

## ПЛЕНАРНІ ДОПОВІДІ

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**Michal Kudlacz**

doktor, adiunkt, Professor of Department of Public Administration,  
Faculty of Public Economy and Administration, Cracow University of  
Economics

### **POLISH UNIVERSITIES IN THE MARKET ECONOMY. NEW STRATEGIES SHAPING NEW SPACES OF KNOWLEDGE**

#### **Abstract.**

This article concerns an important and current issue of socio-economic development of the city by supporting the development of the scientific center. Importantly, the development of the scientific center has many dimensions: infrastructural, programmatic and image-related, it is also related to the economic potential of the city (including eg. the labor market). To properly understand the directions of development and the current potential of universities, it should be analyzed the local context: specific determinants (factors and determinants) of the city's development, legal (systemic) conditions, but also the path of historical development of universities. In this article, the author attempts to characterize the challenges faced by universities and public decision-makers in the context of city development through the resources of science and knowledge. As an example, the city of Cracow was taken for analysis.

City management styles, creative cities, governance, metropolisation, public, urban management.

#### **Introduction.**

The increase in the competitiveness of one's territory constitutes one of the fundamental elements of the authorities in each city. Apart from the activities aiming to execute public tasks providing the adequate quality of life to each citizen, it is just the activity for the increase in the

localisation attractiveness that inscribes into the contemporary manner of thinking about the city functions under the circumstances of unlimited needs and limited resources. Today, the city authorities, just like businessman, have to rationalise their activities in order to make them efficient and effective, through maximising their benefits and minimising the costs. Therefore it is essentially important to take advantage from the set of governing instruments (imperative policy) as well as with the use of local network of connections and interdependencies of actors functioning in a given city (interactive policy), to create the conditions to the maximum use of potential resources, their creation and development as well as to overcome the development barriers. The contemporary economy is based on the liberal concept emphasising the market processes. Its most important features that determine the direction, character and the driving force of city development are: globalisation, metropolisation, digitisation and computerisation of economy. Those phenomena bring on further, significant concentration of potential within the metropolis and the increase in the role of knowledge and innovation in forming the socio-economic potential of the cities.

If the overall goal of ambitious cities is to increase their capacities to attract and to enroot in global consciousness, it is important to add that it results from the activities towards keeping and attracting the knowledge, resource and talents. The adequate combination of those elements determines the attractiveness of the city, while different aspects of such attractiveness deal with various groups: influential personalities, investors, businessmen, customers, tourists, developers, intellectual leaders. The force to attract converts into the economic, political and cultural influence – the opportunities to impact on the individual processes – and then into the economic and financial outputs.

The contemporary theories of city development echo the ideas of smart cities and creative cities. Creativity is related to the intellectual process leading to the new ideas, concepts or new association, combination of existing ideas and concepts. Creative thinking encompasses “soft” resources: culture, knowledge, attitudes, unique concepts of formation of the creative classes: local authorities, citizens and businessmen. A number of research have shown that the economic growth of the cities is tightly connected to the national economic systems and is highly dependent on their development. The creative industry deals with the activities resulting from individual creativity and

talents but also featuring the capacities to create the wealth and employment, taking advantage from the intellectual copyrights. There are different opinions on the role of public sector in influencing the knowledge based economy; starting from the passive approach, allowing market to self-diagnose and self-regulate, to the opposite ones emphasising the protective role of public sector which offers complete solutions.

The fundamental resource of the cities are their citizens. The human wisdom, desires, motivation, imagination and creativity are becoming more important than the location, natural resource and market availability. The creativity of citizens and the authorities determines the future success. It is obvious that creativity have always been a key element for the opportunities to survive and adapt of individual cities. In line with the growing size and complexity of the city structure, the administrative problems have arisen and the cities have had to convert into a sort of laboratory developing solutions – technical, conceptual and social – of the problems resulting from their own development.

It is necessary to note that through many ages the societies developed on the base of knowledge, culture, that is the immaterial resource which impacted on citizens' knowledge, skills and social approaches. Thanks to the knowledge, culture, innovations and creativity, the civilisation progress, science development and relatively stable social order took place. J. Jacobs wrote about the civilisation progress of the ancient and medieval cities, which came to exist because of growing needs and intensification of efforts in order to overcome technical barriers through the elaboration of scientific solutions (mathematical, engineering and architectonic) which allowed to the increase in the quality of life of their citizens. It has to be remembered that the development of knowledge society was easy to be observed, while through a "backdoor" the development of capitalist society took place; the development unrelated to any assumptions of "deep culture". In the capitalist society based on private property of means of production and extreme rationality of behaviours, there is a growing consciousness that its knowledge and skills are decisive for individual social and economic position as well as for the competitiveness of the city as a whole. Therefore, their adequate, specialist and diversified education and experience constitute one of the goal of the city authorities. In the economy of developed countries the recognised capitalists have given up their managerial functions and handed them to

the recognised specialists, both in the scope of production and management (economisation of activities). Thus, rationalisation of activities of actors in both public and private spheres relies not only on taking *ad hoc* advantage from material competitive ascendancies, featuring the capitalist behaviours, but also on long-term activities dealing with creating new functions, releasing resource and overcoming barriers. Therefore, the power in economic organisations is given from the people who have, to the people who know. In a knowledge based society each worker contributes to the firm the element of his skill, which is his knowledge, because it is one of essential elements increasing the competitiveness of economy in the micro-local scale. There is a natural balance of power between the employee and the employer. Each employee as a part of human resource of the organisation has to possess specialist knowledge, which influence on his key competencies. In other words, the source of competitive advantage is the capacity to learn quicker than the others. For many years, in theory and practice of management, the concept of knowledge enterprise has been developing. In the concept the knowledge is created as a resource to be managed and multiplied. The only resource one cannot bought as a complete product is a knowledge of organisation constituting the effect of combination of the knowledge and skills of all its employers.

#### **The system of higher education in Poland.**

The principles of higher education system in Poland can be found in the Law on Higher Education. The initial content of the Law enacted in 1990 had essentially changed the higher education system from the communist era. The positive results of those changes are the following: dissemination of higher education and introduction of institutional diversity, i.e. the existence of professional higher schools and non-public higher schools; permission given to higher schools to introduce paid studies, so called non-stationary ones. The Art. 70 of the Constitution of Republic of Poland provides the autonomy of the higher schools, thus the executive power can intervene in the competencies of higher schools only upon a resolution resulting from individual act. The Constitution has also confirmed the right of individual citizens and other institutions to establish higher school. It burdens public authority with the duty to provide comprehensive and equal access to education to all citizens and the duty to create appropriate systems of financial and

organisational support for the students. The Art. 70 of the Constitution of Republic of Poland provides that the study in public school is free of charge, however individual law may allow to deliver some educational services against payment. The maximum scope of payable educational services in public higher schools has not been defined but its excessive use may be recognised as a violation of fundamental principle of free education. The constitutionality of the practices of paid studies carried out on the basis of the Law on Higher Education has constituted the subject of several judicial decisions of the Constitutional Court.

The public higher schools differ from the non-public ones in the structure of revenue. The structure of revenue from the activities of public higher schools by the end of the first decade of 21<sup>st</sup> century was the following: the revenue from teaching amounted to 82,4 per cent, while the revenue from research activities – 12,5 per cent. The share from business activities rose (0,7 per cent) as well as the sale of products and services (0,2 per cent). Remaining revenues constituted 3,5 per cent. The share of the revenue in the individual type of activities in the total revenue is very differentiated, depending on the type of higher school. The share of revenue from teaching in higher technical schools amounted to more than 75 per cent, while from the research – 20,5 per cent. The analogous indicators for the medical higher schools are 77,7 and 14,9 per cent respectively, for the agricultural higher schools – 73,4 and 12,6 per cent respectively, for the universities – 82,5 and 10,6 per cent respectively and for the economic higher schools – 90,5 and 5,1 per cent respectively. The abovementioned data – related to the financial condition of Polish higher schools – are relatively similar to the ones of the Cracow higher schools. Its structure is also similar. In case of non-public higher schools in the surveyed period, prevailing share from the activities constituted the revenue from teaching – 95,5 per cent, while the revenue from research oscillated around 0,4 per cent. Remaining revenue constituted 4,2 per cent. The public higher schools are more involved in research than the non-public ones, having generated the average revenue ca. 12,5 per cent.<sup>1</sup>

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<sup>1</sup> The project of the action programme of the City of Krakow dealing with securing the conditions for the activities of the Krakow academic centre, Malopolska School of Public Administration Cracow University of Economics, Krakow 2004, pp. 1—12.

The structure of the revenue from teaching in public higher schools. According to the source of financing, is the following<sup>2</sup>:

- State budget donation – 71,2 per cent,
- Fee for study – 21,8 per cent,
- Local government donation and other public funds – 0,1 per cent,
- Other source of financing – 6,9 per cent.

The own operational costs in higher schools constitute the main element in the cost of education – over 90 per cent. The indicator is a bit lower in case of public higher schools – 89,8 per cent in total cost of education in relation to the non-public higher schools which amounts to 91,6 per cent. Over 87 per cent of the material assistance for the students and own stipend funds of both public and non-public higher schools is used by the public higher schools. The highest share belongs to the universities – 31,8 per cent and higher technical schools - 25,4 per cent. The average level of individual education cost per one student in 2004 (own costs of teaching without the costs of material assistance for students and own stipend fund) in public higher schools amounted to 7 904 PLN, while in non-public higher schools – 5301 PLN<sup>3</sup>.

**Academic infrastructure in Cracow.** Cracow belongs to the most important academic centres in Poland, along with Warsaw, Poznan, Gdansk, Katowice and Lodz. The polycentric system of settlement in Poland brings on spatial dispersion of development capacities, in that case knowledge. There is evident quantitative growth related to the higher schools themselves as well as the students. In Poland in the academic year 1992/93 there were 124 higher schools, including 18 non-public ones. In the academic year 2010/2011 the number of higher schools in total was 470, including 338 – 72 per cent – non-public institutions. Possibly, it is one of the highest number of non-public schools all over the world, however this is not a reason for satisfaction. In the same time the number of students – initially amounted to 403 thousand – grew, by the end of the last decade, to 1930 thousand. The expenses for higher education system are four times smaller than in the Western Europe<sup>4</sup>. In the beginning of 90's the opportunities to establish

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<sup>2</sup> Ibidem, p. 11.

<sup>3</sup> Ibidem, p. 10-15.

<sup>4</sup> Projekt programu działu miasta Krakowa w zabezpieczeniu warunków działania krakowskiego ośrodka naukowego, Małopolska Szkoła

private higher schools, created the chance to a rapid growth in the students' number and the improvement of scholarisation indicator, which at the level of higher education, in Poland was much lower in comparison to many European countries. In 1992/1993 the scholarisation indicator in Poland equalled 12,3 and in 2010/2011 – 53,8 per cent in the group of age 18-24. At present higher indicators feature merely Finland, Slovakia and Iceland and e.g. the USA lags much behind (less than 40 per cent, although, according to OECD, the present level of socio-economic development requires at least 40 per cent of scholarisation in the group of age 18-24). The growth in the number of higher schools and students in Poland is commonly recognised as one of the most important achievement of Polish system transformation – the expenses for one student given to the higher schools were low (three-four times lower than in prosperous European countries) and were getting lower, because the number of students grew much faster than the total expenses for education. Now in Poland students learn in over 200 majors, including the unique ones and macro majors. Most students learn economy and administration – 23 per cent, social science – 13,9 per cent, pedagogics – 12 per cent, humanities – 8,8 per cent, engineering – 6,8 per cent, medical science – 5,8 per cent, computer science – 4,9 per cent, public services – 3,7 per cent, law – 3,1 per cent and natural environment protection – 1,4 per cent (the category: other majors – 16,4 per cent)<sup>5</sup>.

Cracow academic centre is one of the leading Polish scientific research centres. It is an example of unique society constituted by the actors for whom cultivation, development and dissemination of knowledge is a principal objective of activity. Its position and significance cross the national arena and are clearly evident in the international dimension. The multiplicity and variety of actors constituting that centre is considered to be one of the largest development capacities of Cracow and Malopolska. It is an example which determines the competitive position of Cracow in both social and economic sphere. The resource of knowledge and skills embodied in the institutions of the Cracow academic centre is a capacity which,

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Administracji Publicznej Uniwersytetu Ekonomicznego w Krakowie,  
Kraków, 2004 r., s. 10-16

<sup>5</sup> Diagnosis of the state of Polish higher schools, Ernst&Young Report,  
Warsaw 2009, pp. 11-20.

appropriately utilised, creates the prerequisites to build competitive economy based on knowledge; provides for sustainable social development and high level of quality of life for its citizens. On the second hand, comprehensively understood social and economic development contributes to the improvement in the conditions of activities of the Cracow academic centre and further strengthen its position – both in intraregional dimension and in relation between other national and international academic and research centres.

57 research and scientific institutions is constituted the Cracow academic centre. There are 10 public higher schools, 13 non-public higher schools, 1 affiliated centre of the Polish Academy of Skills, 11 affiliated centres of the Polish Academy of Science, 22 research and development units. Cracow is the city of universities with over 200 thousand students. In Cracow one may find one of the oldest higher school in Europe, the biggest university of economy in Poland, as well as, providing for impressive diversification in the labour market, higher schools with engineering, medical, economic, human, natural and art profile. It is helpful to present the synthetic description of the most important higher schools in Cracow:

Jagiellonian University (historical names: the Cracow Academy, Main School of the Crown, Main Cracow School, Cracow University; in Latin Universitas Jagellonica Cracoviensis) – the oldest Polish higher school, one of the oldest universities all over the world, with ca. 46 thousand students. University (studium generale) was founded by Polish king Casimir the Great and renewed in 1400 by Vladislav Jagiello upon the request of his wife Jadwiga d’Anjou. The name “Jagiellonian” was given to it in 1817 to emphasise its relation with the royal dynasty of Jagiellonians. The Jagiellonian University was the second (after Prague) university to be found in that part of Europe. It took advantage from the patterns of the University in Bologna. In the medieval ages, apart from the faculty of theology, it hosted the faculties of maths and astronomy.

In the Stanislaw Staszic Academy of Mining and Metallurgy in Cracow – internationally known as the University of Science and Technology, there are 39,1 thousand students. It is one of the biggest Polish higher schools. It was founded 8 of April 1919 upon the resolution of Polish Council of Ministers. It is recognised as one of the best technical higher school in the country. First attempts to obtain consent for establishing in Cracow the higher school educating the engineers of mining, started in 1912, with the participation of the group



of engineers and mining activists. After the Second World War, through a few months the Academy of Mining and Metallurgy was the only organised and working technical higher school in the country. It became a centre of assistance for the other technical higher schools. Upon the initiative of the Academy the Cracow Technical Higher School was established. The Academy contributed to the development of the Silesian Technical Higher School and the Czestochowa Technical Higher School. It played also a major part in organising the renewal of the Warsaw Technical Higher School, Wroclaw Technical Higher School and Gdansk Technical Higher School.

According to the world wide ranking of the higher schools Webometrics Ranking of World Universities from January 2014 developed by the Spanish institute Consejo Superior de Investigaciones Científicas, the Academy of Mining and Metallurgy occupies 1<sup>st</sup> position in Poland among the technical higher schools and 384 position in the world among each type of the higher school. On 6 December 2009 the Board of the European Technical Institute (EIT) announced the results of the competition within the framework of KIC (Knowledge and Information Community). That decision brought the enormous success to Polish science both in financial and prestigious dimensions – in the area of “sustainable energy” the Polish hub – CC Poland Plus – won. The hub is coordinated by the Academy of Mining and Metallurgy in Cracow. The task of the Hub of Energy EIT “Inno Energy” is cheaper and more ecological production of energy from the existing resources as well as production from the renewable resources. Particularly known are the faculties of computer science and major automation and robotics. The graduates of those faculties are employed as the key human resource by the biggest corporations all over the world.

Cracow University of Economics is the most important economic higher school in Cracow, with ca. 21 thousand students. This is a public higher school, third, considering its size, in Cracow, second oldest public academy in Poland (1906 economic higher school in Warsaw, 1935 – Cracow) and the biggest economic higher school in Poland considering the number of students.

There are the following faculties at the University of Economics: Public Economy and Administration; Economy and International Relations; Finance; Commodity Science; Management. The School employs 238 professors and has ca. 21 thousand students. The University has or had some extra-Cracow headquarters located in Chrzanów,

Dębica, Kielce, Nowy Sącz, Nowy Targ, Radom, Rzeszów, Jasło and Tarnów. It is impressive to see the number of academic circles and non-educational organisations. In a Poland-wide ranking of the Wprost weekly (2004) the University of Economics located on the second position among all Polish economic higher schools. The system transformation of 1989 and market economy implementation have opened new tasks and opportunities of rapid development. The new majors were set up which enjoyed growing popularity. The number of students rose very dynamically. At present the school educates exquisite graduates, who are the essential part of human capital in Cracow, the region of Malopolska and in many prestigious corporations in Europe. The professors of the University of Economics, also in this century assumed important positions in Polish government structure: minister of economy, labour and social policy, vice prime minister, four professors are or were the member of the Council of Monetary Policy – the Department of Economy and Public Administration is a leading source of that phenomenon.

When, after the second world war, it became obvious that Lvov and its Technical Higher School would not be a part of Poland, it was decided to found similar technical unit in Cracow. Established on 6 October 1946 at the Academy of Mining and Metallurgy, the Cracow Technical School obtained complete independence in 1954. The diplomas of the Faculty of Architecture are nostrified in all EU countries, the Commonwealth and the USA, because of accreditation of Royal Institute of British Architects – RIBA. The Faculty of Architecture at the Cracow Technical Higher School is the only faculty in Poland to possess such accreditation. The Cracow Technical Higher School comprises of the following faculties: architecture, physics, maths and applied computer science, engineering and chemical technology, ground engineering, natural environment engineering, electrical and computer engineering and mechanics.

The Pedagogical University of Cracow is a public higher pedagogical school in Cracow, with ca. 17 thousand students. The Pedagogical University was established on 11 May 1946 as the Public Higher School of Pedagogics. It started to operate 26 October 1946. The main goal of the University is to teach qualified and comprehensively educated human resource of teachers. The school offers studies in four faculties: Human science, Pedagogical, Math-Physics and Technical and Bio-Geographical. The graduates can obtain the degree of Master,

Master Engineer, Engineer and Bachelor. In the rankings the Pedagogical University of Cracow is the most often leader of all Polish pedagogical higher schools, which testifies to its high level of education and prestige.

Collegium Medicum in Cracow is a part of one of the oldest universities in Europe – Jagiellonian University. The studies are conducted in three faculties: Physician, Pharmaceutical and Health Protection. The school employs the team of eminent scientists and lecturers. A number of tasks are conducted in the terrains of the university hospitals (the University Hospital of Cracow, University Paediatrics Hospital of Cracow, University Orthopaedic Rehabilitation Hospital of Cracow, University Dental Clinique of Cracow). Collegium Medicum for years has co-operated with the largest world organisation aiming to protect healthousand The list of research carried out by its employees and students is very impressive (i.a. EUREKA, the National Programme NATO, the Programme of Public Health). There are many students' organisations acting at the Collegium. The most interesting ones are: the Student Scientific Association and International Association of Medical Students.

The Agricultural University of Cracow is a public higher school, with ca. 13 thousand students. It was established in 1953 as the Higher School of Agriculture – the independent research and educational unit separated from the Jagiellonian University. Since 1953 the Agricultural Higher School of Cracow has been the independent research and educational unit. The beginning of agricultural higher schools in Cracow are dated back to the end of 18<sup>th</sup> century. In 1776 Hugo Kollataj, the representative of the period of Enlightenment and the reformer of the educational system, in its memorandum “On introduction of other disciplines to the Academy of Cracow” proposed the postulate on the establishment of the Faculty of Agriculture to be incorporated to the project of the reform of the Main School of the Crown. The vision of Kollataj came to existence dozens years later.

At present there are seven faculties in the Agricultural University of Cracow: Agro-Economical, Animal Breeding, Natural Protection Environment and Geodesy, Agro-engineering, Technology of Food Processing, Gardening and Forestry. The task of the University is to prepare its future graduates to work in the sphere of comprehensively understood food processing and forestry as well as for development and protection of the natural environment. During the courses, the students

take foreign and national internships at the experimental stations and in laboratories. The University is one of the leading Polish agricultural higher schools.

The rest of important higher schools are: the Ludwik Solski Public Higher School of Theatre - established in 1946 in Cracow, educating future actors and directors, with ca. 0,5 thousand students. It was a result of combination of three autonomous actor studios; two of them belonged to the theatres in Cracow: Slowacki Theatre and the Old Theatre. At present the School offers the study in the Actor Faculty and the Drama Directing Faculty. Moreover the School has affiliated Faculties in Wroclaw (The Actor Faculty and Puppet Actor Theatre). In Wroclaw there is also the Postgraduate Study of Directing the Theatre for the Youth and Children.

The Academy of Fine Arts is also included to the oldest Cracow higher schools, with ca. 1,3 thousand students, and is the oldest school of fine arts in Poland. Its first rector was one of the most recognised Polish painters – Jan Matejko and other outstanding painters were its lecturers. The School was established in 1818. In its history it bore the names: the School of Drawing and Painting (in 1818-1873) and the School of Fine Arts (1873-1900). The Academy of Fine Arts educates painters, sculptors, graphic designers, interior and industrial forms designers, scenographers and conservators. It effectively co-creates Polish culture and promotes it all over the world; everywhere where its numerous graduates and employees work or where their pieces of art are exhibited.

The Musical Academy of Cracow (before the Conservatory of Musical Association in Cracow, the Public Higher Musical School in Cracow) – public musical higher school headquartered in Cracow, educating ca. 0,7 thousand artists, musicians in the first degree studies (the bachelor diploma), the second degree (Master of Arts) and the third degree (PhD in Arts). It started its history from, established in 1888 in Cracow, the Conservatory of Musical Association. The Musical Academy of Cracow is one of the oldest and most distinguished musical higher schools in Cracow and Europe. The particular significance of the Academy is dated to the 70's of 20<sup>th</sup> century, when its rector was Prof. Krzysztof Penderecki – the worldwide recognized composer. The Musical Academy, according to its statutory provisions, focusses on the activities in three principal areas: artistic (composing, playing),

scientific and research (theory of music, musical education) and educational.

The Bronislaw Czech Academy of Physical Education of Cracow – the public higher school established in Cracow in 1950, with ca. 4 thousand students, started its history as a part of the Jagiellonian University. At the Jagiellonian Physician Faculty the Department of Physical Education was founded, which in turn was transformed into the separate Higher School of Physical Education. At present, the Academy conducts its educational activities in two faculties: Physical Education and Physical Rehabilitation. The students can choose among the following majors: Physical Education, Tourism and Recreation and Physiotherapy.

The Papal University of John Paul II in Cracow (before the Papal Academy of Theology in Cracow) – the only one, apart from Rome and Salamanca and first in the Central-Eastern Europe papal university, with ca. 3,7 thousand students. The Papal University of John Paul II in Cracow is the Catholic Church higher school financed as a public higher school. The Papal Academy of Theology started its activities as the oldest Faculty of Theology, established at the Jagiellonian University in 1397. Upon the initiative of cardinal Karol Wojtyla (John Paul II), the Faculty of Theology was granted with the name “Papal” in 1974. The University conducts its activities in the faculties: Theological, Philosophical and the History of the Church and also in interdepartmental institutes of Bioethics as well as Ecumenism and Dialogue.

The above characteristics deals with public higher schools operating in the capital of Malopolska. In Cracow there are also successful private higher school. Below there is a synthetic description of most important non-public higher schools.

The Bogdan Janski Higher School, headquartered in Warsaw is one of the oldest non-public higher school in Poland. Its affiliation in Cracow has existed since 1999 and involves the distinguished academics of Cracow higher schools, e.g. the Academy of Mining and Metallurgy, Jagiellonian University and the Cracow University of Economics. Students can choose among four faculties: Pedagogics, Political Science, Sociology, Marketing and Management.

The Higher School of Banking and Management in Cracow is a private organisation, acting since 1995. It offers the education in three principle majors: Marketing and Management, Finance and Banking,

Computer Science. In the ranking of higher schools according to two Polish prestigious magazines “Perspektywy” and “Rzeczpospolita” (2004), the School was in first position among the organisations conducting the bachelor study. In the same year weekly “Polityka” recognised the Higher School of Banking and Management as the best school among the business bachelor degree higher schools in Poland.

The Cracow Andrzej Frycz Modrzewski Academy is the biggest non-public higher school in Malopolska and the second largest in Poland. It is entitled to award with the PhD degree. In the 19 major offered by the School there are at present over 18 thousand students. Among the majors one may find law, administration, political science, international relations, pedagogics as well as painting, architecture and urban science. The studies at the Academy is paid but, similarly to the most private higher schools in Cracow, students can obtain some financial support: they can be granted with the social stipend and dormitory. They are also entitled to the identical benefits in the scope of the healthcare and transportation discounts as the students of public higher school. The best students can be awarded with scientific stipend.

The Higher School of Economy and Computer Science, since its very beginning, has had a profile directed to the needs of the labour market. The majors in the School are the following: marketing and management, computer science and econometrics, computer systems in management, finance and accountancy, controlling and managerial accountancy, internal control and audit, European integration, planning and management of European projects, real estate management. The School also educated students within the framework of the programme Edexcel International. Its graduates are granted with worldwide recognised certificates facilitating to start work abroad as well as to continue studying at the foreign universities in over 100 countries in the world.

The Higher School of Management – Polish Open University is one of the oldest business schools all over Poland (established in 1991) and its graduates are awarded with the double diploma: Polish and British (Oxford Brookes University). The Higher School of Management is the only Polish higher school which is a member of elite Association of MBA's. It offers the bachelor, MA, MBA and postgraduate study in two majors: marketing and management as well as economy, and in eight departments. In order to study there you do not have to leave home and study through the Internet.

The Jozef Tischner Higher European School was established in 2003. The Higher European School has a social science profile. It conducts regular and extramural studies; the bachelor studies in sociology, applied linguistics and international relations and postgraduate studies in journalism, business communication, European integration, public relations and project management. The School prepares its students to work in the European market, teaching theoretical knowledge and practical skills of creative thinking and active civic attitudes. It offers modern, interdisciplinary programmes adjusted to the requirements of contemporary labour market and employs academic human resource encompassing distinguished academics and experts in the field of economy, media, diplomacy, administration and non-government organisations.

The Malopolska Higher Professional School of Cracow offers study on the regular basis and the extramural ones awarded with the certificate in skills in given profession, e.g.: cosmetology, pedagogics, tourism and recreation, journalism and social communication, technical and computer science communication, organisation and management in physical education, computer science, courses in sport and recreation instructors and many more.

The Academy Ignatianum of Cracow (before the Higher Philosophy and Pedagogics School Ignatianum in Cracow) – the Church run higher school (run by the Jesus Association) functioning as the public school. It comprises of two faculties: philosophical and pedagogical. Both faculties are entitled to award academic degree of master and PhD. The legal status of Ignatianum is defined by the Agreement between the Polish Council of Ministers and the Conference of Polish Episcopate on 1 July 1999. The abridged name of the school – Ignatianum – was introduced in the beginning of 90's in the 20<sup>th</sup> century and echoes celebrated by the Jesuits jubilees: 500 anniversary of the birth of Ignacio Loyola (1491-1991) the founder of the order and 450 anniversary of functioning of the Jesus Association (1540-1990). In the Academy Ignatianum there are 4,5 thousand students.

*Table 1.*

**The number of students at the public and non-public higher schools in Cracow in 2004-2013**

Students (persons)																			
Public higher schools							Non-public higher schools												
2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
138912	140203	140313	142692	145707	145724	147884	150864	151334	143766	27180	33585	36963	38757	39179	39408	37555	33629	30590	26753

*Source: Local Data Bank, The Main Statistical Office*

It is also important to note that in the ranking of Polish higher schools, which graduates are most wanted by the employers, the third position has been taken by the Academy of Mining and Metallurgy and the tenth position belongs to the Higher Technical School in Cracow. It emphasises the growing significance of the graduates with the engineering background.

However, considering the ranking of the higher schools on the basis of international indicators of academic prestige, in 2013, the best higher school in Poland is the Jagiellonian University, which minimally precedes the Warsaw University.

The development of academic research units forming the Cracow academic centre depends predominantly on their spatial development. At present there is a shortage of local spatial development plans for the Cracow academic centre. Cracow is perceived, both in Poland and in Europe, as the academic city, possessing a huge number of higher schools, institutes and R&D units. The higher schools of Cracow, thanks to their long-term tradition, increase the prestige of the city. Nonetheless, high competencies and – what follows – the academic prestige of the units forming the Cracow academic centre require continuous infrastructure development. The infrastructural progress is feasible thanks to the absorption of public and private funds and



appropriate design of administrative and architectural conditions for its development.

**Summary.** It is necessary to emphasise the impressive tradition of Cracow as an academic centre as well as highly qualified human resource of the higher schools in Cracow constituting a significant scientific and academic potential. One can be certain that the huge resource of Cracow is also a big number of R&D units, public and non-public higher schools and student culture that is a tremendous motivation to study in Cracow. As a merit of Cracow in the field of science one may add the comprehensive spectre of academic fields represented in the framework of the Cracow academic centre as well as the varied interschool and interdepartmental majors influencing on intensification of knowledge transfer to the business sector. Cracow possesses significant scientific and academic potential and, related to it, highly qualified human resource. Cracow is the academic centre highly influential, thanks to the prestige of their higher school sustained in the participation in research programmes.

The academic infrastructure of Cracow has also several shortages. To the most evident one may include: the lack of effective mechanism of selecting and promoting the most valuable academic dissertations; insufficient cohesion of the provisions in strategic documents of the city of Cracow with the development plans of the individual units constituting the Cracow academic centre, insufficient co-ordination of the promotion activities carried out by the city of Cracow and the R&D units as well as the difficulties in running investment processes by such institutions, resulting from the lack of unified regulations on spatial policy and problems with the legal status of individual real estates.

The additional problems are non-functioning mechanisms of coordination activities: a small number of academic and research units taking initiatives for stimulating the co-operation among Cracow business, local government units, matching the business partners and insufficient co-ordination between the investments run by the units of the Cracow academic centre and the development of communal infrastructure. The inability to develop tele-information infrastructure resulting from the historical character of the centre of Cracow also limits the opportunities for development. The authorities of the City of Cracow feature the shortage of multiannual forecast of the spatial development for the units forming the Cracow academic centre and insufficient number of approved local spatial development plans dealing with the

Cracow academic and research units. The decreasing number of students resulting from the demographic decline and growing competition of the smaller academic centres neighbouring the region (Katowice, Kielce, Rzeszów) or in the region (Tarnów, Nowy Sącz) also become a problem for the Cracow academic centre.

The most serious threats are certainly the following: the lack of long-term spatial development strategy for the institutions forming the Cracow academic centre, the lack of instruments regulating the legal status of the areas and facilities utilized by the units of the Cracow academic centre, the lack of long-term strategy of introduction cost friendly policy of the communal services for the research and academic units as well as insufficiently developed co-operation between the research and academic units and the Cracow business and the city authorities.

The future of Cracow may rely on location in the city the group of IT enterprises, co-operating with the academic and research sector, establishing and developing the centres of technology transfer by the Cracow higher schools, pursuing to involve existing research laboratories in the national and international scientific networks and involving the research and academic units by the Cracow business in the research and implementation activities.

As the one of the most important barriers in development of the Cracow academic centre the units recognized the lack of sufficient funds for statutory activities and development. Equally essential for the development of surveyed units is insufficiently developed infrastructure impacting on the transportation availability, the shortage of improved land for investments, the lack of congressional centre and the shortage of modern facilities: scientific and educational. Among the development barriers the lack of joint promotion policy and weak degree of integration of the academic milieu were listed. The surveyed units also drew attention to the difficult conditions for development of academic human resource, the difficulties in attracting and keeping young, talented academics. They emphasised the low use of potential of Cracow academic human resource by business and public administration. The next barrier indicated by the academic institutions is insufficient involvement of the City in support to the Cracow academic centre illustrated by the lack of the separate unit within the structure of the City Office responsible for the co-operation with the academic milieu and the

lack of clear policy defining the scientific area which are the most important for the City.

The barriers in scientific development of the academic human resource are low mobility of young people (the shortage of affordable flats or the funds for their purchase in the beginning of their academic career) and the lack of motivation to attract for longer period of time distinguished academics outside of Cracow (which is determined by the shortage of appropriate apartments that meet the adequate standards). Moreover, there is a need to further involve the City of Cracow in the promotion of the achievements and the potential of the units in the Cracow academic centre.

The promotion of the achievements and the potential (capacities) of the units in the Cracow academic centre within the country and abroad should be conducted in two phases:

1) In the first phase – the units of the Cracow academic centre jointly with the City of Cracow elaborates the schedule of events promoting science among the local society (e.g. the open days, exhibitions, symposia, conferences, festivals of science, academic fairs). The City of Cracow will be responsible for the preparation, edition (provision the funds for that purpose) of the schedule and for the update of included information.

2) In the second phase – through the separate office unit in charge for the co-operation with the units of the Cracow academic centre – the co-operation in the scope of disseminating information about the events promoting science among the local population in Cracow will be carried out (with the use of the Internet web pages and the information channels used by the City Office of Cracow).

Cracow aspires to the role of the centre of IT sector. Attracting the investments in the IT sector, non-involving for the natural and cultural environment, will create a chance to employ highly qualified human resource recruited from the graduates of the Cracow higher schools and will be an impulse for setting, in co-operation with the world of science – innovation processes in the Cracow enterprises.

Integration of activities of academic centres and the IT centres will give an impetus to the development of modern systems, effective technology transfer through the joint actions aiming at the direct use of experience and capacities of academic milieus by the companies and research centres as well as immediate application (implementation) of the scientific outcomes in practice.