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MASTER'S THESIS

INTERNATIONALIZATION OF IT COMPANY

Case study of a Finnish MOOC platform

First supervisor: D.Sc. (Tech.) Daria Podmetina
Second supervisor: Professor Juha Väätänen

Date: 19.08.2016

Author: Iulduz Khairullina

Address: Ruskonlahdenkatu 13-15, B14, 53850 Lappeenranta

ABSTRACT

Author: Iulduz Khairullina

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Second supervisor: Professor Juha Väätänen

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The interest to small and media size enterprises' (SMEs) internationalization process is increasing with a growth of SMEs' contribution to GDP. Internet gives an opportunity to provide variety of services online and reach market niche worldwide. The overlapping of SMEs' internationalization and online services is the main issue of the research.

The most SMEs internationalize according to intuitive decisions of CEO of the company and lose limited resources to worthless attempts. The purpose of this research is to define effective approaches to online service internationalization and selection of the first international market.

The research represents single holistic case study of local massive open online courses (MOOCs) platform going global. It considers internationalization costs and internationalization theories applicable to online services. The research includes preliminary screening of the markets and in-depth analysis based on macro parameters of the market and specific characteristics of the customers and expert evaluation of the results. The specific issues as GILT (Globalization, Internationalization, Localization and Translation) approach and Internet-enabled internationalization are considered. The research results include recommendations on international market selection methodology for online services and for effective internationalization strategy development.

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Iulduz Khairullina

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ABBREVIATIONS

B2B – business-to-business

B2C – business-to-consumer

BDs – born globals

BS - Bachelor of Science

CEE – Central and Eastern Europe.

CEO – Chief Executive Officer

CIS – Commonwealth of Independent States

CS –Computer Science

EU – European Union

GDP – Gross Domestic Product

GILT – Globalisation, Internationalisation, Localisation and Translation

GLOBE – Global Leadership and Organizational Behavior Effectiveness Research

ICT – information and communication technologies

IEI – Internet enabled internationalization

IMS – international market selection

MD - Master's Degree

MOOCs – massive open online courses

OECD – Organization for Economic Cooperation and Development

RQ – research question

SMEs – small and medium size enterprises

UK –United Kingdom

US – United States

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1. INTRODUCTION

Current research deals with problem of online service internationalization. It investigates the main challenges and opportunities of online services in a case company. This chapter consists of several main components to cover general points as background of the research and research gap, problem and objectives of the research and structure of the project.

1.1 Research background

Internationalization theories started developing from large enterprises going international using different methods e.g. foreign direct investment and cooperating with global players via original equipment manufacturing and joint venture (Luo and Tung, 2007). But recently globalization trend moved from large corporations towards small and medium size enterprises (SMEs) (Buckley, 2011). The rationale behind this phenomenon is explained by the importance of SMEs for global economy. According to Airaksinen's et al. (2015) research based on the Eurostat statistics, SMEs represent around 99% of all enterprises in European Union. In terms of employment, SMEs also tend to be more labor intensive. "*SMEs account for around two-thirds of total employment and contribute 57 % of value added in the EU*" (Airaksinen's et al., 2015, p. 10).

Another new phenomenon influencing the world economic growth is digitalization. Sabbagh's et al. (2013) research underlines that "*increase of 10 percent in country's digitization score fuels a 0,75 percent growth in its GDP per capita*"(Sabbagh's et al., 2013, p.36), and leads to 1,02 decrease of the unemployment rate. Moreover, digitization is changing business models, methods to entering markets, production and operation.

Online service, i.e. service provided over the Internet, is an example of digitalization. With the development of information and communication technologies (ICT) a lot of traditional services transferred their functionality fully or partially to the Internet as retail, financial services, consultancy, medicine or education. Online services utilize the benefits of the Internet not only in operating sphere but also in marketing, product development, customer support etc. In case of internationalization Internet is able to decrease entering foreign

market barriers as well. At the same time, for SMEs providing online services it is highly important to reach niche target audience at a minimum costs.

One of the recent example of an online services is a Massive Open Online Course (MOOC) (Deimann, 2015). MOOCs provide users with opportunity to study online from professionals. At the first stages high-quality materials for MOOC was provided by USA universities. However, nowadays idea of MOOC gains its popularity in Western Europe among commercial organizations as well and little by little penetrating into other markets of the world. So, there are local MOOC appearing worldwide as private and public organizations. Due to the combination of commercial and social features, MOOCs have become a complex organization with specific features to consider during product development. Moreover, as first MOOCs gained strong popularity worldwide nowadays it is now complicated to compete on the international arena. So internationalization process of online educational service as MOOC requires further research.

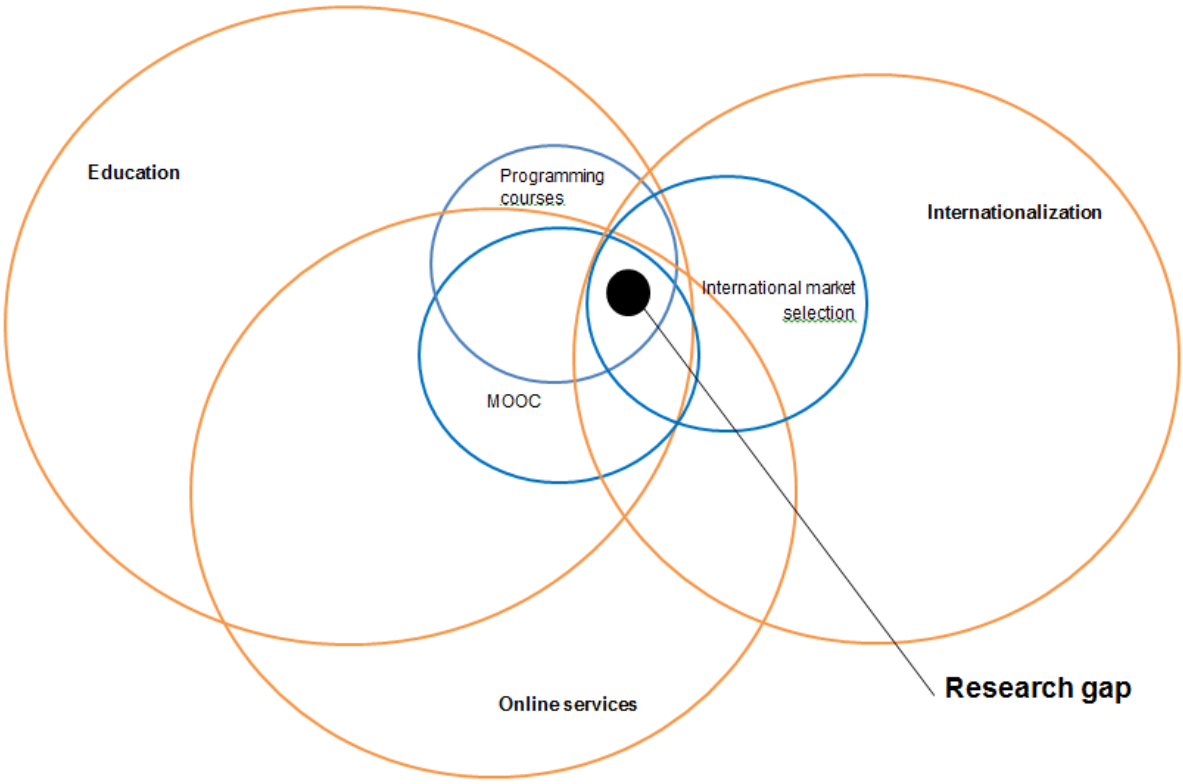
1.2 Research Gap

Considering main directions of internationalization, existing studies can be categorized to several fields. First of all, internationalization theories as Uppsals model by Johanson and Vahlne (1977), Network theory by Johanson and Mattsson (1988), and born globals (BGs) by Knight and Cavusgil (2004). These theories investigate mostly traditional businesses and products, so there is shortage of considering specific features. However, theory of born globals facilitated theory about Internet enabled internationalization (IEI), which is more related to internationalization of online services. Thus, Abraha and Jallow (2013) researched born globals and Active online internationalization on the Swedish BGs, Loane and Bell (2002) studied cross-national internationalization trajectories of Internet startups, and further, Loane, McNaughton, and Bell (2004) introduced term of Internet-Enabled Entrepreneurial Firms.

There are specific technical topics of research over the past 5 years related to case company industry, describing different characteristics of online services, software programs and MOOCs. There are a lot of researches about customer experience with

MOOC (Abeer and Miri, 2014; Zhang, 2016; Stikkolorum et al., 2014; de Barba et al., 2015), functionality of popular programs and its effectiveness (Gamage et al., 2016; Kursun, 2016; Margaryan et al., 2015). Programming education in MOOCs became special part of phenomena and research of several important characteristic were conducted as practical programming exercisers (Staubitz et al., 2015), collaborative software engineering (Billingsley and Steel, 2014), developing a computer programming MOOC (Spyropouloua et al., 2015; Miller et al., 2014) and empirical studies of particular features as forums in MOOCs (Zhu et al., 2015). However, only a few scientists emphasized local characteristics of MOOCs and put special attention to national groups in MOOCs phenomena (Che et al., 2016; Jansen et al., 2015).

However, there is still lack of researches of online services internationalization. MOOCs theory is lacking research on local approach and small new firms as well. So, it is necessary to investigate opportunities and process of online services internationalization, limit to which internationalization can be generalized for all kinds of online services and specification of online service industry. Moreover, understanding the opportunities of international growth for national MOOCs and ways to compete with global market players can support the development of platforms with different contents. The gap of the research is at the intersection of programming MOOCs and international market selection (Figure 1). According to figure 1 research gap lies on the intersections of education, online services and internationalization research domains. Current study specifically considers certain aspects of these larger domains as programming courses, MOOC and international market selection. Combination of theories and empirical research lead to a scientific findings and recommendations for further study.



Source: The Author

Figure 1. Theoretical framework of the research

1.3 Research questions and research

Research background discloses the main idea of current research: to investigate internationalization process of online services with the example of MOOC platform. Internationalization process includes several steps and important decisions: what market to enter, how to operate and how to enter that market (Kovács, 2014). The main question from company side was *"How to improve efficiency of internationalization process of programming MOOC platform?"* For research purpose, this question from the company was specified by several questions in accordance with steps of internationalization strategy development. To answer this question and study internationalization process in details research questions and objectives were formulated in the following table (Table 1).

Table 1. Research objectives and questions

	Research Question	Objective	Method
RQ1	What internationalization strategy is more appropriate for online services?	To conduct interview with company's CEO about previous internationalization experience and current internationalization stage and to find out successful approaches and pitfalls	Interview, Qualitative method
RQ2	Which criteria is the most important for international market selection?	Based on relevant literature and available data create a survey for company's employees and analyze weighting of criteria of international market selection to find out the most important parameters	Interview, Expert evaluation, Qualitative method
RQ3	What market is better to enter first?	To analyze and compare market conditions to identify the most promising markets according to general macro criteria	Statistical analysis, Expert evaluation, Mixed-method
		To analyze customer's behavior according to case specific parameters to define	
		Combine results of analysis and expert evaluation to find out first international foreign market	
RQ4	What costs included in online services internationalization?	To conduct interview with company's CEO to determine expenses of global approach to the market	Interview, Qualitative method
RQ5	Should programming MOOCs be oriented to self-education or be additional training for users?	To analyze website content, interview and secondary sources to find out the interconnection between online and traditional education	Interview , Statistical analysis, Mixed-method research

1.4 Report structure

To organize the clear structure of the research the research, it is divided into six chapters. Figure 2 represents the main sections of the study with the inputs and outputs of each chapter.

The first chapter is “Introduction”. It aims to reveal the background of the research and define research scope. The main subsections include research background, research gap, research questions and objectives and report structure.

The second chapter is “Literature review”. It represents theoretical framework of the study in order to clarify the research questions and overview previous studies on the research topic. Literature review includes five subsections. Internationalization theories describe applicable model of internationalization. International market selection part considers different approaches to define first foreign market mentioned in the literature. Internet enabled internationalization describes benefits and mistakes of online internationalization. Next subsection specifies particular features of online services internationalization. And the final part of literature review represents the area of case company.

Next chapter is “Methodology”. It explains research plan and introduce case company. It consists research design, case company description and data collection process identification.

“Results” chapter includes international market selection methodology based on statistical data combined with interview results. Subsections of the “Results” are internationalization cost, preliminary screening, in-depth screening, customer characteristics, international market selection model and expert evaluation.

The main goal of “Conclusion” chapter is to summarize results, underline limitations and propose further fields for the research. It contains practical results, contribution, limitations and further research subsections.

Section "References" provides all the cited sources used in the research. "Appendices" section includes additional relevant information from the context of study.

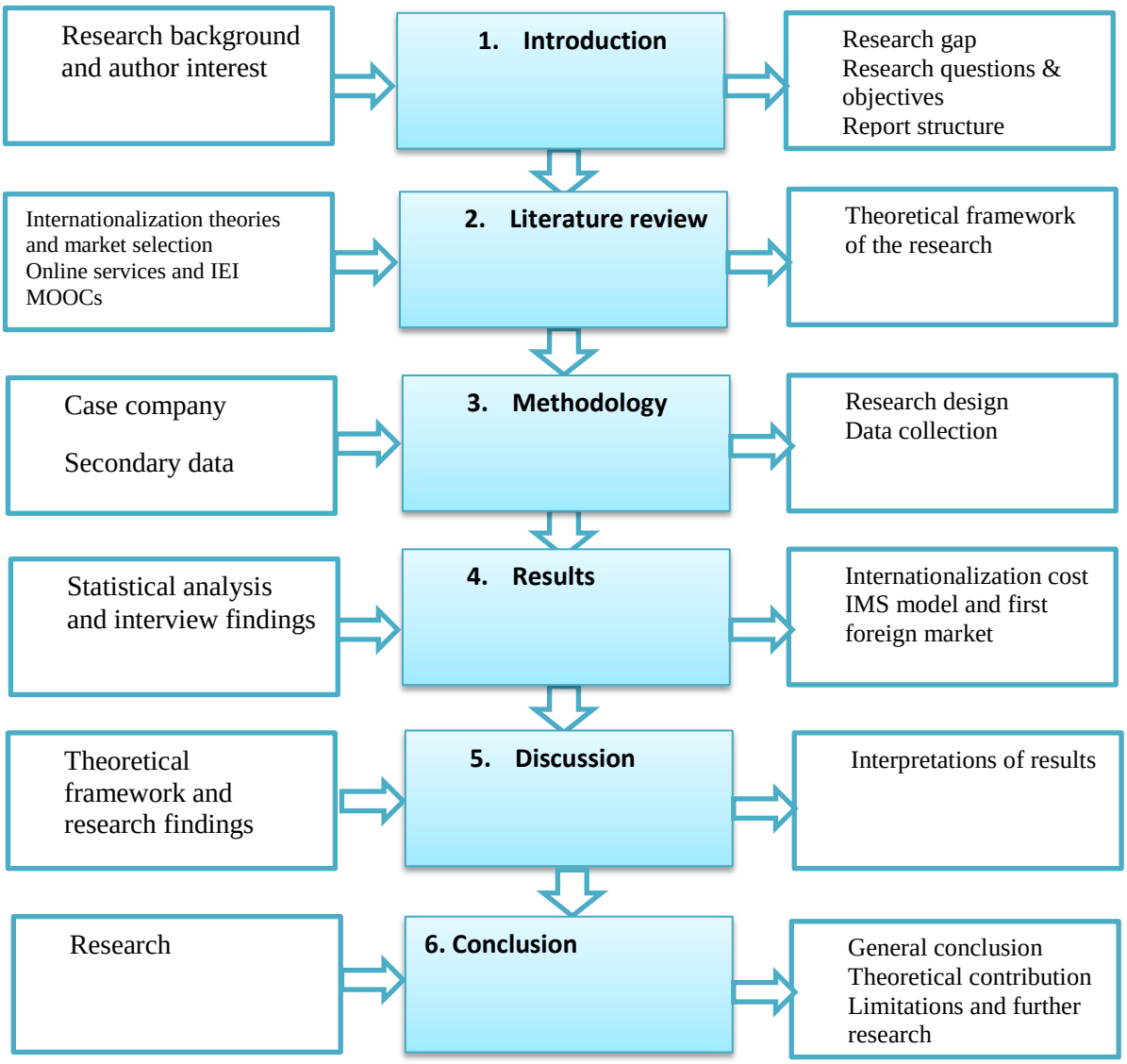


Figure 2. The input-output structure of the research work

2. LITERATURE REVIEW

Literature review provides groundwork for the empirical part of the research on the basis of existing knowledge and theories. It serves to clarify research questions and objectives based on the previous knowledge (Yin, 2009). Current research includes two separated parts. First part dedicated to internationalization process and considers models of internationalization, internet enabled internationalization and costs of internationalization. Second section includes basic overview of general online services and MOOCs in particular.

2.1 Internationalization process

Researchers define internationalization process differently. Basically internationalization is a process of entering and operating on the foreign market. It includes the use of international opportunities for business development (Ellis, 2011), entry mode decision and international market choice and implementation of chosen internationalization strategy in a foreign market (Melin, 1992; Hilmersson, 2013).

Nowadays even small and medium size enterprises are able to operate in several countries and become global. SME is defined by European Commission as company with an annual turnover of up to 50 million euros and up to 250 employees (Eurostat, 2016). Even though SMEs consider less options for internationalization due to resource limits (Mohr et al., 2010) and their operations restricted by their smallness, according to recent data more than 95% of enterprises across the world are SMEs and more than 50% of SMEs are included in international operations (Growing the global economy through SMEs, 2012). SME prefer to internationalize by export and import operations, partnerships across the border and setting up operations in foreign country (European Commission Enterprise and Industry, 2009). Success of SMEs can be explained by certain benefits that help SMEs to overcome entry barriers for foreign market and act more effectively than bigger competitors due to the role of the entrepreneur's personal factors and venture capital (Ughetto, 2015), cooperation with large enterprises (Dias and Lopes, 2014), flexibility and opportunity-based international entrepreneurial culture (Dimitratosa et al., 2015).

2.1.1 Internationalization models

Internationalization process was first tackled in research of Smith (1776) and Ricardo (1817) on absolute and comparative advantage and it still attracts scientists' attention. Nowadays several traditional and admitted theories of internationalization exist. Current work considering Uppsala model (Johanson and Vahlne, 1977), network model (Johanson and Mattsson, 1988) and born globals approach (Oviatt and McDougall, 2000; Knight and Cavusgil, 1996) since these models are the most suitable options for the internationalization of SME (e. g. Masum and Fernandez, 2008; Cunningham et al., 2012; Ferencikova and Hluskova, 2015). However, with the development of new technologies that affects business as well traditional theories have to be always critically reviewed and carefully used in accordance with their limitations and conditions.

Uppsala model was formulated by Johanson and Vahlne (1977) on the base of investigating set of Swedish companies and their way to go abroad. The core idea is to internationalize from exporting to neighbor countries gradually by gaining and using knowledge about foreign market and go further to other countries step by step. To explain ability to have knowledge about another country authors introduce term of "psychic distance" which is connected with the factors that influence the flow of information. It can be common language, similar cultural behavior or familiar political system and regulations. (Johanson and Vahlne, 1977). From the beginning it was considered that neighboring countries have smaller psychic distance and it makes internationalization easier. However, geographical proximity does not guarantee close psychic distance. For example, Ferencikova and Hluskova's (2014) research concluded that most Central and Eastern Europe (CEE) countries preferred to enter former socialist states than neighboring developed non-former socialist countries like Austria, Germany, Italy. The main suggested reason is common history that led to cultural similarity. There was a term "foreign-trade monopoly" in USSR, when export was possible only through a few organizations. That led to lack of knowledge about foreign markets, which basically delayed the development of newcomers and start-ups nowadays and formed certain business culture. In this case, the main driver to enter foreign market is market knowledge and experience. Consequently, company prefers to enter familiar market first by using knowledge from domestic market activities and expand incrementally starting with export activities, growing to selling

products through representatives, than sales subsidiaries and finalizing with manufacturing subsidiaries (Johanson and Vahlne, 1977).

Globalization and developing technologies nowadays provide different opportunities to overcome psychic distance. In case of SMEs' internationalization connections and network come to the fore. Network is social professional and personal relationships between actors (Musteen et al., 2013) First ***network theory of internationalization*** was formulated by Johanson and Mattsson (1988) and the idea behind is considering the international market as interconnected business organizations network. The goal of internalization process, in this case, is to enter a network and to share its advantages. Network internationalization includes long-term relationships between partners that influence each other as well as changing the network itself (Blankenburg et al., 2015). During the process of internationalization over network approach, companies are usually trying to get access to two types of information. The first one is about local business contexts and the other one is about local business networks (Åkerman, 2015). With help of network small companies are aware about new business opportunities and are able to act early (Ellis, 2011) and with established partnerships SMEs can fill in the gap in resources and knowledge by combining assets with partner companies (Chetty and Campbell-Hunt, 2004; Matthyssens, 2008; Lindstrand et al., 2011). Furthermore, combined network knowledge limits constraints related to uncertainty, foreignness, newness, and smallness, without gaining own experience. This theory was examined in different countries like Finnish technology-based firms (Yli-Renko et al., 2002), Chinese international new ventures (Batjargal, 2003) and in all cases networks positively effects on internationalization process. International network is particular important for small companies in transition economies because it provides information that is not available in official sources and able to fulfill lack of experience (Musteen et al., 2013).

However, when entering a business network consider not only benefits but also limitations that can occur for the company. Besides an opportunity to influence on other network members the company will also become dependent on them. Moreover, being in the network, means to be controlled by the network and at the same time there are no opportunities to control the whole network as a new entrant (Forsell, 2010). According to Halinen and Tornroos (1998), there are two dimensions of new insider of the international

business network. Even if company didn't have any connections before, still it has specific features. First of all, the companies are perceived as representatives of their country. Secondly, dimension in a certain region. After including the company in the network, future and history of network members will be important (Fletcher, 2008).

One of the main constraints here is uncertainty, because companies cannot realize real opportunities while it is outside the network. During the process of entering a network, companies change and develop their position which in return causes a change in the network as well. Being an insider in the network can mean for a company, that it can combine resources to achieve better effectiveness inside the network (Blankenburg et al., 2015). Among specific features of business networks, business can define new opportunities and extent the network. However, one of the dimensions of business networks is the level of dependence inside the network. As relationships in networks are based on mutual obligations, the costs for maintaining those relationships rise with the higher level of dependence of companies between each other (Forsell, 2010).

One of the most important objects of the network internationalization model are relations between companies, that can decrease the importance of physical distance between the members. Even though they may come from countries that are far away from each other they will feel more connected and the distance will lose its importance. Once the company is familiar with the process of internalization and knows how networks work it can adapt their knowledge and repeat those steps with other networks as well (Hertenstein et al., 2015).

Born globals (BGs) are new often technology-oriented SMEs with limited resources but they start operating on the international markets within couple years after establishment. Knight and Cavusgil (2004) determine BGs as entrepreneurial start-ups that meant to be global from formation and search for opportunities to get significant share of sales from foreign markets. A distinguishing feature of BG is that it was international from origins or near their inception.

The key for BG's success is ability to gather and absorb information out of its network members, recognize opportunity in early steps and find ways to access necessary resources.

As for most SMEs main assets for BGs are intangible, moreover, their founding and growth are typically based on entrepreneurship skills of founders. Global start-ups are the most complicated as they operate globally, respond to worldwide demand and use global opportunities to develop. Accordingly, they have the strongest competitive advantage (Ferencikova and Hluskova, 2014). However, even BGs are typically do not tackle global whole market right after formation. Few global startups really 'born' global, but they came out on the international markets at an early stage, often during the three years since its inception (Lopez et al., 2009).

The main benefits of global start-ups like newness, smallness and foreignness can lead to failure as well. So, most born globals prefer to enter a regional basis, at least in their early years (Lopez, Kundu,and Ciravegna, 2009). Mostly, born globals are supposed to get 25% of income from international market during 3 years from inception (McDougall and Oviatt, 2000). Significant point is that for European BGs it is much easier to go for neighboring countries in Europe as they are close and similar in culture. Most CEE countries preferred to enter former socialist states than neighboring developed countries like Austria, Germany, as there are important differences between CEE and developed EU countries (Ferencikova and Hluskova, 2014). Entering neighbor markets they do have certain knowledge about market.

2.1.2 Internationalization cost

Internationalization process always involves additional expenses. Richter and Wulhorst (2013) generalized and categorized costs of internationalization into liabilities of newness, liabilities of foreignness, discriminatory liabilities of foreignness and liabilities of multinationality. Particular categories connected only with MNEs internationalization and foreign direct investments like costs associated with installing facilities and connected with physical presence on the market. But types of cost like expenses of acquiring information about new market and occasional mistakes or consumer ethnocentrism and costs resulting from exchange rate fluctuations or increased complexity of operations are usually appears in spite of internationalization approach.

Saarenketo's et al. (2008) research considered transaction costs of Finnish knowledge based SMEs during internationalization. The most important and controversial factors of transactional cost influencing internationalization strategy were complexity of new operations, asset specificity, appropriability of knowledge assets through tacitness and legal means, and economies of scale and scope. Asset specificity is explained as knowledge that has only one way of usage. Factor of opportunism was also under consideration, but there was no connection with internationalization decisions founded. Mentioned parameters play significant role in knowledge based company's internationalization cost and have to be considered according to specific case.

Table 2. Internationalization cost for knowledge based company.

Common category	Knowledge based feature
Liabilities of newness	Complexity of new operations, asset specificity
Incidental liabilities of foreignness	Opportunism
Discriminatory liabilities of foreignness	Legal means, appropriability of knowledge assets through tacitness
Liabilities of multinationality	Economies of scale and scope

***Source**: Richter and Wulhorst, 2013; Saarenketo et. al., 2008*

2.1.3 International market selection (IMS)

International market selection is one of the crucial points of internationalization (Papadopoulos et al., 2002; Chen and Thomas 2002; Francioni 2012). Kotler (2010) developed framework of international market strategy that consists of: (1) decision to go abroad, (2) market selection, (3) entry mode selection, (4) marketing plan development and (5) implementation of strategy. Stonehouse created model with the following four steps: (1) decision about international expansion, (2) overview of international environment to

determine opportunities and threats, (3) international market selection, (4) entry mode selection (Stonehouse et al., 2001).

There are two traditional approaches to the IMS. One is systematic approach that implies several steps of the research about the foreign markets before choosing entry point. Although systematic step-by-step approach presumes better performance (Yip et al., 2000), majority of SMEs prefer non-systematic way because they are lacking of important resources as knowledge about potential international market, know-how, international managerial experience and physical resources (Laragozoglu and Lindell, 1998). Moreover, even realizing the need of systematic approach it is challenging for SMEs to adopt appropriate methodology of IMS (Górecka and Szałucka, 2013).

Mostly SMEs react to foreign opportunities as unsolicited orders from abroad. Additional several stimulus can also be a reason for international market penetration as low uncertainty about the market due to low "psychic distance", cultural differences and geographic distance (Gould, 2002). However, in that case company narrows the selection options only to nearby countries and prefers expansive approach based on political, economic and social similarities between markets. The other way is to start from global perspective including all national markets. In this case screening is needed to limit the markets to the most promising areas and conduct in depth analysis (Albaum and Duerr, 2008).

Systematic way of IMS considers models for selecting foreign countries (Douglas et al., 1982; Johansson 1997). There is also no exact number of markets after preliminary screening defined in the literature. However, each country during in-depth stage adds complexity and takes resources, so according to statistics, the number of countries should not be limited but practical approach suggests selecting less than ten markets, psychological research narrow it to seven according to size of set a person can keep in mind (Schiffman and Kanuk, 1991).

Several market selection models were created by Root (1998), Koch (2001), Cavusgil (1985). All of them aim to sequentially eliminate the less attractive markets during research process until the entry point. Thus, IMS requires a lot of diversified information

and complex analysis (Gould, 2002). The most significant IMS components are preliminary screening, identification (in-depth screening) and final selection (Cavusgil, 1985). Preliminary screening defines the most prospective markets for further analysis based on macro-level indicators. According to Root (1998), it helps to reduce the possibility of two common errors. First is ignoring countries with good prospects applying screening to all countries, and second is to spend resources for the research of countries with low potential. Identification includes industry specific information like market size and growth, competition, entry barriers. And final step is about firm specific information as profitability, revenues forecast, and compatibility with existing portfolio considering objectives, available resources and strategies of the company internationalization. The result of final selection is the entry point for the company which best matches company objectives (Gould, 2002).

Root (1998) developed three stages model for IMS. It includes preliminary screening, analyzing industry market potential (IMP) and company sales potential (CSP) (Root 1998). According to Johansson's model preliminary screening step divides on two stages: country identification with macro parameters and preliminary screening using quantitative dimensions to reduce number of market faster and with low costs (Johansson, 1997).

An important step of IMS process is decision about speed of expansion, i.e. number of markets to tackle at the same time. In case of incremental internationalization, firms prefer to limit number of countries and progress sequentially, while born global companies develop markets simultaneously to reach several niches with target audience at the same time (Kovács, 2014)

There are two main options for identifying target markets described in the literature: clustering and ranking. Cluster methods group countries with similar indicators of country characteristics in order to simplify the process of comparison of different countries. Based on similarities managers can detect synergies among markets (Cavusgil et al., 2004) and enter countries from the same cluster with accumulated knowledge about new market (Johansson and Vahlne, 1990). Another method ranks countries by order of presence according to attractiveness of the market or preferences detected by weighting of

dimensions (Cavusgil et al., 2004; Sakarya et al., 2007). Both methods are described as a tool for preliminary market evaluation.

Effective preliminary screening is based on comparing and assessing countries by certain criteria for identification of potential markets. There is no clear definition of criteria for market screening. However, literature provides examples of dimensions to apply (Russow and Okoroafo, 1996). Mostly, criteria depends on the objectives of internationalization (Dunning, 1998). Criteria for market segmentation can be divided into general and specific characteristics. While general characteristics such as geographic, language, economy, demography, technology, education criteria are measurable, accessible and actionable, specific characteristics about culture, lifestyle and preferences have high relevance to particular case. Literature identifies following criteria: market size and level of economic development (Dunning, 1998; Cavusgil, 1997), endowment factors (Dunning, 1998), market growth (Cavusgil, 1997; Sheng and Mullen, 2011), country risk and political stability (Whitelock and Jobber, 2004), geographic distance, cultural distance and language differences (Sheng and Mullen, 2011; Whitelock and Jobber, 2004), religious differences (Sheng and Mullen, 2011), buying power of customers, market season fluctuations, average industry margin, competitive conditions (price controls, local content, etc.) economic and political stability (Hollensen, 2007). It is also important to put attention to internal criteria like company goals, size and resources, number of potential markets, international market learning, marketing cost and investments (Rural Infrastructure and Agro-Industries Division, 1997).

In systematic approach for SMEs the most important factors are firm-specific and host country factors. Furthermore, such entry barriers as geographic and cultural distance do not have high influence on decision (Górecka and Szałucka, 2013).

After deciding criteria manager has to represent an indicators for them. Papadopoulos et al. (2002) underlines obligations of researcher to choose them and points out unnecessary standardized variables to make research. Another issue is weighting chosen criteria. There is a possibility to weight then equally, as well as use expert evaluation methods. For example, Cavusgil (1985) suggest Delphi method to use expert opinion of international business professionals to define relative importance of each market dimension.

2.1.4 Internet enabled internationalization

In the process of internationalization small firms are faced with many difficulties. The main reasons are novelty of the company and the lack of experience, as well as new markets with their specific features (Arenius et al., 2006). In addition, among them the high cost of internationalization together with resource limitation, lack of managerial experience, unfamiliar business environment and new regulatory standards, the complexity of the company's management and searching for partners (Kos-Łabędowicz, 2013). Positive impact of Internet to internationalization process was detected in a study of small business exporters: the ease of penetration to remote and unfamiliar markets, attracting new customers, creating international visibility of the company (Gabrielsson and Kirpalani, 2012). Thus, using Internet reduce penetration barriers to foreign markets. Online resources are available to companies regardless of their size, which allows us to consider access to international markets since the company's founding.

Creating a company website is often the first step in the internationalization via the Internet. This is due to the fact that virtual reality blurs the boundaries of countries, and by creating a website for a local audience, the company can also attract foreign customers, not applying to this effort. This method is called the default online internationalization (Yamin and Sinkovics, 2006). However, that case won't lead to global success due to internationalization barriers as language and cultural differences.

In case, if the purpose of access to the Internet is to attract foreign audiences, and is accompanied by an adaptation of the website content or the interface of the product, the company must be on an active online internationalization path (Yamin and Sinkovics, 2006). Majority of MNEs use Internet as a marketing tool or information technology, while small businesses, lacking resources, both at home and on the international market, the active online use the internationalization (Pezderka and Sinkov, 2011).

Firstly, it allows companies to operate in different countries without any physical presence, since the possibility of communication with the supplier in conjunction with a high quality

product at a fair price eliminates the need for physical proximity to the customer and the company's real presence in the market. Active online internationalization significantly reduces the cost of development of foreign markets and will enable small companies to enter the international arena at minimal cost.

Secondly, the Internet is inherent intermediary in communication. It provides the possibility of permanent mutual contact with customers, which contributes to a better understanding of the target audience and adaptation to the specifics of the new markets. Communication can be a one-to-one – supplier-buyer, and one-to-many or multiple, so that the supplier can directly access the group of clients. This enhances customer-provider interaction, allows focusing on specific market segments and builds trustful relationships with consumers (Yamin and Sinkovics, 2006). Permanent direct contact with end-users on a remote market reduces intermediaries, increases transaction speed and responsibility of the company to consumers. However, the Internet can also lead to information overload and knowledge gaps. In these situations, the intermediaries may have a function of gathering, filtering, analyzing and processing information (Gabrielsson and Kirpalani, 2012).

Third, using the Internet reduces the psychological distance between the different national markets, which leads to a time reduction in the development of new markets.

Finally, a unique feature of the Internet is the quick exchange of information. It provides companies with information about the market opportunities and helps to create and support business networks as well (Chen and Tao, 2009). Informative function of the Internet enables timely perception of current market opportunities and technological development. Communicative function of the Internet contributes to the strengthening of ties between the international business environment agents.

However, there are obstacles and pitfalls of Internet enabled internationalization as well. Active online internationalization does not always lead to the expected results, and does not guarantee an international growth of company. Internationalization success depends on many factors. Personal selling still plays an important role. Usually companies have to adapt their products for the local market, in spite of the use of virtual tools of

internationalization. Availability and adaptation of technologies are not the only success factors, orientation of the company's management, product specifications, availability of financial and human resources, business networking, access to external resources of the company are also significant issues during IEI. For example, companies with a specifically localized to the region product is less likely to succeed in the internationalization (Gabrielsson and Kirpalani, 2012).

In addition, active online internationalization benefits may lead to common mistakes. First of all, with only a virtual presence on the market it is extremely difficult to take into account the impact of the environment on the client. Despite the success of the internationalization of the Internet, the company may suffer from limited involvement in the local markets. Companies often fall into the "virtual trap", summarizing the behavior of online customers with real market conditions. Despite the development of Internet technologies, they cannot completely replace virtual ways of studying the business environment (Yamin and Sinkovics, 2006).

Despite the considerable scope of the audience, the Internet does not eliminate the need for product localization. As a rule, companies need to choose between a global approach, in which the product is standardized and focused on the average global buyer, and a local approach, where it is necessary to take into account the linguistic and cultural characteristics of clients, as well as regulatory and economic aspects of the local business environment (Arenius et al., 2006).

Also, reducing the "psychological distance" the Internet can lead to excessive generalization markets. The dilemma of "psychological distance" is that when entering the company's long-markets are carefully evaluating the potential business impact, but at the exit on similar markets, companies should develop a pattern. At the same time there is a high probability of dismissing the important features of the market due to the similarity of the primary market conditions (Yamin and Sinkovics, 2006).

While entering unfamiliar markets, the Internet offers the possibility of direct contact with the customer, while reducing the costs of organizing and maintaining a network of intermediaries. However, IT companies often practice the involvement of intermediaries to

attract customers and distribute the product. In many cases, the intermediaries play a key role in the success of the company's internationalization. For example, the gaming industry has demonstrated a significant impact in the reputation of the publisher of games on the process of entering foreign markets (Cunningham et al., 2012).

In most cases, small companies are adapting the latest technology to obtain an advantage in the international market. Active online internationalization on the one hand smooths the lack of small business resources, increasing their flexibility and the perception of the market, on the other hand it creates new challenges for company management. Sophisticated active online internationalization strategy can significantly reduce the time for foreign market entry and increase the coverage of the target audience that consequently creates company's competitive advantages.

2.2 Online services

Development of technologies nowadays provides an opportunity to improve and restructure traditional business. As an example, online services represent any kind of service provided over the Internet. There are different types of services as paid and free, simple and complex, partly or fully executed online over the Internet. Important features of online services are communication between subscribers and unlimited access to information.

2.2.1 Online services specifications

At early stage online services were focused on providing variety of information in electronic form to different group of people, nowadays internet services can include banking, commerce, government, education, entertainment, web storages, online mapping and route planning and so forth. E-business grows in popularity and attracts researches. According to "International e-commerce study" (2015) e-commerce sales in Europe increased by 18,6%, in USA by 14,5%. Such phenomenon attracts attention of scientists and businessmen all over the world and personalized shopping has arguably become a mainstream trend on the Internet.

In case of online services internationalization, SMEs prefer to internationalize by export (European commission, 2010) without establishing company or subsidiary in foreign country, so related costs can be eliminated according to particular case. In addition, those online services that do not involve the physical delivery of the product can also reduce logistics costs, which are key internationalization such as online shops. Internet enabled companies to support their products remotely "*outside of their home markets – internationalization engineering, software localization, website globalization, international QA and testing*" can be developed without physical presence (Tarquini et al., 2010, p. 351). Moreover, Internet allows reducing internationalization barriers as it was overviewed in 2.1.4 part of literature review.

However, internationalization of online services requires special approach in order to eliminate additional costs of internationalization. In case of online services website usually is a main performing tool, so the importance of design, usability, security and digital divides became apparent for software services. The transfer of the services to the internet platforms has led to a development new product development processes. Additional cost might be added by continuous updates of the web content (Fact-finder blog, 2013). Due to early international orientation of new firms and born globals attitude to consider global market from inception GILT (Globalisation, Internationalisation, Localisation and Translation) components are under consideration as a key point to international success (Tarquini et al., 2010).

GILT (Globalisation, Internationalisation, Localisation and Translation) is a term that represents steps following one by one and interdependent (Figure 3) required for software localization to produce product or service that needs to be used by global audience (Fact-finder blog, 2013). Thus translation is the smallest step and a part of localization. Internationalization is a necessary condition for localization. And combination of internationalization and localization build globalization which includes other business related activities as well.

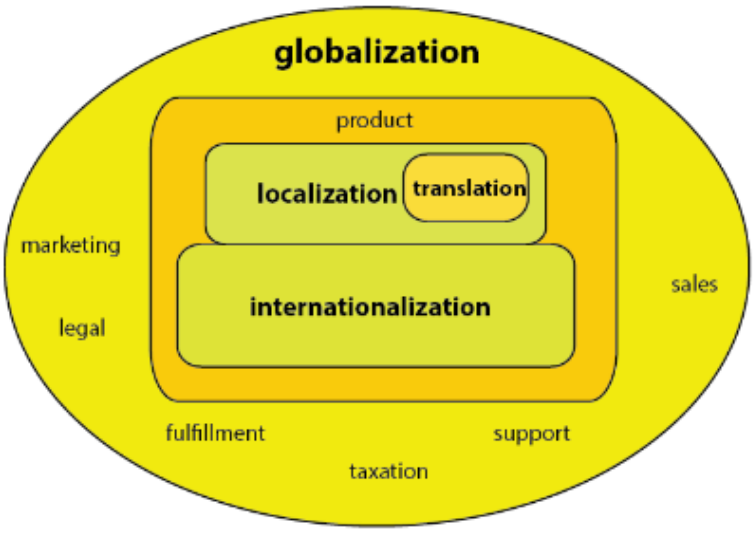


Figure 3. Diagram of the relationship between the main globalization-related activities

Source: Fact-finder blog, 2013

Translation implies not only rendering from one language into another, but also translating the style, idea and perception to convey the context to target audience (Jóvena, 2015). In software product it includes interface, documentation, packaging and so forth.

Internationalization of product sometimes called world-readiness implies designing it with an opportunity to support multiple languages and cultural conventions like currency, data formats, etc. Usually it should be done during the software development life cycle as to save resources for redesigning the product in further performance. Although there are many examples of postponing software internationalization issues that are doubled costs and schedules for development of the product.

Localization is a further process of adapting product in linguistic, cultural and technical specifications to particular audience in accordance with local preferences, and interface translation is just a part of the process. For websites assistance and technical services like updates or, commercial transactions are crucial as well (Tarquini et al., 2010).

Globalization combines both engineering and business development connected with taking product to global market. Engineering part is mostly about implementing internationalization and localization issues, while business includes such parts as product

management, marketing, legal aspects, financial points. Schäler (2003) created methodology to plan globalization. It consists of four steps: strategic considerations on marketing, studies on the target markets, choosing an appropriate resource model for localization and planning. Globalization policy should be supported by research of foreign market evaluating portability, penetration and cultural conventions.

Portability implies readiness of product for entering foreign market and matching all the international customers' requirement. Penetration considers potential market size with consideration of key points as, for instance, currency and language. Cultural conventions depend on type of service and include legal regulations, cultural specificities and religious beliefs.

2.2.2 MOOC (Massive open online courses)

Massive open online courses (MOOCs) represent transferring of learning and education into the Internet. In practice MOOC is a web based platform that provides free online access to courses for unlimited amount of people without any formal requirement and available from any place with an Internet access (Spyropouloua et al., 2015; Cormier and Siemens, 2010; Kop and Carrol, 2011). Basic definition of MOOC included:

- Massive means unlimited and huge number of students participating in the course;
- Openness means no barriers to entry like cost, education criteria or geographical location, access for all people connected to the Internet;
- Online content provided on the web platform;
- Courses means special units of content, studying guide, interaction with peers, control tasks (OpenupEd, 2015).

The idea of MOOC appeared in 2008 from Stanford professors George Siemens who provided a free access to his course in the Internet and over 2200 people participated in it from all over the world (Koutropoulos et al., 2012). A few years later MOOCs became famous worldwide due to Udacity, Coursera, edX popularization. Quality support from high rated universities and open access ensured success of new approach (Uchidiuno et al., 2016). Few years later New York Times journal named 2012 "the years of MOOC".

Development increased and in September 2013 idea of MOOC became popular in Europe and worldwide and different platforms became available. It started from OpenupEd and developed to regional platforms as well like FutureLearn, Iversity, Miriada X etc (European Commission, 2013). MOOCs mostly developing in Western Europe. Nowadays universities are supporting MOOCs and are willing to integrate it into traditional education. European universities are even more involved in MOOCs than in US.

There are two types of MOOCs. cMOOC where "c" means connectivism and connective knowledge is based on idea of learning over network. cMOOC has hyper-centralizad content-based, and has linear structure (Margaryan et al., 2015). It follows main idea of MOOC thus it's online, massive and open for any participants from all over the world. Moreover, it includes the concept of "autonomous learning" (Stikkolorumet al., 2014). Here instructors playing the role of moderators giving the topic while students creating learning environment by themselves on the base of their knowledge. Basically it implies preliminary topic and instructor as a moderator and organizer, meanwhile knowledge and educational atmosphere depends on active participation of students, their different background and prepared materials. In that case MOOC is a professional place to share and collaborate, expand professional network (Morrison 2013).

Planned schedule with fixed start and end dates, peer evaluation, online quizzes and certification at the end of the course are features of xMOOC (Punduk et al., 2014; OpenupEd, 2015). It is similar to traditional higher education and contains same teaching methods and video lectures, practical assignments, peer assessment and supporting materials. xMOOC are decentralized, network based, non-linear structure (Margaryan et al., 2015). "*xMOOCs fit the needs of many (though not all) learners looking for academic courses that meet a specific interest and need*" (Morrison, 2013)

At the beginning MOOCs were treated as disruptive innovation aiming to replace traditional education (Lentell, 2014; Simm and Pinto, 2012). However, nowadays this system face with many thresholds as certification, assessment issues, quality confirmation and confession of knowledge (Pundak et al., 2014). Consequently at the moment MOOCs perceived as additional education and a way to enlarge horizons, share experience and renew knowledge.

There is variety of reasons to motivate people to participate in online courses. According to Jansen et al. (2015) it's not sufficient to use "one-fits-all approaches" in MOOCs due to variety of reasons to study in MOOCs. Instead author recommends to research customer needs and concentrate on customer satisfaction according to different goals. It also underlines that specifically for non-english speakers it is not suffisient to localize MOOCs to EU languages, instead author suggests to fulfill other user needs in accordance with students goals of studying. Competencies that affect participation in courses usually limited to English knowledge, prior knowledge of subject, broad-mindedness, self-regulation and self-efficiency (Uchidiuno et al., 2016).

Meanwhile MOOCs are popular in US and Europe, it's still a controversial phenomena for post-Soviet countries. Educational organizations are not supporting new tendency yet and MOOCs in post-soviet countries it treated even as "*threaten national security of educational area*" (Sapargaliyev, 2014, p.25). To collaborate and popularize MOOCs legislation changes are necessary. According to Sapargaliyev (2014) one of the problems of post-soviet countries might be lack of courses on local languages. Furthermore, status of online learning is not officially recognized by employers as well as universities in that region. However, according to recent data some Russian universities started to participate in implementing MOOC. And prospects of successful development MOOCs in post-soviet countries provided by large population and huge geography of countries as MOOC makes knowledge accessible. Yet Russian universities mostly do not collaborate with startups and not motivated to support online learning platforms (Sapargaliyev, 2014).

There are specific areas of online education that require particular improvements in usual MOOC approaches. Original idea of MOOC includes video lectures, reading materials and quiz-type assessment methods, but only theoretical base is not enough for programming courses. To provide holistic approach and teach practical skills of coding MOOC have to include active experimentation and concrete experience (Grünewald et al., 2013). Online programming courses are supposed to include platform for practice, interactive and step-by-step development of solutions. This approach can provide competitive position for the platform. Moreover, easy to start approach of MOOCs in programming can attract students by realizing programming without long prior preparation

2.6 Summary

Internationalization of online services is a complex structure, that includes entry mode decision, international market choice and implementation of chosen internationalization strategy. From a general point of view, online services internationalization is just a type of internationalization, so traditional theories and models of internationalization can be used to describe the process. However, there are particular features of online services that influence internationalization to be considered. First of all, the main tool and field of operating is the Internet. It provides benefits in internationalization and leads to common mistakes. Significant benefits are accessibility all over the world, communicative function providing direct customer-supplier communication, quick exchange of information, reduction of “psychic distance” and reducing necessity to be present in each operating country. Among pitfalls there are "virtual trap", customers’ generalization, necessity to localize the product and importance of personal sales.

First of all, Internet makes service available to everybody with an Internet access. So, it allows company to use global approach from inception and follow born globals theory. Secondly, even operating virtually companies have to follow legislation of each country and consider cultural differences for marketing, that makes Uppsala model of internationalization applicable for online services. Moreover, one of the most important functions of the Internet is communication, word of mouth, feedbacks and recommendations are widely used to evaluate the best services, so network internationalization model can be used by online services as well.

There are two types of Internet based internationalization. Online default internationalization when it is enough to create website of service. And active online internationalization when company promote service and implement marketing program. To create effective active online internationalization program, it is necessary to select prospective market and research users’ preferences. Systematic approach to international market selection includes preliminary screening by macro parameters of the country, in-depth screening by general and firm-specific characteristics and final market selection.

Systematic way was proven to be more effective comparing to non-systematic and intuitive way often preferred by SMEs. Considering online service internationalization cost, there is GILT approach. The main idea is to build the service easy adjustable to different cultural and country based requirements. Implementation of GILT helps online services to avoid additional expenses to redesign platform for new markets.

Current case studies programming MOOC platform. Literature review revealed specialty of MOOCs and significant importance of practical part of programming learning.

3. METHODOLOGY

Attentively developed and strictly followed research methodology lead researcher and reader of research to clear understanding of research steps and data collection used in the study.

3.1 Research Design

Current research is focused on exploration of internationalization process of online services. The overall topic of research was defined based on author's interest and the needs of case company, however, main research question and focus of study was determined after preliminary web search of secondary information on detected topic and company and first interview about specifics of operation and current stage of internationalization of the product and company.

The goal of the study is a deep investigation of internationalization process of online services in a modern context and environment, of the case company. Consequently, research implies a single-case study strategy (Yin, 2009). The main research question is asking "How?" and research is not supported by clear, single set of results. Case company is studied in real life context, so the study can become flexible and adaptable to change. Mentioned features are belonging to exploratory and holistic researches (Yin, 2009). This research strategy was chosen as an examined case which might be considered as a unique one within online education industry. First of all, company is international from its inception as it is registered in Finland and at the same time its target market is Russian speaking programmers. Secondly, unlike the majority of MOOCs coming from world famous universities on a wide topics, case company is developing non-English professional education in a certain field. Finally, company is a small startup in developing field of online services. Considering mentioned features, it's important to go through relevant theories and develop consistent research framework to fulfill research goals and objectives. The main goal of the research is to develop recommendations and answer the main research question: "***How to improve efficiency of internationalization process of programming MOOC platform?***" In order to meet the goal of study research design was

developed according to academia rules, company requirements and available information (Table 3).

Table 3. Research Design

Research Question (RQ)	Theoretical part	Empirical part: data collection			
		Interview and company's data	Survey	Secondary data	Expert evaluation
RQ1 What internationalization strategy is more appropriate for online services?	Internationalization theories and models: Uppsala model. Network model and Born Globals	Preliminary interview and statistics		Web search about company internationalization	
RQ2 Which criteria is the most important for international market selection?	International market selection (IMS)				Survey to gather information about importance of selected criteria
RQ3 What market is better to enter first?	International market selection (IMS)	Preliminary interview	Analysis of target market based on the results of Stack Overflow	Web search about industry and competition	

			survey (2015)		
RQ4 What costs included in online services internationalization?	Online services and Internet enabled internationalization (IEI)	Interview with case company and statistics			
RQ5 Should programming MOOCs be oriented to self-education or be additional training for users?	Massive open online courses (MOOCs)	Statistics of the company	Analysis of target market based on the results of Stack Overflow survey (2015)		

Case study is flexible method that allows combining qualitative and quantitative data collection (Yin, 2009) and analysis that is widely used in current research. Two main sources of valuable information were used: interview with a case company and survey from worldwide famous programming forum that gathered more than 20 thousand respondents all over the world. As addition data sources company's statistics and web search were used to support analysis and proceeding data.

3.2 Case company

A case company was registered in Helsinki, Finland in 2014 as a platform for teaching programmers. However, they decided to start operations from the Russian market, so their basic market is Russian speaking countries.

The firm can be classified as SME. There are three criteria used to define small and medium-sized enterprise. First is a part of the authorized capital, the amount of revenue and number of employees. According to the definition of the European Commission of 2003 small and medium enterprises (SME) included with a number of employees to 250 people and a turnover of less than EUR 50 million or balance sheet total less than 43 million euros. At the same criteria for micro enterprises up to 10 employees, up to 2 million turnover and balance sheet total. For small enterprises the number of employees to 50 people, turnover and net profit of less than 10 million euros (European Commission, 2003). The key resources of the company are personnel, developed platform and its content.

Company can be categorized as born global start up as it was considering internationalization from the beginning moment of inception. It has limited financial, human and material resources and it is actively approaching different foreign markets starting with Nordic countries and including USA and Europe.

Mission of the company is to provide the best education experience to help software developers and teams growing professionally. The main product of the company is an online platform with a set of courses and the opportunity to practice in a real programming environment through the browser. Platform provides open schedule courses for unlimited number of courses on freemium paid base. Courses are designed for self-study. Most of the theoretical material is available free of charge for unique content, a comprehensive training course and use of programming environment, requires a monthly (or annual) fee. It has a unified approach: training costs $14 per month. The total amount of rates depends on the user, it is possible to pass all courses in the past month, and you can take them for a year.

3.2.1 Platform development

The original company's business idea was to create a resource platform for the publication of copyright training courses and training programmers. Figure 2 shows that the first stage of the company collecting the content and dabbled in the market. In a second step after the creation of a platform company sought in the B2B market by offering a platform for

downloading and learning their courses. However, this attempt failed, and the company changed focus on B2C market. Subsequently, the platform was filled with unique content from the platform developers. The third stage of the product development was development of platform content and providing access to practical training in a virtual machine through a browser.

In 2015 the platform started to provide access to real development environment (a full-fledged Unix-machine) via a browser window. As a result, it was created by a single instruction format to combine theory with practice. The format consists of several steps for the course: initially by studying the theory and tested for the absorption of the material, then invited to practice in the browser - writing program on your computer and check using the provided tests. Stage and prospects of the company are presented in Figure 4.

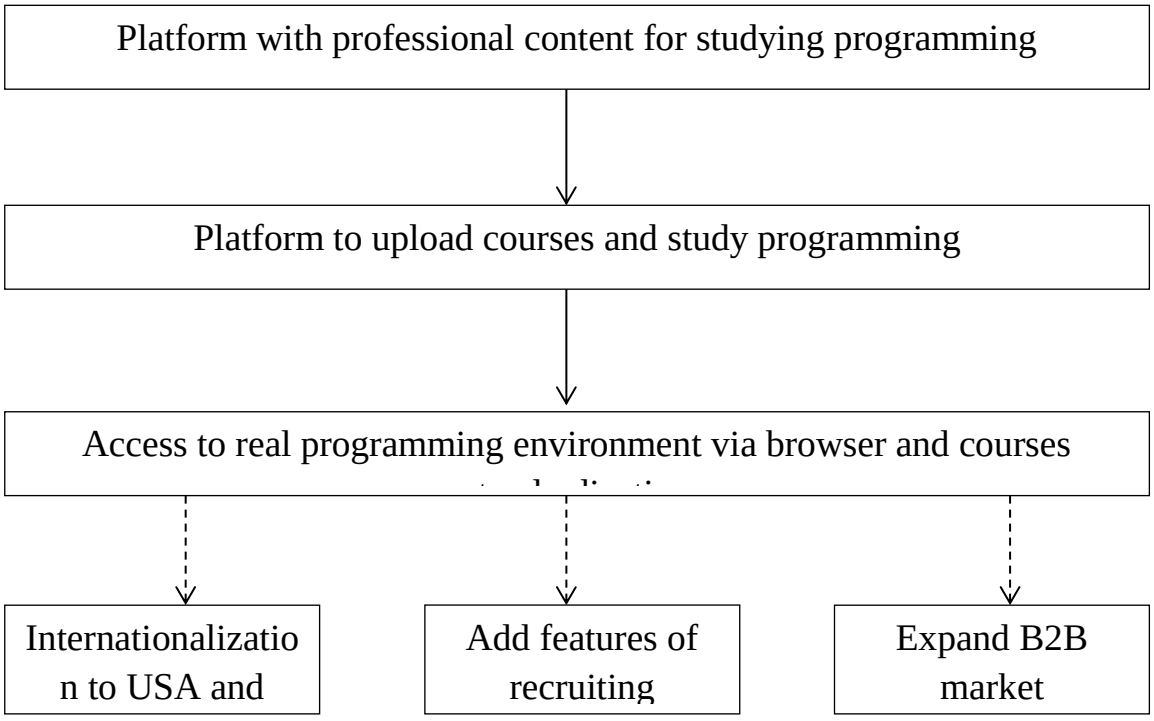


Figure 4. Development of online education platform

The main users of the platform are newcomers in programming, so the company's activities also include the development of community programming on the basis of existing users of the platform. Except the education platform, company also is building the users community of the programmers. To support their students, company conducts webinars on

programming related topics, and also events helping students in future employment. The firm also advice students to keep contact in Slack-chat on the platform to keep in touch with active users and get immediate feedbacks. So since 2014, users of the platform have direct connection with company founders who are also compilers of teaching materials over common slack-chat. This instrument is used to increase loyalty of users as well. "*Using slack-chat is win-win situation. We are always in contact with customers and obtain useful information for us immediately can ask for feedback. And the user feels closer to us and to the platform. We made a lot of sales of hand simply because we talk to users… and as a result they have changed their attitude. We became a real people for them behind artificial platform in the internet*" Thus, the company has also created a new tool for positioning in a competitive market, as well as in compliance with the original plans the advantage of direct contact with users.

At that time there were already several strong competitors on the Russian market. And company was always income oriented, so they operated on paid subscription basis from the very beginning and founders used it as an indicator of the users' interest. "*we had never given everything for free. If people are ready to spend money on our product and are willing to buy, then perhaps we are doing something right. If not, it means that we are doing something wrong, and there we had specifically study what stopped people from buying*"

The goal of the founders was to differentiate by offering quality content of the course and start teaching main basics of the programming. "*Competitors are focused on how to show people magic of programming, to show people that the programming is not that hard and you are able to do many things. Within an hour of studying you already see something new, you created on the phone, however, and when people are faced with the real they cannot solve the problem. We do not lie, we do not say it's easy*" Platform is oriented to give basics of understanding of programming and progressive studying from the fundamentals to advanced level.

3.2.2 Internationalization of case company

First of all, case company operates at the same time in two countries since the company was registered in Finland, but the target audience is Russian-speaking users.

The company developed both Russian and in English interface for the platform. However, from the product development and marketing point of view, company considers Russian and English websites as two different projects, because it requires completely different approach to enter market share, owing to cultural and behavioral differences of the countries. Compared with the Russian platform, the English version has the same technical content, but the composition of the courses is very limited.

The main market of the company is Russia and the CIS. Around 52% of revenue comes from the Russian market, 30% is provided by CIS countries, and about 18% of the rest of the world. However, the company initially was focused on the global market. Since the founding of the company it attempted to enter the foreign markets. The company can be categorized as «born globals», as it considers internationalization since inception, it has limited financial, human and material resources, and is actively seeking to enter foreign markets, taking login attempts on the markets of the Scandinavian countries, the United States and Europe.

Company approached B2B market of Nordic countries by offering them platform on the second stage of development, when users can upload courses and teach student by using platform. However, this attempt failed and company changed the direction to Europe and USA.

The main opportunity for internationalization company perceives in B2B market as there are a lot of cultural issues to be considered on the B2C market while companies all over the world acts towards the same goals in a similar way. The other way to internationalize is B2C market. At the moment company underline the only way to approach foreign B2C market is to translate whole set of courses and enter local programmers' communities in social networks, thematic forums, groups. In this case company face with lack of resources to implement this plan.

The company operates in internet services industry, that requires being flexible and adoptable to customer needs and business environment. Currently, the company is looking for business opportunities, among which address several areas:

- Access to the B2B market, attracting companies to train professionals and groups within the company, as well as, possibly, customers and partners;
- The conclusion of partnerships with employers and the development platform as the place of meeting of employers and potential employees;
- Internationalization and access to international markets in Europe and the United States.

At the first attempt to internationalize the company was faced with the following challenges:

- The lack of resources for high-quality services for foreign markets;
- Lack of information about foreign markets for effective adaptation of the product.

At the moment, the company stresses that the only way to approach foreign B2C market - a transfer of programs and courses in English, together with the promotion of the platform among local communities of programmers in social networks, discussion forums and groups. In this case, the company is faced with the lack of resources to implement the plan. Currently, internationalization process has been paused in order to concentrate on product development and do not distribute limited resources among different tasks.

3.3 Data Collection

The research involves mixed method of data collection of both primary and secondary data. Qualitative method was used to conduct several interviews with CEO of the company and analyze internal issues, while quantitative method and statistical analysis were used to determine industry, analyze market and potential customer based on the secondary data as countries statistics from United States department of Labor Statistics, Statistics Canada, Eurostat, Rosstat, Australian ICT Statistical Compendium (2013), Analytical study of IT personnel (APKIT), Russian Federal State Statistics Yearbook (2015), Organization for Economic Cooperation and Development (OECD), Stack Overflow survey (2015),

Coursera and edX websites. To gather accurate and applicable information about the company was interviewed, and maintain regular contact with the company's representative.

The findings of theoretical part became the ground for selection of data collection and analysis methods during all the research. Data collection process of the research includes two interviews about company and internationalization stage and cost of internationalization, expert evaluation of middle results of the study, analysis quantitative data of survey from worldwide famous forum with target audience as a sample and collecting information from secondary sources. Among the most important sources that can be distinguished are J'son and Partners Consulting research "The market of online education in Russia and the world" 2014; analytical study of the IT labour, 2010. The number of employed in 2009, the Russian economy and the forecast demand 2010-2015; Statistics Organization for Economic Cooperation and Development, the US Department of Labor Statistics; Russian Statistical Yearbook 2015 of the Federal State Statistics Service; Popular Russian and international forums programmers Stack Overflow, habrahabr.ru, lifehacker.com and other. Data collection consists of four main steps and the whole process of data collection and analysis lasted approximately 6 months.

3.3.1 First Stage of Data Collection

Preparation stage of the data collection included Internet search about the case company and theoretical review of the topic. In addition to the primary question from the company side, there were several more questions to consider during research:

1. *How many new programmers appear annually in Russia and in the world?*
2. *How programmers did study their profession? (e.g. university, self-taught online courses, off-line courses, internships, etc.)*
3. *What is the size of the market for online programming courses (measured in people and money)?*

The first stage of data collection is a preliminary interview with CEO of the company to set up goal of the research and gather general information about company and development of the product. Semi structured interview questions were answered by CEO of the company in

accordance with data policy. The semi structured interview guide represented in appendix A.

Interview was conducted over Skype and was recorded by author. It lasted around 50 minutes. The interview guide was built based on the analysis of secondary data about the company in web sources and academic literature. Then the interview data was transcribed and analyzed.

3.3.2 The Second Stage of Data Collection

In order to make a decision about internationalization, company needs to collect essential information about current and future market potential. To make a choice about entry point and time for internationalization, it is necessary to understand potential market share that company can get by developing on both the current and foreign markets.

After the first preliminary interview author of the research got list of questions to explore market potential of current and future customer share. To get the appropriate and valuable information author used web based search engines.

Secondary web sources become base for competitor analysis and several points of market analysis. Since company platform is web based, the main tool for marketing is the Internet, so to determine main competitors on the target markets author used search engine results, information from websites of competitors, reviews of similar platforms, programmers forums and articles dedicated to industry topics. To minimize bias of data all the statistical information represented is from the period of 2012-2015.

To analyze data about customers' author used raw data from annual survey of Stack Overflow 2015. It became significant and comprehensive source of information. Its sample includes more than 26 thousand programmers from all over the world.

Stack Overflow is a privately held website. It features questions and answers on a wide range of topics in computer programming. The website serves as a platform for users to ask and answer questions, and, through membership and active participation, to vote questions

and answers up or down and edit questions and answers in a fashion. So basically, Stack Overflow (Atwood and Spolsky, 2008) users represent target audience of case company since they are programmers and they use online tools for professional improvement.

Although forum conducts the interview with private goals, they provided open access to the results of survey and list of questions asked in the survey provided necessary information to analyze customers of case company. Questions from Stack Overflow survey 2015 which were used as response for further analysis as attached in appendix A.

These data were processed with statistical methods to explore specific customer characteristics.

3.3.3 The Third Stage of Data Collection

To estimate internationalization options, it is crucial to consider expenses as well. While internationalization of a physical product or setting up a company costs a lot, internationalization of online service seems to be easy and cheap. However, lots of services fail internationalization. It demands proper evaluation of costs and expenses should be included in internationalization strategy.

So the next step of data collection is interview about internationalization cost based on theory review and previously analyzed data. Interview was conducted with CEO of the company and interview guide represented in appendix B.

Interview was conducted over Skype and was recorded by author for further analysis. The interview questions formulated according to preliminary analysis of academic literature and secondary data about the company in web sources.

3.3.4 The Final Stage of Data Collection

The final step of data collection includes expert evaluation and weighting of importance of IMS criteria. Four experts are employees and founders of the company. The ratio of the expert selection is that all of experts worked on the MOOCs platform from the very

beginning, all of they are aware of the development stage and history of the platform, moreover, they all are programming specialists.

The survey included visualization of middle results of market investigation and required to weight chosen criteria, comment or offer other criteria. Table 4 represents survey questions.

To determine importance of each criterion for company internationalization, please, put weights 1 to 10 for each criterion in an empty box below.

Table 4. Experts' evaluation survey.

Criteria	Weight	Comments
Market size		Number of IT specialists who are interested in online courses (based on statistics of IT specialists and Stack Overflow survey results)
Annual market growth		Average for 4 years number of computer science graduates who are interested in online courses (based on statistics of IT specialists and Stack Overflow survey results)
Market niche		Market saturation by MOOC provided by local universities (based on Coursera and edx partnerships)
Platform language knowledge on the market		Based on the results of English Proficiency Index research. *for the Russian market used knowledge of Russian language
Number of programmer's with less than 2 years' experience		Proportion of respondents who have less than 2 years of programming experience (based on the results of Stack Overflow survey)
Number of programmers tried online courses		Proportion of respondents who studied on online courses (based on the results of

		Stack Overflow survey)
Similarity of preferences in programming with platform content		Overlap of platform content with top10 required programming technologies (based on the results of Stack Overflow survey and platform content)

4. RESULTS

The “Results” chapter represents the process of international market selection step by step on the basis of findings analysis of international markets and potential customers of the platform. The analysis was conducted on the basis of theory analysis and available data. The first part of the chapter dedicated to selecting foreign countries. Following section conclude all the literature and data findings into market selecting methodology. The last part of results reveals the process of analysis of each market following market selection criteria.

Market selection is the next step towards systematic international ion (Kotler, 2010). Following the systematic approach leads to better performance (Yip et al., 2000), so in order to increase effectiveness of internationalization company should follow step-by-step approach to pursue the most promising markets.

4.1 Internationalization cost

During the first attempts of internationalization towards English speaking countries, company followed the way of default online internationalization (Yamin and Sinkovics, 2006). Platform interface was translated to English together with several courses. However, testing period revealed all the difficulties of penetrating into foreign market connected with liability of newness (Richter and Wulhorst, 2013), so the company postponed the internationalization and focused on the Russian speaking audience.

Further development of the platform was concentrated on Russia and CIS (Ukraine, Kazakhstan and Belarus). The main difference between these countries is in the development of online services. *“In Ukraine users got used to prices, conditions and online studying methods while in Russia and Kazakhstan are was necessary to explain all the details of the system to majority of users”.* So, based on this difference company build targeted advertisement program on the Internet.

The other popularization tool of the company is community. Founders increase awareness of programmers about the platform by developing groups and channels in social network with a useful and interesting content for programmers. Some published materials are referring to their platform so they get users that are interested in their product. And using an opportunity provided by Internet, company keeps in touch with users and even makes sales as a result of trustful relationships with consumers and one-to-one communication (Yamin and Sinkovics, 2006).

The first point to consider in online services internationalization is readiness of the product to be presented on the foreign market. In current case from the technical point of view platform was developed according to GILT approach (Tarquini et al., 2010). From the very beginning company considered internationalization, so existing English and Russian versions of website is *"just two different ways to view the same platform",* i.e. English and Russian interfaces of the same platform.

From the corporate point of view, there was also global thinking in advance. First of all, registration of the company in Europe allows using more business opportunities comparing to Russia. For example, all the payments and security is delivered to the intermediary which does not services Russian businesses. Secondly, there were issues with customer's side of payment. On the one hand, price is in dollars with international payment systems. On the other hand, the challenging part of payment system was variety of options. Company received a lot of requests to add the other payment methods as some users prefer local payment methods. According to that, company considered and added MasterCard option, but less popular types of card were left from the system in order to limit load of staff and avoid possible issues with variety of payment methods.

In spite of operating mostly with Russian speaking programmers, a platform has 18% of users from outside of Russia and CIS. There is a space for reducing "psychological distance" in similar markets using the Internet (Yamin and Sinkovics, 2006):*"Our users are quite monotone and for us it does not matter from which part of the world they are until the point of billing system".* The main cost company faces with is legislation about value-added tax for virtual services in Europe. Payment receiver needs to pay value-added tax to the country of payer according to his country rate on the date of transaction.

Moreover, they have to prove the appurtenance of payer to a particular country with three pieces of data and store that information during three years. Thus, additional costs arise from accounting efforts and maintaining data storage services. To solve that issue company uses intermediary accounting service to support processing the information and all the procedures correctly (Gabrielsson and Kirpalani, 2012). However, dealing with that issue now, company provides itself base to internationalize with less efforts.

Consequently, the main cost of further internationalization is labour cost. The cost of accounting and data storages will increase proportionally to number of user's growth. Moreover, technical and economical parts of internationalization of the case company are ready for internationalization. The main challenge is to attract users in a foreign country and translate the whole content of the platform.

4.2 Preliminary screening

First of all, it is necessary to narrow down number of options for in-depth analysis. Schiffvan and Kanuk (1991) suggested the limit up to ten. In addition, selecting process is divided into several steps: preliminary screening, identification (in-depth screening) and final selection (Cavusgil, 1985). To avoid common errors - ignoring countries with good prospects and spend resources for the research of countries with low potential (Gould, 2002) - first sample will include all the countries and during selection process three criteria will be applied to eliminate not appropriate markets.

Cavusgil et al. (2004) identifies two methods to choose target markets: clustering and ranking. For the primary market selection it is recommended to use general criteria. There are two dimensions to choose markets: macro parameters and quantitative dimensions to reduce number of market with low prospects (Johansson, 1997). So, in current work both methods and types of criteria are used.

First of all, the most important criterion discussed in Uppsala model (Johanson and Vahlne, 1977) is "psychic distance". Even though born globals tend to internationalize globally, it is important to consider during market selection as a criteria. In current work it

is represented by 10 Societal Clusters of GLOBE (Global Leadership and Organizational Behavior Effectiveness Research) Research Project (House et al., 2004). Authors investigated 62 of the world's cultures based on Hofstede's original 1980 research findings and put nations into cultural clusters that are grouped based on similarities in culture and behavior.

For the company case, there is no point in considering each country as a separate market since population of some European countries is very small, besides platform tackles only people interested in programming. So, clustering step of primary market selection is based on following table 5.

Table 5. Globe cultural clusters

Cluster	Countries
Anglo Cultures	England, Australia, South Africa (white sample), Canada, New Zealand, Ireland, United States
Arab Cultures	Algeria, Qatar, Morocco, Egypt, Kuwait, Libya, Tunisia, Lebanon, Syria, Yemen, Jordan, Iraq, UAE, Bahrain, Saudi Arabia, Oman
Confucian Asia	Taiwan, Singapore, Hong Kong, South Korea, China, Japan, Vietnam
Eastern Europe	Hungary, Bulgaria, Romania, Czech Republic, Slovakia, Poland, Lithuania, Latvia, Estonia, Serbia, Greece, Slovenia, Albania, Russia
Germanic Europe	*Dutch-speaking* (Netherlands, Belgium and Dutch-speaking France) *German-speaking* (Austria, German-speaking Switzerland, Germany, South Tyrol, Liechtenstein)
Latin America	Costa Rica, Venezuela, Ecuador, Mexico, El

	Salvador, Colombia, Guatemala, Bolivia, Brazil, Argentina
Latin Europe	Italy, Portugal, Spain, France, Switzerland (French and Italian speaking)
Nordic Europe	Finland, Sweden, Denmark
Southern Asia	India, Bangladesh, Indonesia, Malaysia, Thailand, Iran, Philippines, Turkey
Sub-Sahara Africa	Namibia, Zambia, Zimbabwe, South Africa (Black Sample), Nigeria

***Source**: Robert at al.2004, Culture, Leadership, and Organizations. The GLOBE Study.*

Considering that the company operates in online service industry, one of the main points of international market selection is development level of information and communications technologies on the market. Second criterion is Global ICT Development Index. The main information source of this dimension is Global Information Technology Report 2015 (table 6), basically top-10 countries with the highest results. The study was conducted on the base of four main areas. The environment measures the regulatory and business environment. Readiness measures affordability, quality of infrastructure and the population's preparedness to use technology. Usage measures the level of technological diffusion among individuals, businesses and the government. And impacts measures the information and communication technologies social and economic impacts.

Table 6. Top 20 countries by Global ICT Development Index 2015.

№	Country	The Networked Readiness Index	Environment subindex	Readiness subindex	Usage subindex	Impact subindex
1	Singapore	6,0	5,9	6,3	5,9	6,0
2	Finland	6,0	5,6	6,7	5,9	5,8
3	Sweden	5,8	5,3	6,4	5,9	5,7
4	Netherlands	5,8	5,5	6,0	5,9	5,9

5	Norway	5,8	5,5	6,4	5,7	5,4
6	Switzerland	5,7	5,4	6,2	5,6	5,5
7	United States	5,6	5,3	6,1	5,7	5,6
8	United Kingdom	5,6	5,5	5,9	5,6	5,5
9	Luxembourg	5,6	5,4	5,9	5,8	5,3
10	Japan	5,6	5,2	6,0	5,9	5,4
11	Canada	5,5	5,4	6,2	5,2	5,3
12	Korea, Rep	5,5	4,6	6,0	5,9	5,6
13	Germany	5,5	5,1	6,2	5,5	5,2
14	Australia	5,5	5,2	6,3	5,3	5,1
15	France	5,2	4,8	5,7	5,3	5,0
16	Saudi Arabia	4,7	4,8	4,7	4,9	4,3
17	Russia	4,5	4,0	5,6	4,4	4,1
18	Turkey	4,4	4,4	5,3	4,0	3,9
19	Italy	4,3	3,8	5,5	4,2	3,7
20	China	4,2	3,9	4,7	4,1	4,0

***Source**: The Global Information Technology Report 2015*

The last criterion is based on platform capacity to support languages. Considering foreign markets company is aiming to English speaking audience, so English Proficiency Index is the other dimension for primary market selection. According to «The third edition of EF's English Proficiency Index 2015» (table 7), based on 60 countries investigation table 8 represents first 25 countries in the list by English Proficiency Index.

Table 7. Top countries by English Proficiency Index.

Very high proficiency		High proficiency		Moderate proficiency	
1. Sweden	70,94	10. Austria	61,97	22. Latvia	57,16
2. Netherlands	70,58	11. Germany	61,83	23. Spain	56,80
3. Denmark	70,05	12. Singapore	61,08	24. Dominican	56,71
4. Norway	67,83	13. Portugal	60,61	Republic	56,34
5. Finland	65,32	14. Malaysia	60,30	25. Slovakia	55,08
6. Slovenia	64,97	15. Argentina	60,26	26. Lithuania	54,52
7. Estonia	63,73	16. Romania	59,69	27. South Korea	54,02
8. Luxembourg	63,45	17. Belgium	59,13	28. Italy	53,81
9. Poland	62,95	18. Czech Republic	59,01	29. Vietnam	53,57
		19. Switzerland	58,43	30. Japan	53,18
		20. India	58,21	31. Taiwan	52,91
		21. Hungary	57,90	32. Indonesia	52,70
				33. Hong Kong	52,61
				34. Ukraine	

***Source**: EF English Proficiency Index 2015*

In addition, interview with a CEO of a company revealed company's preferences to enter USA and European market, although first trials of internationalization through the Nordic countries were not successful. The reason is fluency in English and ability to operate from Finland as the company is registered in Helsinki. Combination of described criteria combined with company's goals resulted in list of countries to analyze (Table 8).

Table 8. Countries for in-depth analysis.

Cluster	**Countries**	**Population (million people)**	**ICT Development Index**	**English Proficiency Index***
Russian	Russia	144,096	4,5	-
American	USA	321,418	5,6	-
Canadian	Canada	35,851	5,5	-
United Kingdom	UK	65,138	5,6	-

Australian	Australia	23,781	5,5	-
North Europe	Finland Denmark Sweden Norway	26,151	5,7	68,54%
Germanic countries	Austria, Netherlands Switzerland Germany	115,246	5,5	63,20%
Eastern Europe	Greece Hungary Slovenia Poland	60,729	4,2	61,94%**

**English Proficiency Index is not applicable for English speaking countries*
*** English Proficiency Index of Eastern Europe does not include Greece index*

***Source**: The Global Information Technology Report 2015, The World Bank, EF English Proficiency Index 2015*

To calculate European ICT Development Index and English Proficiency Index average value were used, population calculated by sum.

Table 8 includes Russian market in addition to foreign markets a basic one, in order to compare results with current situation and built strategy on the base of existing experience. At the same time Anglo Cultures are divided into several different sections in accordance to geographical distance and population. Moreover, some countries are eliminated from the clusters as they do not have enough influence and there is lack of information about them.

4.2 In-depth screening

The next step of international market selection is identification or in-depth screening (Koch, 2001; Cavusgil, 1985). Identification includes industry specific information like market size and growth, competition, entry barriers. Root (1998) divides this step into analyzing industry market potential and company sales potential. Górecka and Szałucka (2013) underline importance of firm-specific and host country factors. To investigate market potential criteria are divided into general and specific characteristics.

General part includes host country factors as platform language knowledge, market size, annual market growth and market niche, while platform specific features are number of programmer's with less than 2 years' experience, number of programmers tried online courses on the market, similarity of preferences in programming with platform content.

4.2.1 Market dimensions

Market size

Market size represents the number of individuals in a certain market who are potential buyers of a product or service. So, basically potential customers of programming MOOCs are IT specialists. In order to summarize the statistics all data was taken from the same year of 2012. Since there are not only European countries among screening market, additional to Eurostat sources were used. As there is lack of information about some countries like Russia or some countries in Eastern Europe, alternative data sources is represented in table 9.

Table 9. Number of IT professional by country.

Markets	**Countries**	**Market size (thousand people)**	**Source**
Russian	Russia	255,78	Analytical study of IT personnel (APKIT)
American	United States	1062,7	United States department of Labor Statistics
Canadian	Canada	104,82	Statistics Canada
UK	UK	74,79	Eurostat
Australian	Australia	88,01	Australian ICT Statistical Compendium 2013

North EU	Finland Denmark Sweden Norway	40	Eurostat
Germanic countries	Austria, Netherlands Switzerland Germany	84,49	Eurostat
Eastern Europe	Greece Hungary Slovenia Poland	293,7	Eurostat

Annual market growth

Importance of considering market growth while internationalization was mentioned in the several studies (Cavusgil, 1997; Sheng and Mullen, 2011). Moreover, in the interview company's representative showed particular interest to that point of research.

Since market itself is represented by IT specialists and programmers, growth of the market is supported by newcomers of this field. Basically, the most obvious measurable source is education. To clarify difficulties of each market and unify the time of measurement the following part represents growth of each market during last years.

First goes basic Russian market. Several sources were used to collect information on Russian graduates of IT specialties. The basic source is national statistics "Rosstat", because it provides the most reliable information about the Russian graduates with categorization by area of study and educational organizations. An addition statistics of Eurostat was used to compare data. However, it provides limited information in the four years from 2009 to 2012, besides data from Eurostat does not have enough accuracy of the results. It is included for comparison with the Russian statistical data in order to clarify the

possible fluctuations in the accuracy of the data (Figure 5). The difference ranges from 11 to 18 thousand people.

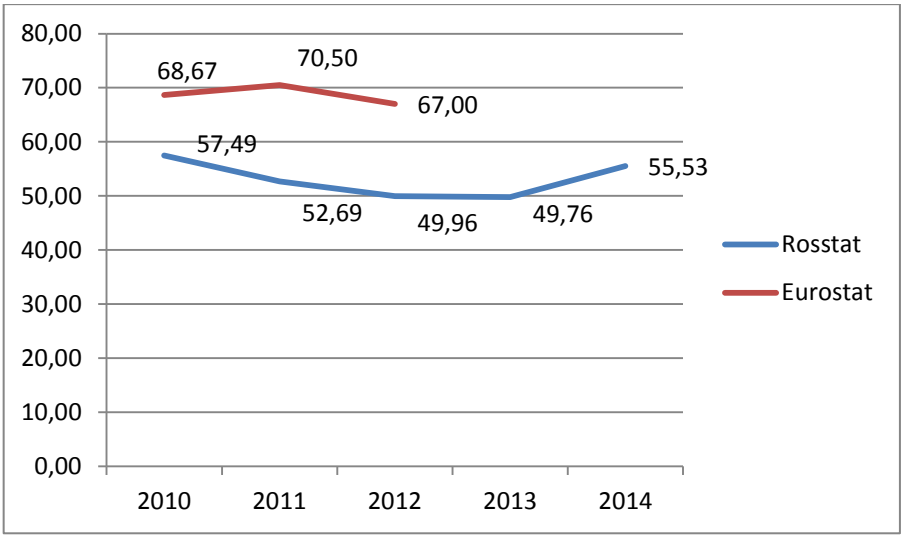


Figure 5. Comparison of Rosstat and Eurostat data about computer science and related fields graduates in Russia.

As seen in the Figure 2, the number of computer science graduates in Russia has increased in 2012. Reducing the number of graduates it was replaced by an increase in the amount of 11,6%.

Second market to analyze is USA. It is a birthplace of the biggest and most famous MOOCs, Silicon Valley and lots of high ranked universities. In addition, the attractiveness of computer science in the universities of the USA is currently growing (Computing Degree and Enrollment Trends). According to «Computing Degree and Enrollment Trends 2010-2011» in 2009-2011 there was an increase in the number of graduates of computing disciplines. The collected data confirmed that the total number of students studying computer science and related specialties increased in total by 5,9%, and there was an increase in interest of students toward computing subjects. Within the short-term period in the US number of computer majors is growing as well as increasing the number of applicants to bachelor degrees and there is noticeable stable growth in the coming masters and doctoral programs (Computing Degree and Enrollment Trends).

On the basis of statistical data for the period from the 1980s, Soper (2014) in his article on education in the field of Computer Science "Analysis: The exploding demand for computer

science education, and why America needs to keep up" underlines the undulating surge of interest in computer science. He identified three main waves and suggested reasons for the increased interest. The first wave was in 1980, and the stimulus was the invention and popularization of the personal computer. The second wave is associated with the dot-com boom and the opportunity to earn money for his new role. The current growth of the author connects with the "power of smartphones" (Soper, 2014).

The basis of US computer science graduates analysis statistics from "Organization for Economic Cooperation and Development (OECD)". According to figure 6 the third wave of increasing interest to the computer science is still in progress in US.

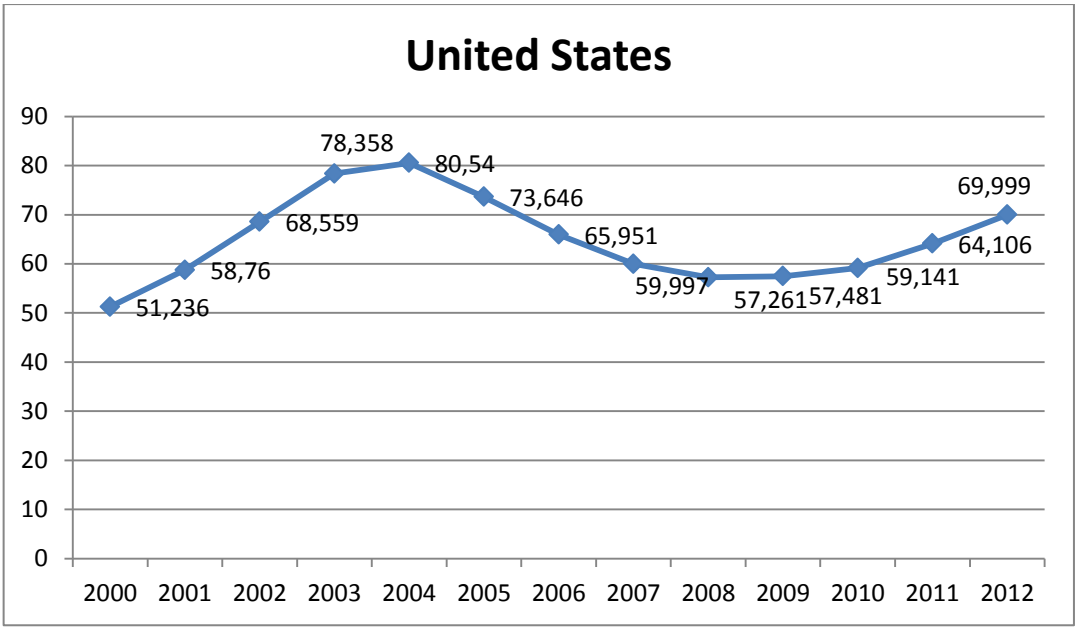


Figure 6. Graph of computer science and related fields graduates in United States.

Annual percent change was negative from 2005 to 2008, but in 2009 the number of graduates of computer specialties started to increase significantly. On average, each year since 2009 62,680 computer science students graduated, the percentage of graduates increased by 3,44% per year. In 2012, there were 69 999 graduates, their number increased by 5893 and 9,19% (Figure 3).

The next market is Canada. In accordance with geographical distance dynamic of graph should be similar to US. Comparing 2004-2012 of Canada and US, since 2009 number of US graduates apparently increasing, while in Canada tendency is not obvious. Mostly trend is changing year-by-year but overall direction is gradual decrease. In 2009 number of graduates dropped down on 9% and after 1% growth next year, dropped down to 8% again. Although in 2012 percent increased on 5 points tendency is unstable (Figure 7).

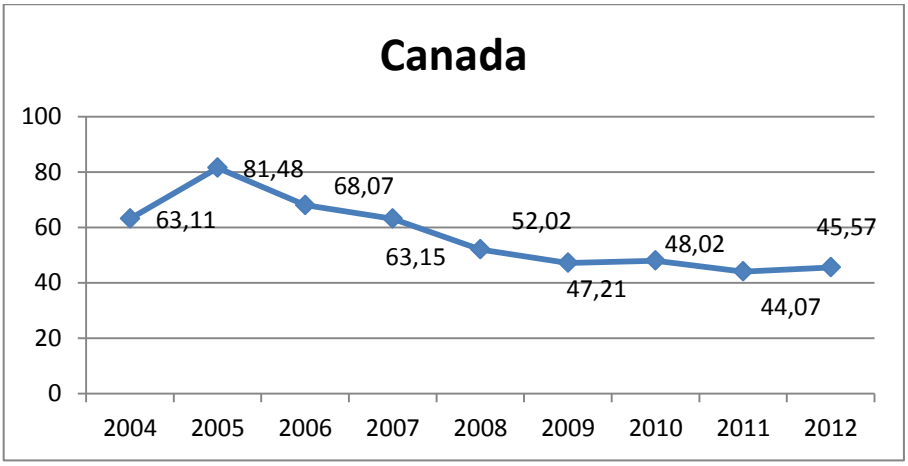


Figure 7. Graph of computer science and related fields graduates in Canada.

Figure 8 demonstrates the beginning of growth of Britain computer science graduates in 2009, however, in comparison with the previous wave, the increase is not as significant, and in 2012 the number of graduate slightly decrease. However, the average for the past 5 years, 24 thousand students is available in England.

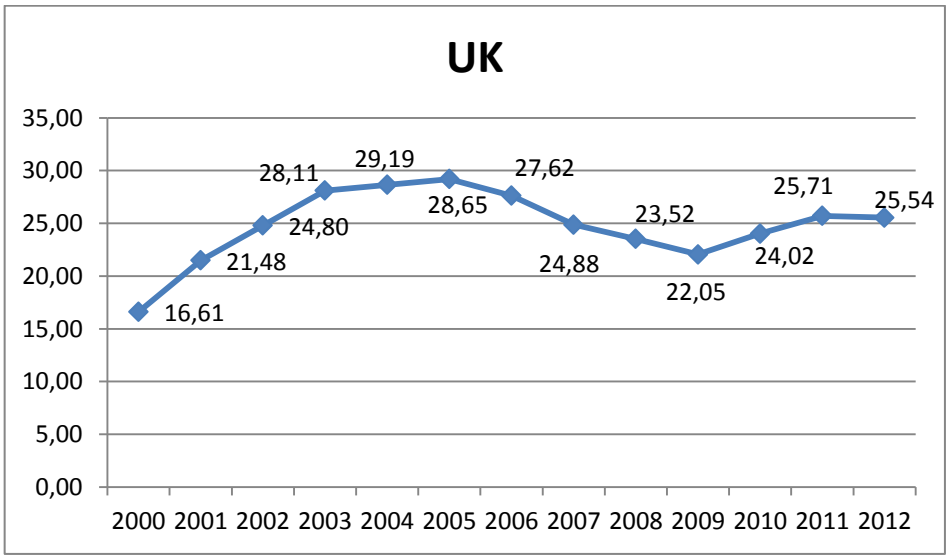


Figure 8. Graph of computer science and related fields graduates in United Kingdom.

Australian market demonstrates visible decrease (Figure 9). Wave of 2009 didn't affect programming education in Australia, so since 2009 number of computer science graduates decreasing up to 8% annually.

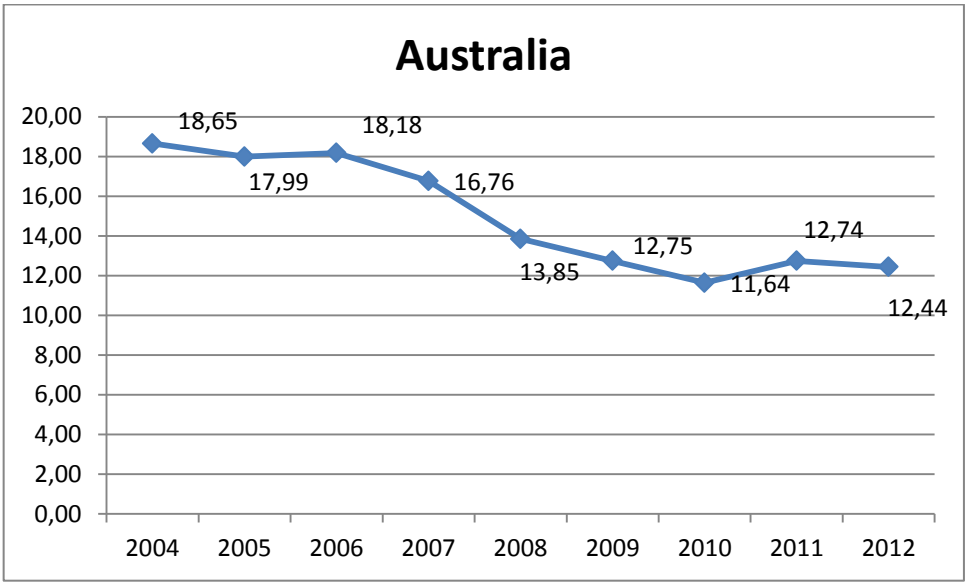


Figure 9. Graph of computer science and related fields graduates in Australia.

North European market includes Finland, Sweden, Denmark and Norway. As we can see on the figure 7, there is a growth in the number of graduates in 2009. On average, every year, since 2009, it issued 6300 students of computer specialties in Northern Europe, an increase of 554 students per year (Figure 10).

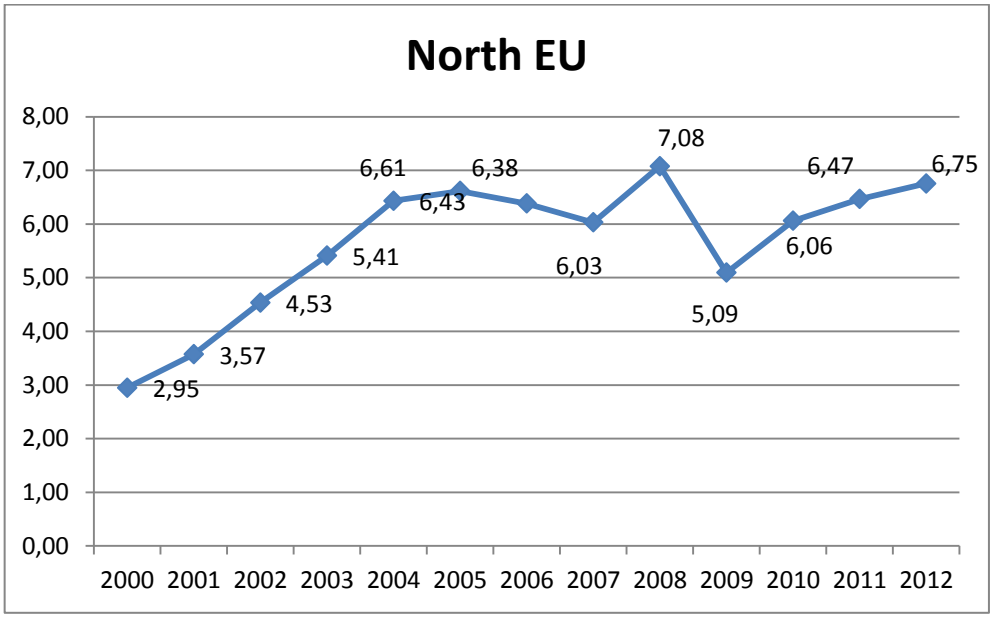


Figure 10. Graph of computer science and related fields graduates in North Europe.

Figure 11 shows Denmark as a leading country in computer science graduates in 2012. At the same time Norway shows a decrease in the number of graduates. In general, the difference in the number of graduates is about 1 thousand students, and the remaining three countries - Denmark, Finland, Sweden - have more than 1,5 thousand students of computer specialties per year.

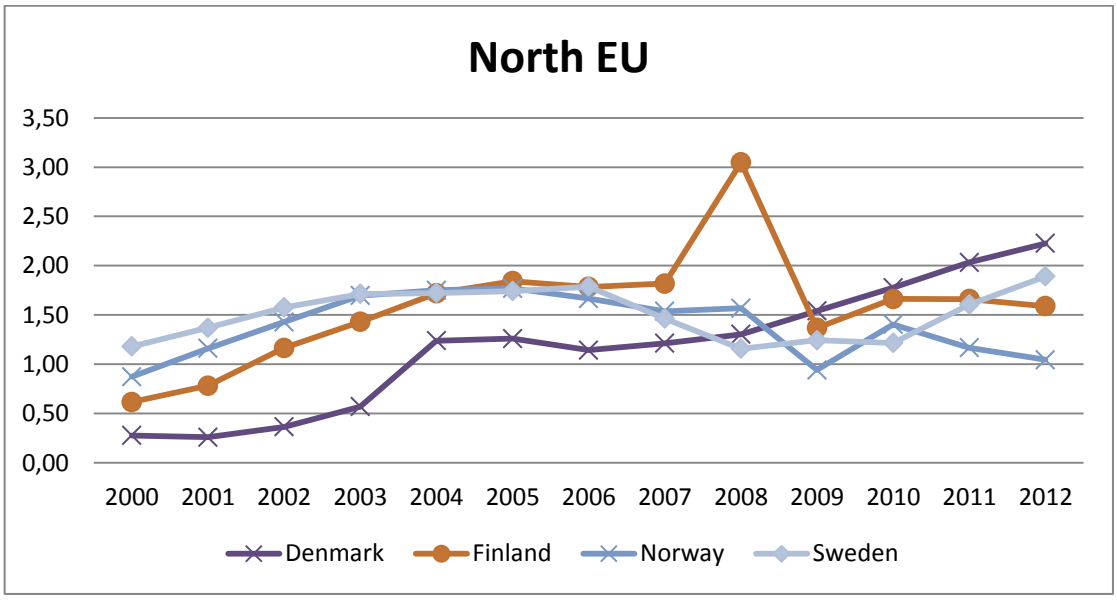


Figure 11. Computer science and related fields graduates by country in North Europe.

Germanic Europe cluster includes Austria, Netherlands, Switzerland and Germany, however in current graph Switzerland is dropped due to lack of data. Figure 9 representing significant and growth of graduates' programmers since 2003. Since 2009 growth percent is up to 5, but constantly increasing (Figure 12).

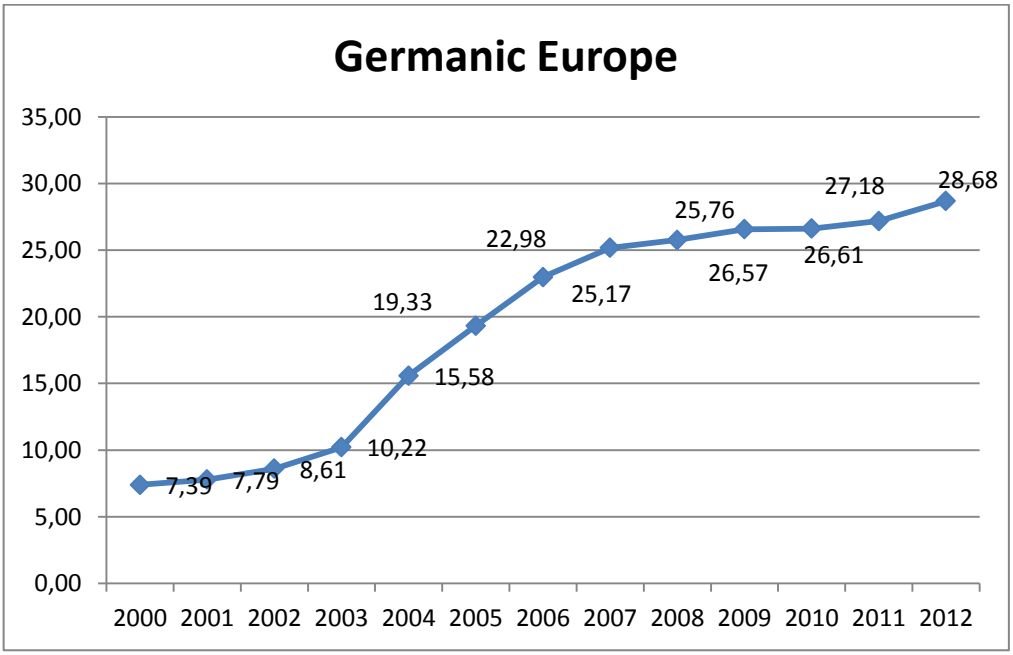


Figure 12. Graph of computer science and related fields graduates in Germanic Europe.

Among Germanic cluster countries Germany is leader, but all of them demonstrate simultaneous growth since 2004. Difference in number of graduates between leader country and the rest is approximately 15 thousand students (Figure 13).

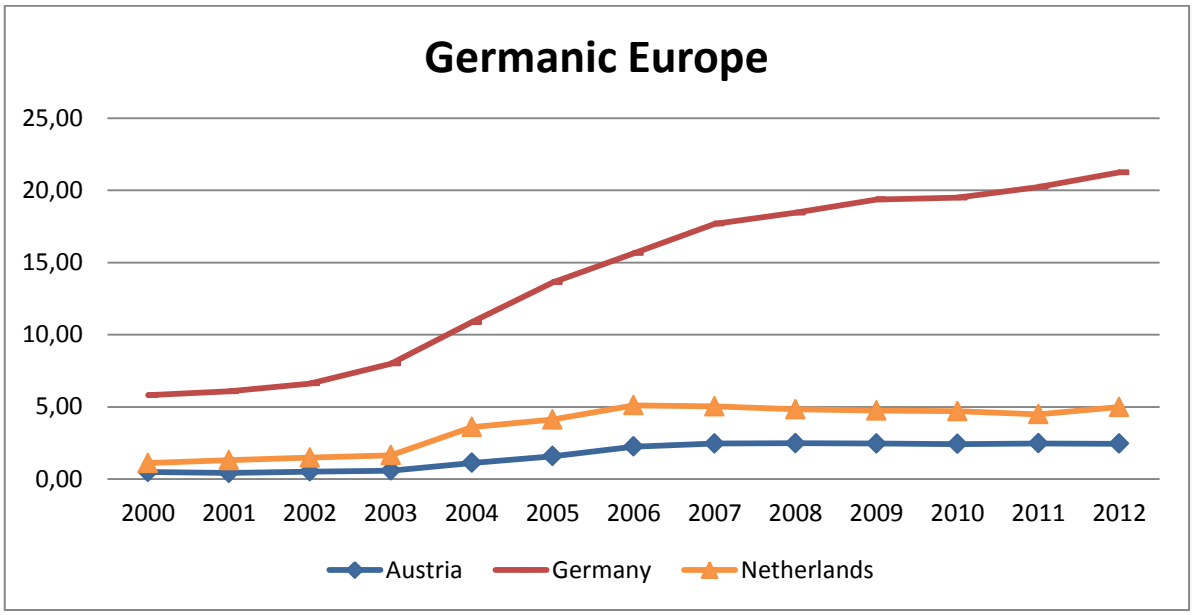


Figure 13. Computer science and related fields graduates by country in Germanic Europe.

Eastern Europe group of countries include Greece, Hungary, Slovenia and Poland. According to figure 14 numbers of graduates is dropping and since 2007 it decreased to 3 thousand people.

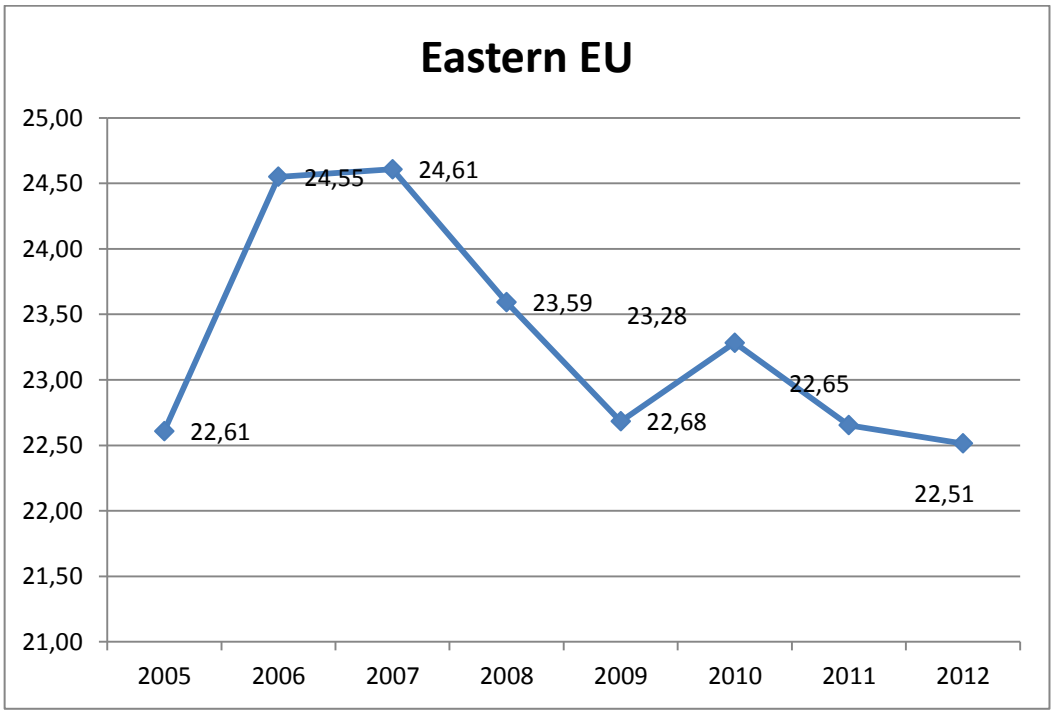


Figure 14. Graph of computer science and related fields graduates in Eastern Europe.

However, figure 12 demonstrates more or less stable situation in each of countries and clearly estimates Poland as a leader of the group. Difference between leader country and the rest in Eastern group is around 14 thousand students (Figure 15).

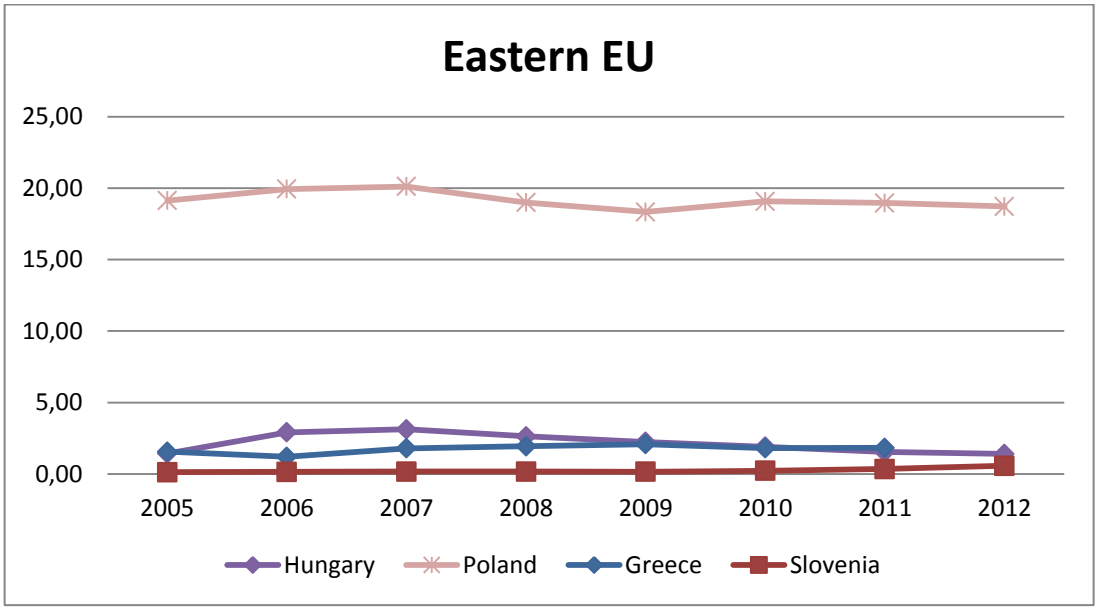


Figure 15. Computer science and related fields graduates by country in Eastern Europe.

So in order to count annual growth of market statistics of computer science graduates were used and compared (Table 10). To follow the equal comparison and due to lack of data statistics of 2009-2012 years only were used.

Table 10. Market growth measured by graduates statistics.

Markets	**Countries**	**Market growth (thousand people)**	**Source**
Russian	Russia	9,36	Russian Federal State Statistics Yearbook 2015
American	United States	11,28	United States department of Labour Statistics
Canadian	Canada	2,31	Statistics Canada
UK	UK	3,65	Organization for Economic Cooperation and Development (OECD)
Australian	Australia	1,82	Australian ICT Statistical Compendium 2013
North EU	Finland Denmark Sweden Norway	0,97	Organization for Economic Cooperation and Development (OECD)
Germanic countries	Austria, Netherlands Switzerland Germany	3,13	Organization for Economic Cooperation and Development (OECD)
Eastern Europe	Greece Hungary Slovenia Poland	3,53	Organization for Economic Cooperation and Development (OECD)

However, programming is specific field as T. Staubitz et al. (2015) mentioned in this study, it requires a lot of practice and programmers usually have different backgrounds. To clarify eligibility of adjustment computer science graduates with potential market growth author analyzed proportion of educated and self-taught programmers on the base of Stack Overflow survey (Table 11).

Table 11. Proportion of educated and self-taught programmers.

Market	**Countries**	**Sample size**	**Professional programmers share**	**Self-taught programmers share**
Russian	Russia	651	36,62%	63,38%
American	United States	4745	44,34%	55,66%
Canadian	Canada	757	47,82%	52,18%
UK	UK	2403	43,49%	56,51%
Australian	Australia	618	52,27%	47,73%
North EU	Finland Denmark Sweden Norway	1223	45,38%	54,62%
Germanic countries	Austria, Netherlands Switzerland Germany	3283	43,13%	56,87%
Eastern Europe	Greece Hungary Slovenia Poland	1278	41,39%	58,61%

***Source**: Stack Overflow survey 2015*

Thus, there are different backgrounds of programmers depending on country. However, registering self-taught programmers is not yet existing, so and table 12 is shown to visualize possible bias of processed data.

Market niche and competitors

Competition on the market always has to be estimated during market analysis for strategy planning. One of the most important steps toward internationalization is competitiveness assessment. In current research the object is online platform, so basically it is not possible to estimate competition on each of chosen market. However, it is necessary to reveal the main competitors on the basic Russian market and English speaking market. First of all, level of competitiveness in Russia will be presented and secondly, new perspectives on the international market will be assessed.

Competitors on the Russian market

Among particular features of Russian online education is that the legislation of distant education was developing since 1992 till 2005 and after that legislation did not change while technologies improved a lot. Mostly it equates online education to distant and electronic education. The absence of legislation and training standards affects the quality of online education and intellectual property of studying materials. In comparison with developed countries development of online education in Russia is late for 5-7 years (J'son and Partners Consulting, 2014).

Thus, there are not so many direct competitors of the company on Russian market. Competition for online education program in Russia are presented by substitutes as non-specified MOOCs, education via Skype, blogs and channels (YouTube, social networks, etc.).

First of all, the most famous place to study is a university, thus there are online universities that provide programming courses. Users can get certification and prove their knowledge by document. However in that case it takes a lot of time and requires learning obligatory set of courses. It is mostly suitable for professional conversion. The example of such university based on Russian language is National Open University "INTUIT". However, getting online professional education is still not so popular and recognized by employers, so majority of users seeking for additional of focused knowledge. So universities organize

separated online courses with resulting document. The most important feature of official online university is *confirmation document* that recognized by employers.

The other option of MOOC is platforms for aggregating courses from different disciplines where users can also learn programming online. For example, the platform for open courses likes “Stepic.org” or where different subjects and disciplines are integrated in a one place. Practice which is quite important for programmers is absent in this case. The same weakness have platforms with limited number of courses like hasBrains or Easyprog that includes theoretical base and tests to check knowledge combined with ability to give feedbacks and discuss educational program.

There are a lot of cases when person wants to know particular subject as certain programming language or method of programming. In these cases focused online courses are strong competitors because they provide deep specific knowledge for users, for example, “Study Java” or “PHP Programming School” as well as platforms focused on programming like “Devacademy” which gathers studying materials as articles and snippets to solve a particular problem. In most cases they have a strong theoretical base and practical oriented.

Important competitive advantage is the opportunity to offer job after studying. For example, “GeekBrains” is a project of “School of programming” and one of the most popular online courses in Russia according to web search. It is an online platform where experienced specialists can teach programming. It developed from usual interactive courses, so they had certain reputation before geekbrains was launched. They offer paid online courses with interaction with a teacher and school’s certificate as a result, but their most attractive feature is opportunity to get an internship after courses and try gained skills in real projects. The other example is big IT companies who offer particular course with ability to get job in the company after finishing it, like “Academy Yandex” or Microsoft courses**.**

It is possible to consider substitutes of the product that widely used by Russian customers. The main option is usual paid courses. Mostly, students can find it in all universities. Table

12 represents comparison of main players of the Russian market in online education for programming field.

Table 12. Comparison of main players of the Russian market in online education for programmers

Category	**Examples**	**Benefits**	**Weaknesses**
MOOC from universities	INTUIT	Certification Systematic education Variety of courses	Standard way of teaching Time consuming
MOOC platforms	Stepic.org hasBrains Easyprog	Variety of fields Theoretical base	Lack of practice Non-specialized platform
Educational resource focused on particular field	Study Java PHP Programming School Devacademy	Focused knowledge Community of users for discussion	Narrow field
Online scheduled courses	GeekBrains	Job offer after studying Traditional way of teaching via electronic resources Direct contact with teachers	Scheduled courses Group training High price
Offline courses	Organized by local universities, IT companies	Job offer after studying Recognized certification Direct contact with teachers Traditional way of teaching	Paid base Scheduled Group training

***Source**: Author*

Thus, speaking about Russian market, weakest part of most online programming courses is lack practice. Basically, most courses provides theoretical knowledge and mostly without feedbacks from teachers. That's why interactive education is still quite popular and even using online resources a lot of students prefer to learn with practical part, teachers and schedule. Simultaneously, the most attractive for users become ability to train and opportunity to get job offer or internship after courses.

Competitors on the foreign markets

In comparison with Russian market, Europe and USA are much more developed in online education industry. While in Russia language is quite important criteria to choose platform for studying, level of English knowledge in Europe is much higher, users are able to use any English based platform either from USA or Europe, thus market is much more saturated. Since 2012 when the biggest MOOC appeared, there are a lot of different general and specific platforms which were created and this sphere is still improving fast. Consequently, it is worth to analyze the most famous competitors with successful history and new trends of the industry represented by newcomers.

First of all, three most popular course of online education is MOOC. The most famous international MOOC are Coursera, Udacity and edX and they were found in 2012. By cooperation with best universities and business companies MOOC providing free access to knowledge, so basic courses are free. Coursera was founded by Stanford professors Daphne Koller and Andrew NG. Unique feature is peer assessments. Edx platform was founded at MIT and Harvard. It includes as self-paced as well as timed classes. Udacity was founded by Sebastian Thrun, David Stavens, and Mike Sokolsky.

All of them represents huge and fast developing online education segment, however, there are particular features of each of them. First of all, it is commercialization method. All of them are based on "freemium" model. Udacity offers additional services on paid base as one-on-one coaching, personal evaluation and verified certificates (SOAs). Coursera and edX provides usual certification for free and verified certificates on the payment base.

Among those three Coursera might be more popular as there are a large number of courses in different languages, while Udacity and edX has a few in foreign languages.

These world-famous MOOC platforms can be considered as competitor on the Russian market as well, as English speaking users can use them instead of Russian resources. Coursera, Udacity and edX have several competitive advantages that make them unique. First of all, long history and popularity around the world support their reputation and they often become first education resource people use. Secondly, they provide variety of courses from high ranked universities around the world. Moreover, they developed own strategy of teaching based on learning theoretical materials, testing gained knowledges and practice with groupmates who can assess and give recommendation to your assignment. And finally, certificates of Coursera, Udacity and edX are recognizable for employers that give them additional benefits.

The next biggest competitors are focused in programming. For example, Treehouse, Codecademy, Code School, Bento provides wide range of programming courses and Code School even gives an opportunity to code via browser. The other huge and quite popular resources are paid online educational services. Mostly they provide free courses partly and in order to get full package user has to pay. Treehouse is a platform that provides basic and professional types of access for different price. Learning methods is based on program track, where courses provide theoretical part and practice. CareerFoundry offers paid programs which includes coaching, feedback, and verified certificates. Basically, these services offer integrated approach to education for individuals and teams. Distinctive advantage is high quality of learning materials, e.g. video, media quality.

There are also educational platforms focused on limited area of programming. For instance, Dash teaches internet programming includes HTML, CSS, and Javascript and provides an opportunity to practice in browser. These are the most preferable way to study among users if they search for particular knowledge of free of charge service.

A lot of new platforms that appeared recently and differentiate themselves using different methods. For example, CodeAvengers provides opportunity to train in educational camp among other programmers. Programmr platform started as a place to code and developed

to teaching platform. Majority of such platforms aim to teach programming in an easy way. They provide environment with possibility to create first program within several hours and attract users with easiness of learning. Table 13 represents main competition on English-speaking market.

Table 13. Comparison of main players of the English market for online education for programmers field.

Category	**Examples**	**Benefits**	**Weaknesses**
World famous MOOCs	Coursera Udacity edX	Popularity Variety of fields Certification Systematic education	Not focused on programing
Platforms with programming courses	Codecademy Code School Treehouse	Focused Easy learning Variety of courses	A lot of paid courses No basics of programming, e.g. not applicable for beginners
Programming courses focused on particular field	Dash	Focused knowledge Community of users for discussion	Narrow field
New startups	CodeAvengers Programmr	Differentiate with specific approach	Not famous Limited content

***Source**: Author*

Thus it is not possible to measure competitiveness in online services field, dimension of market niche was included. To measure saturation of the market author used number of universities partnering with world-famous MOOCs from different countries. The point is that the less universities from that country participate in MOOC programs the more scope is there for new MOOC platform development. The sources of information are Coursera and edx websites with information about partner universities. Table 14 demonstrates the results of analysis.

Table 14. Analysis of programming MOOCs market saturation.

Market	Country	Coursera	Edx	Total
Russian	Russia	7	0	7
American	USA	66	22	88
Canadian	Canada	3	4	7
UK	UK	4	1	5
Australian	Australia	5	2	7
North EU	Finland Denmark Sweden Norway	4	1	5
Germanic countries	Austria, Netherlands Switzerland Germany	11	5	16
Easten Europe	Greece Hungary Slovenia Poland	0	0	0

***Source**: Author*

Platform language knowledge

As it was mentioned in the interview with CEO of case company, platform already has a version in English and Russian, so the target audience of foreign countries is English-speaking programmers. Therefore, the next criteria is platform language knowledge on the market since we comparing Russia with the other markets Russian language knowledge is valid 100% in Russia as well as English for all other countries. So, there are several markets with 100% platform language knowledge: Russian, American, Canadian, UK, Australian and three with less level of English knowledge North EU – 68,54 %, Germanic countries – 65,0% and Eastern Europe – 61,94% as it was stated in table 8.

Firm-specific characteristics

The firm specific characteristics were selected on the base of interview and web-platform analysis and available information. The next criterion is number of programmers who tried online courses, as this audience is first target group that can be reached easily. StackOverflow survey had a question about training and education and online courses was one of the options to answer.

Second firm-specific dimension is experience of the programmers. According to CEO description and content of the platform it is oriented to beginners in programming up to 2 years of experience. Table 15 demonstrates the results on calculations on mentioned criteria.

Table 15. Firm-specific characteristics by each market.

Market	**Country**	**Number of programmer's with less than 2 years' experience**	**Number of programmers tried online courses**
Russian	Russia	15,5%	18,3%
American	USA	14,5%	7,7%
Canadian	Canada	19,6%	16,7%
UK	UK	13,7%	15,1%
Australian	Australia	17,7%	14,7%
North EU	Finland Denmark Sweden Norway	14,6%	16,0%
Germanic countries	Austria, Netherlands Switzerland Germany	14,3%	11,1%
Easten Europe	Greece	23,2%	15,4%

	Hungary Slovenia Poland		

***Source**: Author*

The third important criterion is accordance of customer preferences in the country with existing platform content. Entering the market with similar to platform content requirements costs less which is highly important for SME. To clarify market preferences data from StackOverflow survey 2015 were used. The result demonstrated in table 16 is combination of questions about current language and technologies with future language and technologies used by programmers of particular country. The comparison of platform content, i.e. courses about programming languages and technologies uploaded to the platform, and country preferences represented in table 16. Colored cells represent existing language and technology courses on the platform.

Table 16. Comparison of platform content and country preferences in programming language and technology.

Russian	**American**	**Canadian**	**UK**	**Australia**	**North EU**	**Germanic countries**	**Easten Europe**
JavaScript	JavaScript	JavaScript	JavaScript	JavaScript	JavaScript	JavaScript	JavaScript
Java	SQL	SQL	Java	C#	SQL	Java	Java
SQL	Python	C#	SQL	SQL	Java	SQL	SQL
Python	C#	Java	Python	Java	C#	C#	C#
C#	Java	Python	C#	PHP	Python	PHP	Python
Android	Android	Android	Android	Python	Android	Python	PHP
C++	SQL Server	C++	SQL	Android	C++	C++	Android
PHP	PHP	PHP	C++	SQL Server	PHP	Android	C++
Node.js	Node.js	Node.js	PHP	AngularJS	Node.js	Node.js	AngularJS
AngularJS	C++	AngularJS	Node.js	Node.js	AngularJS	C	C

***Source**: Author*

4.3 Customer characteristics

The important part of internationalization is potential customer analysis. Mostly it includes qualitative characteristics that is challenging to measure. However, customer behavior usually is a base for clarifying future development directions. Thus, it is necessary to study and analyze available data about customers' characteristics on each particular market.

Data source for customer analysis is Stack Overflow survey 2015. Key questions are about age, experience, training and education, current and future programming languages and technologies to learn. Markets will be analyzed one by one to provide data for strategy development.

4.3.1 Russian market and CIS

The average age of programmers in Russia is 26,7 years. Programming sphere developed in Russia recently, and there is no age categories of over 40 who use online sources according to StackOverflow survey (Figure 16). The average experience is 6 years, although more than 40% of programmer have over 6 years' experience. As for younger generation, 15% has less than 2 years' experience (Figure 17).

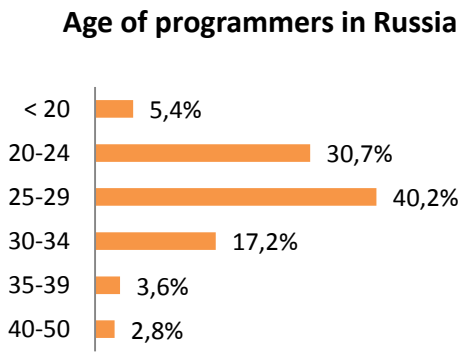


Figure 16. Age of programmers in Russia (according to the survey Stack Overflow 2015)

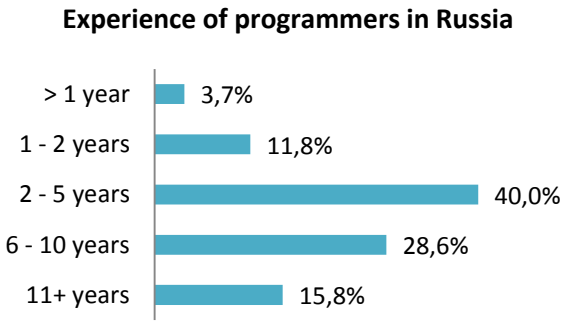


Figure 17. Experience of programmers in Russia (according to the survey Stack Overflow 2015)

Most Russian programmers learn the profession themselves - 41% of the total number of respondents. The importance of special education for Russian programmers is lower comparing to foreign markets. In this case, practical experience is the most important as second most popular methods of training takes on the job training - 30%. The other three elements are very close to each other, so that online learning is popular with 18% of the sample, as well as a bachelor's degree (18%) and slightly more popular Master's degree in Computer Science or related fields - 21% (Figure 18).

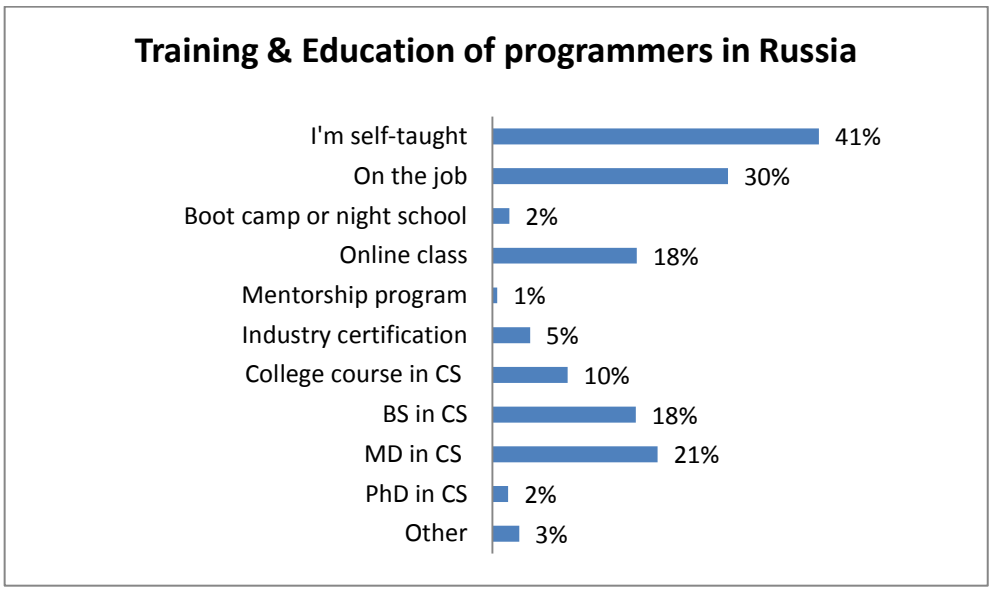


Figure 18. Training and Education of US programmers (according to the survey Stack Overflow 2015)

To offer users the most appropriate content company should be aware of current knowledge about the technologies and languages, and to predict the future preferences. According to the survey Stack Overflow, ten of the most popular programming languages and technologies in Russia are JavaScript, Java, SQL, Python, C#, C++, Android, PHP, Node.js and AngularJS (Figure 19).

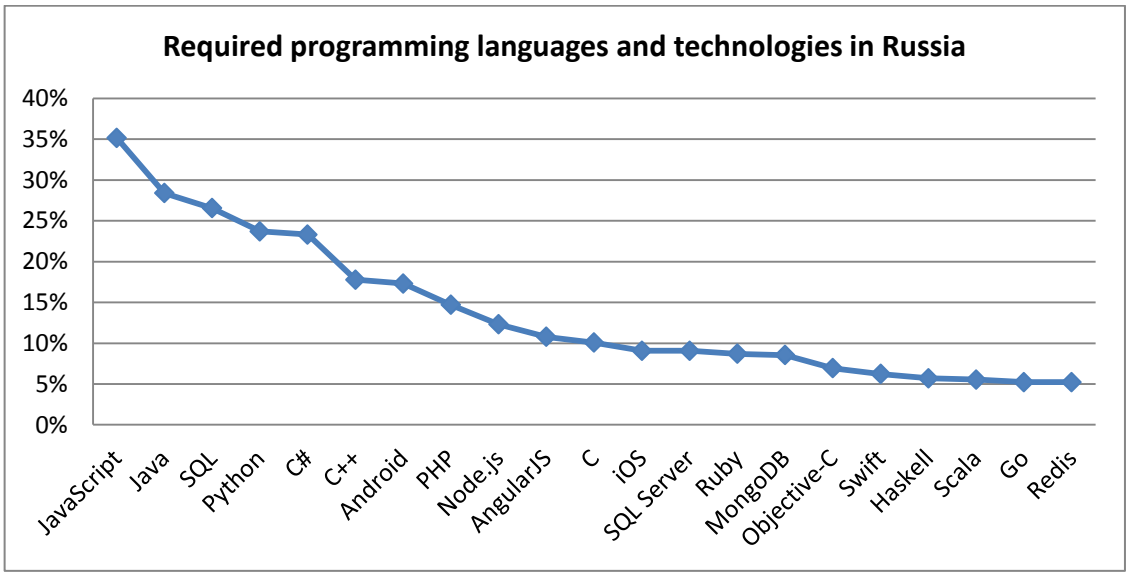
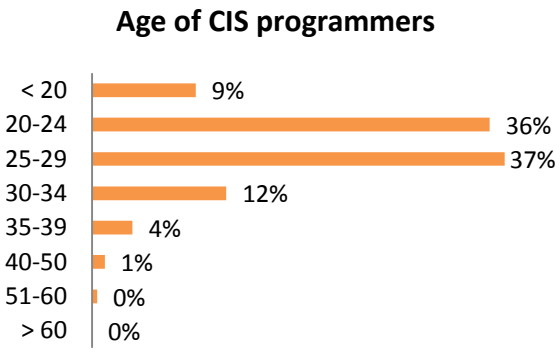


Figure 19. Required programming languages and technologies in US (according to the survey Stack Overflow 2015)

Referring to words of CEO of the company, platform internationalized to CIS countries (mostly Ukraine and Belarus) naturally without particular efforts. Moreover, 30% of income is coming from CIS countries. Therefore, it is useful to analyze and compare customer preferences in Russia and CIS as in basic countries to clarify connection and similarities. CIS countries used for analysis are Belarus. Ukraine, Kazakhstan, Armenia, Kyrgyzstan, Moldova, Kyrgyzstan, Uzbekistan, Azerbaijan, Turkmenistan, Tajikistan. The whole sample includes 441 respondents.

The biggest age group among CIS programmers is 20 to 29 years old as well as it is in Russia, almost 70% (Figure 20). The similar result is also in the biggest group by experience – 2-5 years. However, the difference is in young generations. There are almost 25% of newcomers in programming, i.e. less than 2 years' experience, in CIS (Figure 21).



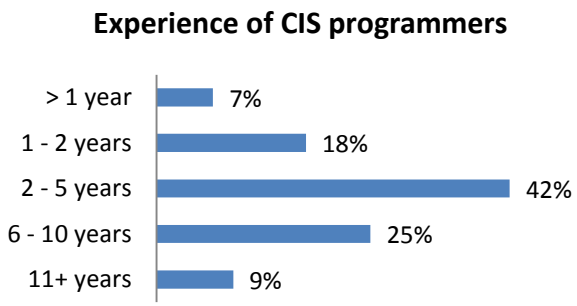


Figure 20. Age of CIS programmers (according to the survey Stack Overflow 2015)

Figure 21. Experience of CIS programmers (according to the survey Stack Overflow 2015)

As for training and education, proportions are almost same. First place is taken by self-taught programmers (39%), second is on the job training (32%), after follows professional education – Bachelor degree 20% and master degree 21% (Figure 22).

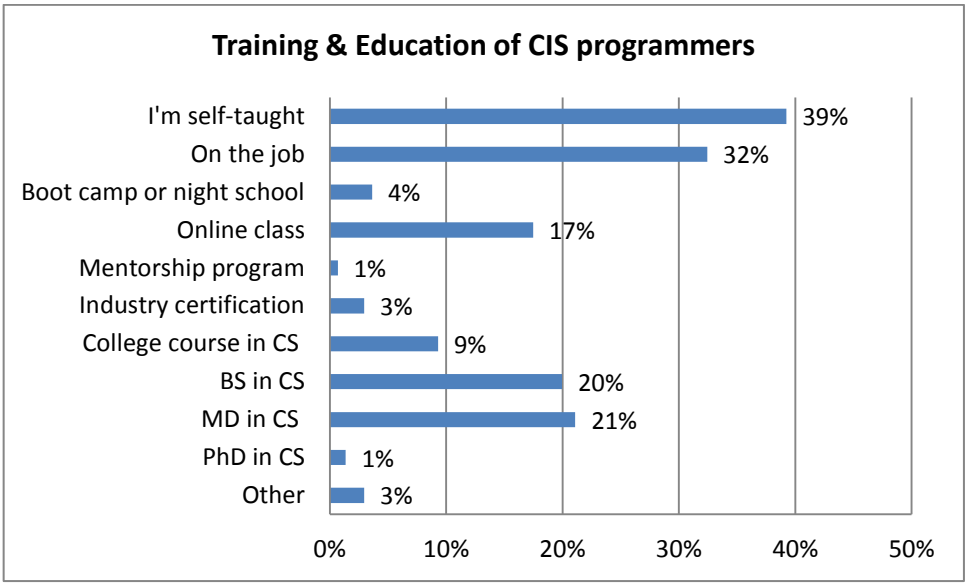


Figure 22. Training and Education of CIS programmers (according to the survey Stack Overflow 2015)

Comparing preferred programming languages and technologies, it differentiate from the first three positions already. Such languages as PHP, AngularJS and MongoDB is more popular in CIS (Figure 23).

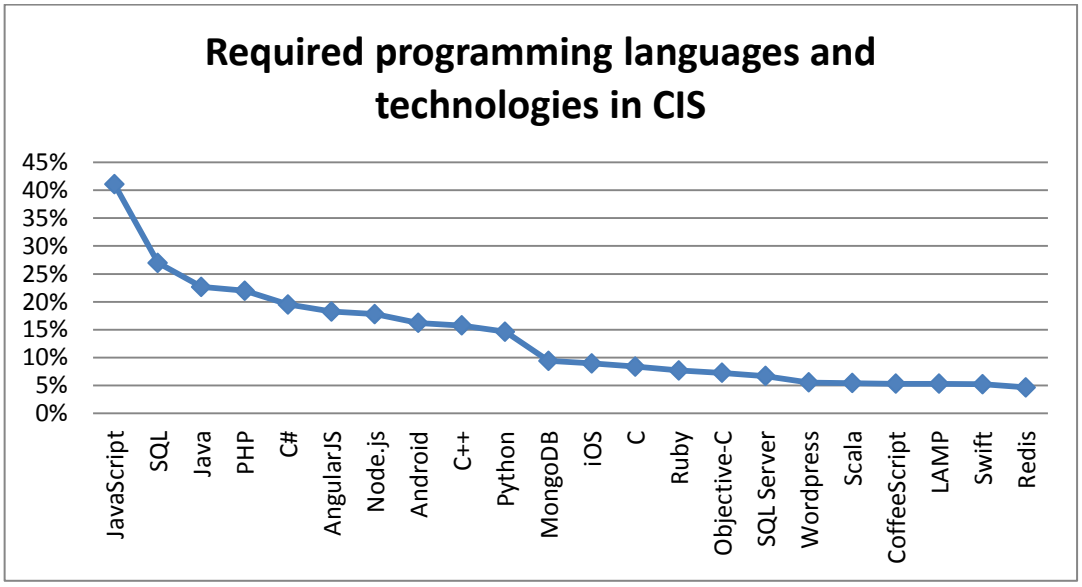
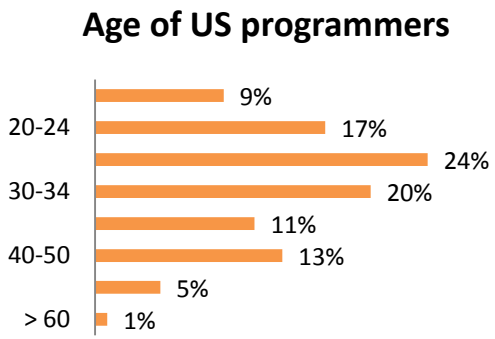


Figure 23. Required programming languages and technologies in CIS (according to the survey Stack Overflow 2015)

4.3.2 American market

The average age of a programmer in the United States is 31,5 and more than 45% of programmers aged 25-35 years (Figure 24). Thus, the programmer occupation exists in the United States longer than on a global scale. USA is one of the few countries where there are retired programmers and share of programmers over the age of 50 years - 19% in general who use online tools. It also affects the impressive work experience. Thus, 35% of programmers have 11+ years of experience, while only 14% of novices with less than 2 years of experience (see Figure 25).



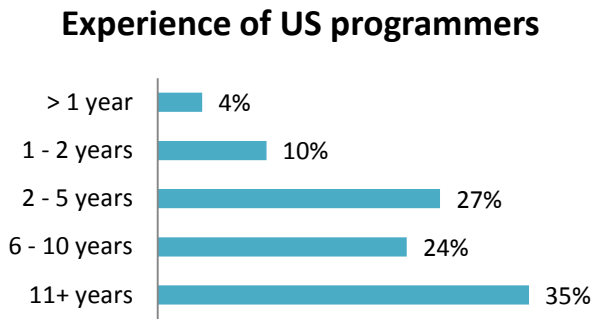


Figure 24. Age of US programmers (according to the survey Stack Overflow 2015)

Figure 25. Experience of US programmers (according to the survey Stack Overflow 2015)

The most popular education among programmers in the United States is a bachelor's degree in Computer Science or related field - 37%. Nevertheless, second place is self-learning and on the job training (34%) (Figure 26).

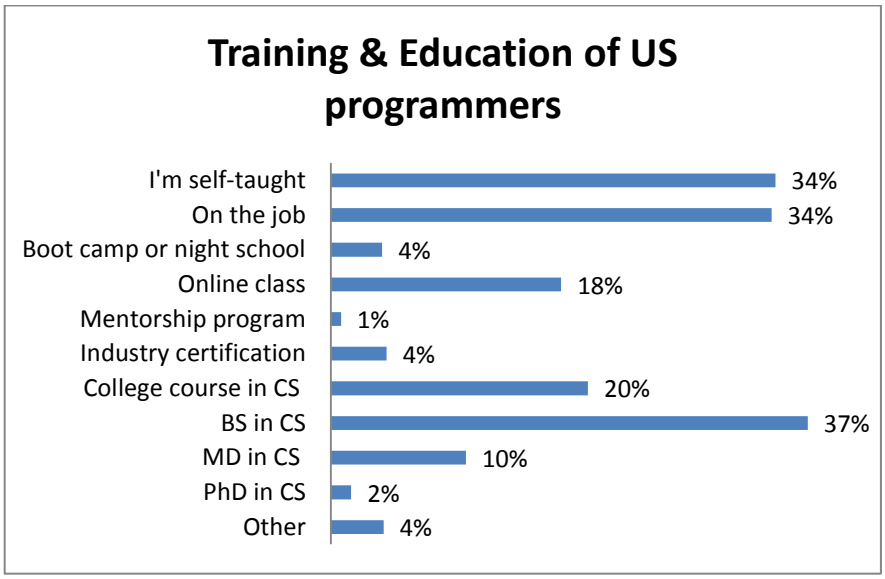


Figure 26. Training and Education of US programmers (according to the survey Stack Overflow 2015)

To popularize the platform in the US market, and the most popular languages and technologies needed to be included in the course content. Based on statistics, combining

the most appropriate languages and skills in the US in 2015 and the priorities for the study of languages and technologies, get a list of the most relevant courses for the online platform for users in the United States: JavaScript, SQL, C #, Python, Java, Android, Node.js, SQL Server, C ++, PHP (Figure 27).

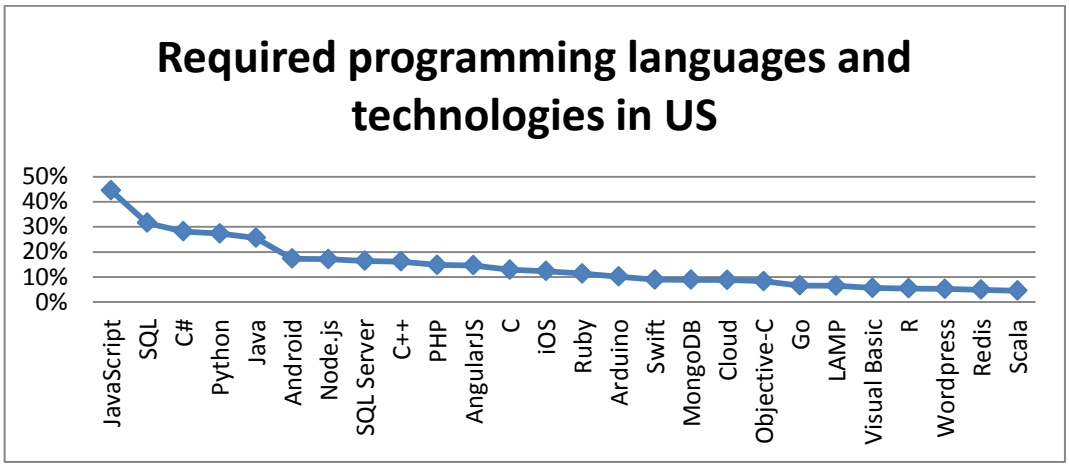


Figure 27. Required programming languages and technologies in US (according to the survey Stack Overflow 2015)

4.3.3 Canadian market

Canadian market of programmers looks stable. The main age groups from less than 20 to 40 are almost equal, percentage starts decreasing on 40-50 groups (Figure 28). Almost the same picture is in the experience field. Starting from 2 years' experience proportion of programmers are almost same – 25-30%. Newcomers are less, however that might be affected by less awareness of online sources (Figure 29).

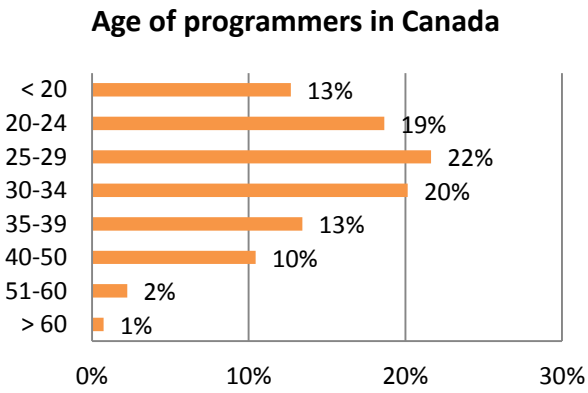


Figure 28. Age of programmers in Canada (according to the survey Stack Overflow 2015)

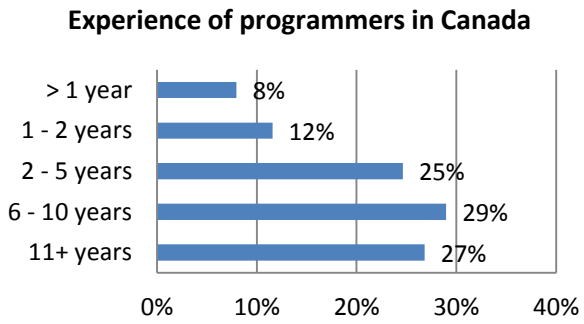


Figure 29. Experience of programmers in Canada (according to the survey Stack Overflow 2015)

The top three places in training and education is taken by bachelor degree, self-study and on the job training. Difference between bachelor degree and self-study is 10% that proves a high quality of education in Canada (Figure 30).

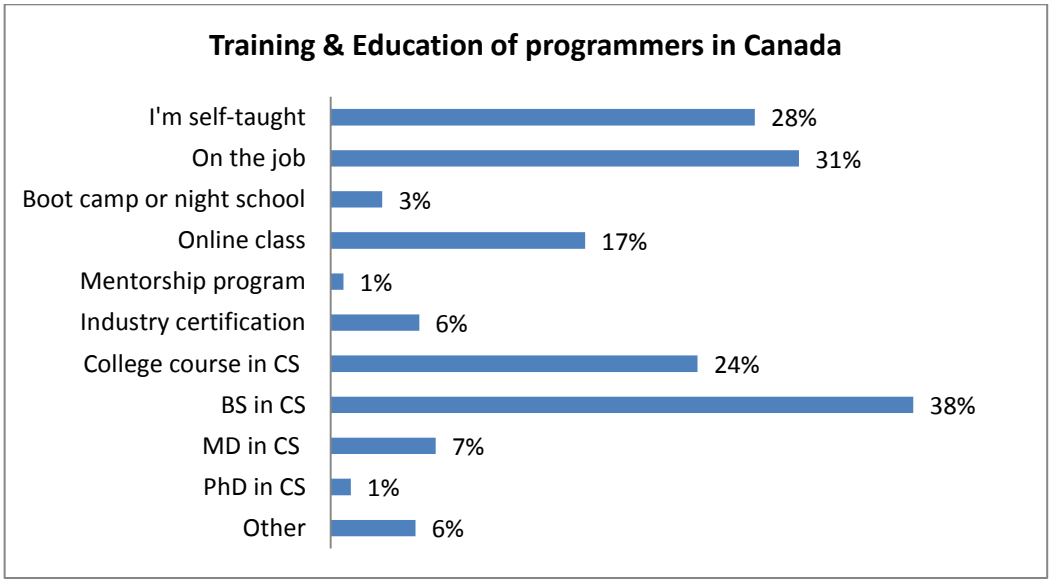


Figure 30. Training and Education of programmers in Canada(according to the survey Stack Overflow 2015)

Among programming languages it is partly similar to globe trends. The most required languages and technologies are JavaScript, SQL, C#, Java, Python, Android, C++, PHP, Node.js and AngularJS (Figure 31).

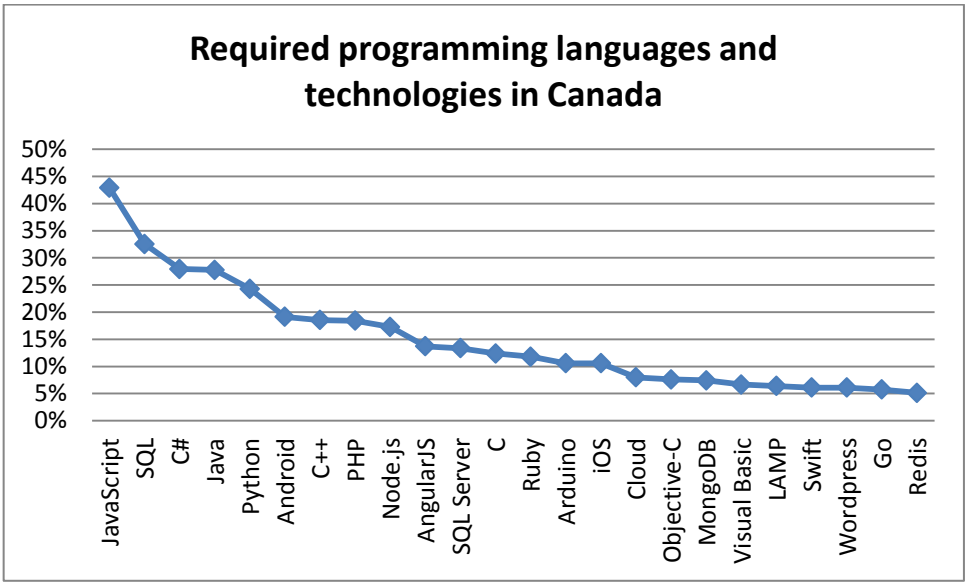


Figure 31. Required programming languages and technologies in US (according to the survey Stack Overflow 2015)

4.3.4 UK market

The age of 25-29 is dominating among programmers in the UK. Age of 20-24 and 30-34 years are not far behind in numbers. Category more than 50 years is almost absent (Figure 32). At the same time programming experience of 11+ years is dominating (32%), slightly smaller proportion of programmers have experience of 2-5 years (29%) (Figure 33). Accordingly, for the UK programmer occupation is not new. Beginners' amount is about 15% while experienced specialists are able to develop the industry.

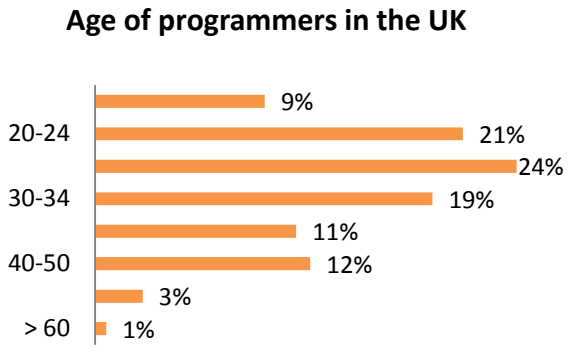


Figure 32. Age of programmers in the UK (according to the survey Stack Overflow 2015)

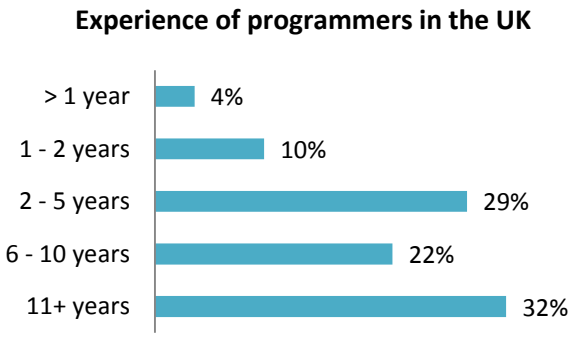


Figure 33. Experience of programmers in the UK (according to the survey Stack Overflow 2015)

The most popular way to learn programming is self-study - 36%. Almost the same number of respondents noted a bachelor degree (34%) and training on (33%). Next in popularity is followed by online courses - 15% (Figure 34).

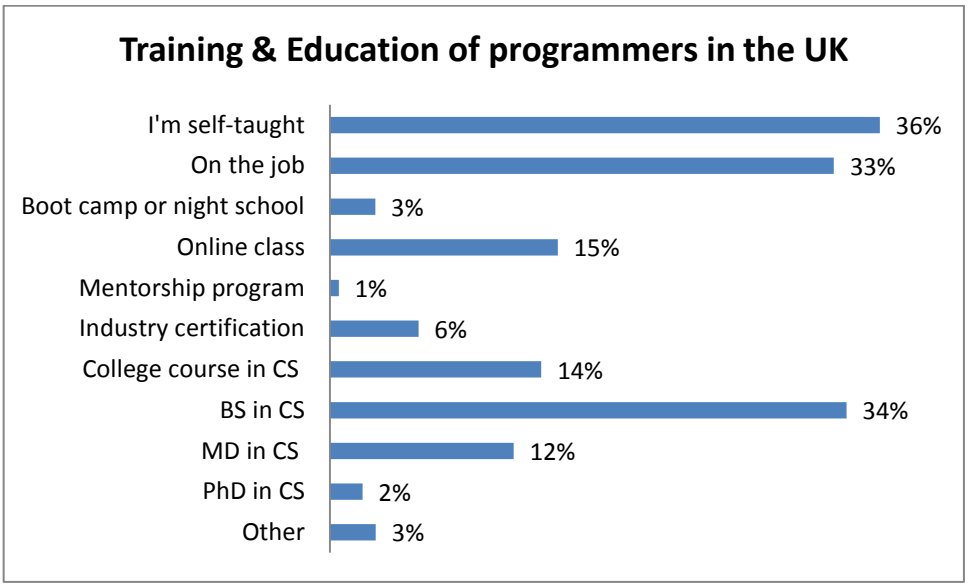


Figure 34. Training and Education of programmers in the UK (according to the survey Stack Overflow 2015)

The most popular and used in UK programming languages and technologies in 2015 are JavaScript, C #, SQL, Python, Java, PHP, SQL Server, Android, Node.js, C ++ (Figure 35) .

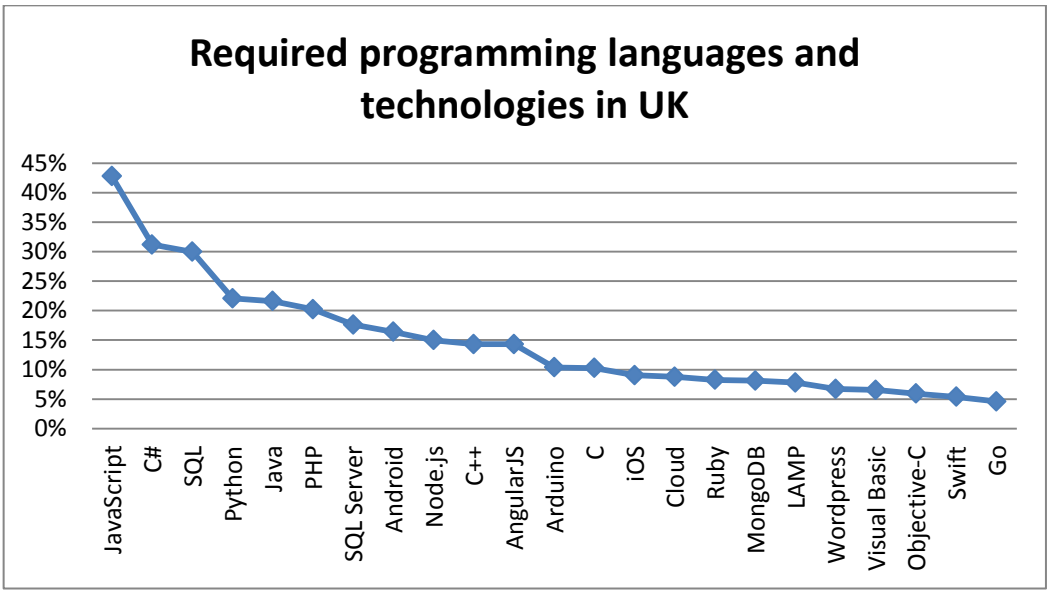


Figure 35 Required programming languages and technologies in UK (according to the survey Stack Overflow 2015)

4.3.5 Australian market

The biggest age groups of Australian programmers are 30-34 (29%) and 20-24 (24%). 25-29 aged group is 14% and the rest are almost similar. There is very less programmers age over 50 years old in Australia who uses online sources much (Figure 36). According to experience groups it seems that programming loses its popularity, since the smallest group has less than 1 year experience (6%), and the biggest 6-10 years (32%) followed by the group of 11+ years experienced programmers (28%) (Figure 37).

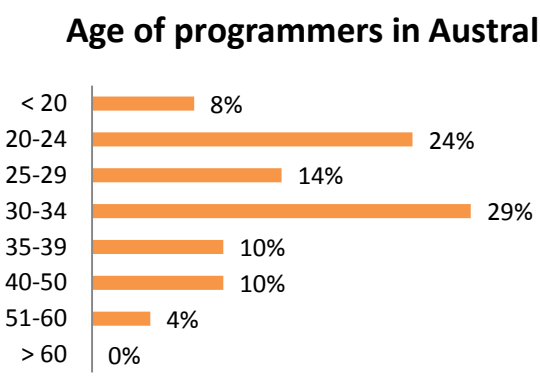


Figure 36. Age of programmers in Australia (according to the survey Stack Overflow 2015)

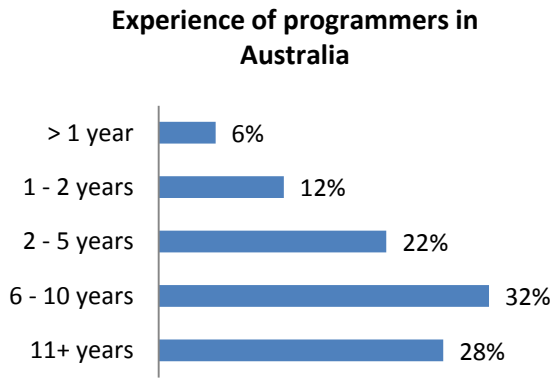


Figure 37. Experience of programmers in Australia (according to the survey Stack Overflow 2015)

The overall picture of training and education in Australia is similar to Canada. The most popular is bachelor degree (46%), self-taught (30%) and on the job training (27%) are almost equal, however they loses 16 points to professional education (Figure 38).

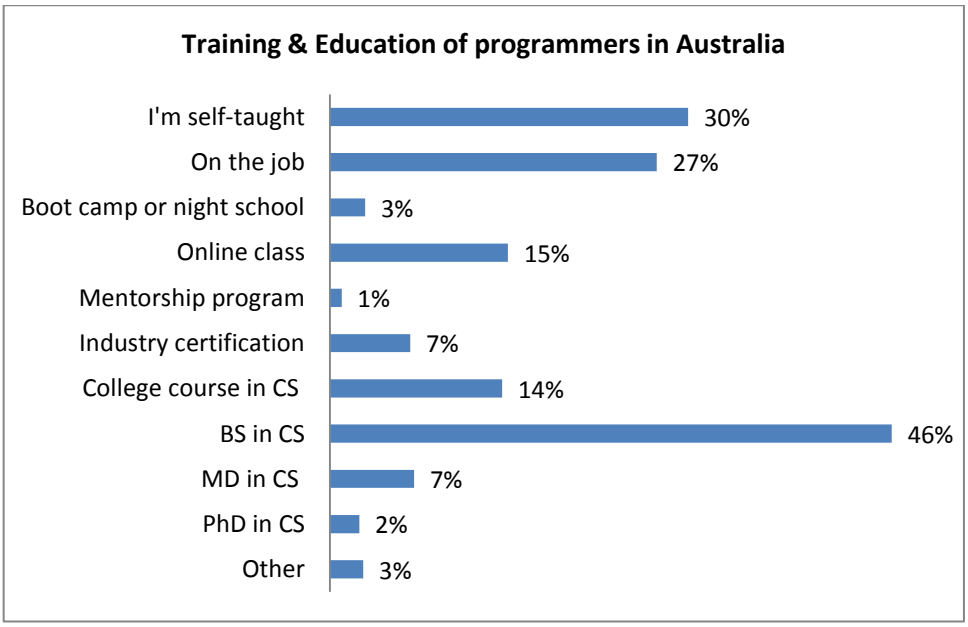


Figure 38. Training and Education of programmers in Australia (according to the survey Stack Overflow 2015)

The most popular and used in Australia programming languages and technologies in 2015 are JavaScript, C#, SQL, Java, PHP, Python, Android, SQL Server, AngularJS and Node.js (Figure 39)

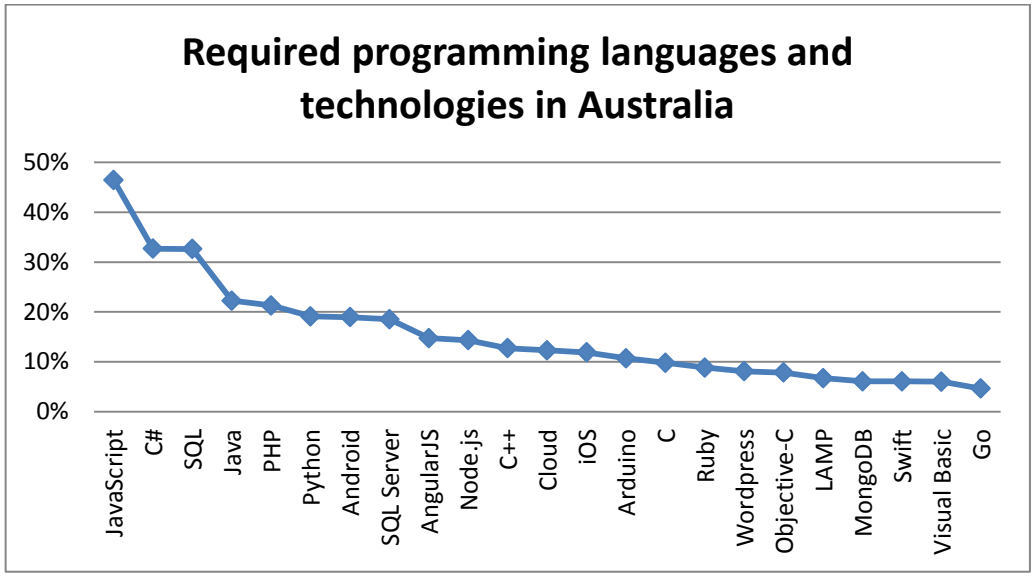


Figure 39. Required programming languages and technologies in Australia (according to the survey Stack Overflow 2015)

4.3.6 North European market

The North European market includes the Nordic countries, i.e. Finland, Sweden, Denmark and Norway. The average age of the customers on the market is 25-29 years, the second largest cluster is 30-34 years old. There is almost no programmers over 60 years, but the percentage of programmers aged 51-60 slightly more than in the United Kingdom (Figure 40). About 15% of respondents have experience up to 2 years. Most programmers have experience of more than 2 years of age: 2-5 years old and 11+ about 30%, 6-10 years of experience is 27% of the sample (Figure 41).

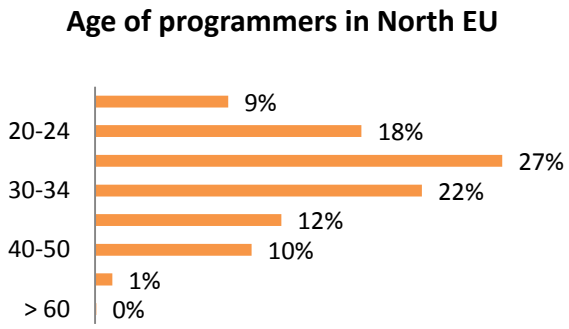


Figure 40. Age of programmers in the North European market (according to the survey Stack Overflow 2015)

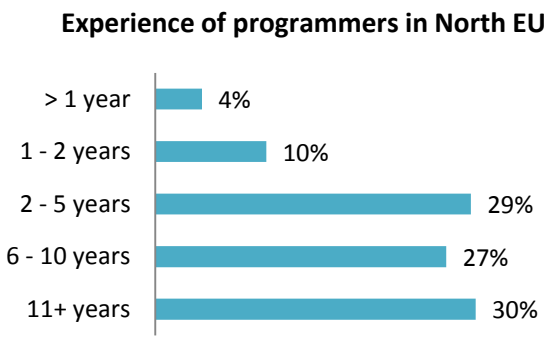


Figure 41. Experience of programmers in the North European market (according to the survey Stack Overflow 2015)

In North Europe also the majority of programmers studied programming themselves (30%). Second place belongs to the trainings at work (27%) and a Bachelor Degree (27%). Master's degree is also quite popular in the Nordic market - 22%. The proportion of students in the online programming courses is 16% (Figure 42).

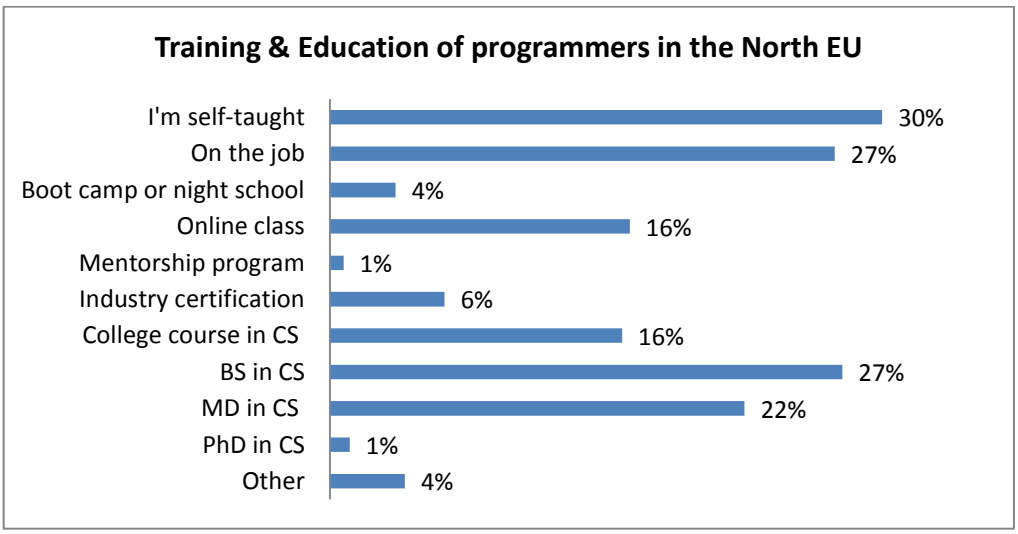


Figure 42. Training and Education of programmers in the North EU (according to the survey Stack Overflow 2015)

According to Stack Overflow survey, top most popular and required programming languages and technologies are JavaScript, Java, SQL, Python, C #, C ++, Android, PHP, Node.js, AngularJS (Figure 43).

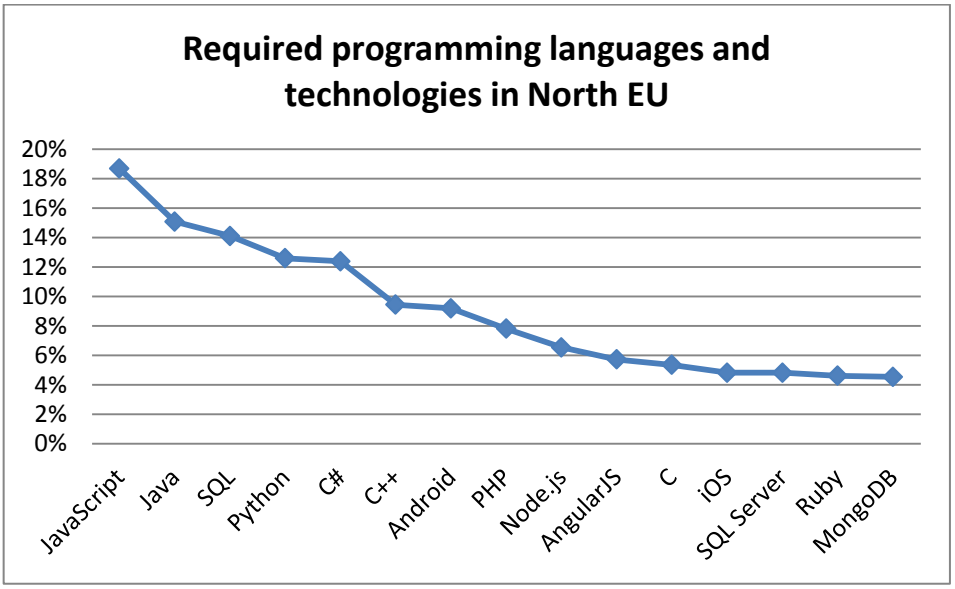


Figure 43. Required programming languages and technologies in North EU (according to the survey Stack Overflow 2015)

4.3.7 Germanic countries market

The biggest share of programmers on Germanic market is 25-29 years old (34%). Neighboring groups are similar – 20-24 years old is 20% and 30-34 years old is 19%. There is a less percent of senior programmers age starts from 35 years old (Figure 44). As for experience, proportion looks stable, starting from 2 years' experience the groups are almost same: 2-5 years is 33%, 6-10 years is 28% and 11+ years' experience is 24%. Beginners share who has less than 2 years' experience is 15% (Figure 45), so Germanic countries has a scope for development as well as experienced specialists to share knowledge.

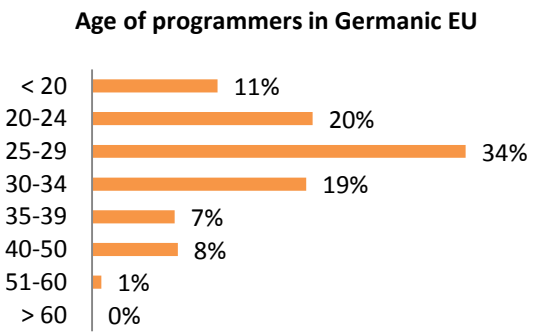


Figure 44. Age of programmers in Germanic EU (according to the survey Stack Overflow 2015)

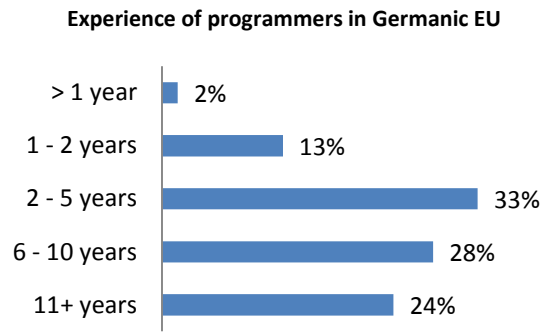


Figure 45. Experience of programmers in Germanic EU (according to the survey Stack Overflow 2015)

Comparing to Canada and Australia, situation with training and education in Germanic countries is different. First place is taken by self-taught programmers (36%), second is on the job trainings (33%) and only third is bachelor degree (28%). The difference between proportion of self-taught and professionally educated programmers is 8% (Figure 46).

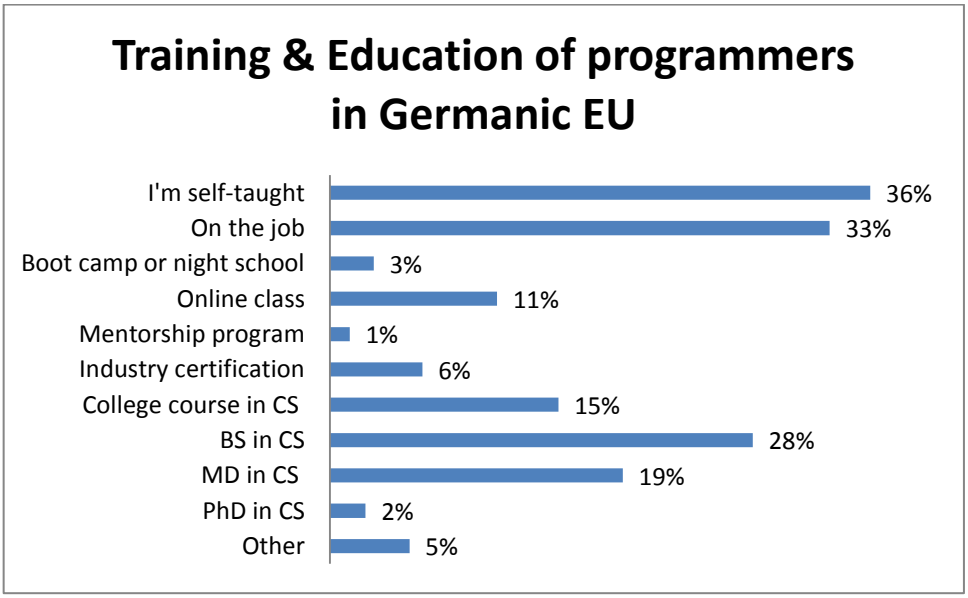


Figure 46. Training and Education of programmers in Germanic EU (according to the survey Stack Overflow 2015)

The most popular and used in UK programming languages and technologies in 2015 are JavaScript, Java, SQL, C#, PHP, Python, C++, Android, Node.js, C (Figure 47).

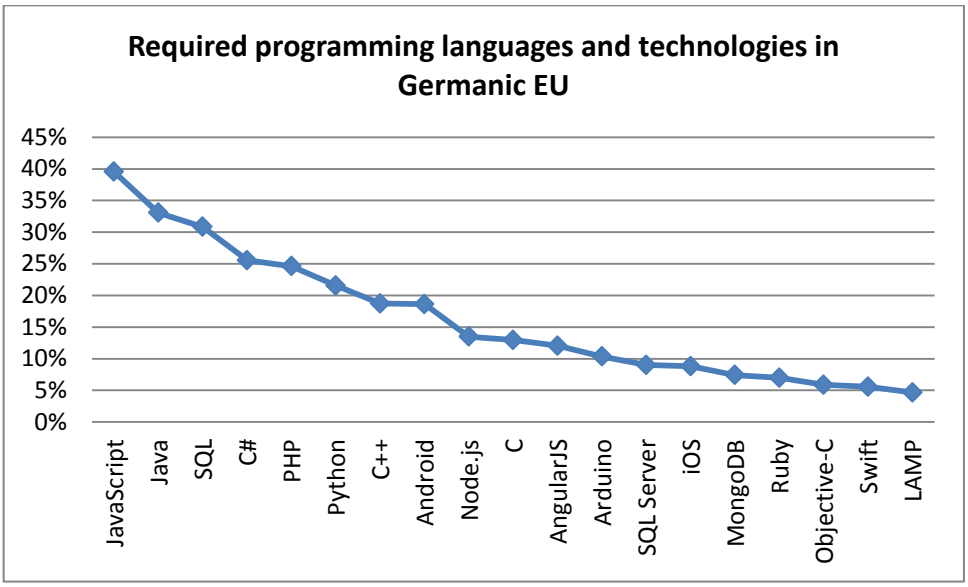


Figure 47. Required programming languages and technologies in in Germanic EU (according to the survey Stack Overflow 2015)

4.3.8 Eastern European market

As well as on Germanic market the biggest share of programmers in Eastern Europe is 25-29 years old (36%). Neighboring groups are similar – 20-24 years old is 21% and 30-34 years old is 18%. There is a less percent of senior programmers age starts from 40 years old (Figure 48). As for experience, proportion looks stable, starting from 2 years' experience the groups are almost same: 2-5 years is 34%, 6-10 years is 26%. Although the group of programmers with 11+ years' experience is much less – just 17%. Beginners share who has less than 2 years' experience is much bigger: less than 1 year experience is 8% and 1-2 years 16% (Figure 49).

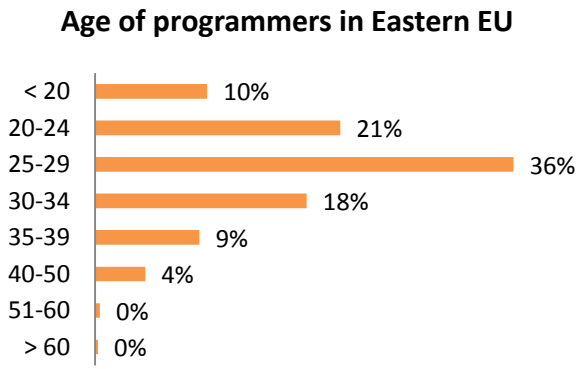


Figure 48. Age of programmers in Eastern EU (according to the survey Stack Overflow 2015)

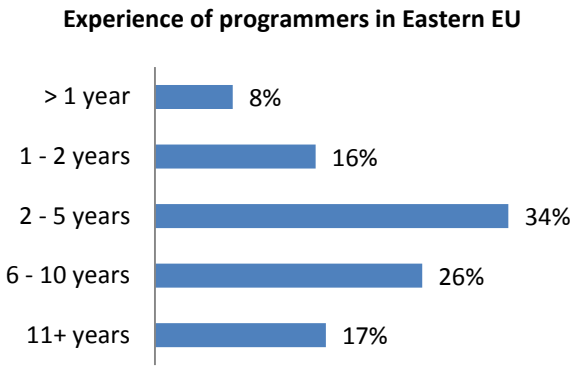


Figure 49. Experience of programmers in Eastern EU (according to the survey Stack Overflow 2015)

Training and education in Eastern countries is also similar to Germanic countries. First place is taken by self-taught programmers (36%), second is on the job trainings (27%) and only third is bachelor degree (25%). The difference between proportion of self-taught and professionally educated programmers is 11% (Figure 50).

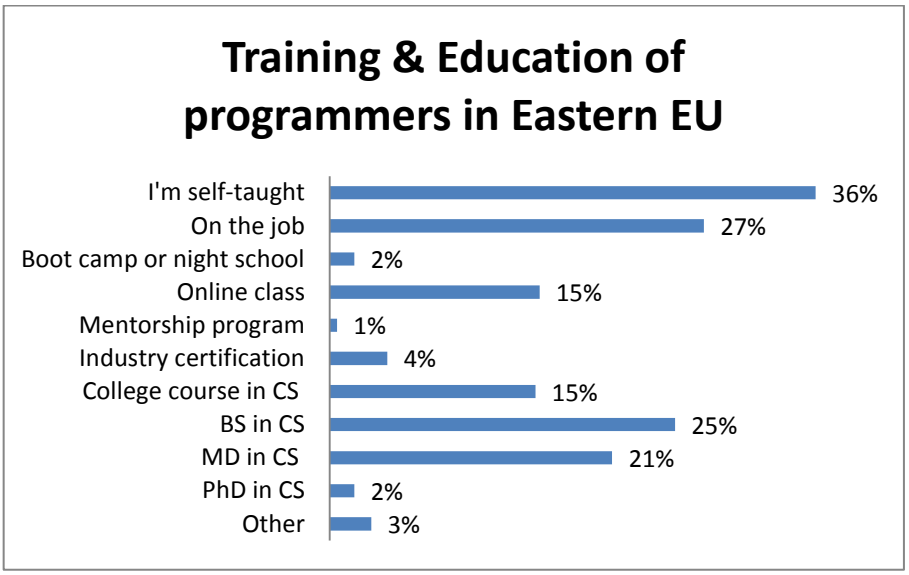


Figure 50. Training and Education of programmers in Eastern EU (according to the survey Stack Overflow 2015)

The most popular and used in UK programming languages and technologies in 2015 are JavaScript, Java, SQL, C#, PHP, Python, C++, Android, Node.js, C (Figure 51).

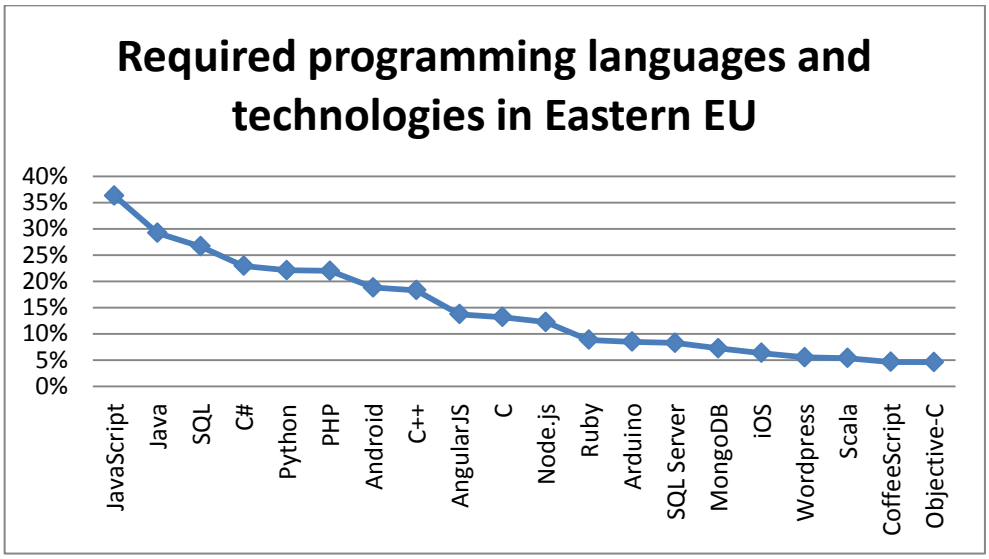


Figure 51. Required programming languages and technologies in in Eastern EU (according to the survey Stack Overflow 2015)

Apparently customer preferences in Germanic and Eastern Europe are similar by mentioned characteristics with a slight difference in programming languages and technologies preferences.

4.4 International market selection model

In order to compare all the described qualitative and quantitative market and customers' characteristics it is necessary to transform them into measurable dimensions. Thus, scale of values for each criterion was created on the base of values and their interconnections. Scale includes values from 0 to 6and each number includes particular meaning for each dimension (Table 17).

Table 17. Scale for international market selection.

Criterion	0	1	2	3	4	5	6
Market size	< 50 thosand people	50-100 thosand people	101-150 thosand people	151-200 thosand people	201-250 thosand people	251-500 thosand people	>500 thosand people
Annual market growth	<1 thosand people	[1;3) thosand people	[3;5) thosand people	[5;7) thosand people	[7;10) thosand people	[10;13) thosand people	>13 thosand people
Market niche	>20 universities support MOOC	[15;20) universities support MOOC	[10;15) universities support MOOC	[7;10) universities support MOOC	[4;7) universities support MOOC	[1;4) universities support MOOC	0 universities support MOOC
Platform language knowledge	<44%	45-54%	55-64%	65-74%	75-84%	85-94%	95-100%
Number of programmer's with less than 2 years experience	<7%	[7;10) %	[10;13) %	[13;15) %	[15;17) %	[17;20) %	>=20%
Number of programmers tried online courses	<7%	[7;10) %	[10;13) %	[13;15)	[15;17) %	[17;20) %	>20%
Similarity of preferences in program-ming with platform content*	<10	[10;15)	[15;20)	[20;25)	[25;30)	[30;33)	>33

*weighing system was used. Explained in table 18.

***Source**: Author*

Weighting system of similarity of preferences in programming with platform content includes values 1-10, where 10 means the most preferable language or technology. Accordingly, to calculate similarity of each market special formula were used:

10*x+9*x+8*x+7*x+6*x+5*x+4*x+3*x+2*x+1*x,

where X is language or technology have value 0 if it is not existing on the platform and 1 if it is on the platform. For example, formula for Russian market is:

10*1+9*1+8*1+7*0+6*0+5*0+4*0+3*1+2*0+1*0 = 30.

Table 18. Calculation of similarity of preferences in programming with platform content.

Weights	**Russian**	**American**	**Canadian**	**UK**	**Australia**	**North EU**	**Germanic countries**	**Easten Europe**
10	JavaScript	JavaScript	JavaScript	JavaScript	JavaScript	JavaScript	JavaScript	JavaScript
9	Java	SQL	SQL	Java	C#	SQL	Java	Java
8	SQL	Python	C#	SQL	SQL	Java	SQL	SQL
7	Python	C#	Java	Python	Java	C#	C#	C#
6	C#	Java	Python	C#	PHP	Python	PHP	Python
5	Android	Android	Android	Android	Python	Android	Python	PHP
4	C++	SQL Server	C++	SQL	Android	C++	C++	Android
3	PHP	PHP	PHP	C++	SQL Server	PHP	Android	C++
2	Node.js	Node.js	Node.js	PHP	AngularJS	Node.js	Node.js	AngularJS
1	AngularJS	C++	AngularJS	Node.js	Node.js	AngularJS	C	C
	30	28	29	29	31	30	33	32

***Source**: Author*

To conclude description of each criteria according to table 17 and calculations in table 18, table 19 represents analyzed data and table 20 transforms values into measurable scales.

Table 19. International market selection criteria by values.

Market	Market size	Annual market growth	Market niche	Platform language knowledge on the market	Number of programmer's with less than 2 years' experience	Number of programmers tried online courses	Similarity of preferences in programming with platform content
Russian	255,78	9,36	7	100%	15,5%	18,3%	30
American	1062,7	11,28	88	100%	14,5%	7,7%	28
Canadian	104,82	2,31	7	100%	19,6%	16,7%	29
UK	74,79	3,65	5	100%	13,7%	15,1%	29
Australian	88,01	1,82	7	100%	17,7%	14,7%	31
North EU	40	0,97	5	68,54%	14,6%	16,0%	30
Germanic countries	84,49	3,13	16	63,20%	14,3%	11,1%	33
Easten Europe	293,7	3,53	0	61,94%	23,2%	15,4%	32

***Source**: Author*

Table 20. International market selection criteria by scale.

Market	Market size	Annual market growth	Market niche	Platform language knowledge on the market	Programmer's experience	Number of programmers tried online courses	Similarity of preferences in programming with platform content
Russian	5	4	3	6	4	5	5
American	6	5	0	6	3	1	4
Canadian	2	1	3	6	5	4	4
UK	1	2	4	6	3	4	4
Australian	1	1	3	6	5	3	5
North EU	0	0	4	3	3	4	5
Germanic countries	1	2	1	2	3	2	6
Easten Europe	5	2	6	2	6	4	5

***Source**: Author*

International market selection criteria are a base for expert evaluation presented in the next subsection. Along with expert evaluation survey, described in section 3.3.4 The Final Stage of Data Collection expert were provided by visualization of international market selection criteria (Appendix B).

4.5 Expert evaluation

As it was stated in "Methodology" chapter expert evaluation was used to clarify the importance of criteria and select the most appropriate market as an entry point. Expert to weight the criteria were chosen three representatives of company, who worked on the platforms since it was launched. The results of weighting are in table 21.

Table 21. Results of expert evaluation.

Criteria	**Experts**						**Total**
	1		**2**		**3**		
	value	weight	value	weight	value	weight	
Market size	8	0,17	9	0,20	10	0,20	**0,19**
Annual market growth	8	0,17	9	0,20	10	0,20	**0,19**
Market niche	8	0,17	8	0,17	4	0,08	**0,14**
Platform language knowledge on the market	7	0,15	8	0,17	1	0,02	**0,11**
Number of programmer's with less than 2 years' experience	6	0,13	5	0,11	9	0,18	**0,14**
Number of programmers tried online courses	7	0,15	4	0,09	7	0,14	**0,13**
Similarity of preferences in programming with platform content	4	0,08	3	0,07	8	0,16	**0,10**

***Source**: Author*

In addition to selected criteria respondents offered the other dimensions listed below:

- tax and legislation related issues
- overall long term dynamics of economics
- level of higher education (e.g. university and college ratings)
- internet coverage and speeds

- offline courses and bootcamps availability and popularity

Some of additional dimensions were taken into consideration. For example, internet coverage and speeds and overall long term dynamics of economics were part of ICT index in preliminary screening. However, tax and legislation and offline courses were not considered in international market selection process. Since company is already operating worldwide it was considered that there are trained procedures to overcome difficulties. As for offline courses, they were analyzed in competitive analysis of basic market as it was assumed that the first target audience abroad should be active online to attract them. Speaking about level of higher education, it is necessary to define the interconnection between traditional education and online education to calculate influence of this dimension on the potential market selection.

The result of expert evaluations was applied to selected markets (Appendix C) and resulting table of prioritized markets is in table 22.

Table 22. Results of international market selection.

Market	Value
Russian	4,5
Easten Europe	4,25
American	3,7
Canadian	3,27
UK	3,13
Australian	3,05
North EU	2,33
Germanic countries	1

Thus, the most promising foreign market according to selected criteria is Eastern market. Further goes American and Canadian markets and last places are taken by the two other European markets.

4.6 Summary and recommendations

Conducted international market selection process includes two main steps: preliminary screening based on macro parameters and in-depth screening according to firm specific characteristics. So, for case company main selection parameters were GLOBE research clusters ICT development index and English language knowledge. Following expert evaluation of criteria has confirmed the importance of considering language knowledge and ICT development index. Two out of three experts estimated language knowledge as 7 and 8 out of 10. In addition one of them mentioned internet coverage and speeds and overall long term dynamics of economics as necessary to consider, which were basically included into ICT development index.

The next step of in-depth screening has revealed similarities and differences between selected markets. Chosen criteria were based on literature, company's questions and available data.

The first and the most important general dimensions of the market are market size and market growth. All experts put high value to them. According to market size, the most promising countries are US and Eastern Europe, followed by Russia. Prospective of market growth are more attractive in US and Russia though, followed by UK and Eastern Europe.

Market niche and competiveness level combined in one dimension. The point is that different countries have different level of competition. For example, in Russia offline substitutes can be considered as main competitors, while US market is more developed and main competitors would be world-famous MOOC platforms. Thus, to measure market saturation author calculated universities participating in MOOCs as the main index of market niche in the country. Expert had controversial opinions about value of that parameter, so it was less important than market niche and market size. According to the results, the less saturated market is Eastern Europe and the most saturated are United States and Germanic countries. The other controversial parameter is language knowledge. Similar to market niche two of experts put relatively high importance to that parameter, and one estimated it as not important. Obviously, English and Russian speaking countries are in the top of the rating in that parameter.

Another category of IMS criteria is company specifications. According to the interview and website analysis the main parameters are low experience of the programmers, awareness of potential users about online courses and similarity of preferences in programming languages and technologies with platform content.

Among firm-specific parameters, the most important is experience according to expert evaluation. All of them put higher than average grade. The most perspective countries here are Eastern Europe, Canada and Australia. The next goes awareness of online courses. Even though one of the experts put lower than average grade, it still influence to IMS. The most perspective and easy to reach countries are Russia and Canada. The last parameter of similarity of platform content to preferences on the market got different weights. Two of experts graded it as less important, so in conclusion, content can be developed according to requirements of the country. The closest markets by content are Germanic countries, eastern countries and Australia.

There were quite similar markets considered as different to approach. First of all, comparing Russia and CIS, it was underlines that Ukraine is more familiar with the concept of the platform that makes it easy to operate in there. Although, according to statistics the situation in CIS is similar to Russia since CIS included other countries with low awareness of online education as Kazakhstan. Considering experience, CIS can provide more audience with appropriate level of programming experience than Russia. However, in training and education cases of Russia and CIS are similar, most of programmers self-taught and trained at job.

Comparing US and Canada as close countries mostly takes as the same cluster, there are several different points. Canada has bigger proportion of less experienced programmers which is more promising for case company. Training and education background is relatively same as well as preferences in programming languages and technologies.
Despite the distance between Canada and Australia, these countries had similar dimensions. First of all, in training and education undoubtedly first place is taken by bachelor degree in computer science or related field. Close share belong to self-training and on the job training. Secondly, both markets have very much perspective share of less

experiences programmers. Moreover, preferred languages and technologies are similar to US and Canada.

Comparing US and UK, these markets have a lot in common. Both have similar number of less experienced programmers. Approximately similar training background, the difference is only in the most popularity of self-training in US and professional education in UK. Preferences in languages and technologies are similar in all the English speaking countries as US, UK, Australia and Canada.

The final markets to compare are North Europe, Germanic countries and Eastern Europe. All the countries are more or less close to each other, some of them have common history and European Union has common rules, currency and until some point certain common culture. However, the results of in-depth screening of mentioned markets are different. Eastern Europe has much bigger share of less experiences programmers comparing to all the other markets, while North Europe and Germanic countries have similar much lower proportion. The training background is actually quite similar. First place is self-taught programmers, followed by on the job training and third place is taken by bachelor degree. As for preferences, Eastern and Germanic Europe has quite similar requirements while North Europe does not fit.

According to Górecka and Szałucka (2013) firm-specific parameters are significant. So, analyzing only macro-parameters the best countries to enter would be US, Russia, however, firm-specific customer analysis included new insights to the screening. Screening proposes Eastern Europe as the most promising countries to enter first. At the same time the rest of European markets are on the last positions in spite of customer characteristics similarities. Eastern market is the most promising foreign market according to research analysis. Market size and growth of eastern market can provide a scope for development of the platform. Moreover, programmers there is big share of less experienced programmers (23%) which if first target audience for case company. Furthermore, preferred programming languages and technologies are similar to platform content.

Network approach suggests penetrating into market using business networks, In case of Eastern Europe there is lack of interaction between universities and MOOC platform.

Moreover, online courses are popular among student of college (28% of student use online training) and bachelor degree (25% of student use online training). So, one of development directions can be cooperation with local universities. The other approach can be over employers. The first place by usage of online training is taken by people trained on the job. In that case it can be B2B market or Current MOOC platform certificated recognition.

However, approach to USA market should be different. Results of the analysis demonstrate difference in programmers' experience. The biggest proportion here of programmers has more than 6 years' experience, so to attract more users platform should adjust content to more deep and specific topics. Moreover, the saturation of MOOC market with courses provided by highly ranked universities call for proper differentiation. Thus, entry to US market requires a lot of preparations and platform development.

As for Canadian and Australian market, the main difference is in sophisticated education of programmers. However, significant part of professional programmers from mentioned markets used online courses. Therefore, variation of content for different experience levels can be attractive for these markets as well.

The overall picture of users' online training demonstrates popularity of online training among programmers trained on the job. Second place is taken by professional learning. According to appendix D self-taught programmers do not commonly use online courses to develop their skills at the moment with exception of Canada (23%) and CIS (24%).

5. DISCUSSION

According to internationalization theory one of the first and most important steps towards effective internationalization is systematic approach (Yip et al., 2000). However, SMEs prefer to operate according to intuitive decisions of CEO due to lack of resources. Current case represents an example of non-systematic approach to internationalization, when company tackled Russian and Nordic markets at the same time. On the one hand, global aiming to Russian speaking users leads to success and significant share of foreign users. On the other hand, attempt with finish target failed. The results of current research show that Nordic market is not the most promising goal, even though company is registered in Helsinki. Preliminary research made before the beginning of internationalization could either prevent resource spending or improve internationalization process according to country specifics.

The main question of the company underlined in the "Introduction" section of the research is *"How to improve efficiency of internationalization process of programming MOOC platform?"*can be answered from different perspectives.

First of all, it is necessary make systematic international market selection. According to the literature systematic approach improves and accelerates internationalization. Moreover, results of study revealed the reasons of difficult internationalization towards Nordic European counties. Systematic internationalization includes international market selection. There are three steps of IMS (Cavusgil, 1985), which was adjusted to a particular company in current research (Figure 52).

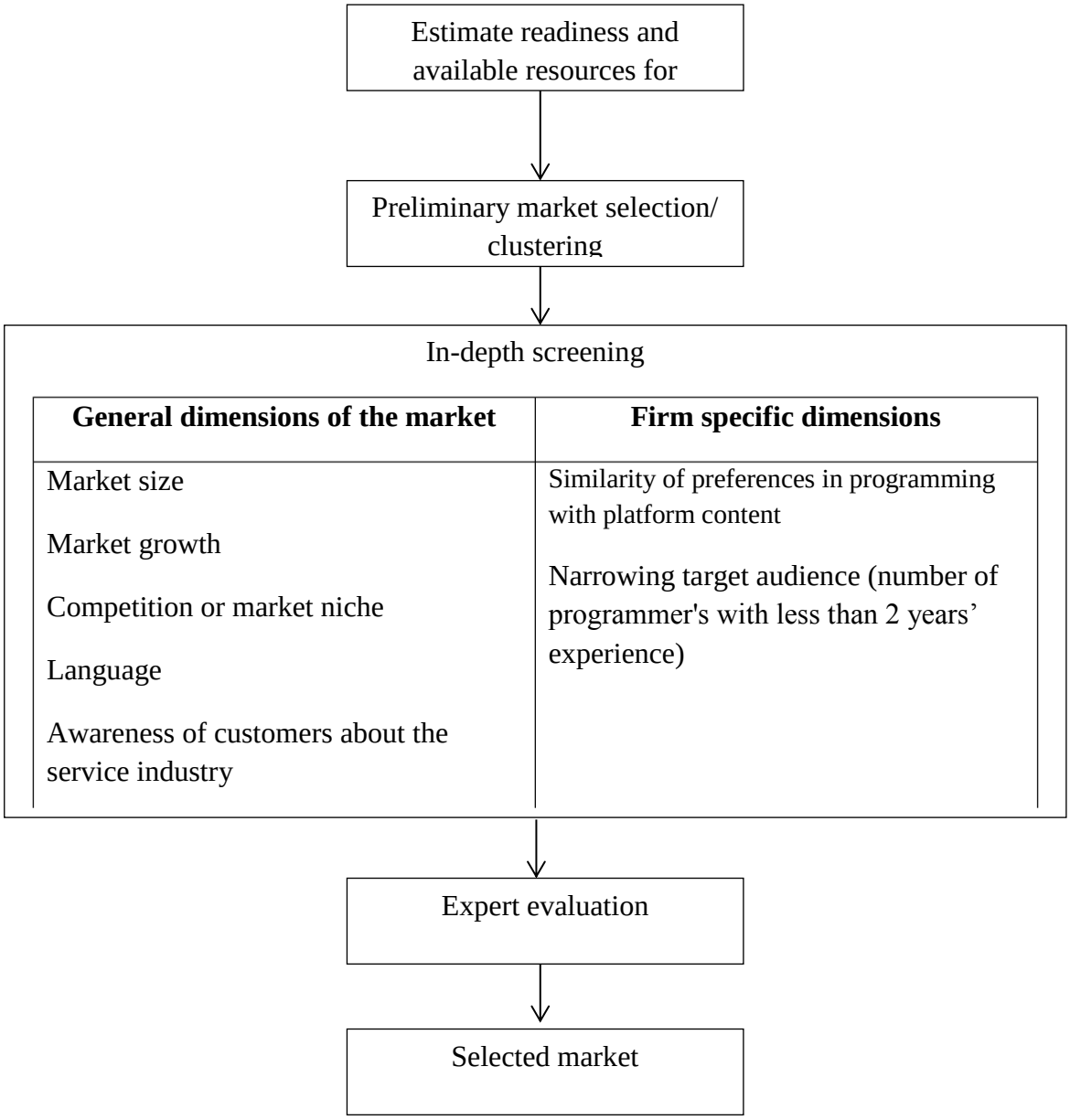


Figure 52. International market selection process.

To give a full value answer to the main research question, it was divided into five sub questions. To answer RQ1 about the most appropriate internationalization strategy for online services, experience of the company was used. According to the interview, case company is positioned as born global from the inception as company was registered 3 years ago and it has more than 25% of income from abroad (McDougall and Oviatt, 2000). However, it combines methods of Uppsala model and Network model at the same time.

First of all, platform attracted users from CIS countries with really close "psychic distance" (Johanson and Vahlne, 1977). As it was mentioned in the interview, "organically, without any explicit operations processes expanded to Ukraine and Belarus". This case represents also how default online internationalization can be implemented into real life (Yamin and Sinkovics, 2006). Secondly, experimental attempts to expand to US were based on personal network (Johanson and Mattsson, 1988). So, all users of English version were attracted by personal contacts of company founders. Moreover, it was mentioned in the interview that founders attracted companies from CIS mostly by personal contacts. However, facing the difficulties of internationalization, company used the most significant features of Uppsala and Network models of internationalization. Entering the countries with a short "psychic distance" according to Uppsala happened "organically" or by default online internationalization (Yamin and Sinkovics, 2006). Even though networks played an important role in internationalization for current case, "psychic distance" theory is still applicable since there are both official and legal restrictions together with cultural and unofficial habits influence to new companies on the foreign markets. Thus, due to flexibility of the company it uses the easiest applicable approach.

To answer RQ2 author combined results of literature review, statistical analysis and expert evaluation results. According to the theory there are plenty of dimensions that could be considered during market selection. The main point is to combine both macro parameters with firm specific characteristics (Gould, 2002). Thus, expert evaluation confirmed the importance of market size (Dunning, 1998; Cavusgil, 1997) and market growth (Cavusgil, 1997; Sheng and Mullen, 2011). Market niche or competitiveness dimension took was also considered in literature as competitive condition (Hollensen, 2007) and was estimated by experts as influential. Among firm-specific characteristics (Gould, 2002) user experience in programming together with awareness about online courses became the most important. Similarity of content and language knowledge became less important. Possible reason is that company is able to overcome challenge of language knowledge by translation and add content in accordingly to demand. Several macro parameters for consideration were also proposed as legislation and taxes, economic development, level of higher education, internet coverage and offline courses popularity. Some points were used for preliminary screening process, so they were taken into consideration. Some were rejected due to low availability of data.

The answer to the RQ3 about the more promising foreign market is provided at the end of empirical part. As a result of in-depth market and customer analysis, the most prospective market for the company is Eastern European market. Comparing to other studied markets, it is more promising in young less experienced programmers, has good infrastructure and language knowledge and target market is not saturated at the moment.

Expenses are one of the most important points of internationalization. It is considered in RQ4. Opposite to physical internationalization, the main pressure in online service internationalization goes to personnel cost as increasing number and variety of operations, difficulty of everyday tasks. According to the interview, the main resource to spend during internationalization to CIS was time of employees, so the main cost is increasing labour. Moreover, issues with foreign legislations and taxes lead to specific point of internationalization cost of online services internationalization is data storage. This coincides with Saarenketo's et al. (2008) findings of increasing transaction cost based on uncertainty and complexity of new operations and legal issues, in current case payment procedures. However, case platform offer specific value of content together with tools to study, so expenses of appropriability of knowledge assets through tacitness is not an issue in current case.

Theory of internationalization of online services underlines the most frequent mistake. Creating the service company has to consider GILT approach, which means to construct the service in a way to make easier adaption of service to other countries requirements (Tarquini et al., 2010). Case company created platform already considering internationalization. Thus, platform has common technical structure but two different interfaces in English and Russian. Moreover, starting with a global approach raised the question of payments from different countries and taxes. Due to facing with that challenge from company inception at the moment company is familiar with solution and no need to spend additional resources and efforts to it. According to Internet enabled internationalization literature, it decreases foreign market entry barriers and provide tools to attract users.

The answers to the first research questions summarized into scheme of online services internationalization developed on the base of case company. It demonstrates main challenges, costs, benefits and approaches to internationalization of online services (Figure 53).

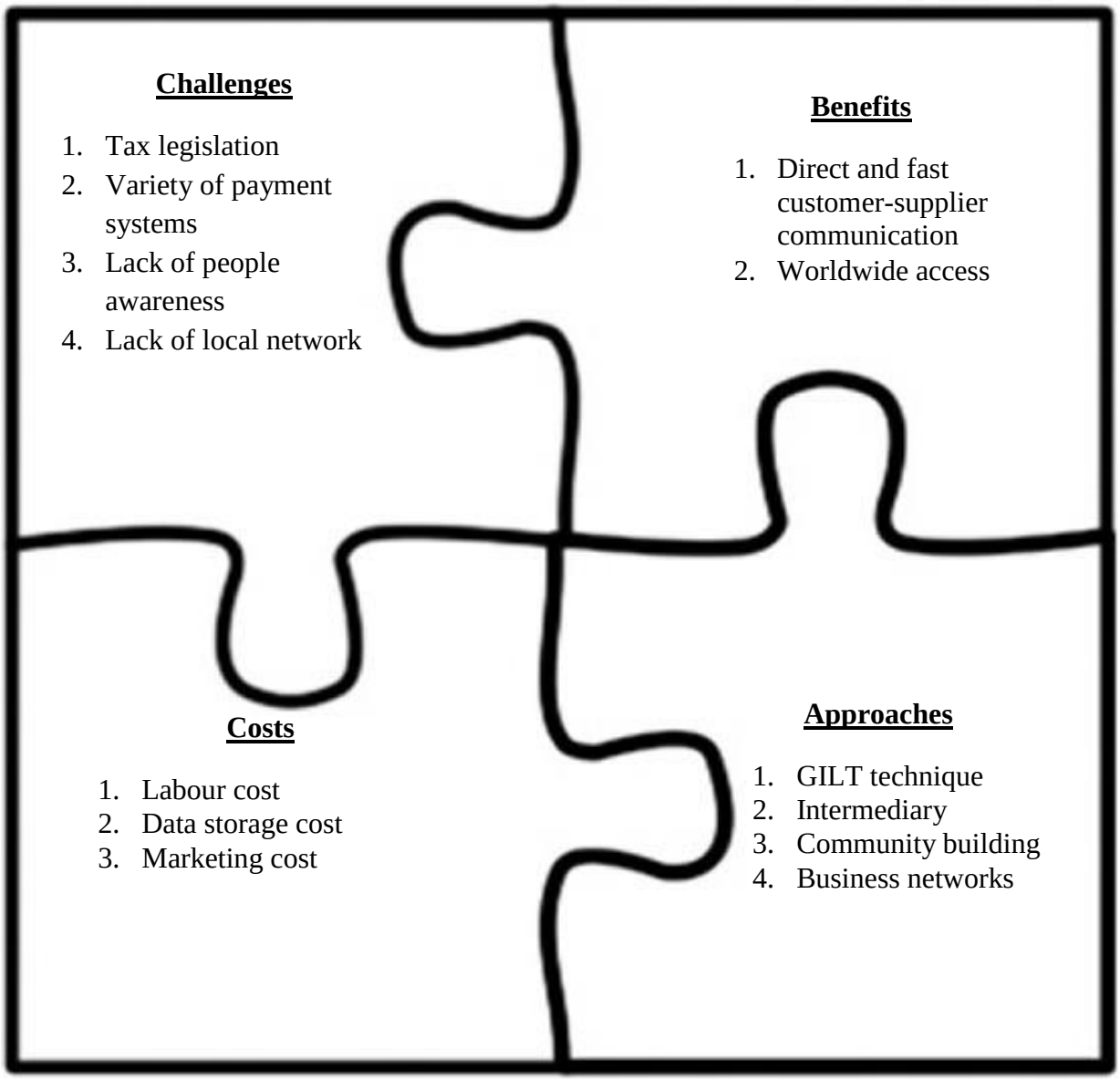


Figure 53. Online services internationalization

The final RQ5 is dedicated to case company field: "Should programming MOOCs be oriented to self-education or be additional training for users?" Statistical data analyzed in research approved that globally online courses used by programmers trained on the job and

having college education. However, statistics is changing depending on region. On countries like Russia, CIS and Germanic Europe collage educated programmers used online courses more than other segments of customers. The unexpected result is that self-taught users tries online courses less than others in Russia, CIS, Australia and Eastern markets. So, approaching users from educational organizations or employers' side would be more effective and make platform and field more popular.

6. CONCLUSIONS

The final part of current research aims to answer the research questions, summarize the results of the whole study and propose future possible research directions. This section includes contribution to theory of studied topic and management practice as well as limitations of research.

6.1 General conclusion

The gap of current research belongs to internationalization of online services. Since Internet related businesses are relatively new field, they provide scope for the research. Case company for current study was chosen due to outstanding characteristics related with online opportunities. The whole business is created on the basic opportunity to teach users online. Moreover, Internet provided opportunities are used in the other fields as well. For instance, they use remotely located personnel of the company working over the Internet, direct customer support and feedback to founders of the company, global approach to Russian speaking users all over the world.

The overall result of the study includes practical oriented approach to international market selection and future recommendations for the company as well as theoretical contribution to academia. According to mixed method during research author analyzed both qualitative and quantitative data. There were several interviews with CEO of the company conducted to clarify business model of the company, internationalization process of the company, costs of operating and assessment of interim results. In addition, to make sophisticated market and customer analysis secondary data from the Internet were used.

Answering research questions author proposed systematic international market selection methodology based on two steps: preliminary screening and in-depth analysis. IMS methodology results in prioritized list of foreign markets. Furthermore, results of in-depth analysis are supposed to be used during building international strategy and decision making.

Considering the best internationalization strategy, the majority of online services belongs to born global category. However, current research reveals the use of Uppsala and Network models in certain cases. Network internationalization model is based on connections between market actors and Internet provides easy communication tools to use and improve this approach to internationalization. Moreover, "psychic distance" from Uppsala model is still valid even for online services since it considers psychically close markets and current research demonstrated default online internationalization across the Russian boarder to CIS countries.

Among variety of criteria for IMS described in literature, research proposed frame of criteria divided to macro parameters and firm specific characteristics. The finding of research confirmed that the most influencing macro parameters for international market selection are market size and market growth. Market niche or competitiveness is also considered as significant. Firm specific characteristics underlined the importance of users' experience in programming together with awareness about online courses. Meanwhile, platform language knowledge and similarity of content are less important.

The result of international markets' analysis revealed the difference between intuitive market selection and systematic choice. According to international market selection process the most promising market is Eastern Europe, while among the first targets during early internationalization were US and North Europe. Analysis revealed similarities of customers on different markets. Russia and CIS were confirmed by customer analysis as close markets by users' characteristics. Canada and Australia are similar by customer parameters as well. Both markets have significant share of les experienced programmers and strong educational background. In addition, similarity of US and UK market was demonstrated. Both have similar number of less experiences programmers and users' educational background. However, analysis of European markets revealed differences among Eastern, Germanic and North Europe. While Eastern market looks most promising, North Europa and Germanic countries are on the last places.

According to research findings, the main pressure in internationalization costs goes to personal salaries as new procedures need automatization, adjustment to foreign legislation is on company's staff as well. In addition, growth of specific expenses for data storage is

one of typical online service characteristics. Also, particular feature of online service internationalization is GILT approach. It can be implied in technical implementation of the product and business model. Case company followed GILT approach by creating two different interfaces for the same system and avoided additional costs for redesign of the platform for internationalization.

As for particular MOOC specification, at the moment MOOC platforms can be considered as additional training due to wide use of service together with on the job training or professional education.

6.2 Contribution

This research contributes in the field of internationalization of online services. The field is relatively new, so by defining particular features of Internet enabled internationalization, considering its challenges and approaches research improves knowledge about online service internationalization. The main focus of research is to improve efficiency of online service internationalization. The important step towards improvement of internationalization strategy is systematic approach, which was proven on the example of case company internationalization.

As a first step, research considered internationalization costs. And it pointed out an ordinary internationalization expenses as well as specific type of cost for online services. Common pitfalls and challenges of online service internationalization were also investigated in the research. Secondly, methodology for international market selection was developed in the research. Based on empirical study and literature review the importance of market selection criteria was pointed out. Although it was based on the only case of MOOC platform, it can be applicable for the other online services. Also there is a contribution to MOOCs academia. Opposite to general point of view that successful MOOCs are based on university's courses, research considered local based MOOC company development.

6.3 Limitations and further research

There are different kinds of limitations that can affect the credibility of research findings. Current research includes data availability and single case study limitations.

Research is based on the mixed method, so qualitative and quantitative data were analyzed. Limitation of qualitative data is provided by certain orientation of secondary data of survey. First of all, sample was formulated on the base of forum users, so since service is originally from US the proportion of US users was significantly bigger comparing to respondents from emerging countries. Moreover, since different regions and countries were under consideration, sources of information for the same parameters were different, although mostly from the official local sources.

Second type of limitation is connected with type of research. Despite the uniqueness of current case study, single case study itself provides limitations of generalizabilityof research findings. Yin (2009) underlines the treats to credibility of research conclusions. Current study is limited by one case company and particular industry of MOOC. However, according to findings and overall approach to analysis it can be applicable for other online services on the B2C market as well.

The further directions of research based on considered in current work findings can be divided into several sections according to theoretical frames.

First of all, the main topic of online services internationalization should be studied. It is important to pay additional attention to partly considered in the current research issues of international market selection and internationalization costs of online services. There is a call for research about systematic international market selection process of online services. The next field can be connected with significant area to investigate is Internet enabled internationalization costs and challenges.

And finally, most researches about MOOCs are dedicated to the most famous platforms based on high-ranked university courses. However, there are local MOOC platforms, emerging in different countries nowadays. Further research on internationalization process

of local MOOCs based on findings of current research would be useful improvement to academia.

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Appendix A.

The semi structured interview guide for first step of data collection.

1. *Your company was founded 3 years ago. Did you plan to enter foreign markets from the very beginning?*
2. *What are the goals and objectives of internationalization? (Is this direction of development important for a company or there is some more prioritized aims?)*
3. *What is the stage of internationalization now?*
4. *What markets you prefer to enter first?*
5. *What is the strategy of internationalization?*
6. *Were there any product modifications for different markets?*
7. *Were customer needs analyzed before starting internationalization process?*
8. *How users are participating in product development?*
9. *What actions were already done for the internationalization?*
10. *What is the plan for near future?*
11. *What resources are available for internationalization?*
12. *Is there any additional resource required? (Does contacts or clients portfolio help you to internationalize?)*
13. *Your uniqueness is the initial focus on the Russian market, and the company is registered in Finland. What are the advantages of this unique feature?*
14. *What is the difference of Russian market from international?*
15. *Who do you think the main competitor in Russia and abroad?*
16. *What is your competitive advantage in case of internationalization?*
17. *What do you see the risks and complexity of internationalization?*
18. *How did the crisis affect the company? Does internationalization plan changed?*

Appendix B.

The semi structured interview guide for the second step of data collection.

1. *What was your first step towards active internationalization?*
2. *What remarkable action did you manage to enter foreign market? What was the result?*
3. *What are specific issues to consider about online service internationalization?*
4. *What sections includes the cost of internationalization? (translation of website interface, content, marketing company, physical establishment, additional workforce, etc.)*
5. *Did you have unexpected costs during internationalization?*
6. *How to minimize or eliminate costs of internationalization?*
7. *How to measure costs of internationalization?*
8. *Is there difference in internationalization cost entering different countries?*
9. *What resources do you need for further internationalization?*

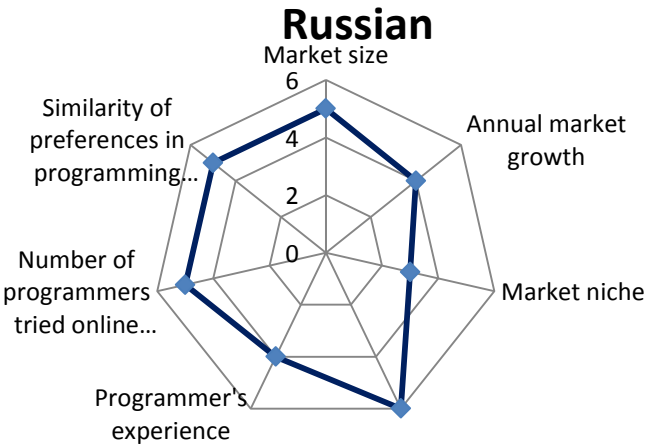
Appendix C.

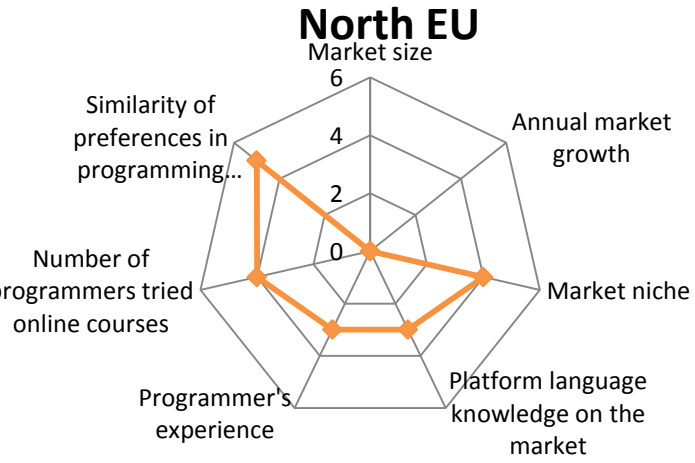
Stack Overflow survey questions and data used.

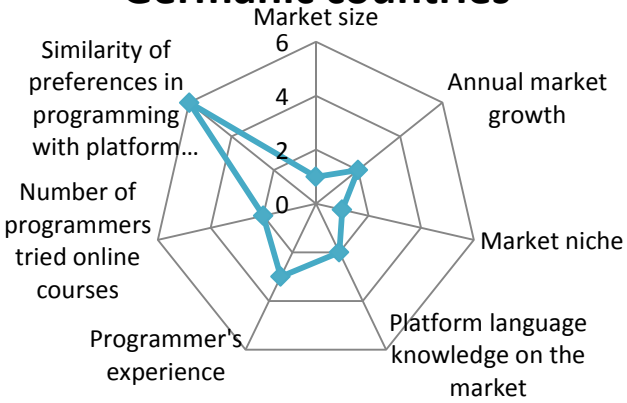
Question	Options
Country	United States, Canada, United Kingdom, Australia, Finland, Denmark, Sweden, Norway, Austria, Netherlands, Switzerland, Germany, Greece, Hungary, Slovenia, Poland, Russia, Ukraine, Belarus, Kazakhstan, Moldova, Armenia, Kyrgyzstan, Uzbekistan, Azerbaijan, Tajikistan, Turkmenistan
Age	> 60, 51-60, 40-50, 35-39, 30-34, 25-29, 20-24, < 20
Years IT / Programming Experience	11+ years, 6 - 10 years, 2 - 5 years, 1 - 2 years, > 1 year
Current Lang & Tech	Android, AngularJS, Arduino, C, C#, C++, Cassandra, Clojure, Cloud, CoffeeScript, Cordova, Dart, F#, Go, Hadoop, Haskell, iOS, Java, JavaScript, LAMP, Matlab, MongoDB, Node.js, Objective-C, Perl, PHP, Python, R, Redis, Ruby, Rust, Salesforce, Scala, Sharepoint, Spark, SQL, SQL Server, Swift, Visual Basic, Windows Phone, Wordpress
Future Lang & Tech	Android, AngularJS, Arduino, C, C#, C++, Cassandra, Clojure, Cloud, CoffeeScript, Cordova, Dart, F#, Go, Hadoop, Haskell, iOS, Java, JavaScript, LAMP, Matlab, MongoDB, Node.js, Objective-C, Perl, PHP, Python, R, Redis, Ruby, Rust, Salesforce, Scala, Sharepoint, Spark, SQL, SQL Server, Swift, Visual Basic, Windows Phone, Wordpress
Training & Education	I'm self-taught On the job Boot camp or night school Online class (ie. Coursera, Codecademy, Khan Academy, etc.) Mentorship program (ie. Flatiron School, GDI, etc.) Some college coursework in Computer Science (or related field) but no degree Bachelor of Science in Computer Science (or related field) Master's Degree in Computer Science (or related field) PhD in Computer Science (or related field)

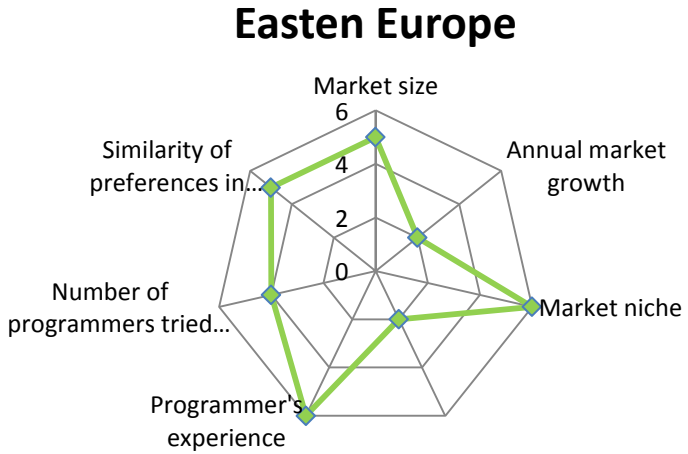
Appendix D.

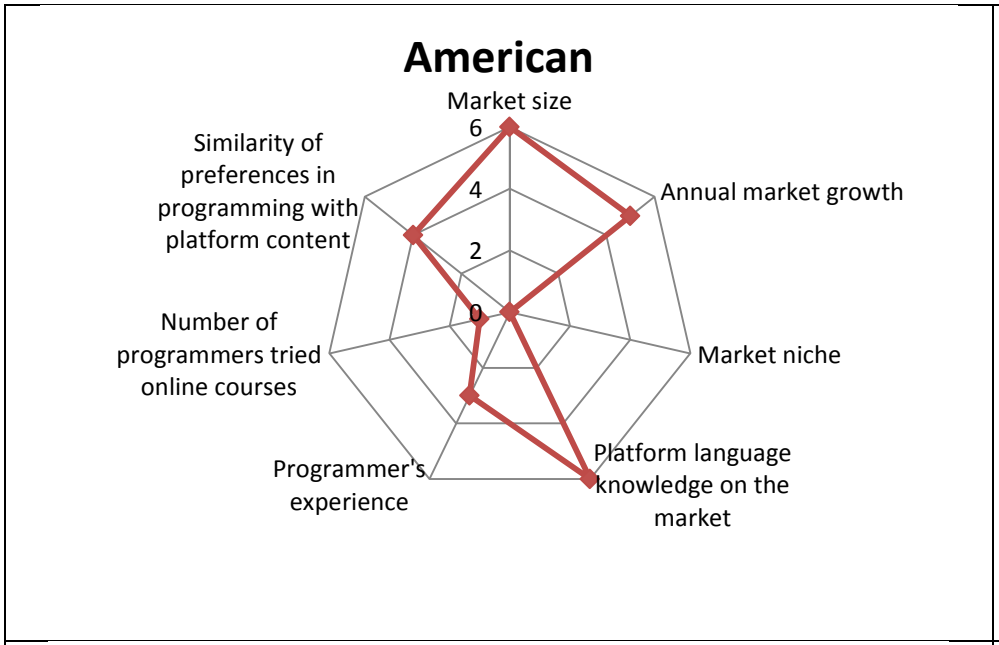
Market potential models.

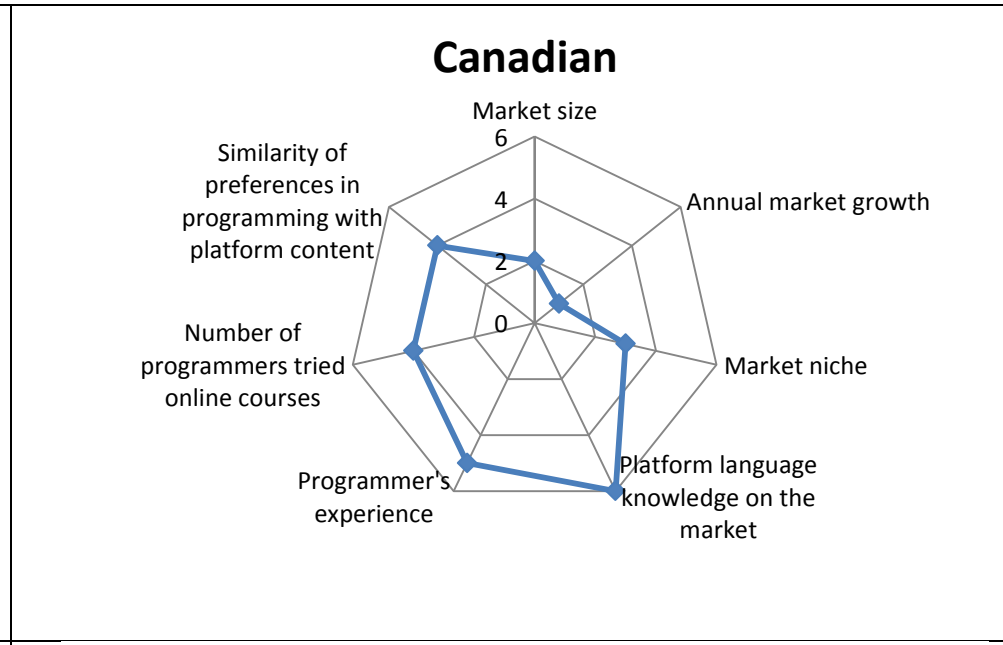


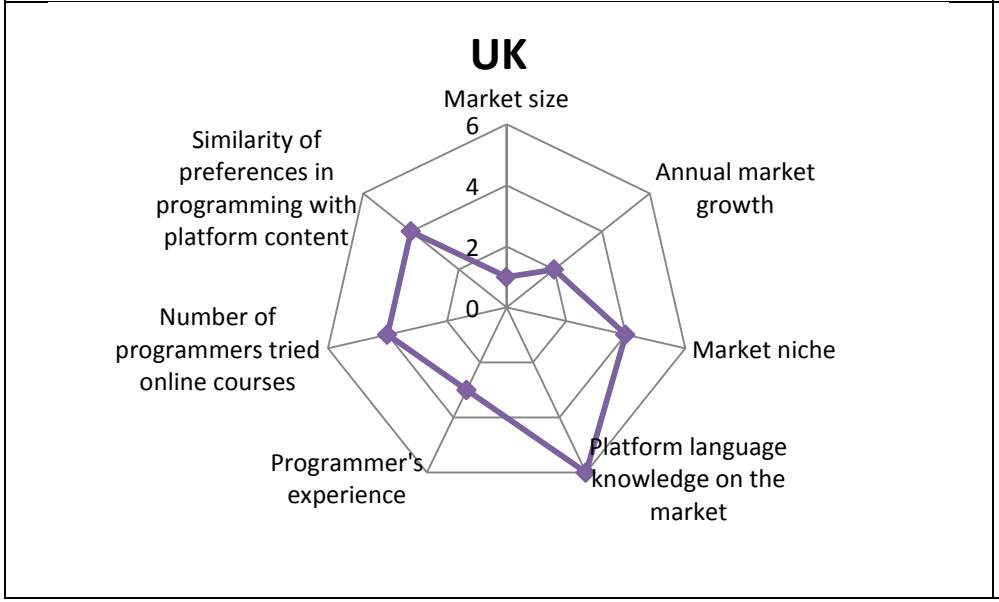


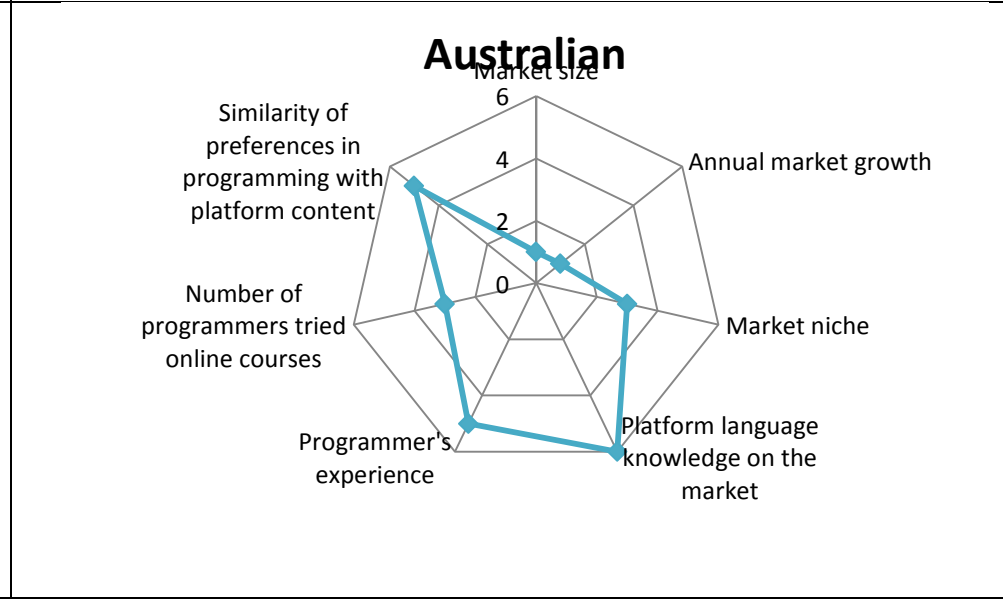





American
Market size
6
4
2
0
Annual market growth
Market niche
Platform language knowledge on the market
Programmer's experience
Number of programmers tried online courses
Similarity of preferences in programming with platform content


Canadian
Market size
6
4
2
0
Annual market growth
Market niche
Platform language knowledge on the market
Programmer's experience
Number of programmers tried online courses
Similarity of preferences in programming with platform content


UK
Market size
6
4
2
0
Annual market growth
Market niche
Platform language knowledge on the market
Programmer's experience
Number of programmers tried online courses
Similarity of preferences in programming with platform content


Australian
Market size
6
4
2
0
Annual market growth
Market niche
Platform language knowledge on the market
Programmer's experience
Number of programmers tried online courses
Similarity of preferences in programming with platform content

Appendix E.

The results of the expert evaluations

Market	Weight	Russian		American		Canadian		UK		Australian		North EU		Germanic countries		Easten Europe	
Market size	0,19	5	0,95	6	1,14	2	0,38	1	0,19	1	0,19	0	0	1	0,19	5	0,95
Annual market growth	0,19	4	0,76	5	0,95	1	0,19	2	0,38	1	0,19	0	0	2	0,19	2	0,38
Market niche	0,14	3	0,42	0	0	3	0,42	4	0,56	3	0,42	4	0,56	1	0,14	6	0,84
Platform language knowledge on the market	0,11	6	0,66	6	0,66	6	0,66	6	0,66	6	0,66	3	0,33	2	0,11	2	0,22
Programmer's experience	0,14	4	0,56	3	0,42	5	0,7	3	0,42	5	0,7	3	0,42	3	0,14	6	0,84
Number of programmers tried online courses	0,13	5	0,65	1	0,13	4	0,52	4	0,52	3	0,39	4	0,52	2	0,13	4	0,52
Similarity of preferences in programming with platform content	0,1	5	0,5	4	0,4	4	0,4	4	0,4	5	0,5	5	0,5	6	0,1	5	0,5
Total		**4,5**		**3,7**		**3,27**		**3,13**		**3,05**		**2,33**		**1**		**4,25**	

Appendix F.

Proportion of programmers used online courses.

	Global market	Russian	CIS	US	Canada	UK	Australia	North EU	Germanic	Eastern
Self taught	19%	19%	23%	22%	24%	18%	16%	20%	15%	16%
On the job	28%	32%	30%	33%	31%	30%	37%	33%	20%	30%
College	27%	36%	41%	25%	24%	25%	25%	32%	21%	28%
CS degree	17%	26%	29%	17%	15%	16%	18%	18%	13%	20%