Russian employers perception: Do soft-skills matter for the future workforce?

Introduction

One of the important consequences of the industrial revolution was a serious gap in the structure of supply and demand in the employees skills. The gap research was initiated by McKinsey & Co and is presented in The War for Talent (Chambers, et al., 1998), which noted the prospect of a middle-aged talent shortage in the near future. This problem was studied both on the scale of national economies (Black, 1995, Jovanovic, 2006, Bednarek, 2014, Brynjolfsson, McAfee, 2014, NESTA, 2012), and in various industry aspects.

Many researchers are trying to formulate a list of those competencies and skills that will be particularly in demand in the new economy. Some authors include cooperation, communication, digital literacy, social responsibility, problem solving, critical thinking, creativity and productivity (Voogt, Roblin, 2012). Others focus their attention on information technology knowledge to solve cognitive tasks in the workplace; skills not based on technology, as they do not imply the use of a specific software product; skills that support thinking processes and skills associated with cognitive processes that promote continuous learning (Claro et al. 2012) Sometimes authors also include information management, cooperation, communication, creation of content and knowledge, ethics and responsibility, assessment and problem solving, technical skills (Ferrari, 2012).

According to the data presented in the "Future of Jobs Reports", by the World Economic Forum soft-skills are decisive. The top 10 soft-skills were identified by global employers, who drive and form future professions: complex problem solving, critical thinking, creativity, people management, coordinating with others, emotional intelligence, judgment and decision making, service orientation, negotiation, cognitive flexibility[1].

At the same time, the soft-skills research in Russia is at the start of its empirical study and, as a rule, relates to a specific job/industry demand (engineers, doctors, teachers, etc.) Such studies certainly form a picture of the soft skills demand from Russian labor market. However, it is local and limited to an industry or a company. In this regard, it is important to carry out research on the most valued soft-skills from the national economy perspective, rank them and conduct a comparative analysis with the results of "Future of Jobs Reports", World Economic Forum.

This research is important not only for employers, but primarily for educational institutions that influence directly on the required skills development, equip their alumni with necessary skills to develop successful career paths and fulfill employers expectations.

Modern Russian universities are stable pillars of traditional education, which are very slow in market change reaction and internal transformation. The inertia of educational products offered by universities leads to the fact that the formed hard-skills do not always correspond to market requirements, and soft-skills are not at all an object of purposeful development, being only a by-product of the main educational process. Therefore, the target skills and competencies identification is a top priority for bridging the gap between the required and emerging skills and competences of future employees.

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[1] Future of Jobs report, World Economic Forum [Electronic resource]. Access: http://reports.weforum.org/future-of-jobs-2016/skills-stability

The research objective is to identify the most valued soft-skills, which are in demand by employers in Russia and Perm krai as a regional context, and conduct comparative analysis with international findings.

Currently, the following stages have been implemented in the research framework:
- a literature review on the topic;
- 15 in-depth interviews were held to identify the employers patterns which determine the required employees competencies and skills
- Two focus groups (29 employers representatives) were conducted, which were aimed at determining the relevance of the soft-skills development for Russian and regional companies;
- A synonyms list has been created, which Russian employers use for 35 soft-skills naming;
- Data were collected and analyzed from a large Russian HR-portal www.hh.ru (a database with 204 384 adds from Russian companies was gathered with a various soft-skills mention)
- a questionnaire was developed to conduct a survey among the Perm region employers in order to determine regional differences in crucial and most valued soft-skills;
- 15 respondents were piloted to check the questionnaire content validity;
- survey data were collected from Perm region employers (currently more than 350 questionnaires have been collected);
- The received data analysis was carried out.

Literature review

Socio-economic development is always an important objective for any society. The modern changes dynamics, the increasing complexity of the various processes increase the need for development trends analysis and understanding and the validity of management decisions taken both at macro and micro levels. It is important to ensure not only the current balance of stakeholders interest, but also the prospective trends and processes.
The sustainable development is build on this thesis, which oriented to ensure the human well-being of modern and future generations based on the rational use of available resources or capital.
There are different approaches to both definition and understanding of this concept. Typically, researchers focus their attention on any aspect of the main types of capital - economic, environmental, human or social.
Analyzing human capital, researches use education indicators. This characterizes education as one of the key institutions that ensure the sustainable development of society, which allows us to resume the social and professional structure of society.
According to the Strategy of the United Nations Economic Commission for Europe, education for sustainable development focuses on the transition "from the simple transfer of knowledge and skills necessary for existence in modern society to readiness to act and live in rapidly changing conditions, to participate in the planning of social development, to learn to foresee the consequences of the actions ... "[2]. In other words, education, including higher education, should be sharpened in the formation and development of students' skills and competences that can make a person in particular, and society as a whole more successful and sustainable in all aspects of the concept.
The education research in the sustainable development context implies considering not only its contribution to the social system sustainability, but also from the point of view of its own development that meets the requirements of the current and prospective trends.

[2] National education strategy for sustainable development in Russian Federation. [Electronic resource]. Access: http://www.unece.org/fileadmin/DAM/env/esd/Implementation/NAP/RussianFederatio nNS. r. pdf

One of the significant problems in the development of modern higher education is the discrepancy between the skills required and valued by future employers and the range of those skills and competences that are developed by students in the process of obtaining higher education.

The study of this gap was initiated by McKinsey & Co's research "The War for Talent" study (Chambers, et al., 1998). This problem is studied both on the scale of national economies (Black, 1995, Jovanovic, 2006, Bednarek, 2014, Brynjolfsson, McAfee, 2014, STC, 2016, BIS / DCMS, 2016, NESTA, 2012,), in various industry aspects: (Rafferty, 2016), medicine (Enani et al., 2017), in creative companies and fields (Munro, 2017) in professional education (Schlee, Harich, 2010, Wymbs, 2011), specific spatial distribution of required skills (Massey , 1984, TechCity, 2015, Mokhtarian et al., 2004, Richardsona, Bissell, 2017), etc.

Many researches are trying to formulate a list of those competencies that will be particularly in demand in the new economy. These include collaboration, communication, digital literacy, citizenship, problem solving, critical thinking, creativity and productivity (Voogt, Roblin, 2012); the mastery of ICT applications to solve the cognitive tasks at work, skills that are not technology-driven, as they do not refer to the use of any particular software program, continuous learning (Claro et al., 2012), information management, collaboration, communication and sharing, creation of content and knowledge, ethics and responsibility, evaluation and problem solving and technical operations (Ferrari, 2012). It should be noted that a number of scientists focus only on digital competencies, which, according to the researchers, are crucial in the digital economy (Calvani et al., 2012, Van Deursen et al., 2016, Helsper, Eynon, 2013)

Other researchers look at this issue more widely, including a variety of skills valuable for future (Kingsley, Grabner-Hagen, 2015, Anderman et al., 2012, Soule, Warrick, 2015), etc.

As a rule, in the list of competences of the future it can be mentioned:

- problem solving;
- creativity
- communication
- critical thinking;
- collaboration

Thus, most researches see as a priority soft-skills, which can ensure the employees individual success and the enterprise effectiveness in the highly turbulent environment.

Modern researches have come to a consensus on the soft-skills importance for the social and professional success of an individual (Bassi et al., 2017; Deming, 2015; Groh et al., 2015; Guerra et al., 2014; Heckman, Kautz, 2012; Heckman et al., 2006, Pieterse, van Eekelen, 2016). According to their findings, the success of a person in the professional life is 85% dependent on soft-skills and 15% on hard skills.

Employers' interest in soft-skills is constantly growing and has now reached about 93% of employers-drivers. (Chulanova, Ivonina, Davletshina, 2017).

Research methodology and current results

In order to obtain reliable data revealing the essence of the employees soft and hard skills influence on the employers choice, it was decided to conduct a mixed method research of employers' view (Johnson et al., 2007).

Firstly, there is a terminological disconnection in the soft-skills concept definition and the employers ambiguity on required soft-skills. In order to overcome this, focus groups were implied. Secondly, most companies have limited access to information from talent competition perspective and HR-strategy. It determines the need for an additional research method, such as in-depth interviews, conducted with company representatives. Thirdly,

the necessity to obtain information from a large number of respondents scattered across a large territory of Perm krai region and Russia, implies the survey method, open data sourcing and analysis, which helps to gather information from large number of respondents.
In the mixed research, different methods were applied at different stages of the analysis.

At the first stage in-depth interviews were conducted. According to gathered data typical patterns determining the required competencies and skills were revealed from employers view. 15 interviewees took part in the interviews, they were company representatives, who involved in hiring process and formed company view on required employees skills. The interviewees represented the companies, which transform industries, viewed by peers as industry drivers and highly ranked among employees. The analysis of the data obtained from the interviews resulted in a problem-situation analysis of employee skills requirement specifics, the list with required soft-skills and their definitions, as well as established requirements for research respondents sample.
At this stage, two focus groups were also held, in which 29 people took part. These were company representatives, who were key decision makers in hiring process and talent development. The first group included company executives (12 people), and the second group included directors and key employees from human resources department (17 people). The focused interview was aimed at determining the relevance of the soft-skills development in Russian companies. As a result, formal requirements to the human resource management system were defined with regard to the employees soft-skills development.

At the second stage, open data was collected and analyzed from the large Russian human resources platform, where employers post adds on vacancies and prospective employees post their resumes and cover letters (HeadHunter, www.hh.ru). As a result of data parsing with the help of high-level code program Python the information collected on 204 384 adds, which mentioned in their posts required soft-skills. For data parsing, a synonyms dictionary has been compiled. This dictionary was compiled based on the results of in-depth interviews with employers representatives conducted at the first stage of the research. The dictionary included 90 phrases/words used by Russian employers to refer to soft-skills mention. Specifying the word combinations for parsing, the soft-skills information was downloaded from the website. Having carried out a frequency analysis, the following key soft-skills were identified for Russian companies, who mentioned soft-skills in their adds (Table 1)

Table 1. Top-10 soft-skills for Russian companies (data analysis from www.hh.ru)

№	Soft-skill	Frequency (number of adds mentioned)
1	Active learning	74 090
2	Coordinating with others	65 218
3	Negotiation	39 416
4	Training and teaching others	30 921
5	ICT literacy	21 546
6	Service orientation	17 987
7	Oral Expression	17 820
8	Complex problem solving	16 367
9	Equipment operation and control	15 914
10	Time management	15 864

Thus, the key soft-skills mention in adds by Russian companies are: active learning, coordinating with others, negotiation, training and teaching others, ICT literacy, service orientation, oral expression, complex problem solving, equipment operation and control and time management. A full soft-skills list and the number of companies mentioning each skill in the job advertisements is presented in Appendix 1.

At the third stage, there was made an attempt to analyze regional differences in key soft-skills requirements. The analysis was carried out in the Perm krai region.
There are 78 000 companies in the region, including 73 000 are either individual entrepreneurs or micro-enterprises that do not have sophisticated and approved practice in hiring personnel. In this regard, as a research general sample were taken 2 690 large and medium-sized enterprises, which relate to different industries, have a different size, form of ownership and to some extend viewed as industry leaders and benchmark[3]. In determining the sample, the enterprise-drivers served as a guide, which set the tone for other enterprises in many areas, including the human resource management. As in the case of open data analysis across all regions in Russia conducted on previous stage, the Perm krai region data from open source website (www.hh.ru) and frequency analysis revealed the following key soft-skills for leading companies in Perm Krai (Table 2).

Table 2. Top-10 soft-skills for leading Perm krai companies

№	Soft-skills	Frequency (number of adds mentioned)
1	Active learning	1 057
2	Coordinating with others	783
3	Negotiation	634
4	Training and teaching others	450
5	ICT literacy	298
6	Service orientation	258
7	Oral expression	230
8	Time management	223
9	Judgment and decision making	223
10	Complex problem solving	222

The key soft-skills for the leading companies in Perm Krai region are: active learning, coordinating with others, negotiation, training and teaching others, ICT literacy, service orientation, oral expression, time management, judgment and decision-making, complex problem solving. It should be noted that unlike the results for Russian companies, in the Perm krai region "time management" is on the 8th place (for Russian companies – the 10th place), and "judgment and decision-making" is on the 9th place (for Russian companies not included in top-10). Such soft-skills as " problem sensitivity ", "active listening", "manual dexterity and precision", which are mentioned in overall list for Russian companies (Appendix 1) are not relevant at all for the Perm krai region companies. A general list of soft-skills and the number of companies mentioning each skill in the job advertisements by companies operating in the Perm region is presented in Appendix 2.

In the fourth stage of the study, the main method was the survey. The research group developed a questionnaire for employers, which includes a list of 35 competencies with a

[3] [http://www.spark-interfax.ru/ru/statistics/region/57000000000].

description of behavior indicators. Respondents had to choose from the list of 10 most relevant soft-skills and rank them on the 7-point Likert scale. This made it possible to assess the degree of skill importance for the companies studied.

To test the substantive validity of the questionnaire, 15 respondents (executives and HR-directors) were surveyed. Experts assessed compliance in the description and title of skills. Experts were presented with the soft-skills list, their description and behavior indicators. If the title and description fully corresponded to the research terminology, the expert designated it as corresponding to the content of the questionnaire. Thus, the final questionnaire was formed for the further research use.

Based on the results of the pilot questionnaire, the final questionnaire was generated, which was sent to the Perm krai region companies. More than 1000 questionnaires were sent out to 856 companies. As a result, researchers managed to get answers from only 378 companies. Turning to the key descriptive statistics for collected data, it should be noted that at this stage of the research were being analyzed 9 groups of economic industries (the classification is based on Russian classification for industries OKVED-2), that were: industrial (processing and mining), energy, construction and real estate, retail and logistics, food industry and entertainment, IT technology, finance, education, medicine. (Table 3)

Table 3. Descriptive statistics for sample (industry)

Industry	**The value in the sample**
Industry	40
Energy	7
Construction and real estate	22
Retail and logistics	68
Food and entertainment	42
IT-technology	119
Finance	43
Education	33
Medicine	4
Overall	**378**

Another classification was the company separation by the functioning levels: federal, regional, international. The sample included 106 federal companies, 218 regional and 54 international.

The company's size is no less significant group of characteristics that is being investigated, which could influences the soft-skills choice.

The study analyzed large companies, medium, small businesses, micro-companies and start-ups. The companies in the sample were divided into groups according to the average annual number of employees. Basically, there are large and small companies in the sample (Table 4).

Table 4. Descriptive statistics for sample (size)

Company size	**The value in the sample**
Large	114
Medium	54
Small	129
Micro	61
Startup	20
Overall	**378**

After analyzing the descriptive statistics of the sample, a frequency analysis was performed, the purpose of which was to reveal the top soft-skills in the sample.

Table 5. Top-10 soft-skills according to survey (Perm krai companies)

№	Soft-skills
1	Service orientation
2	Time-management
3	Complex problem solving
4	ICT literacy
5	Active learning
6	Oral expression
7	Critical thinking
8	Cognitive flexibility
9	Judgment and decision making
10	Emotional intellegence

Absolute leader in the sample became soft-skill "service orientation". A quarter of companies from the sample noted it as a key one. Moreover, employers note "time management" and "complex problem solving" as one of the most significant skills in hiring new employees. It should also be noted that as a result of survey data, "emotional intelligence" also came into play in the top 10 soft-skills, which was not included in the top 10 soft-skills when analyzing open source data from hh.ru. In general, the results of the survey for Perm companies correlate with the results obtained during the frequency analysis using open source data from HeadHunter website (www.hh.ru).

Limitations

One of the limitations of this study is the specific nature of the study region. This determines the high degree closed company data and access to information, which companies do not willing to disclose.

The second limitation is the unformed or vague understanding of employers regarding the soft-skills naming, definitions, and action indicators.

One more limitation of the research is connected with entrepreneurs and family businesses. In the Perm krai region there are about 73.1 thousand individual entrepreneurs whose activities do not highly involve hiring employees. Nevertheless, in the regional companies, they are listed. Their opinion was not taken into account in this research due to the fact that they are not forming the soft-skills requirements, but mostly following the large companies and are not able to formulate the action indicators they want to observe by the staff.

Conclusion and further research

The obtained results allow us to conclude that, companies value and require significant degree of soft-skills development. Soft-skills were always a case of by-product of main education process, while new realities in labor market require absolutely different approach. This fact brings education institutions and policy makers to the situation when they need not only to think about changing the content of the educational process, but also about the change of forms, methods and mechanisms for the translation of knowledge to students.

Such a reorientation of training will help to increase the level of social activity of the younger generation and the development of a personal responsibility understanding for building a personal career path.

More over, according to findings on top-10 soft-skills there are correlations regardless the context company operates (Perm krai region, Russia or international market). 4 out of 10 top soft-skills were identified as valuable by international, Russia and Perm krai employers, such as: service orientation, complex problem solving, negotiation, coordinating with others.

Additionally, active learning, time-management, ICT literacy, oral expression are equally required and included in top-10 soft skills by Perm krai companies and companies that operate in other Russian regions.

It is interesting to note, that judgment and decision making, critical thinking, emotional intelligence, cognitive flexibility are important for Perm krai companies and international employers (according to research made by World Economic Forum), while these soft-skills aren't appear in top-10 for other regions in Russia.

These findings could give education institutions guidelines on most relevant and valued employees soft-skills. It could help to redesign programs, education process and curriculum in order to fulfill employers requirements for future workforce. Futhermore, the results could be used by regional and national economy policy makers in labor market legislation and talent acquisition initiatives.

The considered aspect of the relationship between university education and sustainable development (bridging the gap between the labor market needs and the skills range that are formed by students in the process of obtaining higher education) does not exhaust all existing relationships of these phenomena, but reflect the important direction of managerial efforts concentration.

Futher research will be based on the collected database, determining key soft-skills by industries, company size and other characteristics, that could influence employers choice.

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Appendix 1

Overall list of soft-skills, mentioned in job adds (source: www.hh.ru)

№	Soft-skills	Frequency (number of adds mentioned)
1	Active learning	74090
2	Coordinating with others	65218
3	Negotiation	39416
4	Training and teaching others	30921
5	ICT literacy	21546
6	Service orientation	17987
7	Oral expression	17820
8	Complex problem solving	16367
9	Equipment operation and control	15914
10	Time management	15864
11	Judgment and decision making	13690
12	Quality control	12559
13	Creativity	9245
14	Systems analysis	8551
15	Programming	8104
16	Logical reasoning	3543
17	Persuasion	3184
18	Management of financial resources	2778
19	People management	2588
20	Written expression	2033
21	Visualization	1982
22	Equipment maintance and repair	945
23	Critical thinking	882
24	Reading comprehension	801
25	Management of material resouces	690
26	Physical strength	427
27	Troubleshooting	417
28	Mathematical reasoning	371
29	Cognitive flexibility	316
30	Technology and user experience design	145
31	Emotional intellegence	142
32	Monitoring self and others	39
33	Active listening	35
34	Manual dexterity and precision	15
35	Problem sensitivity	5

Appendix 2

Overall list of soft-skills, mentioned in job adds for Perm krai (source: www.hh.ru)

№	Soft-skills	Frequency (number of adds mentioned)
1	Active learning	1057
2	Coordinating with others	783
3	Negotiation	634
4	Training and teaching others	450
5	ICT literacy	298
6	Service orientation	258
7	Oral expression	230
8	Time management	223
9	Judgment and decision making	223
10	Complex problem solving	222
11	Equipment maintenance and repair	209
12	Quality control	127
13	Systems analysis	125
14	Programming	123
15	Creativity	99
16	Logical reasoning	48
17	Persuation	47
18	Management of financial resources	34
19	Written expression	32
20	People management	32
21	Visualization	27
22	Management of material resources	20
23	Equipment operation and control	18
24	Reading comprehension	17
25	Troubleshooting	8
26	Critical thinking	7
27	Mathematical reasoning	5
28	Physical strength	4
29	Monitoring self and others	2
30	Cognitive flexibility	1
31	Emotional intellegence	1
32	Technology and user experience design	1
33	Problem sensitivity	0
34	Active listening	0
35	Manual dexterity and precision	0