

STUDY OF COMPETENCES IN BPO AND ITO IN KRAKÓW

FINAL REPORT ON THE CONDUCTED RESEARCH

Report prepared on the commission of the Kraków City Hall by Centre for Evaluation and Analysis of
Public Policies Interdisciplinary Centre for Organizational Research and Development

Jagiellonian University

Kraków, September 2012

Table of contents

Introduction and acknowledgements	4
Research team.....	6
About the project.....	8
The premises behind the study of competences	10
Introduction to competences.....	10
Definition of competence and other qualities.....	10
Introduction to educational results	11
Methodology	13
BPO/SSC and ITO/IT in Kraków.....	16
Basic terms	16
BPO/SSC AND ITO/IT IN KRAKÓW.....	17
Growing recognizability.....	18
Poland and Kraków compared with other centres.....	18
BPO/SSC and ITO/IT in the context of the objectives and strategies of Kraków.....	19
Why Kraków?	19
What does the future hold?.....	22
Summary	24
Kraków's universities in the context of the objectives and strategies of the city	24
The demand of the BPO/SSC and ITO/IT sector for competences.....	27
Demand for competences in quantitative view.....	27
Competences that are important and difficult to obtain – BPO/SSC.....	29
Competences that are important and difficult to obtain – ITO/IT	32
Competences of the future – what will employers look for?	35
BPO/SSC.....	35
ITO/IT	36
Summary	37
List of competences (description and dictionary).....	37
Dictionary of competences common for BPO/SSC and ITO/IT	39
Dictionary of competences specific to BPO/SSC.....	45
Dictionary of competences specific to ITO/IT	45
Foreign languages.....	49
Demand for competences in qualitative view	51

Recruitment and selection	51
Employee development	52
Strengths of students and graduates	52
Weaknesses of students and graduates	53
Summary	54
Educational results essential for BPO/SSC and ITO/IT	54
Educational results in quantitative view	58
Achieving the assumed educational results.....	61
Educational results in qualitative view	67
COOPERATION WITH THE BUSINESS.....	69
Foreign languages.....	70
Obstacles in adapting curricula to the needs of the labour market.....	70
Summary	71
Competence study – SUPPLY/DEMAND	71
Summary	78
Appendix 1. Competence demand questionnaire ITO/IT	80
Appendix 2. Competence demand questionnaire BPO/SSC.....	85
Appendix 3. Supply questionnaire for Kraków-based universities	89

Introduction and acknowledgements

This report is the final report on the research dedicated to the balance of competences in BPO/SSC and ITO/IT in Kraków. It is our pleasure to present here the conclusions concerning the demand for particular competences shown by Kraków-based BPO/SSC and ITO/IT companies as well as the supply of such competences by the Kraków's universities. The purpose of the whole project is answering a few fundamental questions, i.e. which competences and at what level are sought by BPO/SSC and ITO/IT employees among the graduates and senior students of Kraków's universities, and to what extent these competences can be found on the labour market at the moment as well as how the situation will change within the next few years. The second group of questions concerns universities and the extent to which the expectations of businesses can find understanding and reflection in the educational offer, as well as what are the strengths of Kraków's universities and what are their weaknesses.

The conclusions presented in this report were formed based on the extensive structured interviews and questionnaires conducted among the HR managers of the major BPO/SSC and ITO/IT companies based in Kraków and among the directors of the basic scientific units as well as persons responsible for language teaching in language colleges at universities. The subject of the research also concerned recruitment offers, dictionaries of competences and other documents delivered by the companies, as well as curricula of fields of study that are essential from the viewpoint of BPO/SSC and ITO/IT companies. For the purposes of obtaining additional information, we interviewed managers and team leaders, whose daily work comprises of introducing new employees to their duties and have an extensive supported experience as regards the challenges connected with competences of the candidates.

The Project was commissioned by the Kraków City Hall in cooperation with Centre for Evaluation and Analysis of Public Policies and Interdisciplinary Centre for Organizational Research and Development at the Institute of Psychology of the Jagiellonian University. It would not be possible to conduct the project, had it not been for the kindness and professional assistance of the representatives of the Kraków City Hall, business, and Kraków's universities. Here we would like to extend our thanks to:

Business representatives: Alexander Mann Solutions, Aon Hewitt, ArcelorMittal SSC, Capgemini, Capita (Poland) Sp. z o.o., Cisco Systems Poland, EDF Polska CUW, EPAM Systems Poland, Google, Hitachi Data Systems, HSBC, Motorola Solutions, IBM BTO, International Paper Company, Lumesse, Shell BSC, Sii and State Street Services Poland;

Representatives of universities: University of Science and Technology, University School of Physical Education in Kraków, Andrzej Frycz Modrzewski Kraków University, Kraków University of Technology, Kraków University of Economics, Jagiellonian University, Pedagogical University of Kraków, University of Agriculture in Kraków and Language Colleges.

We would like to extend our most heartily gratitude to ASPIRE Association, bringing together several dozen companies from the industry we are interested in, for the support, materials and assistance in conducting the questionnaires. We would also like to extend our gratitude to 5 companies, whose representatives spent some time on consulting on the demand questionnaire – the tool to diagnose the expectations of companies and which agreed to share their thoughts about the labour market and its development perspectives in the future. Moreover, we would like to thank all the companies, which take part in the quantitative research and completed the prepared research instrument.

We have made an attempt to formulate this report in such a way, so that it would constitute a bridge and communication medium between the representatives of business, universities and local authorities – we translated the business competence language into the language of education results, which is much more familiar to universities. We hope that the results of our work and the application potential of this report will allow both business and the universities as well as local authorities to initiate and direct systemic actions. The general kind acceptance of our research and the expressed interest in its results by the

majority of participants leads us to believe that thanks to the involvement of public authorities, changes and development of cooperation between science and business is possible.

Research team

Leading experts:

Małgorzata Kossowska – prof. dr hab., deputy dean for educational issues at the Faculty of Philosophy of the Jagiellonian University, the director of the Social Psychology Unit, the president of the Polish Society of Social Psychology, the President of the Management of the Interdisciplinary Centre for Organizational Research and Development at the Institute of Psychology of the Jagiellonian University (ICBRO). She conducts research connected with issues such as: individual differences, political approaches and beliefs, conditions for political beliefs, cognitive rigidity. Holder of multiple prestigious prizes and distinctions. Author of numerous books and articles.

Jarosław Górniak – dr hab., professor of the Jagiellonian University, dean of the Faculty of Philosophy of the Jagiellonian University, the director of Centre for Evaluation and Analysis of Public Policies, director of Department of the Sociology of Economy, Education and Research Methods at Institute of Sociology of the Jagiellonian University. A sociologist and an economist, an expert in social research methods and data analysis, evaluation methodology and analysis of public policies as well as the sociology of economy and organisation. Scientific patron of the systemic research project “Study of Human Capital in Poland” (BKL) and previously – director of multiple research projects and author of studies on the labour market and public policies. A member of the Consulting Council at the Presidium of Kraków.

Team Members:

Piotr Prokopowicz – holder of PhD title in liberal arts and sciences, graduate of sociology and psychology at the Jagiellonian University. Assistant of deputy dean for development at the Jagiellonian University, associate researcher at the Center for Evaluation and Analysis of Public Policies at the Jagiellonian University. Co-worker and lecturer at Cologne Business School and Jagiellonian University, Visiting Fellow at Saint Mary's University in Halifax. Specialist in organisation of research and data analysis. When working as a consultant for Great Place to Work Institute Europe in Copenhagen, he took part in preparing the list of 100 best employers in Europe and South America. Author and editor of many studies, books and articles about sociology and psychology of management.

Grzegorz Żmuda – psychologist and sociologist, Managing director, ICBRO, manager of a specialization path in organisational psychology at the Institute of Psychology of the Jagiellonian University. He specializes in psychology of management and organisation, in particular in psychological organisational diagnostics, participatory management and psychology of personnel. He is also working on creating innovative tools for organisational development. He is working on his PhD thesis concerning the preferences of management styles among the young entrepreneurs, he is the author of multiple publications and presentations about organisational psychology.

Diana Malinowska – holder of a PhD title in liberal arts and sciences, a psychologist, she graduated from psychology at the Jagiellonian University, where she defended her PhD thesis concerning motivating workaholic determinants. She also studied at Katholieke Universiteit Leuven in Belgium and at Valencia University in Spain. She is working for the Polish Foundation for Management Research as a consultant and coach. She is a co-creator of tools used in diagnosing employees and conducts trainings on tests in organisation for HR departments. Her scientific interests concern the psychology of work and organisation. A member of European Association of Work and Organisational Psychology. Author of multiple scientific and general articles about psychology of work and organisation.

Joanna Pyrkoś – a psychologist, managing director, ICBRO, manager of a specialization path in organisational psychology at the Institute of Psychology of the Jagiellonian University. She specializes in psychology of management and organisation, in particular in psychology of entrepreneurship and project management. Author and coordinator of many development projects for the University, with the support

of the European Funds. She is working on her PhD thesis concerning the impact of motivation factors of young entrepreneurs on their professional success. She holds a British certificate NVQ 3 issued to vocational counsellors.

Katarzyna Jaśko – holder of a PhD title in liberal arts and sciences, a psychologist. She specializes in social and political psychology. She is working on the conditionality of beliefs about justice, in particular in the context of inter-group relations. She is also interested in psychology of purposes and motivation as well as in creativity. Author of multiple articles about motivation through compensation.

Marianna Król – a psychologist. A PhD student at Social Psychology Unit of the Institute of Psychology at the Jagiellonian University. As a coach and a trainer she specializes in holding development programmes for companies and organisations, which include trainings in soft skills necessary for effective acting in a complex business environment and individual coaching sessions focused on increasing efficiency and motivation among the employees.

Bartłomiej Baryła – a sociologist. He specializes in social psychology and behavioural economics, paying particular attention to the areas at the junction of psychology, sociology and economics. A scholarship holder of Central European University in Hungary and Antioch College in USA.

About the project

Adapting the educational offer to the needs of the labour market is becoming more and more important issue, both for business as well as for the universities. More and more educational institutions are intensifying their actions in order to analyse the lives of graduates – where they work, how long it took them to find a job, which competences obtained during their studies were useful, and which were not. However, such initiatives are rarely systemic; they rarely cover various groups of stakeholders. Moreover, employers start to express their expectations and needs more and more clearly¹ about competences they seek among graduates and senior students the most. However, even very clearly stated needs of business face a very serious obstacle in the communication with the universities: a communications barrier. This barrier comprises of various languages and various terms used to describe human resources by enterprises and universities. On one hand, we have the business language of dictionaries of competences and skills – often very eclectic and understandable only within a given organisational structure, while on the other hand – qualification framework, curricula and teaching plans, which are not understood by the representatives of business world. The works conducted under the project Study of Competences in BPO/SSC and ITO/IT in Kraków commissioned by Kraków Town Hall intend to overcome this barrier thanks to unifying the description of needs of BPO/SSC and ITO/IT companies, which are some of the major employers in the region, and then to translate their language into the language of educational results, which is understandable and more familiar to universities.

for this very purpose, in the first stage of the project, we asked about expectations of business institutions, which we are now presenting in the form of a universal dictionary of competences sought by BPO/SSC and ITO/IT companies in Kraków. To make it possible, our research team analysed selected dictionaries of competences, recruitment announcements and other materials provided by the companies we worked with. Based on these materials, as well as on the best standards of *Society for Industrial and Organisational Psychology*², we have created a preliminary model of demand for particular competences. This model was later subjected to extensive consultations with HR representatives and managers, who are working with newly recruited employees on a daily basis. As a result of these actions, we have come up with a final model presenting the demand for competences and a tool for analysing the demand for particular competences, knowledge, skills and abilities, which are of key significance for Kraków-based BPO/SSC and ITO/IT companies. This tool was completed in its on-line edition by 16 Kraków-based companies, offering us a good look into what the industry needs and what the situation will look like within the next 5 years.

The second stage of the project included collecting information from the representatives of several dozen fields of study at Kraków's universities. The information concerns the extent, to which the educational expectations of BPO/SSC and ITO/IT companies are met and where the obstacles preventing the universities from adapting their educational offer to the requirements of the labour market lie.

In order to make this happen, the research team, having analysed the demand for competences, translated it into the language of educational results, which is more familiar to universities. We have exercised every effort so that we could present the educational results, which would be simple, understandable, and – which is just as important – measurable, without losing the essence of these competences. Having consulted the tool – “Supply questionnaire” –, we have submitted it to the directors of basic units at the Kraków's universities. Moreover, we have conducted a series of interviews with the representatives of key fields of study and foreign language colleges in order to obtain more detailed information and to verify basic barriers in potential changes to curricula.

¹ Study of Human Capital in Poland (BKL) - www.bkl.parp.gov.pl

² www.siop.org

The whole research process enabled us to prepare a universal model presenting the demand for competences in the BPO/SSC and ITO/IT industries. It turned out that what various companies call cooperation, teamwork or working in a group – is actually one and the same expectation, which may be described using one term. Translating expectations into educational results allowed us to see, which competences are the strengths, and which are the weaknesses of Kraków's universities. Based on the collected information, we have created a database of obstacles and problems, which must be tackled on a daily basis by both the representatives of business and universities. In this report, we would like to present recommendations, which – in our opinion – should help to overcome them.

It is obvious that this report is not a remedy for all challenges that appear at the junction of science and business, but we believe it is a very good tool for commencing the process of changes – both in the companies and in the universities. We are far from supporting the common belief that it is the universities that have to adapt to the labour market. In our opinion they may, and even should, shape it in a certain way. We believe that on one hand the educational offer of universities should satisfy the demands of the employers (it is clear now that in order to achieve it, modifications must be made not only to curricula, but also to the methods and techniques of teaching), while on the other hand educational offer should go way into the future and ensuring personnel, which will attract the higher-level processes to Kraków (the so-called Knowledge Process Outsourcing - KPO). Therefore, next to the companies already present in Kraków, it would be helpful to extend the research to their KPO departments in other countries and to analyse the competences taught by the universities in those countries.

We would like to ensure that, having read this report, we will be able to open a discussion on which competences expected most often by the biggest employers are delivered within the fields of study and majors taught, and where are the shortages. It is always vital to determine to what extent it is possible to meet often very specific requirements of business representatives as well as to what extent the adaptation of curricula to the requirements of the labour market, so often emphasized, is a desired value. In connection with the growing significance of outsourcing centres sector as employers and career-making place for students and graduates of Kraków's universities, we believe this discussion is very important.

The premises behind the study of competences

Introduction to competences

The term “competence” is undoubtedly connected with a wide range of ambiguities both among the HR practitioners and theoreticians. Surely it is partially due to the origin of this word, which was also used in law, clinic psychology and vocational counselling. However, while it was in 1973 when David McClelland suggested, in his famous article, that intelligence testing should be replaced with competence testing, the term became more widely used in organisational context and other use at the end of the 1980s, at the beginning describing the reality at the level of a company, not a person (Hamel and Prahalad, 1989). It referred to key competences of a company (so-called core competencies), which would help these organisations to obtain a competitive advantage. Another transition in the use of the term “competence”, from describing organisations to describing people, resulted in the fact that there are many competitive definitions of this term. Let us list a few sample definitions used by both practitioners and theoreticians in the personnel of psychology (see Shippman, 2000):

- a combination of knowledge, skills and motivation
- competences do not vary significantly from the traditional KSAOs (knowledge, skills, abilities and others)
- knowledge, skills, abilities and other qualities connected with high level of performance at the given position (Mirable, 1997)
- written description of the work habits and skills used to achieve working targets (Green, 1999)

Problems with understanding the term are emphasized i.e. by the research conducted for two years by a working group acting for *Society for Industrial and Organizational Psychology* (Shippman, 2000). These tests showed that even among uniform groups of experts there is no agreement as to what competence is.

The practice shows that there is a terminological confusion in the Polish companies, too. The proof of that may be the materials received by us, containing the descriptions of competences used in BPO/SSC and ITO/IT companies. The lists containing the names of competences and their understanding often listed skills, features or even abilities (e.g. intellectual independence, passion for business, perseverance, positive thinking) without referring to complex behaviour patterns connected with them. One of our basic objectives was to create a universal selection of competences, which would ensure **credibility, accuracy and comparability** of measuring the demand for competences taken in various BPO/SSC and ITO/IT companies.

Definition of competence and other qualities

We have taken our understanding of the term “competence” from the tradition of the competence description from the United States, whose theoretical foundations go back to behavioural psychology³. One of the key representatives of such approach is Robert Flanagan, the creator of the key method used in the competence research – the critical incident technique (Critical

Incident Technique). The main result of this method is the description of behaviours contributing to a failure or a success that took place during the realization of obligations in a significant number of important events at the given position⁴. This approach emphasizes the fact that competence is a behavioural category, differentiated due to low or high level, and constitutes the basis for efficient execution of tasks at work.

³ Rothwell, W. J., & Lindholm, J. E. (1999). Competency identification, modelling and assessment in the USA. *International Journal of Training and Development*, 3 (2), 90-105.

⁴ Flanagan, J.C. (1954), "The critical incident technique", *Psychological Bulletin*, Vol. 51 No. 4, pp. 327 -58.

In this project, we define competence as “a set of behaviours belonging to a common category, enabling effective realization of the purposes in an organisation and the tasks at the given position, determined by various psychological factors.”

In this understanding, competences constitute sets of behaviours connected with characteristics expected at the given position. The following list includes the categories of factors, identified in the demand analysis:

- **Knowledge** – information acquired during learning process (e.g. the basics of economics)
- **Skills** – acquired learnt actions within a given area (e.g. operation of MS Office, a foreign language, but also social skills – important from the viewpoint of a workplace)
- **Abilities** – inborn predispositions within a given area (e.g. learning, analytic abilities)
- **Other** – the qualities that cannot be attributed to the aforementioned categories (e.g. PRINCE certificate)

While the distinction into knowledge, skills, abilities and others allowed us to create an extensive list of expectations of the BPO/SSC and ITO/IT industries from the candidates on the Kraków's labour market, in this study, the term “competence” will be used collectively to their behavioural manifestations – this is compliant with both the Polish research tradition and the commonly accepted international convention.

Introduction to educational results

Almost all studies concerning the National Qualification Framework (KRK) and Educational Results at the very beginning note that the changes arising from the so-called Bologna Process that commenced over 10 years ago are both an opportunity and a very difficult challenge for universities. The changes under implementation surely constitute an opportunity, due to an increased autonomy of universities in preparing their curricula, but on the other hand they are connected with immense efforts consisting in proper preparation of both the assumed educational results, which would be compliant with the binding provisions of law, as well as with the ways they are achieved and assessed/verified.

In this introduction we will not focus on detailed description of the KRK system⁵, we will only present the necessary definitions and comments, which will allow the reader to understand the test results presented here better.

What we mean here by the National Qualification Framework for universities is a certain type of **description of qualifications obtained by graduates of particular field of studies**. In accordance with the findings of the “Bologna experts”, this description should be formed in the language of educational results – that is in the language of requirements a student should meet after completing a certain level of education⁶. The essence of the educational results, according to Kraśniewski (2012), comes down to a statement (...) **what the student should know, understand and be able to do after completing a certain period (process) of education**. A period of education may be both a single lecture, academic course or the whole curriculum in the given fields of study. The experts also put emphasis on the fact that the educational result means not what the student was taught, but what he has learnt. This tiny semantic difference has very serious practical implications – it means that **the curriculum is just as important as the teaching methods used to achieve particular educational results (also called learning results)**.

⁵ An extensive description of this system is included in the publication by A. Kraśniewski (2011). *Jak przygotować programy kształcenia zgodnie z wymaganiami Krajowych Ram Kwalifikacji dla Szkolnictwa Wyższego. [How to prepare curricula in compliance with the requirements of the National Qualification Framework for Universities.]* Warsaw: MNiSW and in a study, ed. E. Chmielecka (2010). *Autonomia programowa uczelni. Ramy kwalifikacji dla szkolnictwa wyższego. [Curriculum autonomy of universities. Qualification framework for universities.]* Warsaw: MNiSW.

⁶ Based on: A. Kraśniewski (2011). *Jak przygotować programy kształcenia zgodnie z wymaganiami Krajowych Ram Kwalifikacji dla Szkolnictwa Wyższego. [How to prepare curricula in compliance with the requirements of the National Qualification Framework for Universities.]* Warsaw: MNiSW; E. Chmielecka (ed.) (2010). *Autonomia programowa uczelni. Ramy kwalifikacji dla szkolnictwa wyższego. [Curriculum autonomy of universities. Qualification framework for universities.]* Warsaw: MNiSW.

In the context of this report it is fundamentally important in that a large portion of the educational results determined based on the expectations of businesses may be achieved through modifying teaching methods, without the need to modify the contents itself.

In Poland, we usually divide the results of education into three categories: **knowledge, skills and social competences**. It is vital to mention that these categories are not always separable. Considering the educational result, which – from the viewpoint of the employer – should translate into certain behaviour, it will almost always be so that the components of the skills presented must contain particular knowledge. In this report we did not decide to divide particular expectations into given categories, we would only like to note that their majority belongs to the category of skills and social skills.

Descriptions of educational results also vary as regards the level of detail and the topic they refer to⁷. The most general of them are universal and may be used to describe educational results at all levels (general, vocational, higher education). The second level of generality refers to each of the selected education levels, and even though it may be applied to other levels, it lacks the universal features. The least general level covers those descriptions of educational results, which are prepared for particular areas – e.g. in the case of higher education, these are: liberal arts and sciences, life sciences, technology, medical sciences, agricultural, forest, veterinary sciences, arts, social sciences and science (for which the “model” educational results were prepared)⁸. Moreover, it is adopted that the educational results should also take into consideration the increase in the knowledge, skills and/or social skills in time, therefore the differences between the studies at levels I, II and III are justified.

The educational results prepared and implemented by universities must conform to a range of formal requirements described in the Resolution on the conditions of studies, described in detail by the already quoted here A. Kraśniewski. These requirements include: cohesion, necessity to express yourself in the categories of knowledge, skills and considering the requirements for the given field of study. On the other hand, the same resolution indicates that defining the educational results should also consider the results of analysis **of compliance the assumed educational results with the needs of the labour market**. Thus, our main objective is to deliver this knowledge, which would make it possible and easier for the universities to adapt the curricula to the clearly expressed expectations of employers. Such adaptation should always consider additional conditions (also described in the relevant resolution), i.e. the connection between the assumed results and the defined mission and development strategy of the university. Therefore one cannot treat the educational results presented in this report as a final and complete list – quite the contrary. If we are to implement changes arising from the Bologna Process, the assumed educational results should always be the effect of interactions between many factors, both internal and environmental.

The description of the educational results may be formulated using two approaches:

“The first one is descriptive, for example phrases such as: “<<student has knowledge within...>>, <<student knows and understands...>>, <<student has the skill ...>>” . Such wording allows to determine the programme contents that correspond to educational results, yet it does not indicate the level of knowledge to be studied or the extent, to which the given skill was learnt. An alternative approach is based on using verbs describing certain activities (actions) performed by the students, realized in the course of the education – the so-called action verbs. (...) Using relevant verbs indicates the way the student should show that he achieved the given educational result. As regards defining the effects in factual knowledge (memorized only), a proper phrase might be <<student is able to list...>>. If understanding is required, a proper phrase might be <<student is able to explain...>>. When phrased in such a way, that is through using action verbs, the educational results allow us to easily direct the form

⁷ Institute for Educational Research: Establishment of the National Qualification System I

⁸ A resolution issued by the Minister of Science and Higher Education of 02/11/2011 on the National Qualification Framework for Higher Education.

and methods of conducting the classes towards achieving these results. Such a description is also beneficial for the student, as he can clearly see what will be required of him in the assessment process”⁹.

As far as it was possible, we have made an attempt to phrase educational results in accordance with the second of these approaches – apart from the already listed benefits, it is also similar to the way competences are described in the business context.

A condition for obtaining a diploma confirming certain qualifications in this new system is proving that each of the assumed educational results was achieved by the student. On one hand it requires constant monitoring and verification of the assumed educational results, while on the other – it poses a risk of determining the educational results at a too ambitious level, which may in turn be difficult to achieve. **Therefore we have decided to prepare a catalogue of the educational results expected by the business, which will be pretty general, but it will still reflect the preferences of the employers.** Such phrasing of the educational results should also make it easier for the given universities to adapt them to the context of their own activity and to the local conditions. Similarly, the authors of model educational results for particular areas put a lot of emphasis on the universities and fields of study so that they would not copy the solutions, but would instead determine their own educational results, emphasized their own solutions and underlined the features that distinguish them from among other studies bearing the same name, just as the educational results important from the viewpoint of the employers presented in this Study of competences should be adapted to the capabilities of particular universities. We count on the fact that our proposals will allow Kraków's universities to modify and improve their own educational results, so that they would fully make use of the opportunities lying behind the changes arising from the Bologna Process.

A large part of the educational results prepared by our team cannot (and should not) replace in any way the main contents of education (both in terms of area and direction). However, they constitute a very good base of expected skills, which may give this knowledge the opportunity to be used in practice. In other words, those fields of study that have already implemented or decide to implement a large part of the educational results expected by the business, may use the word “applied” in their name. We may even risk to say that graduates of these fields of study will have a much easier start in life as regards “employment potential” and development of their professional careers, regardless of the industry they decide to work in. We also hope that the presented educational results will constitute support for the universities in the process of setting out the desired educational results in the group of skills and social skills of their graduates, which is important here, as the discussions about KRRK very often focus on doubts as to the credibility of the prepared results in the discussed group. Thanks to the Study of Competences project, the universities receive a set of educational results that are worth teaching confirmed by research.

Methodology

In order to create the study of competences in BPO/SSC and ITO/IT, we have conducted tests at 18 Kraków-based outsourcing companies in total, and among 215 fields of study/majors, whose representatives completed the demand questionnaire.

The research dedicated to demand for competences covered four main stages:

1. **Preliminary activities**, which covered a preparation of a preliminary version of the main research tool (“Demand questionnaire”) through analysing the materials provided by ITO/IT and BPO/SSC representatives;

⁹ A. Kraśniewski, op cit. pp. 52-53.

2. **Structured interviews** with selected representatives of HR departments, allowing us to see into the experiences of the industry connected with recruitment, selection and development of employees, to assess and to complement the “Demand questionnaire” with the suggestions given by HR specialists;
3. **Structured interviews** with managers at BPO/SSC and ITO/IT companies, which allowed us to understand how– in their daily work – the strengths and weaknesses of employees in the competences they have are visible at most popular positions;
4. **Questionnaire test on-line** together with the HR representatives, using the “Demand questionnaire” tool, allowing us to collect the quantitative data on the current and projected needs of the market as regards the key competences of graduates of Kraków's universities.

While the structured interviews intended to obtain the qualitative view of the operating characteristics at the local BPO/SSC and ITO/IT companies, the main tool used to collect quantitative data on the projected demand for particular positions and competences required was the “Demand questionnaire” prepared for this project. Representatives of companies responsible for employment strategies in their organisations (mostly HR directors) were asked to provide information about:

1. **Identification of names of positions**, for which the BPO/SSC and ITO/IT companies conduct and will be conducting recruitment among the graduates of Kraków's universities;
2. **Predicted number of new employees**, which will be employed at the listed positions in 2013 and 2018, corrected by the turnover indicator;
3. **Stating the extent, to which the particular competences are required at the listed positions** (scale from 1 to 5, competences created based on the documents received from BPO/SSC and ITO/IT companies and consultations with HR specialists from the organisations, which took part in the research; the representatives could complement the list of competences with their own suggestions);
4. **Assessing the importance of particular competences for the company and the difficulty to obtain** particular competences and other qualities on the market.

The aforementioned data, analysed at the level of positions and complemented by the analysis of documents and structured interviews allowed us to obtain comprehensive knowledge within the demand for competences in BPO/SSC and ITO/IT industries in Kraków, which constituted the basis for the analysis presented in this report.

The works intended to complement the Study of Competences with the section about supplying the educational results comprised of four main stages:

1. **Preliminary activities**, which covered preparation of the expected educational result and of the tool to test the supply of competences (“Supply questionnaire”);
2. **Questionnaire on-line** among university representatives responsible for the curricula, using the tool “Supply questionnaire”. This stage allowed us to collect quantitative data about the currently realized educational results and projections as to the number of graduates in the future.
3. **Structured interviews** with the representatives of the selected fields of study at the universities and language colleges responsible for foreign language teaching;
4. **Qualitative analysis of curricula** at selected fields of study, which allowed us to verify the information obtained earlier and to complement the data about key fields of study, whose representatives did not decide to take part in the questionnaire.

Thanks to the structured interviews, we have obtained information about the extent, to which particular educational results are realized and to which it is possible to modify the contents and the methods of teaching in order to adapt the results to the expectations of the employers. We have also analysed a wide range of doubts and comments concerning the implementation barriers and the purpose of changes. University representatives, when completing the “Supply questionnaire”, were asked to provide information on:

1. **Identifying the names of fields of study, profiles and majors** conducted within the given field of study;
2. **Predicted number of graduates**, who will graduate from particular specializations in 2013 and in 2018;
3. **Determining the extent, to which the particular educational results are achieved at each of the indicated specializations** (scale from 1 to 5, educational results were formed based on the expectations of BPO/SSC and ITO/IT companies);

BPO/SSC and ITO/IT in Kraków

Outsourcing is one of the strongest factors shaping the modern capitalism. The continuous looking for savings, using the effect of scale and technological breakthroughs allowed many companies to give life to the saying of Henry Ford: "If there is something we can't do more efficiently, cheaper and better than our competition, there is no sense in doing it and we should employ someone to do the better work for us."

On one hand, outsourcing is an element that evens out the level of life between the developed and developing countries, but on the other hand it may lead to fragmentation of processes (and thus – work). Both these factors may be noticed, taking Kraków as an example. In the recent years, Kraków became one of the major locations, where western corporations located their shared services centres. When Kraków started to be recognizable as the best outsourcing location, even companies from India started to open their centres there. Contrary to the common belief, outsourcing does not concern only the simplest and most work-consuming processes. The structure of outsourcing keeps changing: complex processes start to play a more and more important role. Processes such as animations for films, tv programmes and games are just as willingly outsourced as business analyses, call centres, financing and accounting, HR, legal departments, testing products and services. Providing a comprehensive list of processes that are commonly outsourced would take up a few pages. Apart from the ones already listed, it would include: complaint processing, seeking and analysing suppliers, change management, market research. There is also a growing market for outsourcing of medical services and analyses.

The major¹⁰ factors supporting the idea of creating shared services centres are: standardisation, automation, setting out procedures within the whole organisation and easier adaptation to their legal requirements, reducing costs and increasing the quality of service. The estimated value of the whole BPO/SSC and ITO/IT industry reached 310 billion dollars (USD) in 2008. In 2011 the expenses of companies connected with BPO/SSC or ITO/IT reached 732 billion dollars (USD). Definite majority of this market is located in South-East Asia. Europe takes up only 10%. In India, over 2.5 million people work in these sectors¹¹.

Basic terms

In this report, the analysis concerns the BPO industry (including SSC) and ITO (including IT) in Kraków. In order to avoid misunderstandings, we would like to present a few definitions we use in our analysis.

Shared Services Centre (SSC) are cost-generating departments separated from the organisation and grouped together, e.g. accounting, HR, IT, purchases department. Shared Services Centre remains within the capital group of the company and it does not have to be relocated to another country. It provides services only to its parent company and its clients.

Business Process Outsourcing (BPO) means commissioning certain processes (most often connected with administration and back office, that is accounting, HR, IT (ITO) and customer service at the front office, that is customer service and complaints) to external companies in order to obtain additional savings. It is one of the most dynamic sectors of global economy. This process illustrates the increase of mutual dependencies on the goods and services markets.

Knowledge Process Outsourcing (KPO), means commissioning such areas as research on new products, market studies, research and development, legal interpretations, laboratory work, risk management, analysis and data processing. KPO is usually applied by large banks, pharmaceutical companies, film studios (animation), counselling and consulting companies.

¹⁰ Suska, M., Zitzen, C., & Enders, W. (2011). Shared service centres - "the 2nd Generation."

¹¹ Kaczmarek, M. (2011). Association of Business Service Leaders in Poland: information on the business service sector. Obtained from <http://www.outsourcing.edu.pl/pl/article/details/type/raport/id/179>

Offshoring means outsourcing to distant countries. At the beginning, offshoring concerned mostly IT processes, but along with the development of telecommunications, in particular Internet, many business processes started to be outsourced. It brings on additional problems (cultural differences and time zones), but also benefits (the processes may be conducted during the night, that is the work on the data may take place without any interruptions 24 hours a day).

Nearshoring means outsourcing to geographically near countries (for USA – to Central America, for Western Europe – Central and Eastern Europe). Geographic proximity is connected with easier contacts face to face, which facilitates cooperation and increases its quality. It is also connected with cultural and linguistic proximity, which brings on less tension, if outsourcing concerns Business to Client (B2C).

BPO/SSC AND ITO/IT IN KRAKÓW

At the beginning, Kraków – as a localisation – specialized in IT (technical operation of databases, managing changes to ERP systems), accounting (in particular as regards to receivables and obligations, general ledger and managing databases) and HR (calculating remuneration and bonuses, managing the employee databases), but we may also notice the beginnings of knowledge management and B2C processes.

Outsourcing in Kraków goes back to the end of the 1990s, when it appeared along with PwC Consulting and Ernst&Young Consulting, that is the first global-scale and renown companies offering such solutions in Kraków. As Ernst&Young and PwC were forced to separate their audit services from consulting services, they sold their centres to Capgemini and IBM BTO. After Poland's accession to the European Union, Kraków started to attract further companies, which wanted to make use of still beneficial cost differences in the context of simultaneous rise of legal and economic stability in Poland. Thanks to the parallel intensive development of ICT services, the costs of such services fell down dramatically, and their quality improved, which enabled dynamic development of outsourcing and shared services centres.

In 2009, ASPIRE was established in Kraków, open to organisations active in the outsourcing sector (for business processes and IT), with the intention to collect information about the condition of the sector and to publish reports about it, to lobby for the improvement of the situation on the labour market and infrastructure supporting the development of the sector, facilitating cooperation between universities and the sector as well as improving the opinion about outsourcing through promoting this sector among potential employees. ASPIRE currently has¹² 2 associated organisations (Australian BPO Association, Central and Eastern European Outsourcing Association), 4 partner cities (i.e. Kraków, Katowice, Kielce and Lublin), 45 associated members, which are organisations decisive for the proper functioning of the outsourcing sector ecosystem in Kraków (i.e. Jones Lang LaSalle, AIESEC, Ernst & Young, London School of Business & Finance) and 33 ordinary members employing over 12,000 people in Poland (i.e. IBM, Amway, Shell, State Street). ASPIRE organizes meetings, conferences (in 2012, i.e.: "Acting Local, Winning Global 2012: How Big Can We Grow?", which attracted such authorities as Wally Olins, Geogrey West or Fons Trompenaars) and workshops promoting outsourcing and increasing competences of its members.

In 2010, Kraków's Shared Services Centres employed 12,300 people (constituting 30% of all people employed in such centres in Poland). **The employment levels in the Kraków's outsourcing companies is to grow to over 20,000 people in 2012.**

New centres or expansions to the existing centres were announced i.e. by the biggest UK outsourcing company Capita, while the support centres of Cisco, Heineken or Brown Brothers Harriman & Co opened their financial centre in Kraków in 2012. A few hundred people should find jobs in these centres.

¹² Status as of May 2012

Growing recognizability

In the periodic report published by two Indian consulting companies specialising in outsourcing sector: Tholons and Globar Services, Kraków takes the highest place among all Central-East European cities¹³¹⁴.

City	Country	Region	place	place	place	place	place
			2012	2010	2009	2008	2007
Cebu City	Philippines	South-East Asia	Mature	Mature	1	4	1
Shanghai	China	East Asia	Mature	Mature	2	2	8
Kraków	Poland	Central-Eastern Europe	1	1	4	5	16
Beijing	China	East Asia	2	2	3	3	10
...
Prague	Czech Republic	Central-Eastern Europe	10	12	14	14	20
Warsaw	Poland	Central-Eastern Europe	28	28	28	28	26
Wrocław	Poland	Central-Eastern Europe	68	74	n/a	n/a	n/a

Table 1. Selected cities out of "Top Emerging Global Outsourcing Cities" (Please remember that the list begins with 11 place at the general list. 10 first cities are stabilized/mature centres, and 11 place is the first place of a potentially mature location)

Kraków was also noticed in the Report of the United Nations Conference on Trade and Development) – an auxiliary body to the United Nations Organisation. This institution intends to support economic development, investment and trade. **The report entitled "2011 World Investment Report" quoted the Tholons and Global Services data and placed Kraków at the first place among the developing locations for shared services centres.** According to the Association of Business Service Leaders in Poland¹⁵ referring to the AT Kearney, Gartner and UNCTAD analyses, Poland is one of the best locations for foreign investments, and its most important assets, that is lower labour costs than in the Western Europe, availability of office space and access to numerous graduates makes Poland a perfect place to locate a shared services centre.

Poland and Kraków compared with other centres

Compared with the rest of the world, Poland still remains a marginal player at BPO/SSC.

Less than 100,000 people work in this sector in Poland. For comparison – in the Philippines, between 400,000 and a million of people work in this industry, and in China, depending on the source and definition, about a million. Even more people is employed in India – 1-2.5 million people. The impact of this sector on the Polish economy is estimated at 2 billion dollars per year. In the Philippines it is about 13 billion dollars per year. The potential of these countries also varies as regards the graduates. In Poland, over 400,000 people completes their higher education per year, while in India and in China these numbers are multiple times higher. Over 250 million of India residents (50% at a very good level) and about 85% residents of the Philippines speak English. In Poland, only 10 million residents say they can speak English.

In 2010, the Kraków-based Shared Services Centres employed 12,300 people¹⁶. According to different estimates, the employment rate as of 2011 is 16-20 thousand in 51 centres¹⁷¹⁸. In 2012 it will

¹³ Tholons. (2012). 2012 Top 100 Outsourcing Destinations.

¹⁴ Top 50 Emerging Global Outsourcing Cities (A Global Services-Tholons Study). (2009).Global Services.

¹⁵ Kaczmarek, M. (2011). Association of Business Service Leaders in Poland: information on the business service sector. Obtained from <http://www.outsourcing.edu.pl/pl/article/details/type/raport/id/179>

¹⁶ Micek, G., Działek, J., & Górecki, J. (2010). Shared services centres in Kraków and their relations with the local environment.

¹⁷ ASPIRE, Modis International. (2009). What draws the BPO community to Kraków? Roundtable discussion notes.

¹⁸ ASPIRE. (2010). Languages Survey Summary Report.

grow to 24 thousands. In the subsequent years – to 30 thousand¹⁹ (almost 40% of all people employed in this sector in Poland). The number of such centres located in Kraków will also grow.

BPO/SSC and ITO/IT in the context of the objectives and strategies of Kraków

The presence of BPO/SSC and ITO/IT has a positive impact on the local development. According to one of the reports, **for each 1000 jobs in shared services centres located in Kraków, there are 267 new jobs²⁰ created in the local economy** (transportation, trainings, catering). Another element of impact is ensuring jobs to graduates, which makes it possible not only to retain and develop the knowledge obtained during studies, to keep in contact with foreign languages and corporate culture, but also to keep the young people in the city, whose economy could not absorb so many qualified people. Considering the educational structure and the fact that there are more and more university graduates on the labour market, the presence of more and more BPO/SSC and ITO/IT companies in Kraków is surely a desired phenomenon. While as regards attracting companies that work in more basic processes, Kraków has huge achievements, attracting higher-level processes (KPO) is a field that requires intense actions.

The basic arguments for selecting the location of a Shared Services Centre is a range of factors determining the scale of possible savings and the quality of the services provided. In the first category, the key issues are²¹:

- Local remuneration level
- Prices and availability of office space
- Financial incentives from the local authorities
- Political and economic stability
- Geographic distance

In the category of quality of the services provided, basic elements are:

- Competences of employees
- Cultural differences
- Selection of a service provider

According to PwC²² the key significance is attributed to the qualifications of employees, costs, geographic proximity to the client and local infrastructure. SSC localisations that bring on most savings are the countries of the Central-East Europe and South-East Asia. The highest quality of services is provided in West Europe as well as Central-East Europe. Poland, as the biggest market in Central-East Europe, has the incredible potential to attract services that require high quality and low costs.

Why Kraków?

According to the publication entitled “*Shared services centres in Kraków and their relations with the local environment*”²³ **two key factors for locating the shared services centres in Kraków are foreign languages and low costs.** These assumptions are confirmed by numerous interviews conducted with the managers from the outsourcing industry in Kraków by the authors of this report. **Further down the importance list are: availability of office space, good brand of Kraków, good network of flight**

¹⁹ Obtained from <http://www.businessinmalopolska.com>

²⁰ Micek, G., Działek, J., & Górecki, J. (2010). Shared services centres in Kraków and their relations with the local environment.

²¹ Top 50 Emerging Global Outsourcing Cities (A Global Services-Tholons Study). (2009). Global Services.

²² Suska, M., Zitzen, C., & Enders, W. (2011). Shared service centres - "the 2nd Generation."

²³ Micek, G., Działek, J., & Górecki, J. (2010). Shared services centres in Kraków and their relations with the local environment.

connections. Contrary to the common belief, the support (or lack thereof) of local authorities had no impact on the decisions concerning the localisation of the centres, even though the managers often talked about the lengthy administrative procedures during the interviews.

Kraków²⁴ is listed as one of the best (Top Established Global Outsourcing City) locations for such functions as:

- Business Analytics (Next to the biggest Indian centres and Toronto, as the only city in Europe)
- Multilingual Contract Centre (Next to Cairo, Mexico and Bucharest)
- F&A (Next to Indian centres and Manila, Shanghai and Dublin)

Kraków is also listed as a potentially one of the major centres (Emerging Global Outsourcing City) for such functions as:

- HR (another emerging centre in our region is Tallinn)
- R&D (other emerging centres in our region are Bucharest and Prague)

In the context of Kraków, the economic and population potential of the whole Poland cannot be neglected. Compared with its direct competitors from the Central-East Europe, only the Ukraine and Romania have a comparable potential. However, it is Poland that is better developed in terms of economy and has a more stable political-economic situation. Poland is decentralized, which gives her a competitive advantage over countries such as the Czech Republic or Hungary. The local competition from Katowice, Wrocław, Warsaw, Poznań or Gdańsk makes it relatively easier to expand locally. Decentralization and a relatively large internal market provides more opportunities to obtain employees, new customers and to prepare further expansion to the East. Poland is attractive in particular due to its people and investment potential. Poland has the highest population among the countries in the region, and our gross enrolment indicator is one of the highest. It means that we have the biggest pool of graduates willing to start working for rates that are much lower than in other European countries. Thanks to special tax exemptions in the economic zones and the European funds, the companies from the outsourcing industry have lower entrance barriers and therefore are more willing to locate their centres in Poland.

According to Andrew Hallam, the president of ASPIRE, the emergence of Kraków on the international arena in this industry was mostly connected with Poland's accession to the European Union. It was the consequence of cheaper flights and harmonization of law with the European legislation. Kraków became the most important destination due to significantly lower costs than the other major academic centres in this part of Europe. The cost advantage was about 40% compared with Warsaw²⁵.

Kraków, as the leader in attracting BPO/SSC investments in this part of Europe, creates huge demand for office space. Compared with other regional cities, Kraków is characterized by high investments in office space and second to Warsaw available office space²⁶. A characteristic feature of Kraków is the dispersion of the major office spaces in various places round the city. Currently, according to the estimates of Jones Lang LaSalle, 41 percent of the office space in Kraków is occupied by BPO/SSC companies. Moreover, a considerable differentiation of the services and the potential to attract new KPO companies ensures additional safety to investors and developers.

²⁴ Top 50 Emerging Global Outsourcing Cities (A Global Services-Tholons Study). (2009). Global Services.

²⁵ Can Poland emulate India in BPO? Interview with Andrew Hallam, General Secretary of ASPIRE, on the trends and challenges for Poland as one of the upcoming destinations for the outsourcing industry. (2009). BPO Voice.

²⁶ CBRE. (2012). Poland Office Destinations.

Supply of office space	414 420 m ²
Office space commissioned for use in the first half of 2011	26400 m ²
Office space planned to be commissioned for use in the second half of 2011	23000 m ²
Demand for office space among BPO/SSC/R&D in the first half of 2011	42,855 m ²
Unused office space	11.7%

Table 2²⁷. The key data concerning office space in Kraków

The growing demand for high-class office space results in relatively low number of free offices (between 7% and 12%, depending on the given period) despite continuous growth of the office space. The current rates are comparable with other regional cities and vary between EUR 12 and 15 per m². Modern office spaces, built from scratch, are of very high quality and meet most strict ecological standards, which may lead to lower maintenance costs for potential tenants.

Geographical location makes Kraków easily accessible both by road and thanks to flight connections (both standard and low-cost) from United Kingdom, Holland, Germany or Scandinavia, that is countries where the major customers operate. It ensures not only less time difference (therefore the phone contacts may be more frequent, and responses to the reported problems – faster), but also more possibilities of meeting face to face, which increases the quality of the relation and decreases the number of misunderstandings, thus increasing the quality of the services rendered and the satisfaction of the customers.

Local communications is assessed positively not only within Poland itself. In 2010 Millward Brown SMG/KRC conducted a survey on the satisfaction of public transport users in the major Polish cities, and Kraków received the best marks. Kraków's passengers use public transport more extensively than residents of other cities in Poland due to difficulties in finding parking places in the city centre and to insufficient number of parking places next to the office centres. According to the Forbes magazine²⁸, which compared the public transport all over the world, Kraków came 9. Contrary to the survey conducted by Millward Brown SMG/KRC, the Forbes' survey was performed by experts.

Kraków is recognized as one of the 5 best cities in the world as a location for centres requiring multiple-language support. Multilingualism was recognized as the biggest asset of Kraków compared with other centres, thus constituting a competitive advantage²⁹. Thanks to the establishment of a large number of centres in the Kraków region, the demand grows for both primary languages (English, German, French, Spanish, Italian) as well as for the less popular ones (in particular Nordic, Dutch, Baltic, Slavic languages). This increase reaches about 25-30% per year³⁰. An additional asset is the fact that even though some languages are not taught there at a sufficient level, it is relatively easy to bring people from other regions of Poland or from abroad who speak them fluently. It is all due to the popularity of Kraków as a place with rich culture and a place friendly to young people. The cultural potential³¹ of Kraków is attractive not only to students from all over Poland, but also acts like a magnet for foreigners, for whom the atmosphere of the place is just as important as financial perspectives. Kraków attracts large numbers of Italians, Spanish, Czechs to work in Shared Services Centres. For many of them, it is an opportunity to live in one of the most fashionable cities of Central Europe. Thus, the languages that are not present on

²⁷ ASPIRE & Colliers International. (2011). Real Estate Review BPO/SSC KRAKÓW H1 2011.

²⁸ Woolsey, M. (2008). World's 10 Best Commutes. Forbes. Obtained from http://www.forbes.com/2008/10/28/commute-cities-world-forbeslife-cx_mw_1028realestate_slide_3.html

²⁹ ASPIRE, Modis International. (2009). What draws the BPO community to Kraków? Roundtable discussion notes.

³⁰ ASPIRE. (2010). Languages Survey Summary Report.

³¹ Can Poland emulate India in BPO? Interview with Andrew Hallam, General Secretary of ASPIRE, on the trends and challenges for Poland as one of the upcoming destinations for the outsourcing industry. (2009). BPO Voice.

the local market may easily be imported from abroad. Such opinions also appear in the opinions of managers during interviews conducted by the authors of this report.

A strong academic standing of Kraków in Poland translates into the education level of their graduates and knowledge as well as the foreign languages they speak. Jagiellonian University, University of Economics, Pedagogical University of Kraków as well as smaller universities teach languages other than only English, German or French.

Polish IT specialists receive higher remuneration than IT specialists from all Central-Eastern Europe countries apart from Slovenia, where the average remuneration is closer to the Western Europe standards. In the cost contest, Poland is overcome by Romania, Hungary and the Ukraine, which dispose of a similar or only slightly smaller population potential³².

In Kraków itself there are numerous academic institutions teaching IT, and students of Kraków's universities win a lot of international prizes in IT skills and knowledge contests. Apart from the educational activity, Kraków's universities conduct an active research activity. The development of the IT sector is, according to the Regional Innovation Strategy of the Voivodship, one of the development priorities of the voivodship in the future. Support to the development of these technologies is also provided by the Regional Innovation System³³.

As regards finances, economics and similar fields of study, education is provided not only at the BA and MA levels by the Jagiellonian University and the University of Economics, but also by numerous training companies (e.g. BPP) and private universities (e.g. Andrzej Frycz Modrzewski Krakow University, The School of Banking and Management).

What does the future hold?

It is difficult to ensure that shared services centres will not move their activity to other locations. In this sense, the fears of many people that their jobs may be transferred to cheaper locations may be justified. Nevertheless, the current tendencies result in the fact that the centres from North Africa (political destabilisation) and Latin America (increasing crime rates and falling quality of life) are moved to Poland and that nearshoring from neighbouring countries is getting stronger³⁴.

Even if the shared services centre will migrate to cheaper locations, they will not leave only empty space behind them. Kraków is and will remain a natural base for much richer countries such as Holland, Germany or the Scandinavia. The Southern European countries will more willingly locate their centres in Romania, which is closer to them culturally, or in the case of France – the Francophone Africa (if it is stable politically and economically), USA, Spain and Portugal – Latin America. The geographical division tendencies are already visible

in preferences of companies from various geographic regions³⁵. It is also possible that the social crisis in the third world countries will deepen, which – in the context of growing aversion to instability – may lead to even more inflow of such centres to Poland. In its report about shared services centres PwC predicts an increase of interest in locating such centres in Central-Eastern Europe³⁶.

According to Andrew Hallam, Kraków has about 20 years to even out the cost advantage over Western Europe and to even out the quality advantage over Eastern Europe. In his opinion this period should be used to attract more advanced processes based more on knowledge and skills than on the cost advantage

³² Central and Eastern European Outsourcing Association. (2010). Central and Eastern Europe IT Outsourcing Review 2010.

³³ Gawlik, J.(coordinator) (2008). Regional innovation strategy of Małopolska 2008-2013.

³⁴ Micek, G., Działek, J., & Górecki, J. (2010). Shared services centres in Kraków and their relations with the local environment.

³⁵ Can Poland emulate India in BPO? Interview with Andrew Hallam, General Secretary of ASPIRE, on the trends and challenges for Poland as one of the upcoming destinations for the outsourcing industry. (2009). BPO Voice.

³⁶ Suska, M., Zitzen, C., & Enders, W. (2011). Shared service centres - "the 2nd Generation."

itself. Therefore the migration of centres to cheaper locations will be accompanied by importing more advanced KPO processes.

The outsourcing sector is evolving and the internal changes may result in serious transitions on the service market. Outsourcing of medical services, tasks of the public sector in the developed countries and the processes, which will only become possible to be rendered thanks to the technological progress, may significantly increase the number of the services offered, and thus – increase the potential to be used.

Another threat is the depletion of demographic resources, that is relatively low birth rates in Poland and low mobility of the Polish citizens. Almost 85% of Polish employees declares that they are ready to emigrate³⁷. It may result in problems in finding employees for the most demanding positions in long term perspective. We may also list here a threat of a similar nature but far closer time perspective – depletion of certain local resources. When only a few speakers of a rare foreign language are missing, potential employees are brought from other cities in Poland or from abroad. If the demand will reach a few hundred or a few thousands of people, the companies will start to consider other locations – both in Poland and abroad³⁸. It may concern IT specialists in particular, where the demand exceeds the supply periodically. The local competitors of Kraków, that is Katowice, Łódź and Wrocław may take advantage of it³⁹.

In order to attract new companies, Kraków must constantly improve its profile and take care of its brand⁴⁰. We need to ensure that it is still easy to attract “the talented” from abroad. We need better coordination of tasks between the local authorities and the sector representatives – recently both parties amicably emphasize that the cooperation is becoming better and better. What we miss is the cooperation between local universities and the city in order to ensure the best possible graduates for the labour market. The fact that this report has been written seems to prove that the first step to change the state of things has already been made. If these threats are avoided, a slow transition of the emphasis from the costs to the higher-quality personnel will take place.

Kraków will then become a true cradle of highly qualified and specialist workforce. If these threats are not avoided, outsourcing industry will leave Kraków, taking the specialists with it.

PESTER

In short, the opportunities and threats for BPO/SSC and ITO/IT industries are presented in the form of a PESTER analysis, that is the analysis of the macro-environment of the sector.

Environmental aspect	Opportunities and threats
Political-legal	<p>Threats connected with regulating the transfer of business activity outside the borders of a given country.</p> <p>Opportunities connected with political destabilization in the third world countries that are outsourcing centres (Egypt, Mexico, Philippines, India, China). The growth of active policies encouraging to relocate shared services centres.</p> <p>Collapse of the European Union or the Eurozone.</p>

³⁷ Grafton. (2011). Global Skills Mobility. Jobseeker Survey September 2011. Recruitment Report.

³⁸ Frańk, M. (2012). Comarch will employ a thousand IT specialists in Łódź. Gazeta Wyborcza. Obtained from http://wyborcza.biz/biznes/1,100896,12173797,Comarch_zatrudni_w_Lodzi_tysiac_informatykw_.html

³⁹ Frańk, M. (2012). HP opens an office in Łódź. Gazeta Wyborcza. Obtained from http://lodz.gazeta.pl/lodz/1,35153,12018481,HP_otwiera_biuro_w_Lodzi_Kilkaset_nowych_miejsc_pracy.html

⁴⁰ ASPIRE, Modis International. (2009). What draws the BPO community to Kraków? Roundtable discussion notes.

Economic	Economic destabilization caused by currency crisis (including the Euro crisis) or currency speculations (PLN). Increasing operating costs: the prices of energy, real estate, taxes. Higher remuneration demands. Outflow of personnel to higher-developed countries.
Social-cultural	Growing nationalistic and anti-immigrant sentiments. Aversion to working in outsourcing (perceiving it as something worse). A drop in the number of students – that is potential employees.
Technological	Replacing knowledge of languages with translating software (in particular in written communications). The growing virtualization of communications.
Environment	The material and/or energy crisis leading to the increase of maintenance costs of centres in Poland compared with other countries. Lengthy draughts in Africa, resulting in massive inflow of immigrants to Europe, destabilizing the political order.
Regulatory	Tightening the regulations concerning the transparency of financial operations. Changes in the labour law regulations.

Table 3. Multidimensional PESTER analysis for the BPO/SSC and ITO/IT industries.

Summary

Kraków is one of the biggest location focusing the activity of shared services centres, offering a unique combination of relatively low labour costs and highly qualified personnel.

Even though in terms of absolute numbers Poland still remains far behind in the BPO/SSC sector, according to specialist reports, Kraków is recognized as the best and most promising location for shared services centres. In 2010, there were 12,300 people employed in the Kraków's Shared Services Centres, the prognoses for 2012 increase this number to 20,000. This situation does have an impact on the development of the local community – it is estimated that for each 1000 jobs in shared services in Kraków, there are 267 new jobs in the local economy.

Why international players decide to locate their outsourcing centres in Kraków? The factors for locating shared services centres in Kraków indicated by the businesses are: languages, low costs and the economic and population potential in the region.

In connection with numerous threats to the high position of Kraków among the global SSC/BPO centres (i.e. negative demographic prognosis, the threat of moving the centres to cheaper countries), it seems that the most important factor that may save the competitive potential of the city is attracting the processes based on knowledge and skills more than just on the cost advantage itself (the so-called Knowledge Process Outsourcing)

Kraków's universities in the context of the objectives and strategies of the city

The document describing the Strategy of Kraków (Appendix to the Resolution No. LXXV/742/05 of the Kraków Town Hall of 13 April 2005, version published on 7 August 2012) clearly emphasises insufficient use of the scientific potential of the city, which has a lot of universities, offers a lot of fields of study and different scientific disciplines. The most often noticed problems and symptoms are:

- outflow of talented graduates and highly qualified scientific workers to the private sector outside Kraków,
- a small number of scientists from abroad or other academic centres in Poland, which would like to live in Kraków permanently

If Kraków is to become a centre of modern economy, as the vision created of the Town Hall says, the scientific circles may have an important role to play. Only due to a well developed and equipped scientific-research base it is possible to create a competitive economy. This issue is addressed by one of the strategic objectives, which assumes that Kraków is to become a European metropolis with major functions of science (culture and sport). Among the operative objectives listed by the Town Hall that would support the realization of the said strategic objective, included:

1. Improving the operating conditions for the Kraków's scientific circles.

These activities include: new investments concerning construction, expansion or modernisation of Kraków's universities, improving the possibilities of conducting scientific research on a wide scale, organising conferences and scientific symposiums (sharing specialist knowledge and experiences), integration of the scientific circles in the City, cooperation and better coordination of activities at the national and European levels.

2. Supporting cooperation of science and economy

These activities include: joint preparing, co-financing and implementing of projects realized together by companies, universities, research institutes and technology and knowledge transfer institutions, ensuring relevant technical base for the development of high technologies (development of the Kraków's Technological Park).

As regards the last of these operating objectives, the position of the stakeholders, that is the universities and the city, seems to be important. Thanks to the interviews conducted with the representatives of these circles we may comment on this issue.

As regards the potential cooperation possibilities between the universities and the Town Hall, particular proposals were very rare. The general expectation concerns the construction of a dialogue platform for universities and business as well as facilitating mutual contacts. Other expectations listed are: promoting scientific knowledge, promoting the activities of universities, offering projects to the students. The representatives of universities also indicated some tools, which could be used more extensively by the public authorities for the purposes of developing universities and cooperation with the business, such as: organising fairs (or supporting universities and companies, which would like to take part in such fairs in the country and abroad), festivals, trips, contests and awarding prizes. The representatives of universities also count on the assistance in promoting the universities, which would attract students from other national and international centres (i.e. joint promotion).

The majority of the university representatives had no precise expectations as to the cooperation with the Town Hall. Moreover, some of them emphasized that due to potential benefits, contacts with business are more important, therefore they do not see the need to implement activities for the potential cooperation with the Town Hall. Our interviewees, representing the scientific circles, did not see the role of the Town Hall in creating a bridge between the universities and the business. In this context, a very important role of the City may be the dialogue with the universities themselves, for the purposes of working out those areas, where their joint cooperation may be fruitful.

Another position on the potential cooperation with the Town Hall is expressed by the business representatives. In their statements, they voice very concrete expectations from the Town Hall: improving infrastructure, availability of office space, issuing permits for business activity, etc. It was also indicated that due to few initiatives undertaken by the Town Hall, there is much to do. The business perceives the role of the City i.e. as a facilitator in the academic circles. The business suggests that the City should facilitate opening the communications between the universities. In the opinion of our interviewees, the universities should formulate common plans and coordinating activities, which will make it possible to follow the direction that is compatible with the demand reported by the companies. Moreover, the Town

Hall may play the role of a partner for business that has an important vote in the employment policies. Moreover, the need to establish a relevant unit in the Town Hall was indicated, which would keep in contact with the employers to facilitate communications in this way.

The demand of the BPO/SSC and ITO/IT sector for competences

Demand for competences in quantitative view

Table 4 below presents a list of competences expected from the graduates and senior students, which are sought at the labour market by the BPO/SSC and ITO/IT companies. These expectations concern the basic positions, to which the companies recruit candidates from the labour market directly. This list was prepared as a result of the quantitative survey and complemented with a few additional competences, which – due to their rarity – we only mention in passing here. Some of the expected competences are of significance for both BPO/SSC and ITO/IT industries, other are important only in one of them, which is marked by an X in a relevant column.

#	Competence / expectation name	Definition	BPO/SSC	ITO/IT
1	Initiative	Initiating new activities and accepting responsibilities connected with them	x	x
2	Innovation	Generating ideas, creating and implementing new solutions facilitating work	x	x
3	Written communications	Preparing and submitting written communications, preparing clear written reports	x	x
4	Oral communications	Presenting and submitting information in oral form, fluent speaking	x	x
5	Goal orientation	Activities directed at realization of short-term and long-term objectives allocated to the given position	x	x
6	Customer-orientation	Satisfying the needs and expectations of the customer, considering the customer-perspective when offering solutions	x	x
7	Organizing own work	Behaviour dedicated to optimizing own work and realizing tasks on time.	x	x
8	Taking care of quality	Activity compliant with the regulations, provisions and procedures in the organisation, accuracy and diligence in realization of tasks	x	x
9	Influencing others	Influencing others, convincing them through substantiated argumentation and other measures, self-confidence in presenting your point of view	x	x
10	Cooperation	Effective team work, orientation on realizing group objectives	x	x
11	Involvement	Enthusiasm and passion for work, “can-do” approach, taking care of the company's image	x	x
12	Inter-cultural “sensitivity”	Practical application of the knowledge about inter-cultural differences, adapting activities to the different cultural patterns	x	x
13	Using MS Office, OpenOffice or Google Docs	Effective use of the opportunities offered by the basic office software sets	x	x
14	Mathematical skills	Carrying out various mathematical operations	x	x

15	Learning	Easiness and speed of acquiring new knowledge	x	x
16	Adaptation	Easiness and speed of acting in changing conditions	x	x
17	Dealing with stress	Easiness and speed of acting in difficult situations	x	x
18	Analytical skills	Easiness, speed and reliability of obtaining and processing information	x	x
19	Honesty	Adhering to the common moral standards	x	x
20	General knowledge about outsourcing	Having basic knowledge about the outsourcing industry and the operating context of such companies	x	x
21	Basics of Economics	Understanding basic terms in economics and ability to use them in practice in organisational context	x	
22	Accounting basics	Understanding basic terms in accounting and ability to use them in practice in organisational context	x	
23	General knowledge about insourcing	Having basic knowledge about the insourcing industry and the operating context of such companies		x
24	Programming language C/C++	The ability to use the programming language C/C++ in practice to solve problems specific for the professional work of a programmer.		x
25	Programming language Java	The ability to use the programming language Java in practice to solve problems specific for the professional work of a programmer.		x
26	Computer networks	The ability to manage (design, implement, maintain and administer) computer networks and systems		x
27	Algorithms and data structures	The ability to manage (design, implement, analyse and program) algorithms and data structures		x
28	The ability to test software	The ability to conduct tests and validations (planning, assessment and realization) of software		x
29	Agile methodology	The ability to work in a group effectively, using soft project management methodologies (AGILE, SCRUM, etc.)		x
30	Time availability	Flexibility as regards hours of work, accepting overtime work in exchange for free time later	x	x
31	Mobility	Accepting proposals of trips connected with professional duties or learning (conferences, training courses) outside the place of work	x	x

Table 4. The list of linguistic used in the “Study of competences in BPO and ITO” along with the definition and allocation in relevant industries. The list was created based on the analysis of documents delivered by companies and as a result of the analysis of the conducted structured interviews.

Additional expectations and competences indicated by the BPO/SSC companies include loyalty and a few additional foreign languages. ITO/IT companies also indicated the operation of a few programming languages and applications: SharePoint, ASP.NET, Selenium, HTML, JavaScript, C# and SQL.

Foreign languages:

#	Foreign language	Definition	BPO/SSC	ITO/IT
1	English	Is able to communicate in writing and orally in the given language at at least B2 of the Common European Framework of Reference for Languages (Can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialisation. Can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.	x	x
2	German		x	x
3	French		x	x
4	Italian		x	x
5	Dutch		x	x
6	Finnish		x	
7	Swedish		x	
8	Hungarian		x	
9	Spanish		x	
10	Norwegian		x	
11	Czech		x	
12	Russian		x	x

Table 5. The list of linguistic competences used in the “Study of competences in BPO and ITO” along with the definition and allocation in relevant industries. The list was created based on the analysis of documents delivered by companies and as a result of the analysis of the conducted structured interviews.

Competences that are important and difficult to obtain – BPO/SSC

Representatives of HR departments in the BPO/SSC companies were asked to point out, on the scale from 1 to 5 (where 1 means least important, and 5 means most important), to which extent they believe particular competences are important for their organisation and difficult to obtain (where 1 means easy to obtain and 5 means difficult to obtain). Below, in tables 6 and 7, we present a list of 6 competences recognized by BPO/SSC companies as the most important and the most difficult to obtain, respectively.

Most important competences	
Honesty	4.78
Customer-orientation	4.67
Oral communications	4.60
Taking care of quality	4.60
Cooperation	4.60
English	4.60

Competences most difficult to obtain	
Oral communications	3.78
Inter-cultural sensitivity	3.78
Written communications	3.78
Involvement	3.67
Analytical skills	3.63
Italian	3.57

Tables 6 and 7. The list of competences recognized by the BPO/SSC representatives as most important and most difficult to obtain (on a scale from 1 to 5).

Detailed information on assessing the importance and availability of competences in BPO/SSC industry are presented below, in Table 8.

Competence	Average importance	Average difficulty to obtain
Initiative	4.00	3.22
Innovation	3.60	3.22
Written communications	4.30	3.78
Oral communications	4.60	3.78
Goal orientation	4.00	3.44
Customer-orientation	4.67	3.38
Organizing own work	3.90	3.22

Taking care of quality	4.60	3.22
Influencing others	3.78	3.44
Cooperation	4.60	3.33
Involvement	4.30	3.67
Basics of Economics	2.80	2.33
Accounting basics	3.20	2.50
General knowledge about outsourcing	1.89	2.33
Mathematical skills	3.56	3.13
Inter-cultural sensitivity	4.10	3.78
Operating MS Office	4.00	2.56
English	4.60	2.78
German	4.00	3.29
French	3.75	3.43
Italian	3.38	3.57
Dutch	3.50	3.50
Learning	4.33	3.13
Adaptation	4.11	3.50
Dealing with stress	4.44	3.50
Analytical skills	4.33	3.63
Honesty	4.78	2.50
Mobility	2.78	2.63
Time availability	4.00	2.86

Table 8. The list of competences recognized by the BPO/SSC representatives as regards their importance and difficulty to obtain (on a scale from 1 to 5). Average values over 4.5 (importance) and 3.5 (competences) were marked in yellow.

The majority of the competences were recognized by the representatives of companies as important and difficult to obtain (average values over 2.5). In order to show the differences between particular competences/expectations better, we would like to present them on a reduced-scale chart.

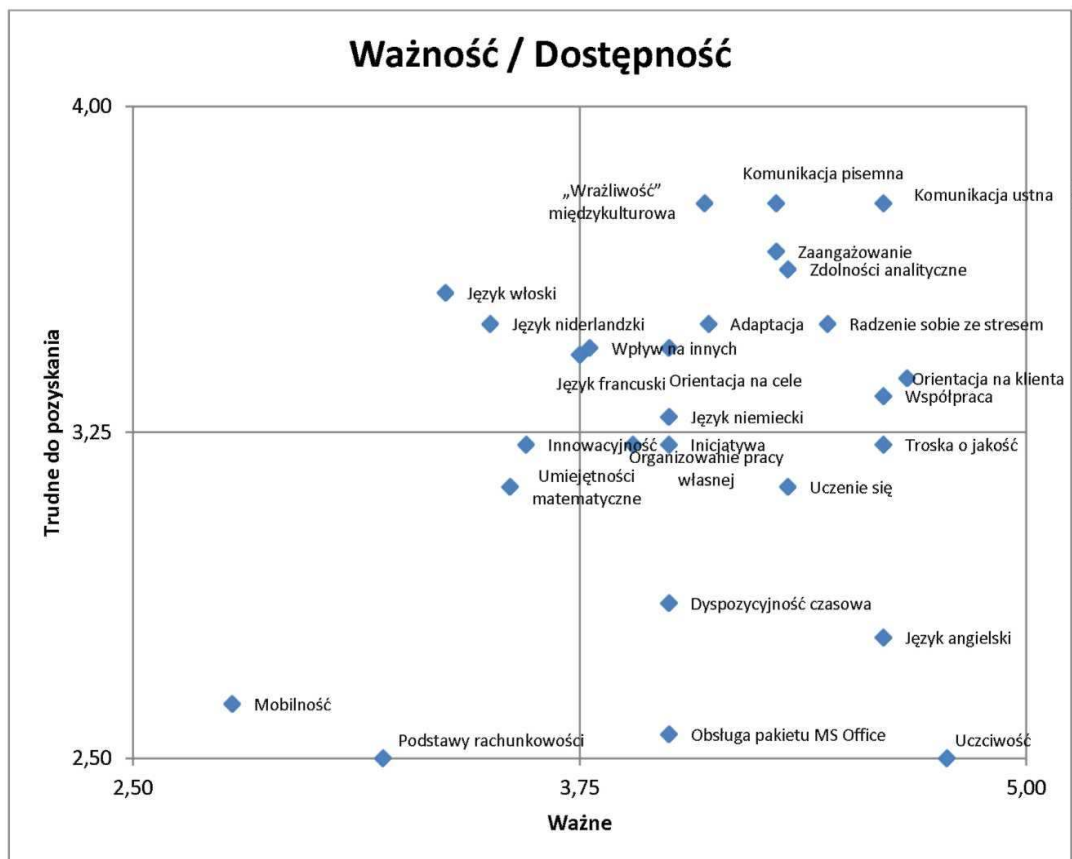


Chart 1. Competence matrix “Importance / Accessibility” in BPO/SSC.

<i>Ważność/dostępność</i>	<i>Importance/accessibility</i>
<i>Trudne do pozyskania</i>	<i>difficult to obtain</i>
<i>Ważne</i>	<i>important</i>
<i>Inicjatywa</i>	<i>Initiative</i>
<i>Innowacyjność</i>	<i>Innovation</i>
<i>Komunikacja pisemna</i>	<i>Written communications</i>
<i>Komunikacja ustna</i>	<i>Oral communications</i>
<i>Orientacja na cele</i>	<i>Goal orientation</i>
<i>Orientacja na klienta</i>	<i>Customer-orientation</i>
<i>Organizowanie pracy własnej</i>	<i>Organizing own work</i>
<i>Troska o jakość</i>	<i>Taking care of quality</i>
<i>Wpływ na innych</i>	<i>Influencing others</i>
<i>Współpraca</i>	<i>Cooperation</i>
<i>Zaangażowanie</i>	<i>Involvement</i>
<i>Podstawy rachunkowości</i>	<i>Accounting basics</i>
<i>Umiejętności matematyczne</i>	<i>Mathematical skills</i>
<i>Wrażliwość międzykulturowa</i>	<i>Inter-cultural sensitivity</i>
<i>Obługa pakietu MS Office</i>	<i>Operating MS Office</i>
<i>Język angielski</i>	<i>English</i>
<i>Język niemiecki</i>	<i>German</i>
<i>Język francuski</i>	<i>French</i>
<i>Język włoski</i>	<i>Italian</i>
<i>Język niderlandzki</i>	<i>Dutch</i>

<i>Uczenie się</i>	<i>Learning</i>
<i>Adaptacja</i>	<i>Adaptation</i>
<i>Radzenie sobie ze stresem</i>	<i>Dealing with stress</i>
<i>Zdolności analityczne</i>	<i>Analytical skills</i>
<i>Uczciwość</i>	<i>Honesty</i>
<i>Mobilność</i>	<i>Mobility</i>
<i>Dyspozycyjność czasowa</i>	<i>Time availability</i>

Most problematic group of competences are those that were recognized as both important and difficult to obtain. This group includes: communications (both oral and written), involvement, analytical skills, dealing with stress, adaptation, goal-orientation, customer-orientation, inter-cultural sensitivity, cooperation, influencing others and German.

In the group of competences that are important but easy to obtain, which may be recognized as the strength of the Kraków's labour market, there are: taking care of quality, initiative, organising own work, learning, availability, English language, operating MS Office and honesty.

Competences that are important and difficult to obtain – ITO/IT

Do the BPO/SSC and ITO/IT companies perceive the importance of and difficulty to obtain particular competences on the Kraków's labour market in the same way? It turns out that the differences are quite significant. Below, in tables 9 and 10, we present a list of 6 competences recognized by ITO/IT companies as the most important and the most difficult to obtain, respectively.

Most important competences	
English	4.50
Honesty	4.50
Initiative	4.43
Taking care of quality	4.43
Involvement	4.43
Innovation	4.29

Competences most difficult to obtain	
Initiative	3.86
Innovation	3.71
The ability to test software	3.60
Involvement	3.57
Algorithms and data structures	3.50
Inter-cultural "sensitivity"	3.50

Tables 9 and 10. The list of competences perceived as most important and most difficult to obtain in ITO/IT.

Detailed assessment of importance and perceived availability of competences in the ITO/IT industry is presented below, in Table 11.

Competence	Average importance	Average difficulty to obtain
Initiative	4.43	3.86
Innovation	4.29	3.71
Written communications	4.14	3.00
Oral communications	3.57	3.14
Goal orientation	4.29	3.00
Customer-orientation	3.86	3.14
Organizing own work	3.86	3.14
Taking care of quality	4.43	2.86
Influencing others	3.14	3.29
Cooperation	4.29	3.00
Involvement	4.43	3.57

C/C++ programming language	2.40	3.00
Java programming language	3.40	2.75
Computer networks	4.00	3.20
Algorithms and data structures	3.80	3.50
General knowledge about insourcing	1.60	2.50
General knowledge about outsourcing	1.83	2.40
Mathematical skills	3.67	3.00
The ability to test software	3.60	3.60
Inter-cultural "sensitivity"	3.83	3.50
Operating MS Office	3.40	2.40
English	4.50	2.67
German	2.25	3.00
French	2.50	3.00
Italian	1.00	1.00
Learning	4.17	2.83
Adaptation	4.17	3.17
Dealing with stress	3.67	3.00
Analytical skills	4.00	3.00
Honesty	4.50	3.17
Mobility	2.40	2.50
Time availability	3.17	3.00
Agile methodology	2.40	2.25

Table 11. The list of linguistic competences recognized by the ITO/IT representatives as regards their importance and difficulty to obtain (on a scale from 1 to 5). Average values over 4.4 (importance) and 3.5 (competences) were marked in yellow.

Similarly to BPO/SSC, a chart using a reduced scale gives a much better image of the situation for the competences expected by ITO/IT.

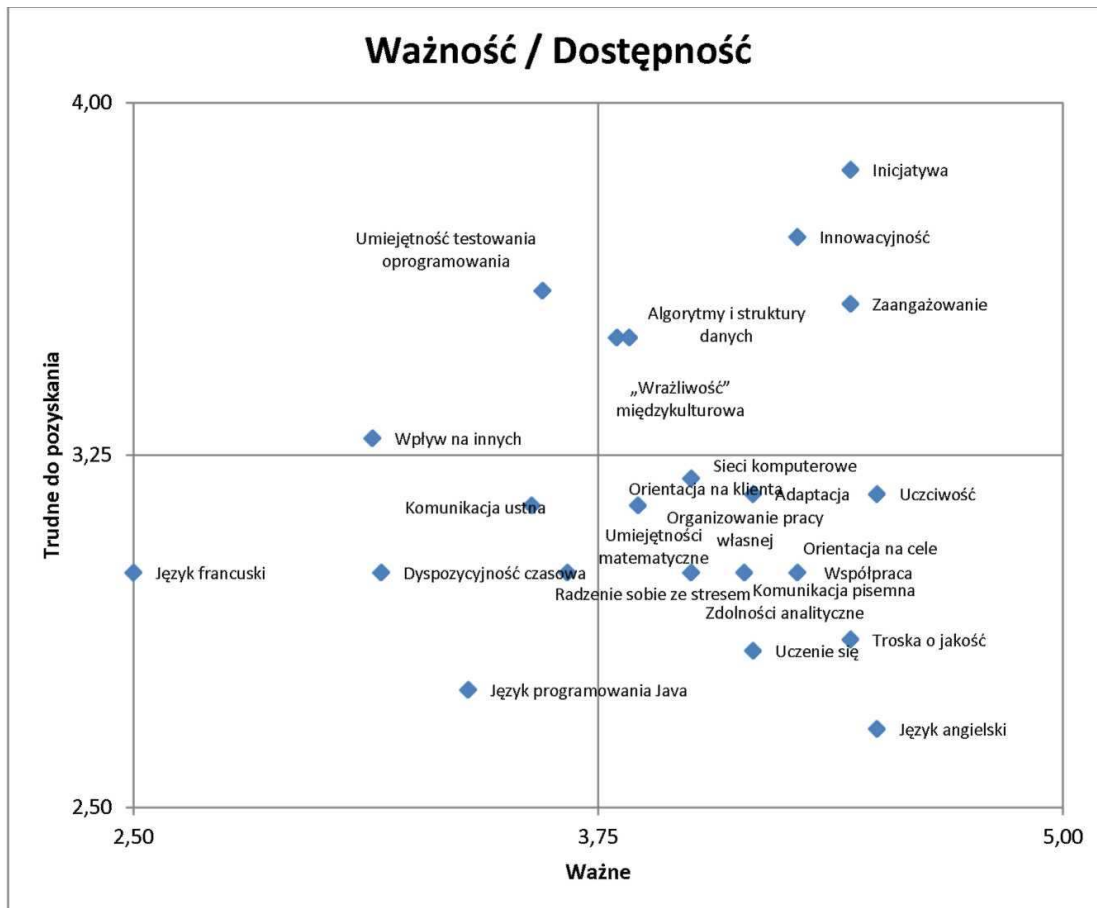


Chart 2. Competence matrix “Importance / Accessibility” in ITO/IT.

Ważność/dostępność	Importance/Accessibility
Trudne do pozyskania	difficult to obtain
Ważne	important
<i>Inicjatywa</i>	<i>Initiative</i>
<i>Innowacyjność</i>	<i>Innovation</i>
<i>Komunikacja pisemna</i>	<i>Written communications</i>
<i>Komunikacja ustna</i>	<i>Oral communications</i>
<i>Orientacja na cele</i>	<i>Goal orientation</i>
<i>Orientacja na klienta</i>	<i>Customer-orientation</i>
<i>Organizowanie pracy własnej</i>	<i>Organizing own work</i>
<i>Troska o jakość</i>	<i>Taking care of quality</i>
<i>Wpływ na innych</i>	<i>Influencing others</i>
<i>Współpraca</i>	<i>Cooperation</i>
<i>Zaangażowanie</i>	<i>Involvement</i>
<i>Język programowania Java</i>	<i>Java programming language</i>
<i>Sieci komputerowe</i>	<i>Computer networks</i>
<i>Algorytmy i struktury danych</i>	<i>Algorithms and data structures</i>
<i>Umiejętności matematyczne</i>	<i>Mathematical skills</i>
<i>Umiejętność testowania oprogramowania</i>	<i>The ability to test software</i>
<i>„Wrażliwość” międzykulturowa</i>	<i>Inter-cultural “sensitivity”</i>
<i>Język angielski</i>	<i>English</i>
<i>Język francuski</i>	<i>French</i>

<i>Uczenie się</i>	<i>Learning</i>
<i>Adaptacja</i>	<i>Adaptation</i>
<i>Radzenie sobie ze stresem</i>	<i>Dealing with stress</i>
<i>Zdolności analityczne</i>	<i>Analytical skills</i>
<i>Uczciwość</i>	<i>Honesty</i>
<i>Dyspozycyjność czasowa</i>	<i>Time availability</i>

As regards ITO/IT, **the competences, which are both important and difficult to obtain, are: initiative, innovation, involvement, algorithms and data structures and inter-cultural sensitivity.** The list of important competences, but easier to obtain from the labour market, includes: computer networks, customer-orientation, adaptation, honesty, organising own work, mathematical skills, goal orientation, cooperation, written communications, analytical skills, taking care of quality, learning and English language.

Competences of the future – what will employers look for?

A unique – on the scale of voivodship and the country – aspect of the analysis from this report is considering not only the photographic view on the demand for competences in BPO/SSC and ITO/IT industries in Kraków, but also the long-term perspective. Do the employers intend to increase their employment rates at the positions, to which the graduates and senior students of Kraków's universities are recruited? Will the profile of the competences sought change within the next 5 years? What are the competences that are most worth investing in today, so that it is possible to find employment after graduation? These questions are tackled by the analysis, which considers the difference between the planned number of positions requiring particular competences in 2018 and 2013.⁴¹

BPO/SSC

While the majority of the analyses concerning the demand for competences (e.g. Study of Human Capital), including this report, emphasizes the importance of written and oral communication competences and cooperation as the characteristics usually sought among the candidates for jobs, they very rarely ask questions about what types of competences will be sought within the next few years. Below we would like to present a list of competences in the BPO/SSC industry, ordered by the growth dynamics, understood as the number of candidates sought for newly created jobs, which will require at least moderate level of the given competence.

Competence	Dynamics	Competence	Dynamics
Innovation	599	English	529
Influencing others	582	Oral communications	527
Basics of Economics	582	Inter-cultural “sensitivity”	527
Dealing with stress	569	French	518
Initiative	559	Accounting basics	493
Goal orientation	554	Travelling	455
Adaptation	539	Dutch	453
Analytical skills	539	German	440
Mathematical skills	537	Mobility	1

⁴¹ It is worth to mention that the representatives of the companies during the extensive interviews were not willing to talk about the employment in the future, pointing out the lack of responsibilities in this respect or dynamic situation on the market. We asked to provide us with an estimate based on all the informatino they have and on their own experiences, considering the tendencies.

Customer-orientation	534	Scandinavian languages	0
Organizing own work	534	Russian	0
Taking care of quality	534	Loyalty	-7
Cooperation	534	Czech	-20
Involvement	534	Spanish	-27
Operating office software	534	Finnish	-40
Learning	534	Hungarian	-40
Honesty	534	Swedish	-40
Time availability	534	Italian	-47
Written communications	532	General knowledge about outsourcing	-212

Table 12. The list of competences that will be sought the most in the future by BPO/SSC employers. The higher the indicator, the higher the expected growth dynamics of the demand for the given competence.

Among the already listed competences, the highest dynamics is expected as regards competences such as: Innovation, Influencing others, Basics of Economics, Dealing with stress and Initiatives. It may mean that the BPO/SSC companies may need more and more innovators and candidates for leaders and managers, who will be able to show the approaches characteristic for knowledge-based economies. It may also be proven by a relatively low demand dynamics for foreign languages – almost all of them apart from English, German and Dutch will experience a drop in the growth dynamics within the next five years.

ITO/IT

The expected growth dynamics of the demand for competences in the ITO/TO industry is slightly different than the situation in the BPO/SSC. Below we would like to present a list of competences in the ITO/IT industry, ordered by the number of candidates sought for newly created jobs, which will require at least moderate level of the given competence.

Competence	Dynamics	Competence	Dynamics
Initiative	197	Algorithms and data structures	172
Innovation	197	Operating office software	167
Written communications	197	The ability to test software	159
Oral communications	197	French	143
Goal orientation	197	Mobility	143
Organizing own work	197	General knowledge about insourcing	137
Cooperation	197	General knowledge about outsourcing	135
Involvement	197	Java programming language	132
Inter-cultural “sensitivity”	197	Computer networks	130
English	197	Agile methodology	119
Learning	197	C/C++ programming language	112
Adaptation	197	ASP.NET	105
Dealing with stress	197	HTML	85
Analytical skills	197	German	78
Honesty	197	JavaScript	65
Time availability	187	Selenium	55

Customer-orientation	182	Russian	23
Mathematical skills	182	Sharepoint	20
Taking care of quality	177	C#	5
Influencing others	172	SQL	5

Table 13. The list of competences that will be sought the most in the future by ITO/IT employers. The higher the indicator, the bigger the growth dynamics.

The group of competences with a similar expected growth dynamics is in the ITO/IT industry higher than in BPO/SSC, also, different expectations are in this group. **Among the already listed competences, the highest dynamics is expected as regards competences such as: Initiative, Innovation, Written communications, Oral communications, Goal orientation, Organizing own work, Cooperation, Involvement, Inter-cultural sensitivity, English language, Learning, Adaptation, Dealing with stress and Analytical skills.** It shows quite clearly that the ITO/IT industry focuses on the increasing demand for the so-called soft competences connected with teamwork, in multi-cultural environments, where the communications skills, initiative or effective dealing with challenges play just as important role as the technical skills. **It is worth to note that Innovation is the only competence, whose expected growth dynamics was selected in both BPO/SSC and ITO/IT as the highest.** The aforementioned results does not mean that hard competences (e.g. programming languages, operating office software) are not recognized as essential by the companies. The extensive interviews only confirm that it is not too difficult to obtain them on the Kraków's market, while highly-developed soft competences separate good employees from excellent ones.

Summary

In our analysis, we stated that the competences that are crucial for BPO/SSC and ITO/IT are those, which were recognized as both important and difficult to obtain at the same time. For BPO/SSC, this group includes: communications (both oral and written), involvement, analytical skills, dealing with stress, adaptation, goal-orientation, customer-orientation, inter-cultural sensitivity, cooperation, influencing others and German. As regards ITO/IT, the competences, which are both important and difficult to obtain, are: initiative, innovation, involvement, algorithms and data structures and inter-cultural sensitivity.

A unique aspect of the analysis presented in the report is considering the long-term perspective as regards the requirements connected with the demand for particular competences in the industries connected with outsourcing. As regards BPO/SSC, the highest demand dynamics is expected in the case of Innovation, Influencing others, Basics of Economics, Dealing with stress and Initiative. In the case of ITO/IT industry, among the already listed competences, the highest dynamics is expected as regards competences such as: Initiative, Innovation, Written communications, Oral communications, Goal orientation, Organizing own work, Cooperation, Involvement, Inter-cultural sensitivity, English language, Learning, Adaptation, Dealing with stress and Analytical skills.

List of competences (description and dictionary)

An attempt to create a universal set of competences along with their description at particular levels (from low to high) for various BPO/SSC and ITO/IT companies is a certain simplification of the very complex company reality. There is no doubt that each company may have slightly different conducts that indicate a given competence (e.g. in the case of one company adapting the manner of expression to the recipient is essential to the communication, while in others it is of no significance) or it may designate different levels (e.g. providing support to team members is in one company a high level of cooperation competence, while in another one - it is at the low level of the same competence). Creating a universal dictionary allows us to create the framework for the platform of dialogue between the representatives of businesses and universities, and it should be treated as such a tool. It is the result of a compromise between often very

specific expectations of companies and the necessity to translate them into uniform list of educational results. Apart from referring to the theoretical model of competences, a range of consults with the business representatives and basing the descriptions on the examples of conduct provided by the companies themselves constitute an additional guarantee of accuracy of the descriptions used.

Dictionary of competences common for BPO/SSC and ITO/IT

Initiative – initiating new activities and accepting responsibilities connected with them	
Level	Description of conduct
1	Criticizes initiatives presented by others. Does not become involved in the activities exceeding the duties.
2	Passively subordinates to initiatives in the team, company. Initiates activities exceeding the duties only if the circumstances force it.
3	Indicates new activity areas for the team. Initiates activities exceeding the duties independently.
4	Takes full responsibility for initiating the activity. Looks for resources for the realization of new activities.
5	Indicates new areas of activity that concern the whole company. Involves other people in creating such initiatives.

Innovation – generating ideas, creating and implementing new solutions facilitating work	
Level	Description of conduct
1	Maintains status quo. Criticizes ideas presented by others.
2	Complies with the facilitations suggested by others. Presents only schematic solutions.
3	Presents usable ideas for facilitating the work. Introduces minor facilitations in the work.
4	Indicates the areas in the team, which could be improved. Improves ideas presented by others significantly.
5	Creates original plans of activities and solutions, leading to organisational changes. Takes part in implementing solutions suggested by them. Indicates the areas in the whole organisation, which could be improved.

Written communication – preparing and submitting written communications, preparing clear written reports	
Level	Description of conduct
1	Makes basic errors in written communications. Creates too concise or too diffuse written communications.
2	Makes minor errors in written communications. Uses the patterns of written communications selectively (e.g. letter templates).
3	Uses the patterns of written communications (e.g. letter templates). Is able to describe situations clearly.
4	Adapts the means of written communications to the recipient. Prepares very clear reports.
5	Creates new communications patterns. The written communicates may be model examples for others.

Oral communication – presenting and submitting information in oral form, fluent speaking	
Level	Description of conduct

1	Speaks in a chaotic manner. Communicates in a way that is not understandable to the environment.
2	Speaks in a too concise manner. Uses technical jargon when communicating with non-specialists
3	Conveys information clearly. Respects the interlocutor.
4	Adapts the means of communications to the recipient. Uses rich specialist terminology.
5	Communicates freely even in difficult situations. Applies various communication techniques (paraphrase, open-ended questions, mirroring).

Goal-orientation – realization of short-term and long-term objectives set for the given position	
Level	Description of conduct
1	Fails to finish activities. Changes goals during their realization in unjustified cases.
2	Realizes objectives selectively (easy, short-term ones). Exceeds the deadlines for the realization of tasks.
3	Communicates potential difficulties in the realization of tasks in advance. Realizes short-term and long-term goals on time.
4	Realizes goals before the arranged deadline. Is persistent despite obstacles.
5	Realizes the tasks on time, even if there are significant difficulties on the way. Optimizes the means of actions, in order to go beyond the designated goals.

Organising own work – planning the work and organising the tasks intended to realize the plan, giving priorities to tasks	
Level	Description of conduct
1	Acts without any plan. Realizes excessive number of tasks within a certain time
2	Divides tasks into smaller activities to perform. Treats all tasks as important and urgent.
3	Plans own work Designates priorities in accordance with the importance and urgency of the tasks
4	Transforms own activities in response to the current situation. Creates alternative plans of short-time actions.
5	Creates long-term plans. Shares knowledge about effective work organisation with others.

Customer orientation – satisfying the needs and expectations of the customer, considering the customer-perspective when offering solutions	
Level	Description of conduct
1	Reacts to the needs of the customer improperly. Ignores what the customer is saying.
2	Is schematic in responses to the needs reported by the customer. Is impolite towards customers.
3	Asks questions to obtain extensive information about customer's needs. Listens to what the customer is saying attentively.
4	Provides the customer with new suggestions. Maintains a partnership relation with the customer.
5	Analyses customer's satisfaction in long-term perspective. Indicates potential areas of long-term cooperation with the customer.

Taking care of quality – activity compliant with the regulations, provisions and procedures in the organisation, accuracy and diligence in realization of tasks

Level	Description of conduct
1	Does not comply with company's procedures. Makes serious mistakes that pose a threat of financial losses to the company
2	Applies the procedures existing in the company in a selective manner. Makes minor mistakes
3	Applies to the procedures existing in the company. Checks his work thoroughly.
4	Makes no mistakes in his work. Is constantly increasing the quality of his work.
5	Supports other persons in maintaining high quality of work. Provides others with proven methods of improving work quality.

Influencing others – influencing others, convincing them through substantiated argumentation and other measures, self-confidence in presenting your point of view

Level	Description of conduct
1	Submits to others, with a detriment to his own objectives. Gives in regardless of who is the convincing person.
2	Exercises pressure in influencing others. Encourages others to accept his opinion in an aggressive manner.
3	Convinces others using rational arguments. Defends his opinions in a resolute manner.
4	Adapts arguments to the person and situation. Applies selected compliance techniques.
5	Maintains a partnership relation in an compliance situation. Applies varied compliance techniques supporting the intended purposes effectively.

Cooperation – effective team work, orientation on realizing group objectives

Level	Description of conduct
1	Does not become involved in teamwork. Forces individual objectives
2	Becomes involved in teamwork forced to do so by other persons, situations. Subjects to the realization of group objectives
3	Shares knowledge and resources with others on his own initiative. Actively supports the realization of group objectives.
4	Seeks ways of improving cooperation in the team. Encourages others to cooperate.
5	Seeks ways of improving cooperation in the company Through his actions, he motivates others to effective realization of group objectives.

Involvement – enthusiasm and passion for work, “can-do” approach, taking care of the company's image

Level	Description of conduct
1	Shows weariness in his work. Criticises the company publicly.
2	Takes part in company parties. Performs his duties without enthusiasm.
3	Speaks well about his company. Approaches the realization of tasks he has under control with enthusiasm.
4	Approaches the realization of even difficult tasks with enthusiasm. Defends the good name of the company, when it is threatened.
5	Is a model example of being committed to work. By his behaviour, supports the values that are valued in the company.

Inter-cultural sensitivity – practical application of the knowledge about inter-cultural differences, adapting activities to the different cultural patterns	
Level	Description of conduct
1	Treats representatives of various cultures in a uniform manner, even if adaptation comprises of simple actions. Makes gaffes when contacting representatives of other cultures.
2	Modifies his behaviour towards representatives of various cultures in a simple manner. Does not make sure that he understands the representative of a different culture correctly.
3	Respects cultural diversity. Makes sure that he understands the representative of a different culture correctly.
4	Adapts his behaviour to the requirements of various cultures. Keeps expanding his knowledge about cultural differences.
5	Talks to representatives of various cultures with ease and acceptance, even in difficult situations. Prepares others for meetings and conversations with the representatives of other cultures.

Operating MS Office, OpenOffice or Google Docs – efficient use of basic capabilities of the office software	
Level	Description of conduct
1	Does not use office software. Creates documents and presentations on paper or using simple text programmes.
2	Creates simple documents, spreadsheets and presentations using office software. Does not use basic functions of the software (changing the formatting of the text, justification of the text, enumeration, basic mathematical operations in spreadsheets)
3	Creates and edits documents, spreadsheets and presentations in office software, using basic software functions (changing the formatting of the text, justification of the text, enumeration, basic mathematical operations in spreadsheets)
4	Uses some advanced options of software software (format paintbrush, conditional formatting, animations). Applies headline formatting in documents, takes care of the visual aspects of documents.
5	Creates aesthetic, well-formatted documents, using headline formatting. Uses advanced options of office software, i.e. pivot tables, macros, serial correspondence. Creates his own document templates.

Mathematical skills – conducting various mathematical operations	
Level	Description of conduct
1	Makes mistakes in basic arithmetic tasks. Avoids tasks connected with calculations and mathematical operations.
2	Carries out simple arithmetic operations (addition and subtraction) without using a calculator, with no mistakes. Makes mistakes in more difficult arithmetic operations (multiplication, division).
3	Carries out basic arithmetic operations (addition, subtraction, multiplication and division) without using a calculator, with no mistakes. Makes occasional mistakes on operations carried out over bigger numbers and complex mathematical operations.
4	Carries out basic arithmetic operations without using a calculator, with no mistakes, even over bigger numbers and complex mathematical operations.
5	Carries out advanced arithmetic operations (integration, logarithms, functional analysis). Creates his own solutions of complex mathematical, logical and arithmetic problems.

Learning – easiness and speed of acquiring new knowledge	
Level	Description of conduct
1	Does not manage new tasks. Requires detailed instructions, even when performing simple tasks.
2	Needs help all the time to perform new tasks. Requires general instructions when performing simple tasks.
3	Needs explanations/demonstration in order to learn new tasks. Quickly learns new tasks of average difficulty level.
4	Is constantly expanding his knowledge in the topics connected with the performed work. Needs little support when learning new tasks of high difficulty level.
5	Independently learns new tasks of high difficulty level. Becomes fluent in performing new tasks very quickly.

Adaptation – easiness and speed of acting in changing conditions	
Level	Description of conduct
1	Acts in a disorganized manner in the case of changes. Undertakes schematic actions regardless of the changing conditions.
2	Modifies simple actions, if the situation so requires. In case of a change, subjects his actions to suggestions of other people.
3	Modifies key actions, taking the situation into consideration. Maintains the efficiency of action in the case of change.
4	Uses the change to introduce beneficial modifications to his work. Checks the efficiency of introduced modifications in the case of change.
5	Takes part in creating the changes in the organisation. Uses the change to introduce beneficial modifications to the organisation.

Dealing with stress – easiness and efficiency of action in difficult situations (atypical expectations of the customer, conflicts, period of intense work)	
Level	Description of conduct
1	Acts in a disorganized way in difficult situations. In the periods of intense work, provides results of very low quality.
2	Makes numerous mistakes in difficult situations. In the periods of intense work, provides results of poor quality.
3	Makes minor mistakes when working in difficult situations. In the periods of intense work, provides results of good quality.
4	Maintains high efficiency of action in difficult situations. In the periods of intense work, delivers results which vary only slightly from the work provided in standard conditions.
5	Maintains very high efficiency of action in difficult situations. In the periods of intense work, delivers results of the same quality as the work provided in standard conditions.

Analytical skills – easiness, speed and reliability of obtaining and processing information	
Level	Description of conduct
1	Has problems in understanding the task he is to perform. Considers only one viewpoint when presenting the the state of the facts.

2	Divides a problem into smaller aspects, without any particular order. Groups similar simple aspects.
3	Analyses the connections between a few parts of the problem. Obtains information from various sources, in order to understand a complex situation better.
4	Analyses the details of the problem in a more extensive context. Determines a few potential causes or consequences of the situation.
5	Predicts effects of potential activities in long-term perspective. Understands co-dependencies between even seemingly distant problems.

Honesty – adhering to commonly recognized moral standards.	
1	Breaches the commonly recognized moral standards regularly. Fails to perform his obligations, lies, fails to behave as declared.
2	Adheres to moral standards only to avoid punishment. Cannot explain clearly the purpose of honest conduct.
3	Adheres to commonly recognized moral standards, though even if he breaches them, he does not try to learn from it and fix the damage arising from such action.
4	Adheres to commonly recognized moral standards regardless of whether there are positive consequences connected with it. Tries to behave in compliance with his own declarations and fix the damage arising from his actions.
5	Explains the value of adhering to moral standards to others. Performs his obligations and encourages others to do so.

Mobility – Accepting proposals of trips connected with professional duties or learning (conferences, training courses) outside the place of work				
1	2	3	4	5
very rarely	rarely	sometimes	often	very often

Availability – Flexibility as regards hours of work, accepting overtime work in exchange for free time later.				
1	2	3	4	5
very rarely	rarely	sometimes	often	very often

General knowledge about outsourcing – having basic knowledge about the outsourcing industry and the operating context of such companies	
Level	Description
0	Does not have even basic knowledge about the characteristics of operation in BPO, SSC and/or ITO industries. Does not understand basic concepts and the operating context of companies in these industries.
1	Has at least basic knowledge about the operation of the BPO, SSC and/or ITO industries. Understands basic concepts (e.g. KPI, call center, SSC, etc.) and the operating context of companies in these industries.

Dictionary of competences specific to BPO/SSC

Basics of Economics – understanding basic terms in economics and ability to use them in practice in organisational context	
Level	Description
0	The student has no basic knowledge of economics. Does not understand basic terms.
1	The student has at least basic knowledge of economics. The student understands basic terms and is able to use them in practice in the organisational context.

Accounting Basics – understanding basic terms in accounting and ability to use them in practice in organisational context	
Level	Description
0	The student has no basic knowledge of accounting. Does not understand basic terms.
1	The student has at least basic knowledge of accounting. The student understands basic terms and is able to use them in practice in the organisational context.

Dictionary of competences specific to ITO/IT

C/C++ programming language – the ability to use the programming language C/C++ in practice to solve problems specific for the professional work of a programmer.	
Level	Description of conduct
1	Does not use object oriented programming in C/C++. Creates a structured code, which is unoptimized and inextensible.
2	Uses the basics of object oriented programming C/C++, using moderately complex data structures. Uses basic libraries, included in the language.
3	Uses the potential of object oriented programming C/C++ in full, creating extensible, optimised software, using i.e. encapsulation and polymorphism. Takes care about memory usage.
4	Creates high quality object oriented software in C/C++. Writes a clean code, which does not require refactorisation and is fully tested and compatible with many environments.
5	Uses advanced options of C/C++ language. Goes beyond the language options, adapting it to the specific requirements of the customer and the programme, writing his own compilers or drivers.

Java programming language – the ability to use the programming language Java in practice to solve problems specific for the professional work of a programmer.	
Level	Description of conduct
1	Creates a code, which is unoptimized and inextensible, using basic object oriented programming principles in Java.
2	Creates moderately optimized code. Uses basic libraries, included in the Java language.
3	Creates extensible and optimized software in Java. Uses basic graphics libraries.
4	Writes a clean code in Java, which does not require refactorisation and is fully tested and compatible with many environments. Programmes mobile devices, uses multithread programming.
5	Uses advanced options of the Java language. Goes beyond the language options, adapting it to the specific requirements of the customer and the programme, writing his own compilers or drivers.

Computer networks – the ability to manage (design, implement, maintain and administer) computer networks and systems	
Level	Description of conduct
1	Is able to configure only small local networks (LAN), susceptible to external attacks.
2	Configures small, secured local networks (LAN), understands the principles of NAT translation.
3	Creates extensive, safe local networks. Understands the operating principles of proxy servers, NAT and routing basics.
4	Creates simple corporate networks, ensuring their security as required.
5	Is able to create a complex, secured corporate network, comprising of many smaller subnetworks.

Algorithms and data structures – the ability to manage (design, implement, analyse and program) algorithms and data structures	
Level	Description of conduct
1	Incorrectly applies the basic principles of algorithm analysis, is not able to differentiate elementary data structures.
2	Uses basic principles of algorithm analysis, differentiates and applies elementary data structures.
3	Uses basic algorithms, radix sort, binary search methods with ease. Uses basic complex data structures.
4	Uses complex data structures, i.e. binominal queues, Fibonacci heaps with ease. Uses graph algorithms.
5	Uses and modifies complex data structures and dynamic graph algorithms, adapting them to his own purposes.

The ability to test software – the ability to conduct tests and validations (planning, assessment and realization) of software	
Level	Description of conduct
1	Writes tests of low quality, which do not test the source code fully.
2	Writes basic tests, which test the basic functionalities of the source code.
3	Takes care of the test efficiency by using mock-up projects.
4	Writes comprehensive application tests, e.g. black box tests, unit tests.
5	Believes in test-driven development. Does not accept writing code without writing a test earlier. His tests are optimal, well-thought-out.

Agile methodologies – the skill of efficient management of work in groups using soft methodologies for project management (Extreme programming, Crystal Clear, ASD, SCRUM, etc.)	
Level	Description of conduct
1	Does not apply the basic principles of the Agile methodologies in his project.
2	Applies basic principles of the Agile methodologies in his project. Does not use the terminology connected with any of the Agile methodologies well.
3	Works on a project using one of the Agile methodologies (Scrum, Extreme programming, ASD, etc.), using the terminology very well.
4	Applies all the principles of the Agile manifesto in practice. If needed, works on a project using

	various Agile methodologies. Switches roles in the project smoothly.
5	Loves the Agile methodologies, tries to improve the project management method based on the Agile manifesto, offering his own facilitations.

SharePoint – operating SharePoint platform	
Level	Description of conduct
1	Is able to use selected options of the SharePoint Foundation platform at the basic level.
2	Is able to use options of the SharePoint Foundation platform at the advanced level.
3	Is able to use selected options of the SharePoint Server platform at the basic level.
4	Is able to use options of the SharePoint Server platform at the advanced level.
5	Is able to adapt the options of the SharePoint Server and SharePoint Foundation platforms to the needs of the organisation.

ASP.NET- the ability to use ASP.NET in practice to solve problems specific for the professional work of a programmer.	
Level	Description of conduct
1	Uses the basics of ASP.NET, performs basic element manipulations on site.
2	Writes software using ASP.NET, which modify DOM tree structure, using simple frameworks for this purpose.
3	Uses basic frameworks, and because of that writes clear and well-optimized code in ASP.NET. His programmes are able to communicate remotely with the server.
4	Uses advanced frameworks, which allow him to write software with object oriented characteristics in ASP.NET .
5	Uses specialist frameworks, which help him write advanced frontend applications in ASP.NET based on Model-View-Controller model.

Selenium – the skill of using the Selenium framework to test applications and websites.	
Level	Description of conduct
1	Writes scenarios that do not mirror the needs of the customer.
2	Writes basic tests. The tests he creates sometimes return error messages, even though there is no actual error in the code.
3	Takes care of the test efficiency by using mock-up projects.
4	Writes tests that cover most of the functionalities of the application and websites.
5	Writes complete scenarios, checking extensively all functionalities of applications and websites.

HTML – the ability to use HTML in practice to solve problems specific for the professional work of a programmer.	
Level	Description of conduct
1	Writes code with invalid markup, fails to close tags, mixes up structural and presentational tags.

2	When writing code, mixes up markups from various HTML versions, closes tags, his code is validated
3	Writes correct, validated HTML code, consequently using the standards of the given HTML version.
4	Uses structural tags instead of presentational tags (e.g. instead of), uses HTML 5, looks at search engine indexing.
5	Writes code, which is free of errors, compatible with all browsers (including older versions) and validated.

JavaScript – the ability to use JavaScript in practice to solve problems specific for the professional work of a programmer.

Level	Description of conduct
1	Uses the basics of JavaScript, performs basic element manipulations on site.
2	Writes software using JavaScript, which modify DOM tree structure, using simple frameworks for this purpose.
3	Uses basic frameworks, and because of that writes clear and well-optimized code in JavaScript. His programmes are able to communicate remotely with the server.
4	Uses advanced frameworks, which allow him to write software with object oriented characteristics in JavaScript.
5	Uses specialist frameworks, which help him write advanced frontend applications in JavaScript based on Model-View-Controller model.

C# – the ability to use the programming language C# in practice to solve problems specific for the professional work of a programmer.

Level	Description of conduct
1	Writes unoptimized and inextensible code in C# using the basic principles of object oriented programming.
2	Is able to use basic libraries included in the C# language.
3	Creates extensible and optimized software in C#.
4	Writes a clean code in C#, which does not require refactorisation and is fully tested and compatible with many environments. Programmes mobile devices and multithread programming.
5	Uses advanced options of the C# language. Goes beyond the language options, adapting it to the specific requirements of the customer and the programme.

SQL – the ability to use query language to create and manage databases.

Level	Description of conduct
1	Creates unoptimized and redundant relationships. Does not meet the requirements of basic normal forms.
2	Creates data relationships minimizing the number of redundant relationships. His relationships design complies with basic normal forms.
3	Creates well-optimized data relationships. Creates triggers, if needed.

4	Creates optimal data structures able to store and operate on large amount of data. Uses the basics of procedural programming. Is familiar with the basics of database servers configuration in accordance with the requirements of the software or the customer.
5	Uses advanced methods of procedural programming. The data structures created by him are able to store and operate on large amount of data in an optimum manner. Conducts database servers in accordance with the requirements of the software or the customer.

General knowledge about insourcing – having basic knowledge about the insourcing industry and the operating context of such companies	
Level	Description
0	Does not have even basic knowledge about the characteristics of operation in insourcing industry. Does not understand basic concepts and the operating context of companies in the industry.
1	Has at least basic knowledge about the operation of the insourcing industry. Understands basic concepts (e.g. KPI, KPO, ITO/IT, etc.) and the operating context of companies in the industry.

Foreign languages

A good reference for the needs and expectations of companies from the BPO/SSC and ITO/IT industries as regards the language skills is the Common European Framework of Language Education. The required minimum is the B2 level (student can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialisation. Can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.

The key reservation that we have to make here concerns the importance of particular linguistic competences. There are a lot of arguments proving that even though reading and writing skills as well as knowing the grammar of the foreign language is very important, the key competence is speaking.

Languages: English, German, French, Italian, Dutch, Finnish, Swedish, Hungarian, Spanish, Norwegian, Czech, Russian – using the foreign language at such a level, which enables proper and efficient communication. ⁴²	
Level	Abbreviated description
A2	Can understand sentences and frequently used expressions related to areas of most immediate relevance (e.g. very basic personal and family information, shopping, local geography, and employment). Can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters. Can describe in simple terms aspects of his/her background, immediate environment and matters in areas of immediate need.
B1	Can understand the main points of clear standard input on familiar matters regularly encountered in work, school, leisure, etc. Can deal with most situations likely to arise whilst travelling in an area where the language is spoken. Can produce simple connected text on topics which are familiar or of personal interest. Can describe experiences and events, dreams, hopes and ambitions and briefly give reasons and explanations for opinions and plans.

⁴² Source of descriptions: Common European Framework of Language Education (source: UNESCO Chair for Translation Studies and Intercultural Communication of the Jagiellonian University (<http://www.unesco.uj.edu.pl>))

B2	Can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialisation. Can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.
C1	Can understand a wide range of demanding, longer texts, and recognise implicit meaning. Can express him/herself fluently and spontaneously without much obvious searching for expressions. Can use language flexibly and effectively for social, academic and professional purposes. Can produce clear, well-structured, detailed text on complex subjects, showing controlled use of organisational patterns, connectors and cohesive devices.
C2	Can understand with ease virtually everything heard or read. Can summarise information from different spoken and written sources, reconstructing arguments and accounts in a coherent presentation. Can express him/herself spontaneously, very fluently and precisely, differentiating finer shades of meaning even in more complex situations.

Demand for competences in qualitative view

The conclusions from the quantitative research supplement the information collected during the qualitative research – interviews with HR representatives and managers working in BPO/SSC and ITO/IT companies. **In the majority of cases, the business representatives had difficulties in determining which fields of study and at which universities constitute the best base of candidates – it is largely due to the specificity of the competences sought. As regards BPO/SSC, the most often indicated fields of study included language studies and economic studies (mostly accounting and finances). As regards ITO/IT, the most often indicated fields of study were programming, automation and robotics, IT, physics and mathematics.**

Recruitment and selection

One of the connections between the situation on the labour market and the employers are the recruitment techniques used. If they are selected properly, they let the HR find the candidates with relevant qualifications, whereas if they are incorrect, regardless of the presence of relevant candidates on the labour market, they do not encourage them to file an application. The HR representatives listed a few key methods, using which they obtain candidates for work among students and graduates. These methods vary, and in reality, they allow them to reach an extensive pool of potential candidates:

- announcements published in job portals
- looking for persons at social networking sites focusing on career development
- contacts during labour fairs
- meetings at universities
- contacts with career offices and associations gathering graduates
- contacts through recommendations.

It may be stated that next to Internet, an important source of potential candidates are the universities. The comprehensive nature of the undertaken activities lets us state that it is highly probable, that if companies experience difficulties in finding candidates with certain competences, it is rather due to shortage of such persons on the market rather than from the improper recruitment methods.

As regards the techniques for assessing competences, knowledge, skills and abilities in the case of BPO/SSC industry, the following were listed: phone interviews, analytic and linguistic tests, individual conversations with a direct superior. It is interesting that in the case of ITO/IT industry, the knowledge is checked first – its verification is conducted by engineers (often during phone conversations). In the next step, during a conversation with engineers and the manager responsible for employing new workers, the so-called “soft” skills are checked. The assessment includes i.e. adaptation to the particular team and organisation, initiative and independence at the position as well as motivation. BPO/SSC and ITO/IT managers stated that such an assessment is undoubtedly a difficult task, in particular when assessing motivation, adaptation to organisational culture or honesty. Managers indicated that the so-called “sampling”, that is performing a particular task connected with future work, was helpful in the assessment. Difficulties in selecting relevant candidates may also be the result of limited use of techniques such as a situation test or Assessment Center, which are rather used to assess competences at higher positions.

Employee development

It would be naive to believe that the persons recruited directly from the labour market will have a complete and comprehensive set of competences at the desired level, which does not have to be developed in any way later. The representatives of companies are aware of this fact and the companies themselves have a wide range of extensive programmes focused on employee development. The list of main tools includes:

- Induction programmes or Onboarding,
- training courses providing knowledge connected with the performed work (also called “hard”), e.g. accounting, legal issues,
- training courses developing intrapersonal and interpersonal skills (so-called “soft skills”), e.g. communications, customer service, dealing with stress, assertiveness, teamwork,
- language courses,
- mentorship (in particular in ITO/IT; new employees are assigned to an experienced engineer),
- group coaching conducted by a manager,
- visits to company's branches,
- workshops in the companies for which they work, for the purposes of exchanging knowledge and learning about the business context of the operation,
- support of a more experienced co-worker in the first few months of employment,
- training courses organized by the team members.

It may be said that such an extensive range of tools constitutes, in a sense, a vote of no confidence in the educational results obtained by the employees at the universities – however, the reality is much more complex, and such image would be unfair to the universities. Of course, the majority of the training courses are intended to eliminate the shortages, which would be unnecessary, if the curricula at the universities were adapted better. On the other hand, their majority is intended to prepare candidates for work in a particular business environment, and as such they are necessary for the purposes efficient action. Another group comprises of educational activities, which are necessary for the purposes of the companies adapting themselves to the changing business conditions, development and changes in the profile of activity. **In the context of life-long learning, the development opportunities offered by the BPO/SSC and ITO/IT companies should be recognized as very well prepared, which should therefore translate into establishing a positive image and attracting better and better candidates to these jobs.** The companies often join two general forms of development activities: off the job and on the job. More and more emphasis is put on the development through experience.

Strengths of students and graduates

While it is much easier to talk about shortages and deficiencies, the representatives of BPO/SSC and ITO/IT companies have no difficulty in indicating a range of very positive aspects connected with the competences of graduates and senior students of Kraków's universities. They include:

- high level of knowledge,
- good technical education in the case of engineers,

- openness and easiness in contacts, which help in contacts with customers,
- efficient organisation of work and planning of tasks,
- high flexibility, i.e. in easily adapting to changes of duties, hours of work,
- high work motivation,
- creativity,
- extensive linguistic skills among graduates of language studies.

Moreover, the managers also valued the inter-cultural experience of the students – in their opinion such experiences and the opportunities to have contacts with foreigners at the universities are very beneficial. They shape the desired habits connected with understanding cultural differences and work for the benefit of proper conduct in various cultural contexts, inherent to working in BPO/SSC industry.

Moreover, the business representatives see the readiness to obtain knowledge and skills, which is most often expressed by graduates of language studies and liberal arts and sciences as well as social studies, for whom finances are a new field.

Weaknesses of students and graduates

As regards the weaknesses of graduates and senior students of Kraków's universities, the interviews conducted with the managers and HR specialists confirm the data collected in the questionnaire survey. In particular, they see acute deficiencies in:

- communications. Students and graduates experience difficulties in public speaking, they prefer electronic contact to direct contact.
- influencing others. They often lack self-confidence, in particular in the contacts with persons higher in the organisational hierarchy or on a larger forum.
- teamwork. They visibly focus on achieving individual successes, they have problems with connecting with the team.
- accepting feedback. The students and graduates often react emotionally to critical information; they do not treat them as a source of information as to which areas they may develop.
- involvement. Low identification with the company is often noted, which – in the opinion of managers and HR representatives – results from higher mobility of this generation and the belief that it is easy to change jobs.
- applying knowledge in practice. The students and graduates have academic knowledge, which is checked during the recruitment process and it is assessed very highly, but in real-life situations, they are not always able to use it.
- work experience. Another issue, most often indicated by managers, is the practical experience as such, not connected strictly with the BPO/SSC and ITO/IT industries. They believe that the students lack the familiarity with business environments and adapting to the rules required at work. They often indicated the benefits that arise from going beyond the required practice at the universities. It is very helpful if a given person has already worked at any position and realized certain duties.

- the level of the English language among graduates of language studies. It was often indicated that while the graduates of language studies know their major languages very well, their level of English language is not satisfactory.

As the representatives of companies often indicate, the level of the competences could be increased in particular through realization of team projects during their studies. Then they would obtain real experiences, instead of learning what the efficient group work comprises of or what the compliance techniques are. It would be best if such classes would be based on real problems and case studies, and would conclude with writing a report and presenting the results.

It is interesting that apart from the issues that may be addressed by the universities by the methods, in which the curricula are realized, the generation issues connected with social transformations and technological progress were mentioned. The interviewees often emphasized that young people belong to the so-called “generation Y” – they take care about maintaining the balance between work and private life, higher mobility in employment, and thus – poorer identification with the employer and lack of loyalty towards the company, as well as taking things for granted and lack of humbleness, arising from taking care of their own rights. It may constitute quite a serious challenge for a company, which cares about keeping a good employee and often forces a change in approach, which will guarantee that the high expectations of the young generation are met.

Summary

It seems that the BPO/SSC and ITO/IT representatives find it difficult to clearly determine the fields of study and universities, which are the best base of candidates, as they are most often focused on intensive training courses as regards the domain knowledge required at the given position. However, it does not mean that they do not see the strengths of the graduates of Kraków's universities or their deficiencies in basic competences required for their professional work.

The **strengths** of Kraków's graduates according to the representatives of companies are, for example: extensive knowledge, openness and easiness in contacts, flexibility, motivation to work, creativity and linguistic skills. **Acute deficiencies** according to the representatives of companies are: communication skills, influencing others, accepting feedback, practical application of theoretical knowledge, work experience and level of the English language among graduates of language studies.

Educational results essential for BPO/SSC and ITO/IT

Considering the specifics of the competences expressed by the graduates and expected by business representatives, as well as the application nature of the prepared solutions, we decided not to consider any divisions and categories of the educational results. The expected competences, and therefore the educational results, are pretty universal (except for the expectations that are strictly connected with a given field of study, such as the basics of economics or programming in selected languages) and transferable between fields. Another argument in favour of resigning from any categories is one of the main assumptions of KRK – the autonomy and freedom of creating the educational results by particular universities.

This is also the reason why it would be worth it if the universities, before including a given educational result in their own catalogue, could formulate its contents anew and adapt it to their own needs and capabilities – this is most often due to the necessity to monitor and verify the learning of the given educational result. This is the condition, which allows students to obtain a diploma confirming certain qualifications. Therefore we decided to create a catalogue of educational results, which would reflect the expectations of business in an accurate manner, and on the other hand – which would allow universities to modify them easily. A significant help in modifying or adding details to the educational result may be provided by the dictionary of competences, where each expectation of business was expressed in the

form of conduct corresponding to the level of the given competence. Therefore we prepared a short catalogue of guidelines stating how the given educational results may be achieved and measured.

#	Competence / expectation name	Definition	Description of the educational result	BPO /SSC	ITO/ IT
1	Initiative	Initiating new activities and accepting responsibilities connected with them	The student is able to initiate new activities (initiatives) in the given organisational and social context, accepting the liability for realizing them	x	x
2	Innovation	Generating ideas, creating and implementing new solutions facilitating work	The student is able to create new ideas (innovations) on his own within a given organisational environment, work on them and later implement them, thus solving problems in an innovative way.	x	x
3	Written communications	Preparing and submitting written communications, preparing clear written reports	The student is able to prepare and present communications, professional documents and reports in written form, using proper language and form, which are understandable to the recipient / principal.	x	x
4	Oral communications	Presenting and submitting information in oral form, fluent speaking	The student is able to communicate with others accordingly, preparing and presenting information orally, using language and form that is understandable to the recipient.	x	x
5	Goal orientation	Realization of short-term and long-term objectives set for the given position	The student is able to understand and accept short-term and long-term objectives in the organisation he works for, and then to undertake actions for realizing them on time.	x	x
6	Customer-orientation	Satisfying the needs and expectations of the customer, considering the customer-perspective when offering solutions	The student is able to identify the needs and expectations of the recipients of his actions (customers or beneficiaries) in the organisation he works for, and then to use this knowledge to undertake actions dedicated to satisfying them.	x	x
7	Organizing own work	Planning the work and organising the tasks intended to realize the plan, giving priorities to tasks	The student is able to organize his actions and time, designate priorities and optimize their performance method. The student is able to designate clear and demanding objectives when working on a particular task.	x	x
8	Taking care of quality	Activity compliant with the regulations, provisions and procedures in the organisation, accuracy and diligence in realization of tasks	The student identifies the quality criteria of his own work (understood as meeting the requirements of the customer or beneficiary of the actions). The student is able to identify how his activities translate into the results of the organisation, and based on it – to undertake actions compliant with the written and unwritten rules applied within the given organisational context, he is thorough and diligent in meeting them. The student takes care of the quality and diligence of the tasks he performs.	x	x
9	Influencing others	Influencing others, convincing them through substantiated argumentation and other measures, self-confidence in presenting your point of view	The student is able to conduct a substantiated discussion, to use argumentation to convince others and to defend his opinion within a given organisational environment, without antagonizing the relation.	x	x

10	Cooperation	Effective team work, orientation on realizing group objectives	The student is open to cooperation and is able to work with others in a group, to take certain roles in teamwork, which serve the realization of team objectives.	x	x
11	Involvement	Enthusiasm and passion for work, "can-do" approach, taking care of the company's image	The student is able to become involved in the actions and to show enthusiasm and passion in realizing tasks. The student accepts the significance of taking care of the company's image in the given organisational context.	x	x
12	Inter-cultural "sensitivity"	Practical application of the knowledge about inter-cultural differences, adapting activities to the different cultural patterns	The student is able to adapt his behaviour to different cultural patterns in the organisation. The student is able to identify cultural conditions of various behaviours of people in the organisation. The student is able to respect the different world views and cultures of his co-workers and customers.	x	x
13	Using MS Office, OpenOffice or Google Docs	Effective use of the opportunities offered by the basic office software sets	The student is able to operate and use in his work the basic office software (MS Office, OpenOffice, Google Docs).	x	x
14	Mathematical skills	Carrying out various mathematical operations	The student is able to carry out various mathematical operations in solving problems and generating knowledge.	x	x
15	Learning	Easiness and speed of acquiring new knowledge	The student is able to acquire new knowledge efficiently and quickly.	x	x
16	Adaptation	Easiness and speed of acting in changing conditions	The student is able to adapt his habits and behaviours to changing conditions.	x	x
17	Dealing with stress	Easiness and speed of acting in difficult situations	The student is able to work under pressure, using effective strategies of dealing with stress.	x	x
18	Analytical skills	Easiness, speed and reliability of obtaining and processing information	The student is able to, regardless of the conditions, obtain, analyse and process information required to perform a given task.	x	x
19	Honesty	Adhering to the common moral standards	The student accepts the need of standards of ethical behaviour and honesty and applies them in his activity.	x	x
20	General knowledge about outsourcing	Having basic knowledge about the outsourcing industry and the operating context of such companies	The student has basic knowledge about the characteristic of operation of the Business Process Outsourcing and Shared Services Center industries. He understands concepts (BPO, SSC, call center, KPI, etc.) and is able to use them in practice in organisational context. He knows which competences should be developed in order to achieve success in this industry.	x	x
21	Basics of Economics	Understanding basic terms in economics and ability to use them in practice in organisational context	The student has basic knowledge of economics. He understands the terms and is able to use them in practice in organisational context.	x	
22	Accounting basics	Understanding basic terms in accounting and ability to use them in practice in organisational context	The student has basic knowledge of accounting. He understands the terms and is able to use them in practice in organisational context.	x	
23	General knowledge about insourcing	Having basic knowledge about the insourcing industry and the operating context of such companies	The student has basic knowledge about the characteristic of operation of the Insourcing businesses. He understands basic concepts (SSC, KPI, KPI, ITO, insourcing, etc.) and is able to use them in practice in organisational context. He knows which competences should be		x

			developed in order to achieve success in this industry.		
24	C/C++ programming language	The ability to use the programming language C/C++ in practice to solve problems specific for the professional work of a programmer.	The student is able to use the programming language C/C++ in practice to solve problems specific for the professional work of a programmer.		x
25	Java programming language	The ability to use the programming language Java in practice to solve problems specific for the professional work of a programmer.	The student is able to use the programming language Java in practice to solve problems specific for the professional work of a programmer.		x
26	Computer networks	The ability to manage (design, implement, maintain and administer) computer networks and systems	The student is able to manage (design, implement, maintain and administer) computer networks and systems		x
27	Algorithms and data structures	The ability to manage (design, implement, analyse and program) algorithms and data structures	The student is able to manage (design, implement, analyse and program) algorithms and data structures.		x
28	The ability to test software	The ability to conduct tests and validations (planning, assessment and realization) of software	The student is able to conduct tests and validations (planning, assessment and realization) of software.		x
29	Agile methodology	The ability to work in a group effectively, using soft project management methodologies (AGILE, SCRUM, etc.)	The student is able to work in a group effectively, using soft project management methodologies (AGILE, SCRUM, etc.)		x
30	Time availability	Flexibility as regards hours of work, accepting overtime work in exchange for free time later	-	x	x
31	Mobility	Accepting proposals of trips connected with professional duties or learning (conferences, training courses) outside the place of work	-	x	x
32	SharePoint	The ability to operate SharePoint platform	The student is able to use the SharePoint platform in practice to solve problems specific for the professional work of a programmer.		x
33	ASP.NET	The ability to use ASP.NET in practice to solve problems specific for the professional work of a programmer.	The student is able to use the programming language ASP.NET in practice to solve problems specific for the professional work of a programmer.		x
34	Selenium	The skill of using the Selenium framework to test applications and websites.	The student is able to use the Selenium framework to test applications and websites in practice.		x
35	HTML	The ability to use the programming language HTML in practice to solve problems specific for the professional work of a programmer.	The student is able to use the programming language HTML in practice to solve problems specific for the professional work of a programmer.		x
36	JavaScript	The ability to use the programming language JavaScript in practice to solve problems specific for the professional work of a programmer.	The student is able to use the programming language JavaScript in practice to solve problems specific for the professional work of a programmer.		x

37	C#	The ability to use the programming language C# in practice to solve problems specific for the professional work of a programmer.	The student is able to use the programming language C# in practice to solve problems specific for the professional work of a programmer.		x
38	SQL	The ability to use query language to create and manage databases.	The student is able to use the options of SQL databases in practice to solve problems specific for the professional work of a programmer.		x

Table No. 14. Translating the expectations of BPO/SSC and ITO/IT companies into the language of educational results.

Educational results in quantitative view

We asked the directors of educational units and heads of majors at Kraków's universities to complete the "Supply questionnaire". The questionnaires were completed by the representatives of 215 fields of study/majors from 8 universities – the details of the size of particular groups is presented in Table 15.

University name	Frequency
University of Science and Technology	46
University of School of Physical Education	18
Andrzej Frycz Modrzewski Krakow University	15
Kraków University of Technology	6
Jagiellonian University	66
Pedagogical University of Kraków	45
University of Agriculture in Kraków	8
The School of Banking and Management	11
Total	215

Table 15. The number of fields of study/majors at the particular Kraków's universities considered in the analysis.

One of the basic questions we asked the directors of basic units of Kraków's universities is the number of graduates estimated for the years 2013 and 2018 at particular fields of study. As it clearly arises from the data presented in Table 16, despite the population decline, the universities expect that in the case of the universities indicated by the ITO/IT and BPO/SSC industries, the number of graduates will grow by about 15%.

Predicted number of graduates	Average ITO/IT fields of studies (N=24)	Average BPO/SSC fields of studies (N=191)
Year 2013	31.45	42.12
Year 2018	36.11	47.36

Table 16. Estimated number of graduates in the years 2013 and 2018.

Apart from the predictions concerning the number of graduates, the directors and persons responsible for the teaching process in the basic units at universities were asked to which level, on a scale from 1 to 5 at the given profile / path / major, particular educational results are achieved, where 1 means that the given educational result is obtained to only a slight extent, and 5 that the given educational result is obtained to full extent. Below you will find a comparison between the fields of study comprising the bases for the BPO/SSC and ITO/IT industries as regards the percentage of the fields of study, where the given educational result is realized to at least medium extent (the presentation does not include unpopular foreign languages and programming languages, due to scarcity of cases).

Educational result	BPO/SSC average	ITO/IT average
--------------------	-----------------	----------------

The student is able to initiate new activities (initiatives) in the given organisational and social context, accepting the liability for realizing them.	69%	86%
The student is able to create new ideas (innovations) on his own within a given organisational environment, work on them and later implement them, thus solving problems in an innovative way.	67%	82%
The student is able to prepare and present communications, professional documents and reports in written form, using proper language and form, which are understandable to the recipient / principal.	75%	91%
The student is able to communicate with others accordingly, preparing and presenting information orally, using language and form that is understandable to the recipient.	83%	86%
The student is able to understand and accept short-term and long-term objectives in the organisation he works for, and then to undertake actions for realizing them on time.	77%	77%
The student is able to identify the needs and expectations of the recipients of his actions (customers or beneficiaries) in the organisation he works for, and then to use this knowledge to undertake actions dedicated to satisfying them.	59%	64%
The student is able to organize his actions and time, designate priorities and optimize their performance method. The student is able to designate clear and demanding objectives when working on a particular task.	75%	86%
The student identifies the quality criteria of his own work (understood as meeting the requirements of the customer or beneficiary of the actions). The student is able to identify how his activities translate into the results of the organisation.	75%	86%
The student is able to conduct a substantiated discussion, to use argumentation to convince others and to defend his opinion within a given organisational environment, without antagonizing the relation.	79%	77%
The student is open to cooperation and is able to work with others in a group, to take certain roles in teamwork, which serve the realization of team objectives.	92%	91%
The student is able to become involved in the actions and to show enthusiasm and passion in realizing tasks. The student accepts the significance of taking care of the company's image in the given organisational context.	86%	86%
The student has basic knowledge of economics. He understands the terms and is able to use them in practice in organisational context.	34%	67%
The student has basic knowledge of accounting. He understands the terms and is able to use them in practice in organisational context.	21%	24%
The student has basic knowledge about the characteristic of operation of the Insourcing businesses. He understands basic concepts (SSC, KPI, KPI, ITO, insourcing, etc.) and is able to use them in practice in organisational context.	7%	10%
The student has basic knowledge about the characteristic of operation of the Business Process Outsourcing and Shared Services Center industries. He understands concepts (BPO, SSC, call center, KPI, etc.) and is able to use them in practice in organisational context.	9%	5%
The student is able to carry out various mathematical operations in solving problems and generating knowledge.	36%	86%
The student is able to adapt his behaviour to different cultural patterns in the organisation. The student is able to identify cultural conditions of various behaviours of people in the organisation. The student is able to respect the different world views and cultures of his co-workers.	75%	57%

The student is able to operate and use in his work the basic office software (MS Office, OpenOffice, Google Docs).	85%	100%
The student is able to acquire new knowledge efficiently and quickly.	88%	100%
The student is able to adapt his habits and behaviours to changing conditions.	79%	95%
The student is able to work under pressure, using effective strategies of dealing with stress.	74%	86%
The student is able to, regardless of the conditions, obtain, analyse and process information required to perform a given task.	82%	95%
The student is able to manage (design, implement, maintain and administer) computer networks and systems	7%	67%
The student is able to manage (design, implement, analyse and program) algorithms and data structures.	16%	67%
The student is able to conduct tests and validations (planning, assessment and realization) of software.	16%	43%
The student is able to work in a group effectively, using soft project management methodologies (AGILE, SCRUM, etc.)	7%	43%
The student is able to communicate in writing and orally in the English language at B2 level of the Common European Framework of Reference for Languages*	83%	95%
The student is able to communicate in writing and orally in the German language at B2 level of the Common European Framework of Reference for Languages*	31%	29%
The student is able to communicate in writing and orally in the French language at B2 level of the Common European Framework of Reference for Languages*	16%	19%
The student is able to communicate in writing and orally in the Russian language at B2 level of the Common European Framework of Reference for Languages*	20%	19%

Table 17. The percentage of fields of study, where the given educational result is realized to at least medium level.

The educational results that are assessed as the best by the unit directors are those concerning oral and written communications, cooperation, quick learning, analytical skills, operating office software and, which is particularly important, enthusiasm. It is quite a surprising result, as a lot of these highly-assessed educational results is in turn assessed very poorly by the employers. A lot points out towards the fact that obtaining particular transferable competences was overestimated by the respondents; we will continue the topic further in the report. It is most probably due to incorrect assessment and improper understanding.

Below you will see those educational results, where there was the biggest difference between the fields of study characteristic for BPO/SSC and ITO/IT, to the benefit of the latter.

Educational result	Average (N=24)	Average (N=191)	Difference
The student is able to carry out various mathematical operations in solving problems and generating knowledge.	4.4	2.6	1.8
The student has basic knowledge of economics. He understands the terms and is able to use them in practice in organisational context.	3.5	2.5	0.9
The student is able to operate and use in his work the basic office software (MS Office, OpenOffice, Google Docs).	5.0	4.3	0.7

The student has basic knowledge about the characteristic of operation of the Business Process Outsourcing and Shared Services Center industries. He understands concepts (BPO, SSC, call center, KPI, etc.) and is able to use them in practice in organisational context.	1.7	1.2	0.5
The student is able to adapt his habits and behaviours to changing conditions.	4.4	3.9	0.5

Table 18. The differences in obtaining educational results between fields of study/majors constituting a natural source of obtaining candidates for companies from ITO/IT and BPO/SSC industries.

It is no surprise that the strengths of fields of study that are the natural source of candidates in the ITO/IT industry include the competences connected with mathematics, while it may seem weird that the graduates of fields of study characteristic to ITO/IT are leaders in the knowledge of economics, adaptation and knowledge about BPO/SSC and operating MS Office.

Educational result	Average (N=24)	Average (N=191)	Difference
The student is able to adapt his behaviour to different cultural patterns in the organisation. The student is able to identify cultural conditions of various behaviours of people in the organisation. The student is able to respect the different world views and cultures of his co-workers.	3.3	4.1	-0.8
The student is able to communicate with others accordingly, preparing and presenting information orally, using language and form that is understandable to the recipient.	3.8	4.3	-0.5
The student is able to conduct a substantiated discussion, to use argumentation to convince others and to defend his opinion within a given organisational environment, without antagonizing the relation.	3.9	4.2	-0.3
The student is open to cooperation and is able to work with others in a group, to take certain roles in teamwork, which serve the realization of team objectives.	4.3	4.5	-0.2
The student is able to identify the needs and expectations of the recipients of his actions (customers or beneficiaries) in the organisation he works for, and then to use this knowledge to undertake actions dedicated to satisfying them.	3.6	3.7	-0.2

Table 19. The differences in obtaining educational results between fields of study/majors constituting a natural source of obtaining candidates for companies from BPO/SSC and ITO/IT industries.

The strengths of the fields of study connected with BPO/SSC include educating soft skills – inter-cultural sensitivity, communications, cooperation and persuasion.

Achieving the assumed educational results

The table below presents sample methods and tools, which may be used to help students in obtaining a given educational result as well as selected tools for verifying/assessing, whether it actually happened. While preparing this section, we followed the guidelines of the works by Bologna experts⁴³ and suggestions from the representatives of universities. As regards the teaching methods and tools for achieving certain educational results, we decided not to limit ourselves only to those methods that may be applied in academic courses, but also to include more general actions – such as pressure to increase student exchange, supporting students' organisations, etc. We hope that such a decision will let us

⁴³ A series of presentations by T. Saryusz-Wolski, D. Piotrkowska, J.M. Pawlikowski, M. Ziótek or E. Chmielecka is available at www.ekspertbolonscy.org.pl; Moreover, we used the publication: M. Rydzewska-Włodarczyk (2011) *Zasady oceny efektów kształcenia - wybrane problemy. [The principles of assessing educational results – selected problems]* Folia Pomer. Univ. Technol. Stetin. Oeconomica 287 (63), 223-234.

provide a wider perspective. The general direction, in which our suggestion go, comprises of maximum use of such tools, which enable teaching through experiencing⁴⁴. Hence the pressure on project work (in international groups as well), practice in business organisations, courses in the form of simulations, using educational games, workshops conducted by business representatives or the so-called “live” case studies⁴⁵.

Additional comment should also be made as regards the suggested assessment/verification tools of obtaining the assumed educational results. These tools are commonly divided into two main types⁴⁶:

- formative assessments – they are performed relatively often, whose major purpose is to provide information to the student (concerning progress, any shortages and deficiencies in development) and to the academic lecturers (concerning the efficiency of their own teaching activities).
- summarizing assessments – usually performed once at the end of the given teaching period, stating whether and to what extent the student achieved the assumed educational results.

This report does not indicate which assessment tools should be placed in which of these categories, leaving the decision to the teachers who decide to use them. It is important to note that what the literature calls “formative assessment”, the business usually calls “feedback”. As such, it may come from various sources and in accordance with the adopted rules, it should not have any impact on the final assessment (or, in the case of business, e.g. on remuneration). The purpose of feedback is only the development of the person, to which it is given⁴⁷. According to such approach, **the formative assessment process may, or in many cases even should, involve the students themselves** as well as other stakeholders of the educational process (analogically to the 360-degree assessment used in business). It requires that the persons providing and accepting feedback must be prepared for it beforehand, but the expected results are surely worth it. In contrast, summarizing assessment is similar to the financial result of a company, and, comprising a negative measure of success in the activities of an organisation, it should be the basic assessment criterion for the whole process.

Preparation of tools themselves as well as detailed assessment criteria exceeds the scope of this study, yet it is important for them to be prepared jointly by the representatives of business and universities. In some cases (e.g. situation tests, sampling, or student practice), such cooperation is absolutely necessary to prepare reliable and accurate tools.

Competence / expectation name	Description of the educational result	Teaching methods and tools	Assessment/verification tools
-------------------------------	---------------------------------------	----------------------------	-------------------------------

⁴⁴ See D. Kolb (1983). *Experiential learning*. Paramus, NJ: Financial Times/Prentice Hall; M. Silberman (ed.) (2007). *The Handbook of Experiential Learning*, San Francisco: Pfeiffer.

⁴⁵ While the student practice, simulations and games are pretty well recognized on the educational market, it is the live case studies that need some explanation. This method, comprising of making the use of case studies more realistic in the teaching practice, is based on stronger pressure on project work and on the class teacher assuming different roles when students solve the given case study. At certain stages of a project, he becomes once a principal, once a user, once a contractor or supplier. The students are usually not given access to all information required to solve the case – they must obtain the information, work on them by interacting with the teacher, who assumes a particular role. In order to achieve it, they must use various means of communications – conversation, negotiations, e-mails, etc. The teacher gains new opportunities to teach and assess, and students – to learn, not only this particular piece of knowledge, but also essential skills we mentioned before – communications, customer orientation, dealing with stress, empathy, etc. D. Fink (2008). *Living Cases: Authentic Learning in Action*. Proceedings of the EDU-COM 2008 International Conference. Sustainability in Higher Education: Directions for Change, Edith Cowan University, Perth Western Australia.

⁴⁶ M. Rydzewska-Włodarczyk (2011) *Zasady oceny efektów kształcenia - wybrane problemy*. [The principles of assessing educational results – selected problems] Folia Pomer. Univ. Technol. Stetin. Oeconomica 287 (63), 223-234

⁴⁷ See Stocki, Prokopowicz, Zmuda (2008). *Pełna partycypacja w zarządzaniu*. [Full participation in management]. Kraków: Wolters Kluwer.

Initiative	The student is able to initiate new activities (initiatives) in the given organisational and social context, accepting the liability for realizing them	Project method "Live case study" Work group, student practice Students' organisations	Feedback from stakeholders (teachers, project group members, customer, co-workers, employer, self-assessment) ⁴⁸ Assessment discussions, Student practice grade, Report on activity, Observations (behaviour observation sheet) Assessing a project work
Innovation	The student is able to create new ideas (innovations) on his own within a given organisational environment, work on them and later implement them, thus solving problems in an innovative way.		
Goal orientation	The student is able to understand and accept short-term and long-term objectives in the organisation he works for, and then to undertake actions for realizing them on time.		
Cooperation	The student is open to cooperation and is able to work with others in a group, to take certain roles in teamwork, which serve the realization of team objectives.		
Involvement	The student is able to become involved in the actions and to show enthusiasm and passion in realizing tasks. The student accepts the significance of taking care of the company's image in the given organisational context.		
Customer-orientation	The student is able to identify the needs and expectations of the recipients of his actions in the organisation he works for, and then to use this knowledge to undertake actions dedicated to satisfying them.	Project method "Live" case study Practice Educational games, simulations	Feedback from stakeholders, evaluation interviews, observations, project grade, practice grade Assessment of practical skills Situation test Assessing the result of an educational game Situation interview (oral exam)
Organizing own work	The student is able to organize his actions and time, designate priorities and optimize their performance method. The student is able to designate clear and demanding objectives when working on a particular task.		
Taking care of quality	The student identifies the quality criteria of his own work (understood as meeting the requirements of the customer or beneficiary of the actions). The student is able to identify how his activities translate into the results of the organisation, and based on it - to undertake actions compliant with the written and unwritten rules applied within the given organisational context, he is thorough and diligent in meeting them. The student takes care of the quality and diligence of the tasks he performs.		
Influencing others	The student is able to conduct a substantiated discussion, to use argumentation to convince others and to defend his opinion within a given organisational environment, without antagonizing the relation.		

⁴⁸ Descriptions of particular assessment methods and techniques can be found below the table.

Adaptation	The student is able to adapt his habits and behaviours to changing conditions.		
Written communications	The student is able to prepare and present communications, professional documents and reports in written form, using proper language and form, which are understandable to the recipient / principal.	Project method "Live case study" Work group, student practice	Feedback from stakeholders, Project assessment, report assessment, Student practice assessment, Sampling
Oral communications	The student is able to communicate with others accordingly, preparing and presenting information orally, using language and form that is understandable to the recipient.	Project method "Live case study" Work group, Discussions, Student practice	Feedback from stakeholders, presentation assessment, Student practice assessment, Sampling
Inter-cultural "sensitivity"	The student is able to adapt his behaviour to different cultural patterns in the organisation. The student is able to identify cultural conditions of various behaviours of people in the organisation. The student is able to respect the different world views and cultures of his co-workers and customers.	Working in an inter-cultural group (student exchange) Project method Educational games	Feedback from the stakeholders Project assessment Assessing the result of an educational game Situation test Situation interview
Using MS Office, OpenOffice or Google Docs	The student is able to operate and use in his work the basic office software (MS Office, OpenOffice, Google Docs).	Lectures Workshops Presentations	Project assessment, Case study assessment, Practical test, Sampling
Mathematical skills	The student is able to carry out various mathematical operations in solving problems and generating knowledge.	Lectures Workshops Case studies	Knowledge test, Skill assessment, Practical test
Learning	The student is able to acquire new knowledge efficiently and quickly.	Lecture Workshops Practice Educational games	Feedback from the stakeholders, Student practice assessment Assessing the result of an educational game
Dealing with stress	The student is able to work under pressure, using effective strategies of dealing with stress.	Project method Group work "Live case study" student practice	Feedback from the stakeholders, Project assessment, Student practice assessment
Analytical skills	The student is able to, regardless of the conditions, obtain, analyse and process information required to perform a given task.	Project method, Exercises, Solving problems, Case studies	Test of skills Case study assessment Practical test
Honesty	The student accepts the need of standards of ethical behaviour and honesty and applies them in his activity.	Discussion Problem method, Case studies, Project method, Group work	Feedback from stakeholders Presentation Situation test, Situation interview, Observation
General knowledge about outsourcing	The student has basic knowledge about the characteristic of operation of the Business Process Outsourcing and Shared Services Center industries. He understands concepts (BPO, SSC, call center, KPI, etc.) and is able to use them in practice in organisational context. He knows which competences should be developed in order to achieve success in this industry.	Lecture, Presentation, Study visit, Guest workshops/lectures conducted by business representatives	Knowledge test Oral exam

General knowledge about insourcing	The student has basic knowledge about the characteristic of operation of the Insourcing businesses. He understands basic concepts (SSC, KPI, ITO, insourcing, etc.) and is able to use them in practice in organisational context. He knows which competences should be developed in order to achieve success in this industry.		
Basics of Economics	The student has basic knowledge of economics. He understands the terms and is able to use them in practice in organisational context.	Lecture Exercises. Solving problems – case studies Educational game	Knowledge test Case study assessment Presentation assessment
Accounting basics	The student has basic knowledge of accounting. He understands the terms and is able to use them in practice in organisational context.		
C/C++ programming language	The student is able to use the programming language C/C++ in practice to solve problems specific for the professional work of a programmer.	Lecture, exercises, laboratories, Project method "Live case study" Work group, student practice	Feedback from stakeholders Evaluation interviews, Project assessment Sampling Student practice assessment Knowledge test
Java programming language	The student is able to use the programming language Java in practice to solve problems specific for the professional work of a programmer.		
Computer networks	The student is able to manage (design, implement, maintain and administer) computer networks and systems		
Algorithms and data structures	The student is able to manage (design, implement, analyse and program) algorithms and data structures.		
The ability to test software	The student is able to conduct tests and validations (planning, assessment and realization) of software.		
Agile methodology	The student is able to work in a group effectively, using soft project management methodologies (AGILE, SCRUM, etc.)		
SharePoint	The student is able to use the SharePoint platform in practice to solve problems specific for the professional work of a programmer.		
ASP.NET	The student is able to use the programming language ASP.NET in practice to solve problems specific for the professional work of a programmer.		
Selenium	The student is able to use the Selenium framework to test applications and websites in practice.		
HTML	The student is able to use the programming language HTML in practice to solve problems specific for the professional work of a programmer.		
JavaScript	The student is able to use the programming language JavaScript in practice to solve problems specific for the professional work of a programmer.		

C#	The student is able to use the programming language C# in practice to solve problems specific for the professional work of a programmer.		
SQL	The student is able to use the options of SQL databases in practice to solve problems specific for the professional work of a programmer.		

Table 20. Sample teaching tools/methods and assessment/verification tools for particular educational results.

Feedback from the stakeholders We suggest that techniques analogous to the 360-degree assessment popular in the business context should be used to provide feedback (the name comes from the full scope of people assessing). In this method, a person is assessed by the persons from their direct environment within the scopes that are significant from the viewpoint of their development, most often using a standardized assessment questionnaire. Feedback concerning the realization of a given educational result coming from varied sources (lecturers, other students, potential employees) not only allow for higher objectivity of assessment, but they also add significant development value to the whole process, in particular if such feedback is compared with the student's self-assessment. The 360-degree assessment should not be connected with the course grade or any prizes – in this case the feedback provided by other students or lecturers could be distorted by personal preferences.

Evaluation interviews with the students should be conducted regularly; the best option - before the beginning of the academic year and after the end of each term by selected lecturers or more experienced and trained students. During these interviews the student would have the chance to talk about his own progress in obtaining educational results and to learn about feedback about him as well as to respond to it. These interviews should be connected with a personal, individual development plan, which should be prepared at the beginning of the studies with the help of the assigned mentor. These methods are known in life-long learning under the names “mentorship” (that is regular assistance in solving problems provided by more experienced co-workers or superiors) and “coaching” (that is regular assistance in specifying personal objectives and their realization methods).

Student practice assessment is an assessment conducted by employers, using the criteria for feedback established in the course of cooperation between business and universities. Such an assessment should be based on clear practice objectives, determined together with the student, translated into the language of educational results, which may be assessed.

Activity report should on one hand be based on individual development objectives of the student, one the other hand – on particular episodes, which illustrate the realization of particular objectives and educational results.

Observations. The most accurate and reliable assessment methods of competences and educational results are the scales based on assessing behaviours that may be observed. A golden standard in this respect are BARS; Behaviourally Anchored Rating Scales. The assessment is based on a few essential activity scopes using a scale of a few points, where each point is described by providing sample, characteristic behaviours for a given level. The potentially exceptional accuracy of BARS is mostly due to its method of creation – they are based on the so-called critical incidents, situations, which describe episodes which are exceptionally important for the realization of particular educational results or competences.

Project work assessment should constitute a microcosm of the global work of a student throughout the whole course or path of his presence at the university. IT should include both the elements of 360-degree assessment, evaluation interview and a report and assessment performed by business representatives.

Assessment of practical skills should take place in accordance with best practices connected with observing and analysing behaviours and providing feedback (these practices were described above at other assessment methods)

Situation tests are one of the best, though still not so popular, assessment method of practical competences. They comprise of a series of problems referring to real situations, which a given person will have to deal with at the given position. Created based on situations from daily experiences of professionals within a given professional area, such tests are a perfect tool for assessing persons that have not only the potential, but also the relevant procedural knowledge required to properly perform work with a high complexity and responsibility level. What is important is that situation tests ensure a good accuracy to required effort ratio – a simple, 10-question test checks skills, which may derive from experiences of many experts within a given field.

Simulation games, more and more popular educational tool, is one of the most effective and best evaluated educational techniques. As they are based on three fundamental issues: selected resources, clear principles and roles that reflect reality, they are able to ensure unique involvement and development of the participants. One of the fundamental advantage of simulation games is the fact that their side-effect is the result, which reflects the quality of the decisions made – and at the same time it is the winning criterion. Such a result may be a very good criterion for assessing the educational results.

Situation interview does not differ in the contents from the situation test – the only difference lies in the form (oral instead of written) of the test and in the more casual assessment of the respondent's answers.

Both **assessment of projects and reports** prepared during practice-oriented classes should be performed in accordance with the criteria agreed with the business representatives. If it is possible, the assessment should be performed by the representatives of companies and organisations, which would be potentially interested in using similar solutions in their activity.

Sampling is the most accurate tool for assessing competences and educational results as regards predicting the future performance levels. It comprises of preparing and conducting of a test, which represent a real-life element of work connected with a given position or professional standing (for example, in the case of programming competences, it would be creating a code realizing a given functionality, while for the competences comprising of operating office software – preparing a presentation or a complex spreadsheet realizing certain functions). A work sample should be assessed in accordance with clear criteria focusing on the result, not the method of reaching the result.

Educational results in qualitative view

The interviews conducted with the representatives of key fields of study for BPO/SSC and ITO/IT industries as well as the conversations with the representatives of language colleges, allowed us to add more details to the information collected during quantitative surveys and to supplement them with the missing data from the fields of study and universities, which decided against participating in the quantitative survey.

The results of the analysis focusing on the contents of the curricula at the Kraków's universities confirm the opinions of employers as regards the good education provided to graduates as regards theoretical knowledge and technical skills (e.g. in the case of ITO/IT companies, there is no such programming language, which would be expected, but which would not be present in a curriculum of at least one university). We may risk a statement that in the majority of cases such knowledge and skills are even higher than expected at the positions the employees start work (the so-called entry level) – of course, it is a desired situation and it should not constitute the basis to a decision on lowering the quality of education. The graduates, who have competences exceeding the requirements of a given position, will be able to progress faster and develop in the organisations, on the other hand, they will be more “resilient” to potential changes in the profile of the companies, reducing the risk of long-term

unemployment. Shaping the current expectations of the labour market should also be a factor, which will attract KPO (Knowledge Process Outsourcing) processes to Kraków.

The analysis of the methods of achieving educational results clearly proves that the opinions about achieving them that arise from the quantitative analysis are a little too optimistic. While in the case of specialist expectations, the assessments by the representatives of the universities and business were quite similar, in the case of soft competences there is a high disproportion. It means that on one hand the persons responsible for the said fields of study do dispose of the tools to assess competences, while on the other hand – high assessments may indicate problems with adequate assessment and lack of “aspiration gap” in this respect. This is one of the reasons explaining why the graduates are assessed by the employers relatively poorly in this respect. A similar effect was noticed in the Study of Human Capital in Poland⁴⁹ – the results clearly indicate that the students overestimate their own competences, in particular as regards their social and communication competences.

It is crucial to state that there are significant differences between particular fields of study or specialisations, therefore the general competence study cannot reflect the full variety of the problems and challenges connected with education in the areas connected with the requirements of BPO/SSC and ITO/IT industries. We tried to describe situations and practices we deal with the most often, indicating the dominating tendencies at the same time.

As regards the educational results expected by employers, in many cases they are not measured in any ways at the universities, or it is assumed that they are obtained in a sort of automatic way, in connection with the recruitment and selection process (“we get the best students, who have a lot of initiative already”). Some of the competences expected by the employers are surprisingly often treated as personal predispositions by the university, which cannot be developed in any way (e.g. innovation, involvement, initiative), so there are no activities intended to develop them. As a result, the students who are more proactive, find themselves places, where they can develop further – science clubs, students' organisations, traineeships. In turn, the students who are not proactive, are also not supported in their development by the universities. It needs to be emphasized that the competences listed are connected with personal predispositions, but they may also be developed through certain techniques. They may be taught and developed; they only need a different approach than teaching theoretical knowledge. A lot of the representatives of Kraków's universities is aware of this fact and understands this relation, yet they face a wide range of barriers, which do not let them implement changes effectively due to reasons we will discuss at the end of this subchapter.

One of the competences expected by the employees is teamwork. However, the teaching method connected with it – group work – is, despite some exceptions, not used too often, mainly due to too numerous groups but also due to the way the classes are organized and the teaching methodologies used. Another negative effect of too numerous groups is the fact that the teachers find it difficult to dedicate enough attention to each of the project groups, and therefore to assess the input of each and every person in an adequate manner. Teaching oral communication competences is also difficult due to the numbers of students in the group and the resignation from oral exams, choosing written exams instead. Even though some curricula offer courses in communications, these are unique cases among Kraków's universities, and the biggest impact on these competences will be provided not by additional courses in the topic, but by including a communication component in all other classes. The situation would surely be improved by changing the organisation and settlement of the work of academic teachers involved in developing such competences – in many cases the traditional exercises could be replaced by project tasks including consultations and feedback from the teacher.

As regards written communications, it is important to note that the teachers themselves see the increasing problems in this respect, even in daily communication between students and the

⁴⁹ www.bkl.parp.gov.pl

teacher⁵⁰. Students experience problems in writing e-mail messages, using polite forms and expressing themselves clearly. The majority of our interlocutors perceives this problem and indicates the solutions applied, which go in the directions other than business expectations, even though they surely may contribute to development of the said competence. The majority of these solutions is focused on teaching students how to write formal scientific documents, while BPO/SSC and ITO/IT representatives expect practice in writing business documents – reports, briefs and notes.

University representatives pay a lot of attention to the issues connected with honesty and promoting ethical behaviour. More and more universities use anti-plagiarism software, random analysis of various works, including source code in the case of IT. Frauds are punished quite severely, yet less attention is paid to promoting ethical behaviour and proving their value.

COOPERATION WITH THE BUSINESS

In the interviews with university representatives we also talked about the experiences in cooperation with businesses so far. The information we received indicate an important obstacle in mutual cooperation. In the majority of cases, including in the context of KRK, the universities have quite a lot of experience in working with the representatives of the world of business. However, the experiences are rather not systemic; the cooperation is most often incidental. Particular fields of study consulted selected companies when preparing their educational results; organisation of student practice and internships is pretty popular, similarly to scientific cooperation. As regards cooperation in education, representatives of large IT companies sometimes run seminars for students – they are not systematic, but still quite regular. Some companies provide the topics of theses, Master's or Bachelor's, which is often well received by the universities. Even though it is often difficult for formal reasons (e.g. formal requirements concerning education type, salary scales), the universities often employ business representatives to conduct workshops or practical classes. Cooperation with industry associations is also possible and the works of students take part in a range of industry contests.

It is believed that there could be more contacts and joint initiatives. The ones that do exist are often incidental, that is due to the fact that the class teacher has personal connections in the given company. The universities would like companies to report concrete problems and work with students on a current basis during realization (e.g. consults, participating in presentations). **Even though it was quite an unexpected conclusion, it turned out that representatives of universities experience low openness of the business world to cooperation.** They provided us with examples, such as refusal to research conducted by students, PhD students and scientific workers in a real organisational environment. Both companies and students miss out a lot – on one hand it is the chance of working on applicable knowledge, on the other hand – learning about the industry itself and proving themselves in a given business context. Moreover, some companies use the students to perform less responsible, but rather imitative tasks, which does not give the students to obtain new qualifications. From this perspective, the university representatives often indicate benefits that would be brought on by more detailed determination of cooperation scope between universities and companies, considering mutual needs and capabilities.

A lot of representatives of Kraków's universities is now convinced about a pretty instrumental interest of BPO/SSC and ITO/IT in universities, and such a belief definitely makes it more difficult to work out good solutions. Considering the fact that the business representatives often speak in the same way about the academic circles, it is clearly visible that we need some external support that would mediate and moderate the cooperation process between these two worlds. This role may be perfectly served by public authorities.

⁵⁰ Despite this fact the university representatives stated that obtaining this educational result is very good.

Foreign languages

During the research activities, we conducted 3 extensive interviews with persons responsible for managing language centres. In the majority of cases, their approaches on the topics essential from the viewpoints of universities and businesses are identical. They indicate the biggest obstacle in the educational process, that is insufficient number of hours of language classes. All colleges try to adapt the language teaching to the fields of study. In many cases it is decided by the authorities within a given faculty (the most active ones ensure that the students are taught the language in their field), but the scope of Business English constitutes only a minor percentage of all courses. **The most often taught language is English, German comes second (though it is becoming less popular), while the popularity of Spanish is increasing.** In language teaching, group work is used, but it is not a dominating technique. Moreover, the lower the language level, the less frequently it is used. A lot of emphasis is put on presentations and speaking, inasmuch as it is possible. **The representatives of language centres indicate that Kraków's students experience a lot of difficulties in writing, while their strongest skills lie in listening.** Therefore a lot points out to the fact that the problems in poor speaking skills reported often reported by employers do not arise from linguistic problems as such, but rather from problems with self-presentation. Most of the universities put emphasis on teaching soft skills while teaching foreign languages. There are various work methods used during classes: self-presentation, discussion, public speaking, writing memos, a lot emphasis is put on communication skills. However, these objectives are not always fully realized in practice. **Generally speaking, the language level of students beginning the I level studies is getting lower.** Some universities indicate problems with inadequate space and organisational problems, which stem from the former. Sometimes it is also said that the language studies are only treated as source of costs for the university which is constantly cut down, despite the obvious importance of language skills for the employers.

Representatives of language colleges feel confident and competent as regards adapting the curricula to the needs of the employers, but on the other hand they believe that from their perspective, cooperation with the representatives of business is not indispensable and they are able to deal without them. They ensure that if they receive a concrete offer, they are willing to cooperate, but they are not willing to organize any initiatives of their own.

Obstacles in adapting curricula to the needs of the labour market

University representatives were in agreement as to the fact that the expectations of business are adequate and important, but they had a lot of doubts whether it is possible to implement them. We can specify a few main obstacles indicated by the representatives of the universities:

- 1) **Perceived lack of willingness to cooperate from business and their instrumental treatment of the universities.** We have already talked about this problem in this report. In practice, in order to obtain most of the educational results expected by BPO/SSC and ITO/IT, strict and intensive cooperation between the business and the universities is required. Without such cooperation, the success will go half-way at the most. The representatives of the world of business must become involved in the teaching process to a higher extent – e.g. through providing case studies, topics and problems to solve, or through organizing and offering student practice, providing feedback, etc. Probably it would be a good idea to organize seminars and workshops, where the cooperation could be started between the university lecturers and specialists in training development as well as managers from business circles. Of course, this obstacle could be tackled by the involvement of public authorities, which could assist in the process of discussing mutual needs and expectations. Often the university representatives indicated that the only way to start effective cooperation with the business is the social capital in the form of private contacts with the representatives of business. The City could support this process by creating a platform, at which this social capital could be extended.

- 2) **Finances and organisation.** It does not concern all fields of study, but the information we gathered from extensive interviews seems to indicate that the current tendency to increase the number of students in groups, as a consequence of difficult economic situation, is rather negative and intensive action is required to change it. Another obstacle consists in formal requirements, which make it difficult to include business representatives in the teaching process, as we have already mentioned.
- 3) **Habits and workload of lecturers and persons responsible for shaping and obtaining educational results at particular fields of study.** According to the university representatives, a lot of “soft” competences expected by the business is not taught at all during studies, and if so – it is not intentional. In some cases they are not treated as a potential study subject, but rather as qualities or permanent approaches, which are not susceptible to teaching. According to the respondents the academic circles are rather conservative and there is not much willingness to change. Traditional approach dominates, putting emphasis on hard competences. According to the persons responsible for education at particular fields of study, the academic teachers themselves are not sufficiently prepared to teach “soft” competences and they do not think they are equally important as hard competences. In order to educate students better, the teaching staff must largely take on coaching or tutoring role. In order to realize this new function properly, despite having skills expected by the employers, it is necessary to have very good skills in applying active forms of teaching through experience, observation of behaviours and preparation and provision of feedback.

Summary

Adapting the educational results of Kraków's universities to the expectations of the labour market usually does not require changes to the curricula themselves (even more so, it would be difficult or impossible to implement due to limited number of teaching hours), but rather modification of teaching methods. Such activities make it possible to develop practical skills of applying the knowledge in a given organisational context. Our major postulates include: increasing the number of hours realized as group projects for students, containing the elements of contacts with a customer, specifying the objectives of the task, presenting feedback to the principal, preparing reports, summaries and presentations and the presentation of results in the group and individually. It requires a particular level of cooperation with

business organisations, which should provide problems for “live case studies” and provide feedback to students on a regular basis. It would be best if these tasks were realized in international groups, which in turn requires an increased involvement of universities in preparing courses in foreign languages and expansion of student exchange networks (including countries of Eastern Europe, whose citizens more and more often find employment in BPO/SSC and ITO/IT industries). We are aware how difficult this task is, but on the other hand, working with business and making the courses more attractive may make it easier to start international cooperation. The activity supporting teaching is also important – such as expanding student practice programmes and supporting the development of students' organisations. More emphasis should be put on innovative teaching methods – using simulations and educational games as well as creating courses, which would simulate the operation of an organisation.

Competence study – SUPPLY/DEMAND

Below you will find a matrix presenting the adjustment of expected educational results to the perception of availability of BPO/SSC competences on the market.

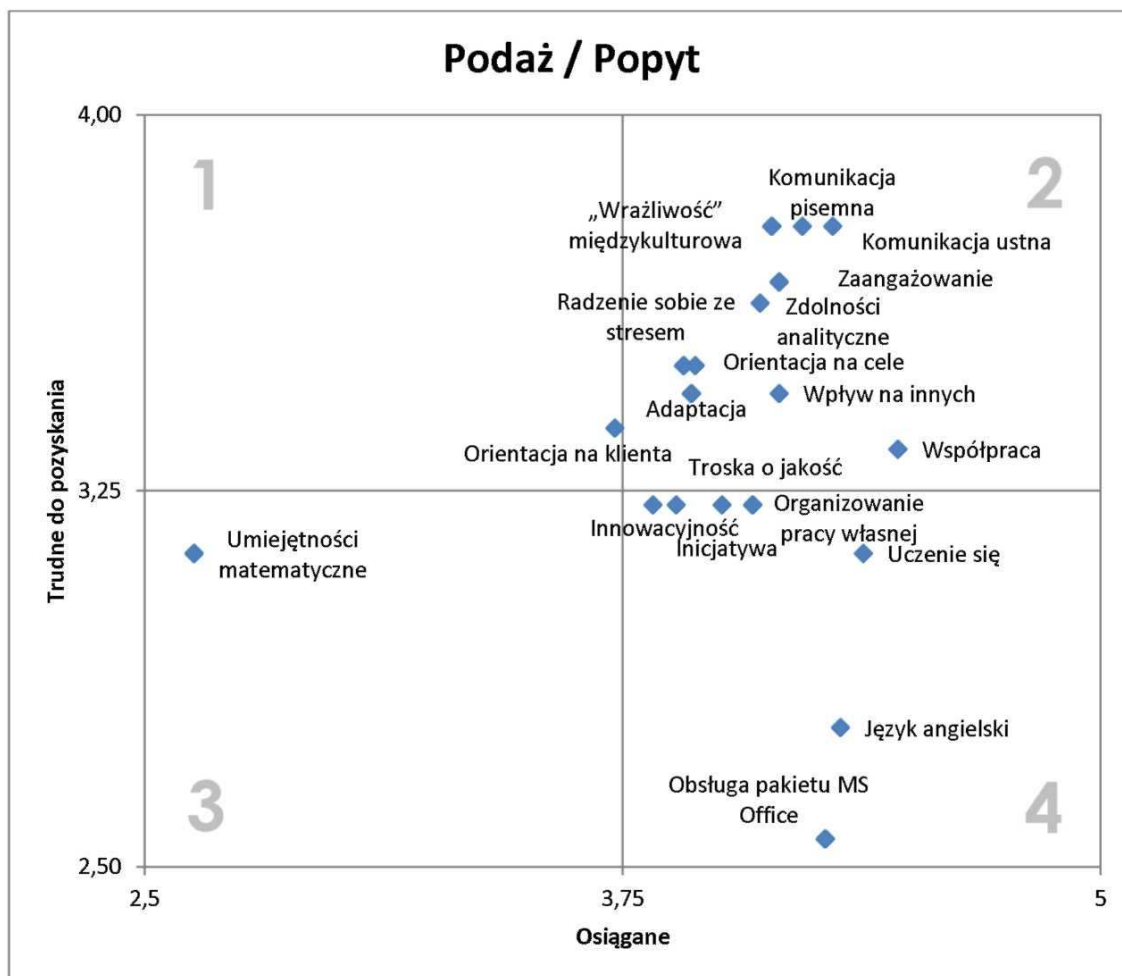


Chart 1. The relation between the perceived difficulty of a given competence to obtain and their level obtained at the fields of study/majors that are the natural base for BPO/SSC industry.

Podaż/popyt	Supply/Demand
Trudne do pozyskania	difficult to obtain
Osiągnane	obtained
Inicjatywa	Initiative
Innowacyjność	Innovation
Komunikacja pisemna	Written communications
Komunikacja ustna	Oral communications
Orientacja na cele	Goal orientation
Orientacja na klienta	Customer-orientation
Organizowanie pracy własnej	Organizing own work
Wpływ na innych	Influencing others
Współpraca	Cooperation
Zaangażowanie	Involvement
Umiejętności matematyczne	Mathematical skills
„Wrażliwość” międzykulturowa	Inter-cultural “sensitivity”
Język angielski	English
Uczenie się	Learning
Adaptacja	Adaptation
Radzenie sobie ze stresem	Dealing with stress

Zdolności analityczne	Analytical skills
Obsługa pakietu MS Office	Operating MS Office
Troska o jakość	Taking care of quality

In a perfect situation of convergence between the perception of demand and supply of competences between business and universities, such matrix should contain no points in fields 2 and 3 (high supply / low availability, low supply / high availability), while all points should be placed in fields 1 and 4 (low supply / low availability; high supply / high availability). As it follows from the chart above, the situation is different. While operating MS Office, English language, learning, organisation of own work, initiative, innovation and customer orientation seem to be perceived in a similar way (the last one – negatively), the key soft competences such as written or oral communications, influencing others, involvement or cultural sensitivity are perceived in a completely different way. The quality section allows us to refer to the identified variance. During the interviews our interlocutors from the universities indicated that a lot of expectations important for business is not measured by the universities in any way.

Below you will find a matrix presenting the adjustment of expected educational results to the perception of availability of ITO/IT competences on the market.

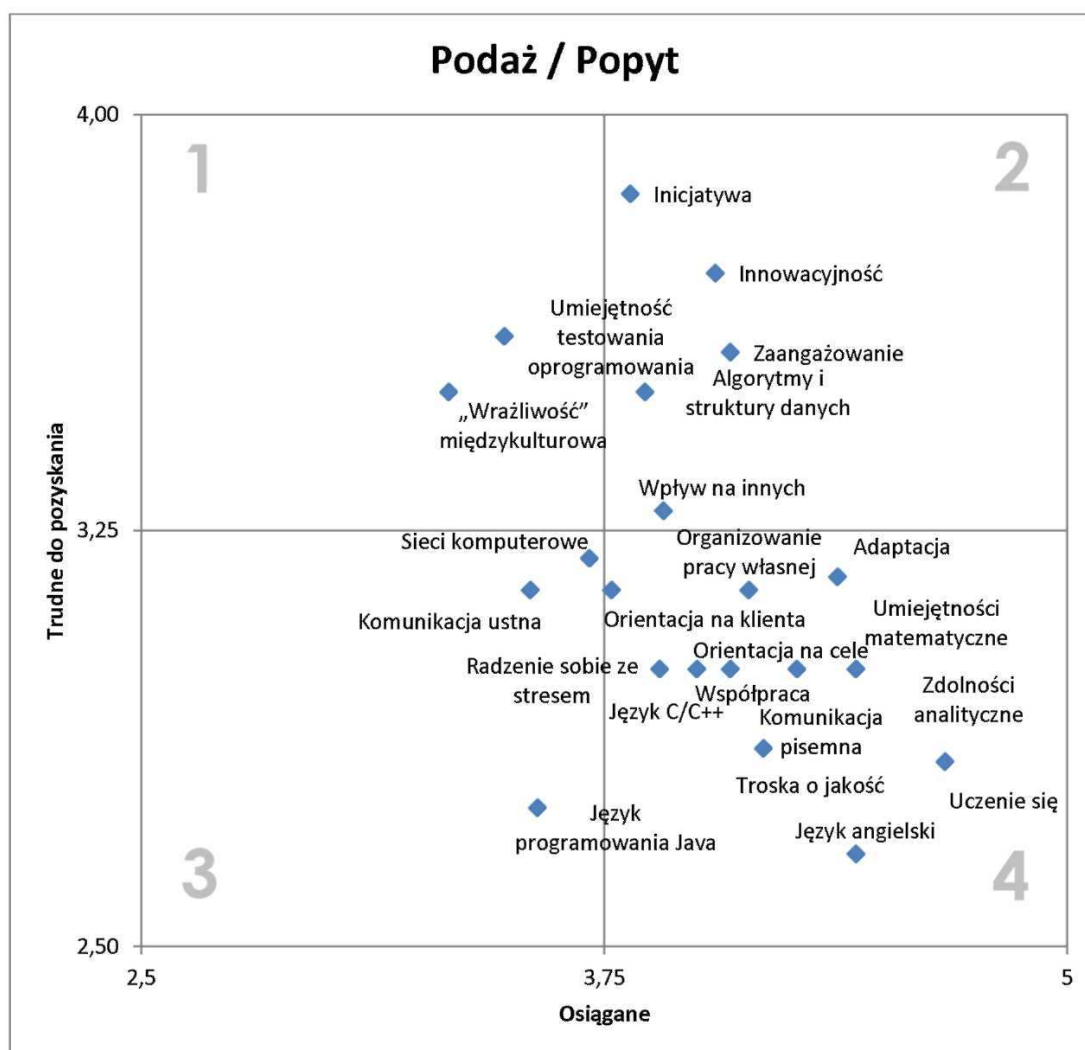


Chart 2. The relation between the perceived difficulty of a given competence to obtain and their level obtained at the fields of study/majors that are the natural base for ITO/IT industry.

<i>Podaż/popyt</i>	<i>Supply/demand</i>
<i>Trudne do pozyskania</i>	<i>difficult to obtain</i>
<i>Osiągane</i>	<i>obtained</i>
<i>Inicjatywa</i>	<i>Initiative</i>
<i>Innowacyjność</i>	<i>Innovation</i>
<i>Komunikacja pisemna</i>	<i>Written communications</i>
<i>Komunikacja ustna</i>	<i>Oral communications</i>
<i>Orientacja na cele</i>	<i>Goal orientation</i>
<i>Orientacja na klienta</i>	<i>Customer-orientation</i>
<i>Organizowanie pracy własnej</i>	<i>Organizing own work</i>
<i>Troska o jakość</i>	<i>Taking care of quality</i>
<i>Wpływ na innych</i>	<i>Influencing others</i>
<i>Współpraca</i>	<i>Cooperation</i>
<i>Zaangażowanie</i>	<i>Involvement</i>
<i>Język programowania Java</i>	<i>Java programming language</i>
<i>Język C/C++</i>	<i>C/C++ programming language</i>
<i>Sieci komputerowe</i>	<i>Computer networks</i>
<i>Algorytmy i struktury danych</i>	<i>Algorithms and data structures</i>
<i>Umiejętności matematyczne</i>	<i>Mathematical skills</i>
<i>Umiejętność testowania oprogramowania</i>	<i>The ability to test software</i>
<i>„Wrażliwość” międzykulturowa</i>	<i>Inter-cultural “sensitivity”</i>
<i>Język angielski</i>	<i>English</i>
<i>Uczenie się</i>	<i>Learning</i>
<i>Adaptacja</i>	<i>Adaptation</i>
<i>Radzenie sobie ze stresem</i>	<i>Dealing with stress</i>
<i>Zdolności analityczne</i>	<i>Analytical skills</i>

Using the analogous assessment criteria to the matrix, it needs to be stated that the perception of business and universities in the case of ITO/IT fields of study is similar as regards the software testing skills and inter-cultural sensitivity (similarly – negative), while the English language, mathematical skills, organising own work, written communications, dealing with stress, learning, taking care of quality, adaptation, etc. are perceived in a similar – positive – manner. The differences occur in assessing such competences as: initiative, innovation, involvement, influencing others, algorithms and data structures (contrary to BPO/SSC, interestingly) and Java programming language, oral communications and computer network (interestingly, the competences are perceived as realized poorly, but relatively easy to obtain).

As regards the relation between the declared demand for employing the graduates of Kraków's universities and the number of persons that graduate from selected fields of study are presented in Table 21⁵¹. This study should be approached with a lot of reserve and it should be treated as an estimate. It is due to four major factors. First, limited sample of companies, which took part in the research. Second,

⁵¹ The estimated number of graduates was based on the information about the planned limits for particular fields of study and the future plans indicated by the representatives of the universities (the information is available for: University of Science and Technology, Kraków University of Technology, Kraków University of Economics, Jagiellonian University, Pedagogical University of Kraków). As regards ITO/IT, the key fields of study include: IT, applied IT, automation and robotics, electrotechnology. As regards BPO/SSC, these key fields of study include: management, administration, finances and accounting, economics, international relations.

dynamic situation on the market and the demand for particular competences changing from year to year (new companies in the industry opening their offices in Kraków). Third, difficulties in indicating key fields of study for BPO/SSC industry. Fourth, the fact that graduates of particular fields of study often select other professional careers and find employment in organisations other than those included in the study (e.g. small specialized IT companies, start-ups, etc.).

Industry	Estimated number of employees recruited in 2013	Estimated number of graduates of the fields of study key to the industry in 2013	Estimated number of employees recruited in 2018	Estimated number of graduates of the fields of study key to the industry in 2018
ITO/IT	3000	5000 ⁵²	4250	5750
BPO/SSC	4300	14000	5700	15750

Table 21. Quantitative comparison of the demand in BPO/SSC and ITO/IT companies with the number of graduates of key fields of study.

The number of graduates of Kraków's universities in both cases satisfies the demand for employees in the BPO/SSC and ITO/IT industries, yet it means only that there are no structural obstacles. The entities from these industries must compete with other market participants – e.g. smaller IT companies or other companies employing IT graduates or banks and other entities from the services sector. Some graduates of Kraków's universities leave for other centres after graduation (e.g. for Wrocław or Warsaw). It is also important to note that the planned increase of the numbers of graduates is lower than the growth of employment rates declared by business representatives. It means that the difficulties in recruitment experienced by BPO/SSC and ITO/IT companies may become more visible. The growth dynamics of graduates and demand for employees is presented in Table No. 22 below.

	Growth dynamics of the demand for new employees	Growth dynamics of the number of new graduates
ITO/IT	41%	15%
BPO/SSC	33%	12.5%

Table 22. The growth dynamics of the demand for employees and the number of graduates between 2013 and 2018.

⁵² Raport Business in Malopolska: Shared Services, Technology and Outsourcing in Malopolska available at ASPIRE website (www.aspire.org.pl) mentions about 8000 graduates of engineering and IT fields of study each year.

Final conclusions

The study provides us with a quite consistent and interesting model of expectations and needs of the companies from the BPO/SSC and ITO/IT sector in Kraków. First of all, it turned out that it is possible to create universal names and definitions of competences, which are necessary for the development of companies, and therefore it is possible to hold a discussion between business and universities as well as to work out new solutions as to modifying the existing curricula. The specific nature of the required competences will most often require not the modifications to the contents of the curriculum itself, but it may be achieved by changing the teaching methods. Development of such competences as customer orientation, teamwork, inter-cultural sensitivity, written communication (in particular, writing reports, summaries, etc.) may be achieved through introducing project work in more subjects. During such classes, the students should work together (it would be best if they used a foreign language and worked with foreign students) on preparing a solution for a problem, specify the scope of the project, talk to the “customer”, present the results of their work in front of a large audience, etc. The involvement of companies is necessary, as it is them who should provide “orders”, on which the students will work.

In the nearest future, BPO/SSC companies will value the following competences the most: honesty, customer orientation, taking care of quality, cooperation and oral communication. As regards foreign languages, **the English language** is still the most important one, followed by: **German, French, Dutch and Italian**, where the two last ones are most difficult to obtain from the labour market. In five-year perspective, the highest number of positions will use: **innovation, influencing others, basics of economics, dealing with stress and initiative – these competences should become the focus of attention of universities, which plan to adapt their curricula and teaching methods to the expectations of the BPO/SSC industry for the next few years.**

In the case of ITO/IT industry in short-term perspective, the most important competences will be: English language, honesty, initiative, taking care of quality and involvement. The key languages for this industry are: English, French and German. In long-term perspective, a range of competences of equal importance will become the focus: **initiative, innovation, written and oral communication, goal orientation, organising own work, cooperation, involvement, inter-cultural sensitivity, English language, learning, adaptation, dealing with stress, analytical skills and honesty – these competences should become the focus of attention of persons preparing the curricula at science departments of the universities that intend to educate graduates, who will be working in ITO/IT industry.** In no case it means that “hard competences” should be omitted (i.e. both the knowledge and skills connected i.e. with programming). Naturally, ITO/IT companies seek persons with the knowledge of: C/C++, Java, SharePoint, ASP.NET, Selenium, HTML, JavaScript, C# or SQL as well as the skills of operating computer networks and systems, algorithms and data structures or the ability to test software. We may risk a statement that in the majority of cases such knowledge and skills are even higher than expected at the positions the employees start work (the so-called entry level) – of course, it is a desired situation and it should not constitute the basis to a decision on lowering the quality of education. What is meant here is the establishment of such conditions, where the students will be able to obtain additional competences, **facilitating the use of that knowledge in practice. In other words, those fields of study that have already implemented or decide to implement a large part of the educational results expected by the business, may use the word “applied” in their name.**

When preparing a study of competences and focusing on the needs, it is almost natural that we focus on the shortages and deficiencies in particular. However, this image is not complete – business representatives clearly emphasize the advantages of Kraków as a location, and one of them is access to a large number of potential employees with a huge potential.

What is equally important, the representatives of the business world declare a far-reaching willingness to cooperate and they are willing to devote their time to work on new solutions.

The study on the supply of competences expected by BPO/SSC and ITO/IT companies indicate that there are significant discrepancies in the assessment of the actual education level between the companies and universities. While the level of strictly technical knowledge skills is similar in assessments, in the case of practical and social skills, there is no such similarity. A lot points out to the fact that the main problem lies in adjusting the teaching methods than the educational contents in itself. **Adapting the educational results of the Kraków's universities to the expectations of the labour market in majority requires modification of the teaching methods, which enable developing practical skills of applying knowledge in a particular organisational context.**

Qualitative research indicates that the changes to the teaching process we propose are not easy to implement, and the condition of some fields of study makes it even more difficult. One of the obstacles is probably the way the time of work is settled in the case of academic teachers – the hours spent in the lecture hall. The students rarely receive formative feedback and they do not improve their competences; they are only examined without opportunity to improve. Here the change would mean the introduction of settling the teachers for the formative feedback as well as the amount and quality of such feedback. On the other hand, cooperation with the business at many fields of study looks very well and brings benefits to both parties. A most often indicated deciding factor is the social capital, in the form of individual contacts of university representatives and the business. **One of the major functions the public authorities may serve here is the establishment of a platform, which would make it possible to commence and develop such contacts between business entities and universities.**

Even where the active teaching methods are used extensively – e.g. group and project work, solving real problems – they may be suspended at any time due to the necessity to increase the number of students in the groups. The situation does not improve due to the fact that there are many problems in cooperation between the universities and businesses. On one hand the business representatives indicate the hermetic nature of academic circles (there are exceptions) and lack of willingness to cooperate. On the other hand, we have seen a wide range of cases where, initiated by the university, proposals to conduct research or research-implementation works met with refusal from the business representatives. In this context, the role of public authorities will be particularly important. They may constitute a bridge between business circles and universities, moderating the process of working out best practices for cooperation. Such cooperation is necessary to meet the requirements of the business representatives on one hand, and to ensure relevant preparation of graduates by the universities to commence professional careers on the other hand.

Some of the identified obstacles present in the cooperation between universities and business is of systemic nature and overcoming them does not always lie within the authority of the university. On the other hand, there are a lot of areas, where changes may be implemented. **Increasing the number of group projects performed by the students (including elements such as: contacting customer, indicating objectives, presenting the results, etc.) requires a particular type of cooperation of the university with the business organisations, which should provide “live case studies” and to provide feedback to the students.** It would be best if these tasks were realized in international groups, which in turn requires an increased involvement of universities in preparing courses in foreign languages and expansion of student exchange networks (including countries of Eastern Europe, whose citizens more and more often find employment in BPO/SSC and ITO/IT industries). BPO/SSC and ITO/IT companies may play a very positive role in facilitating attracting good students from abroad through making courses more attractive. The activity supporting teaching is also important – such as expanding student practice programmes, creating incubators and supporting the development of students' organisations. **More emphasis should be put on innovative teaching methods – using simulations and educational games as well as creating courses, which would simulate the operation of an organisation.**

The educational offer of the university should satisfy the demand of the employers considering the specifics of operation and processes they run now (it is clear now that in order to achieve it, modifications must be made not only to curricula, but also to the methods and techniques of teaching), while on the other hand educational offer should go way into the future and ensuring personnel, which will attract the higher-level processes to Kraków (the so-called Knowledge Process Outsourcing - KPO). Therefore, next to the companies already present in Kraków, it would be helpful to extend the future research to their KPO departments in other countries and to analyse the competences taught by the universities in those countries.

Summary

The report from the first part of the research within the Study of Competences in BPO and ITO in Kraków contains the analysis of expectations and needs of Kraków's companies referring to the competences of senior students and graduates of Kraków's universities recruited from the local labour market. The same competences were defined as precisely as possible, to seize the needs of the business in a comprehensive manner. Under the term "competence" we understand: **a set of behaviours belonging to a common category, enabling effective realization of the purposes in an organisation and the tasks at the given position, determined by various psychological factors.** As regards the works we conducted, a dozen or so extensive interviews were held with the representatives of HR departments and managers who deal with newly employed persons directly. A tool was prepared – demand questionnaire – which measures the demand of Kraków-based BPO/SSC and ITO/IT companies for major competences in a quantitative manner and allows us to diagnose the change tendencies within the next 5 years. This tool, thanks to ASPIRE, was sent to the majority of Kraków-based companies in the industries of our interest – 18 companies completed it in the end. The most important competences sought on the labour market by the **BPO/SSC** companies were: honesty, customer orientation, oral communication, taking care of quality, cooperation and the English language. The biggest difficulties were experienced in the recruitment of persons with high levels of: oral communication, sensitivity to cultural differences, written communication, involvement, analytical skills and speakers of the Italian language. As regards **ITO/IT** companies, the most important competences are: English language, honesty, initiative, taking care of quality, involvement and innovation. The competences that are most difficult to obtain include: initiative, innovation, the ability of testing software, involvement, algorithms and data structures and inter-cultural sensitivity.

The employment perspectives, as the research shows, seem to be very good and stable. All companies predict a growth in employment within the next 5 years, even though the dynamics of this growth differs significantly in terms of particular competences. **The biggest growth dynamics among the competences sought in BPO/SSC industry concerns: innovation, influencing others, basics in economics, dealing with stress and initiative. In the case of ITO/IT, the competences of the future are: initiative, innovation, written and oral communication, goal orientation, organising own work, cooperation, involvement, inter-cultural sensitivity, English language, learning, adaptation, dealing with stress, analytical skills and honesty.**

The expectations of companies, as stated in the first part of this report, were translated into the language of educational results, and then it was verified to what extent they are obtained, where the biggest problems in obtaining them lie and how the companies and universities may work together to adjust them. During the conducted research, we received responses from 215 fields of study/majors from 8 Kraków-based universities; moreover, 11 extensive interviews with representatives of key fields of study and managers of language centres were conducted.

The educational results that are assessed as the best by the unit directors are those concerning oral and written communications, cooperation, involvement, quick learning, operating office software and analytical skills. Effectiveness of English language teaching is also assessed very highly. **These assessments often vary from the assessment of the situation by the companies.** While in

BPO/IT operating MS Office, English language, learning, organisation of own work, initiative, innovation and customer orientation seem to be perceived in a similar way (the last one – negatively), the key soft competences such as written or oral communications, influencing others, involvement or cultural sensitivity are perceived in a completely different way. In the case of ITO/IT industry, perceiving the demand and supply converge in terms of software testing skills and inter-cultural sensitivity (negative) and i.e. English language, mathematical skills, organising own work, written communication, dealing with stress, learning, taking care of quality and adaptation (positive). The differences are present in assessing competences such as: initiative, innovation, involvement, influencing others, algorithms and data structures, Java programming language, oral communication, computer networks (in the case of the last example the business has a much better opinion about this competence than the universities themselves).

Changes of the presented state of the facts requires undertaking cooperation between the universities and the business, which will enable modification of curricula and will allow students to learn through experience. We move for increasing the use of active teaching methods: group and project work, simulation games, “live case studies”, student practice, presentations and writing reports. A major role may be played by strengthening the role of students' organisations and pressure put on international cooperation in terms of student exchange.

A positive role in the context of introducing changes and overcoming obstacles in cooperation (i.e. lack of knowledge about mutual needs, limited trust, lack of personal contacts, mutual assistance in achieving expected educational results and scientific-research cooperation) may be served by public authorities, through establishing a platform, which makes it possible to start and develop cooperation and supportive activities for both the universities and the BPO/SSC and ITO/IT companies.

Appendix 1. Competence demand questionnaire ITO/IT⁵³

1. Please state the name of the company.
2. Please provide the e-mail address of the person completing the questionnaire.
3. Please complete the names of positions or groups of positions with identical scope and requirement levels, to which the graduates or senior students will be recruited⁵⁴:

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

4. Please state the demand for particular positions or groups of positions.

	Position 1	Position 2	Position 3	Position 4	Position 5	Position 6	Position 7	Position 8	Position 9	Position 10
The demand for 2013, considering the turnover factor. The estimated number of new employees, which are to be employed at the given position/in the group of positions in 2013 (January to December), corrected by the turnover indicator.										
The demand for 2018, considering the turnover factor. The estimated number of new employees, which are to be employed at the given position/in the group of positions in 2018 (January to December), corrected by the turnover indicator.										

5. Please state, to which extent each of the criteria is required at the given position/in the given group of positions, using scale from 1 to 5, where 1 means to slight extent, 2 – to minor extent, 3 – to medium extent, 4 – to high extent, 5 – to very high extent. If the given criterion is not required at all, please write 0⁵⁵.

⁵³ The questionnaire was distributed through electronic means, using Limesurvey software in two language versions - Polish and English.

⁵⁴ Please provide full name of the position or, in the case of groups of positions, short descriptions of the tasks in the group and providing sample position names in the group. It is very important to write in positions with different requirements in separate questionnaire fields (e.g. English language contacts specialist and Swedish language contacts specialists are separate positions). If the number of positions exceeds 10, please contact us at: piotr.prokopowicz@uj.edu.pl.

⁵⁵ When completing the questionnaire, the respondents answered to 3 additional questions, and their responses were automatically enclosed to the assessed requirements:

Is the knowledge of any other languages needed at any of these positions apart from the foreign languages listed above? Please enter it below.

	Position 1	Position 2	Position 3	Position 4	Position 5	Position 6	Position 7	Position 8	Position 9	Position 10
Initiative. Initiating new activities and accepting responsibilities connected with them										
Innovation. Generating ideas, creating and implementing new solutions facilitating work										
Written communications. Preparing and submitting written communications, preparing clear written reports										
Oral communications. Presenting and submitting information in oral form, fluent speaking										
Goal orientation. Activities directed at realization of short-term and long-term objectives allocated to the given position										
Customer-orientation. Satisfying the needs and expectations of the customer, considering the customer-perspective when offering solutions										
Organizing own work. Planning the work and organising the tasks intended to realize the plan, giving priorities to tasks										
Taking care of quality. Activity compliant with the regulations, provisions and procedures in the organisation, accuracy and diligence in realization of tasks										
Influencing others. Influencing others, convincing them through substantiated argumentation and other measures, self-confidence in presenting your point of view										
Cooperation. Effective team work, orientation on realizing group objectives										
Involvement. Enthusiasm and passion for work, "can-do" approach, taking care of the company's image										
C/C++ programming language										
Java programming language										
Computer networks										
Algorithms and data structures										
General knowledge about insourcing										
General knowledge about outsourcing										
Mathematical skills. Carrying out various mathematical operations										

Is the knowledge of any other programming languages needed at any of these positions apart from the languages and frameworks listed above? Please enter it below.

Are there any additional requirements at any of the positions/ groups of positions that are not listed in the demand questionnaire? Please enter it below.

The ability to test software										
Inter-cultural "sensitivity". Practical application of the knowledge about inter-cultural differences, adapting activities to the different cultural patterns										
Using MS Office, OpenOffice or Google Docs										
English										
German										
French										
Italian										
Dutch										
Learning. Easiness and speed of acquiring new knowledge										
Adaptation. Easiness and speed of acting in changing conditions										
Dealing with stress. Easiness and speed of acting in difficult situations										
Analytical skills. Easiness, speed and reliability of obtaining and processing information										
Honesty										
Mobility										
Time availability										
Agile methodology										
Additional language 1 (user selection)										
Additional language 2 (user selection)										
Additional language 3 (user selection)										
Additional programming language 1 (user selection)										
Additional programming language 2 (user selection)										
Additional programming language 3 (user selection)										
Additional expectation 1 (user selection)										
Additional expectation 2 (user selection)										
Additional expectation 3 (user selection)										

6. Please assess the importance level of the given competence/criterion for your company, using scale from 1 to 5, where 1 means not important at all, and 5 means definitely very important.

Please assess the difficulty to obtain persons with the relevant level of the given criterion, using the scale from 1 to 5, where 1 means easy to obtain, and 5 means very difficult to obtain.

	How much important for the company?	How difficult to obtain?
Initiative. Initiating new activities and accepting responsibilities connected with them		
Innovation. Generating ideas, creating and implementing new solutions facilitating work		
Written communications. Preparing and submitting written communications, preparing clear written reports		

Oral communications. Presenting and submitting information in oral form, fluent speaking		
Goal orientation. Activities directed at realization of short-term and long-term objectives allocated to the given position		
Customer-orientation. Satisfying the needs and expectations of the customer, considering the customer-perspective when offering solutions		
Organizing own work. Planning the work and organising the tasks intended to realize the plan, giving priorities to tasks		
Taking care of quality. Activity compliant with the regulations, provisions and procedures in the organisation, accuracy and diligence in realization of tasks		
Influencing others. Influencing others, convincing them through substantiated argumentation and other measures, self-confidence in presenting your point of view		
Cooperation. Effective team work, orientation on realizing group objectives		
Involvement. Enthusiasm and passion for work, "can-do" approach, taking care of the company's image		
C/C++ programming language		
Java programming language		
Computer networks		
Algorithms and data structures		
General knowledge about insourcing		
General knowledge about outsourcing		
Mathematical skills. Carrying out various mathematical operations		
The ability to test software		
Inter-cultural "sensitivity". Practical application of the knowledge about inter-cultural differences, adapting activities to the different cultural patterns		
Using MS Office, OpenOffice or Google Docs		
English		
German		
French		
Italian		
Dutch		
Learning. Easiness and speed of acquiring new knowledge		
Adaptation. Easiness and speed of acting in changing conditions		
Dealing with stress. Easiness and speed of acting in difficult situations		
Analytical skills. Easiness, speed and reliability of obtaining and processing information		
Honesty		
Mobility		
Time availability		
Agile methodology		
Additional language 1 (user selection)		

Additional language 2 (user selection)		
Additional language 3 (user selection)		
Additional programming language 1 (user selection)		
Additional programming language 2 (user selection)		
Additional programming language 3 (user selection)		
Additional expectation 1 (user selection)		
Additional expectation 2 (user selection)		
Additional expectation 3 (user selection)		

Appendix 2. Competence demand questionnaire BPO/SSC⁵⁶

1. Please state the name of the company.
2. Please provide the e-mail address of the person completing the questionnaire.
3. Please complete the names of positions or groups of positions with identical scope and requirement levels, to which the graduates or senior students will be recruited⁵⁷:

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

4. Please state the demand for particular positions or groups of positions.

	Position 1	Position 2	Position 3	Position 4	Position 5	Position 6	Position 7	Position 8	Position 9	Position 10
Initiative. Initiating new activities and accepting responsibilities connected with them										
Innovation. Generating ideas, creating and implementing new solutions facilitating work										
Written communications. Preparing and submitting written communications, preparing clear written reports										
Oral communications. Presenting and submitting information in oral form, fluent speaking										

5. Please state, to which extent each of the criteria is required at the given position/in the given group of positions, using scale from 1 to 5, where 1 means to slight extent, 2 – to minor extent, 3 – to medium extent, 4 – to high extent, 5 – to very high extent. If the given criterion is not required at all, please write 0⁵⁸.

⁵⁶ The questionnaire was distributed through electronic means, using Limesurvey software in two language versions - Polish and English.

⁵⁷ Please provide full name of the position or, in the case of groups of positions, short descriptions of the tasks in the group and providing sample position names in the group. It is very important to write in positions with different requirements in separate questionnaire fields (e.g. English language contacts specialist and Swedish language contacts specialists are separate positions). If the number of positions exceeds 10, please contact us at: piotr.prokopowicz@uj.edu.pl.

⁵⁸ When completing the questionnaire, the respondents answered to 2 additional questions, and their responses were automatically enclosed to the assessed requirements:

	Position 1	Position 2	Position 3	Position 4	Position 5	Position 6	Position 7	Position 8	Position 9	Position 10
The demand for 2013, considering the turnover factor. The estimated number of new employees, which are to be employed at the given position/in the group of positions in 2013 (January to December), corrected by the turnover indicator.										
The demand for 2018, considering the turnover factor. The estimated number of new employees, which are to be employed at the given position/in the group of positions in 2018 (January to December), corrected by the turnover indicator.										
Goal orientation. Activities directed at realization of short-term and long-term objectives allocated to the given position										
Customer-orientation. Satisfying the needs and expectations of the customer, considering the customer-perspective when offering solutions										
Organizing own work. Planning the work and organising the tasks intended to realize the plan, giving priorities to tasks										
Taking care of quality. Activity compliant with the regulations, provisions and procedures in the organisation, accuracy and diligence in realization of tasks										
Influencing others. Influencing others, convincing them through substantiated argumentation and other measures, self-confidence in presenting your point of view										
Cooperation. Effective team work, orientation on realizing group objectives										
Involvement. Enthusiasm and passion for work, "can-do" approach, taking care of the company's image										
Basics of Economics										
Accounting basics										
General knowledge about outsourcing										
Mathematical skills. Carrying out various mathematical operations										
Inter-cultural "sensitivity". Practical application of the knowledge about inter-cultural differences, adapting activities to the different cultural patterns										
Using MS Office, OpenOffice or Google Docs										

Is the knowledge of any other languages needed at any of these positions apart from the foreign languages listed above? Please enter it below.

Are there any additional requirements at any of the positions/ groups of positions that are not listed in the demand questionnaire? Please enter it below.

English																			
German																			
French																			
Italian																			
Dutch																			
Learning. Easiness and speed of acquiring new knowledge																			
Adaptation. Easiness and speed of acting in changing conditions																			
Dealing with stress. Easiness and speed of acting in difficult situations																			
Analytical skills. Easiness, speed and reliability of obtaining and processing information																			
Honesty																			
Mobility																			
Time availability																			
Additional language 1 (user selection)																			
Additional language 2 (user selection)																			
Additional language 3 (user selection)																			
Additional expectation 1 (user selection)																			
Additional expectation 2 (user selection)																			
Additional expectation 3 (user selection)																			

6. Please assess the importance level of the given competence/criterion for your company, using scale from 1 to 5, where 1 means not important at all, and 5 means definitely very important.

Please assess the difficulty to obtain persons with the relevant level of the given criterion, using the scale from 1 to 5, where 1 means easy to obtain, and 5 means very difficult to obtain.

	How much important for the company?	How difficult to obtain?
Initiative. Initiating new activities and accepting responsibilities connected with them		
Innovation. Generating ideas, creating and implementing new solutions facilitating work		
Written communications. Preparing and submitting written communications, preparing clear written reports		
Oral communications. Presenting and submitting information in oral form, fluent speaking		
Goal orientation. Activities directed at realization of short-term and long-term objectives allocated to the given position		
Customer-orientation. Satisfying the needs and expectations of the customer, considering the customer-perspective when offering solutions		
Organizing own work. Planning the work and organising the tasks intended to realize the plan, giving priorities to tasks		
Taking care of quality. Activity compliant with the regulations, provisions and procedures in the organisation, accuracy and diligence in realization of tasks		
Influencing others. Influencing others, convincing them through substantiated argumentation and other measures, self-confidence in presenting your point of view		

Cooperation. Effective team work, orientation on realizing group objectives		
Involvement. Enthusiasm and passion for work, "can-do" approach, taking care of the company's image		
Basics of Economics		
Accounting basics		
General knowledge about outsourcing		
Mathematical skills. Carrying out various mathematical operations		
Inter-cultural "sensitivity". Practical application of the knowledge about inter-cultural differences, adapting activities to the different		
cultural patterns		
Using MS Office, OpenOffice or Google Docs		
English		
German		
French		
Italian		
Dutch		
Learning. Easiness and speed of acquiring new knowledge		
Adaptation. Easiness and speed of acting in changing conditions		
Dealing with stress. Easiness and speed of acting in difficult situations		
Analytical skills. Easiness, speed and reliability of obtaining and processing information		
Honesty		
Mobility		
Time availability		
Additional language 1 (user selection)		
Additional language 2 (user selection)		
Additional language 3 (user selection)		
Additional expectation 1 (user selection)		
Additional expectation 2 (user selection)		
Additional expectation 3 (user selection)		

Appendix 3. Supply questionnaire for Kraków-based universities⁵⁹

1. Please state the name of the university.
2. Please state the name of the faculty.
3. Please state the name of the field of study:
4. Please provide the e-mail address of the person completing the questionnaire:
5. Please enter the profiles, specialization paths, majors and post-graduate studies (including general profile) conducted within the given field of study⁶⁰:

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

6. Please provide the number of graduates of particular fields of study.

	Field of study 1	Field of study 2	Field of study 3	Field of study 4	Field of study 5	Field of study 6	Field of study 7	Field of study 8	Field of study 9	Field of study 10
Predicted number of graduates in 2013										
Predicted number of graduates in 2018										

7. Please note to what extent the following educational results are achieved at the given profile/path/specialization. Please use the scale from 1 to 5 (drop-down menu), where 1 means that the given educational result is obtained at a low level, while 5 – the given educational result is obtained at a very high level. Please select 0, if the given educational result is not obtained at all.

	Field of study 1	Field of study 2	Field of study 3	Field of study 4	Field of study 5	Field of study 6	Field of study 7	Field of study 8	Field of study 9	Field of study 10
The student is able to initiate new activities (initiatives) in the given organisational and social context, accepting the liability for realizing them										

⁵⁹ The questionnaire was distributed through electronic means using Limesurvey software.

⁶⁰ If the number of majors exceeds 10, please contact us at: piotr.prokopowicz@uj.edu.pl.

The student is able to communicate in writing and orally in the Spanish language at B2 level of the Common European Framework of Reference for Languages*										
The student is able to communicate in writing and orally in the Czech language at B2 level of the Common European Framework of Reference for Languages*										

* Can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialisation. Can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.