, especially by the media, who have assumed media patronage of the endeavour.

6. THE EXEMPLIFICATION OF SENIORS' NEEDS IN THE BUSINESS MODEL

The conducted research allowed to identify the needs of seniors with regards to the ICT platform, which were reflected in the implementation model of this platform dedicated to the Polish market afterwards.

Regarding the first condition i.e. the safety of using such a ICT tool, it should be pointed out that the platform uses secure Internet communication protocols and the secure OpenID Connect authentication protocol. The server with user data is separated and adequately protected against the possibility of security breaches and data leaks. From the technical point of view, the application is accordingly adapted to the expectations of the target group. However, in this area, it is very important to communicate these facts to users in an accessible way and to make them aware of the safe techniques of using the application. For this purpose, initial trainings for the target group of users are needed. It is also worth to share the own infrastructure (e.g. computers in intermediaries' offices), which should be properly secured and operated under the supervision of the customer assistant. The plans also include the introduction of external payment systems for services with high standards of security and credibility among users. It is also worth trying to get patronage and certification of recognized social as well as IT organizations (including those in the area of systems security).

Another aspect is to provide access to continuous technical and substantive support. In addition to the computer station with access to on-site support, a helpdesk system is necessary to allow remote contact via e-mail or telephone and on-going solving of users' problems while

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using the application remotely. It is the responsibility of an intermediary who should provide appropriate hardware and software infrastructure as well as human resources for that purpose.

Activation of seniors using existing structures may take place by using the structures defined in the application as neighborhoods. They have their own information sites, their own news feeds and dedicated catalogs of services only for the members of the particular community. Older people will be more willing to use the services of other people if they are offered by people from the neighborhood, affiliated to the same organization like the Senior Club. Thus, neighborhoods can also be extremely useful in the use of the natural need for self-organization and the desire to support others, in particular those close to them.

Older people are more willing to perform part-time jobs and the application provides different forms of such a work via all three modules. The application can handle different processes of appointment coordination for such kind of occupational activity. Each process allows negotiating the required terms from any end device, from the level of the application, from e-mail notifications or text messages. Users can also plan their temporary availability slots, then the system won't suggest them works expected to be performed on other dates than indicated. Thus, it is possible to plan the day and find time for daily duties and part-time job.

The last required condition is to ensure the possibility of verification of services and service providers. The system at the moment provides an one-way confirmation of the service and it is expected to implement a two-way verification, in order to allow both sides to confirm the service and its quality. It is also important to introduce tools for the direct evaluation of service providers by consumers, but currently the platform does not make it available. This requirement is reported not only by Polish users, therefore it is one of the priorities for the further development of the application.

7. CONCLUSION

The issue of the quality of life of elderly people acquires special importance in the face of the adverse demographic forecast. One of the steps in the right direction to cope with these rather pessimistic trends is occupational activation of elderly people in order to prolong their active participation in the labour market. New forms of service distribution facilitate the aforementioned process.

The business model of the service e-marketplace platform, which was proposed as a result of the research work and in-depth direct interviews with senior citizens, assumes the transfer of the processes of ordering and coordinating the services, which so far have been organized in a traditional way, to the virtual reality. The said transfer makes it possible to verify the service providers, to respond quickly to the market needs, to match the offer to the expectations and to enhance the trust in the system among the prospective customers. Supplying the market with an advanced platform which integrates: providers of services for people over 50 years of age, employers who wish to hire senior citizens in part-time jobs on a commercial or voluntary basis and service recipients, constitutes a complex response to the needs of the indicated target group. Furthermore, it provides environmental integration of elderly people and it helps to build capital of confidence in service providers and employers. The intermediary, who plays the crucial role in the model, renders assistance to senior citizens not only in the field of price negotiations and settlements but also in the area of verification of service providers and employers. Therefore, the intermediary solves the problem of distrust demonstrated by elderly

people in service providers and employers unknown to them and eliminates the problem of dishonest users. The model also takes into account the impact which the patronage exerts on the functioning of the service e-marketplace by providing ongoing financing and by promoting an active approach adopted by senior citizens on the labour market. The latter aspects also constitute a key determinant of success of the endeavour, whose self-financing capabilities are limited due to its pro-social character.

ACKNOWLEDGEMENT

The paper is a part of the ActGo-Gate project funded by the AAL Agency awarded on the basis of the agreement number AAL6/1/2015.

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