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## **ENTREPRENEURSHIP OF STUDENTS**

Labour market of young people in the European community is becoming more and more competitive. This requires changes in university priorities in order to build a system enhancing entrepreneurial attitudes among students. Knowledge, skills and competencies are the main three pillars of educational process at the university. However, all of them require creating a system, which allows students to participate in research activities and in real daily duties of enterprises in order to make teaching more practical. The main purpose of the paper is to present a methodology and results of the support system oriented to students' invention, which was developed under nationwide pilot project entitled the *Support System for Students Invention* in period from 2012 to 2013. The major components of the developed methodology include the National Stock Exchange, Brokerage Event, proper training, and promotion of their achievements on national and international level. The outcomes of the project *Support System for Students Invention* indicate that there are many talented students who have property rights to own inventions and who expect support in further development of their own products, or their commercialization, or promotion of their achievements on national or international level. The statistical data gathered confirmed an influence of the pilot project on the engagement of Polish students in developing patents, utility models, or industrial designs. In conclusion, it is stated that the results of the presented pilot project correspond with the expectations of the scientific community, students and even potential investors.

**Keywords:** entrepreneurship, students' inventions, development of innovation policy.

### **1. INTRODUCTION**

Many scientists believe that the critical period in developing entrepreneurial attitudes among young people is the primary school. There is the fastest and easiest way to shape the four main features of entrepreneurial attitudes, like: personal courage, self-confidence, ability to solve problems, and creativity. All these four features will constitute the entrepreneurial attitude of an adolescent and mature man<sup>2</sup>.

Cantillon defined entrepreneurship as an ability to anticipate and willingness to take a risk. An entrepreneur is a person who has a good knowledge of a particular market and takes advantage of opportunity created by the imbalance between supply and demand<sup>3</sup>.

Considering the academic entrepreneurship one can say it is the entrepreneurship of students, academic staff and all the other university employees. Enterprising students can find a job and they will organize work for themselves. The ability to shape these attitudes

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<sup>2</sup> Santarek K., *Transfer technologii z uczelni do biznesu - Tworzenie mechanizmów transferu technologii*, Wyd. PARP, Warszawa 2008.

<sup>3</sup> Cantillon R., *Essai sur la nature du commerce engenerale*, Royal Economic Society, London 1759.

students can gain by being active in student organizations, student research teams, and in other interest groups<sup>2</sup>.

It has been well known since the last century that in capitalism we have to compete with new products, new technologies, new type of organizations, or new sources of supplies<sup>4,5</sup>. Now it is obvious that in order to be competitive we have to develop knowledge-based economy<sup>6,7</sup>. The European Commission document *the role of universities in the Europe of knowledge*, developed in the Bologna process, clearly emphasizes the role the higher education should play in the development of a knowledge-based economy. The document emphasises that university should be open to working with the business environment and participating in the commercialization of knowledge. This implies a need for more than hitherto involvement of students in the research process and preparing them to start their own businesses, especially those based on knowledge. Currently, universities all over the world must be prepared for global competition among students and researchers. It is rather typical that many universities have innovation skills shortages and they do not attract enough top global talents. In order to build innovative Europe all Member States should increase affords in order to gain highly qualified workers. The only path, which makes it possible, is to develop a modern educational system. Universities need new researchers in order to reach the R&D target of 3% of GNP, which has a fundamental significance for increasing competitiveness of SMEs employees<sup>8,9</sup>. This is even more pronounced if we take into account the fact that many researchers will retire over the next decade. The EU and its Member States should strengthen their capacity to attract and train young people to become researchers. In this respect any initiative, which allows us to strengthen the development of skills, including entrepreneurship among students is very valuable<sup>10</sup>.

The current economic situation in the EU countries meant that the access to labour market of young people is becoming more difficult. In accordance with the recommendation of EU Council for Education, Youth, Culture and Sport, in order to effectively compete the economic crisis, the EU countries should:

- implement professional monitoring and analyzing of graduates, which makes it possible to customize training programs to the expectations of the labour market,
- stimulate the development of entrepreneurship, creativity and innovation in all areas and in all studies,
- create sustainable partnerships and cooperation with businesses,

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<sup>4</sup> Schumpeter J.A., *The Theory of Economic Development. An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*, Oxford University Press, New York 1934.

<sup>5</sup> Chesbrough H. W., *Open Innovation. The New Imperative for Creating and Profiting from Technology*, Harvard Business School Press, Boston 2003.

<sup>6</sup> Drucker P. F., *Innovation and Entrepreneurship*, Butterworth-Heinemann, 1985.

<sup>7</sup> Hubert A., *Empowering People, Driving Change: Social Innovation in the European Union*, BEPA-Bureau of European Policy Advisors, European Union, 2010.

<sup>8</sup> Chabbel R., *Characteristics of Innovation: Policies, Namely for SMEs*, "Science, Technology, Industry", 1995, No. 16.

<sup>9</sup> Etzkowitz H., *The Norms of Entrepreneurial Science: Cognitive Effects of the New University-Industry*, "Linkages, Research Policy", 1998, No. 27.

<sup>10</sup> Europe 2020, *Flagship Initiative - Innovation Union*, Communication from the Commission to the European Parliament, The Council, The European Economic and Social Committee and the Committee of the Regions, European Commission, Brussels, 6.10.2010.

- effectively develop higher education research,
- engage students in research projects,
- strengthen the links between universities, employers, business supporting institutions and local authorities,
- improve the quality of higher education through greater mobility of students and researchers and intensified cross-border cooperation,
- attract students and researchers from outside the EU to European universities.

According to the aforementioned facts, developing entrepreneurship, creativity, and involvement of students into research process are still the important factors to build innovative Europe<sup>11,12</sup>. Statistical data confirm there is a lot we have to do in order to improve entrepreneurship and linkages<sup>13</sup>. The entrepreneurship and linkages are not satisfactory in several EU countries, and especially, in Romania, Bulgaria, Poland and Latvia, which is presented in Figure 1. However, it must be noted that in the last several years a lot of effort has been made in order to improve linkages in Poland by developing clusters<sup>14</sup>. This however, needs some time to see visible changes on the market.

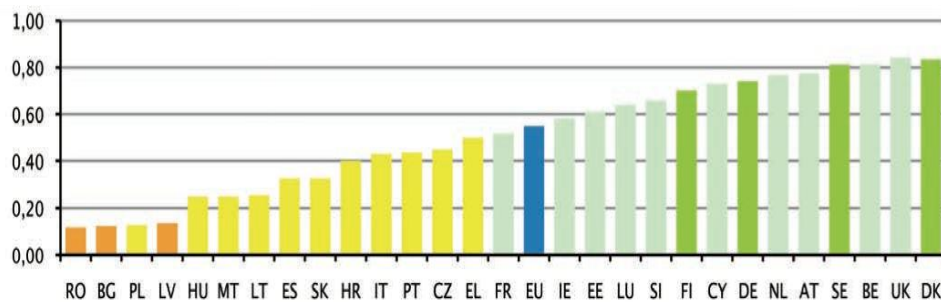


Fig. 1. Member States' performance in linkages and entrepreneurship

Source: Innovation Union Scoreboard 2014.

The ability to commercialize knowledge is correlated with a number of patents. Taking into account Poland, as an example, the diagnosis of the current state indicates a large disparity between patents submitted to the Polish and to the European Patent Office<sup>15</sup>. As

<sup>11</sup> Bartosik A., *Perspektywy rozwoju przedsiębiorczości akademickiej w regionie świętokrzyskim*, [w:] „Dobre Praktyki Przedsiębiorczości Akademickiej. Teoria i Praktyka w Regionalnym Kontekście Społeczno-Kulturowym”, editor: E. Grzegorzewska-Ramocka, Wyd. Wyższej Szkoły Ekonomii i Prawa, Kielce 2010.

<sup>12</sup> Bartosik A., *Dobre praktyki współpracy nauki z biznesem i samorządem*, [w:] „Możliwości Współpracy Między Nauką, Biznesem i Samorządem”, editor: E. Grzegorzewska-Ramocka, Wyd. Wyższej Szkoły Ekonomii i Prawa, Kielce 2011.

<sup>13</sup> *Innovation Union Scoreboard*, European Commission, 2014.

<sup>14</sup> Walczyk A., *Wpływ struktury klastrów Stowarzyszenie Producentów Komponentów Odlewniczych COM-KAST na rozwój Polski Wschodniej*, Zeszyty Naukowe Uniwersytetu Szczecińskiego, „Ekonomiczne Problemy Usług”, Nr 98, Szczecin 2012.

<sup>15</sup> *Annual Report of Patent Office of the Republic of Poland*, Patent Office of the Republic of Poland, Warsaw 2013.

it is seen in Figure 2 the number of patents granted by the European Patent Office to the Polish applicants has been increasing continuously since Poland's accession to the EU. However, the number of granted patents in 2013, which is 95, is far away from a satisfactory level. The patents and rights of protection for utility models granted to domestic entities by the Polish Patent Office (PPO) has a clear tendency for increasing, which is shown in Figure 3. However, it is still far away from an average number adequate for highly developed EU countries.

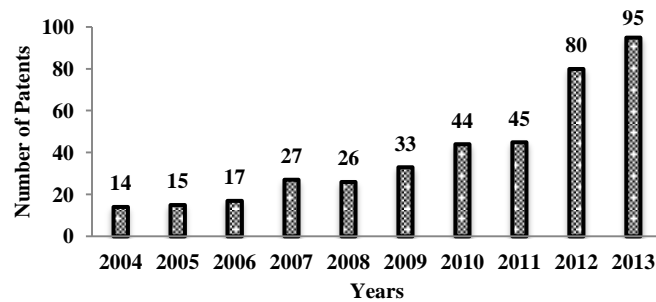


Fig. 2. Number of patents granted by the EPO to Polish applicants from 2004 to 2013

Source: 2013 Annual Report of Patent Office of the Republic of Poland.

Continuing the example of Poland, the low number of patents and rights of protection for utility models, granted by the Polish Patent Office<sup>15</sup>, which is seen in Figure 2 and Figure 3, are strictly correlated with the effectiveness of national research system. Again, there is a low rate in the range of open, excellent and effective research systems in countries, like Latvia, Romania, Poland and Bulgaria<sup>13</sup>, which is seen in Figure 3.

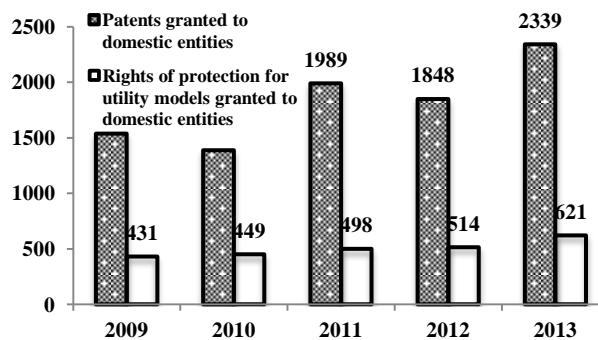


Fig. 3. Number of patents and rights of protection granted to Polish applicants from 2009 to 2013

Source: 2013 Annual Report of Patent Office of the Republic of Poland

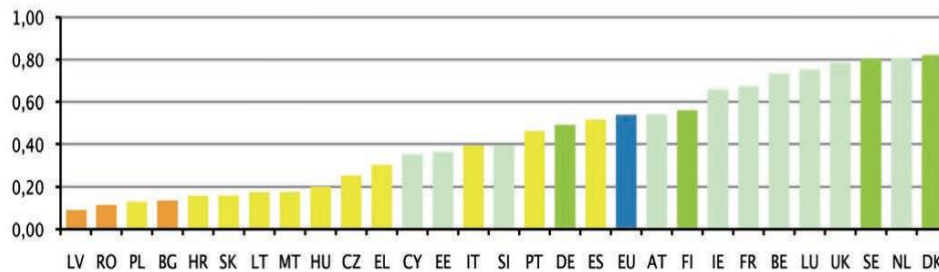


Fig. 4. Member States' performance in open, excellent and effective research systems  
 Source: Innovation Union Scoreboard 2014<sup>13</sup>.

Continuing the example of Poland, the low number of patents of Polish entities, granted by the European Patent Office, and the low number of patents and rights of protection for utility models, granted by the Polish Patent Office<sup>15</sup>, which is seen in Figure 2 and Figure 3, are strictly correlated with the effectiveness of national research system. Again, there is a low rate in the range of open, excellent and effective research systems in countries like Latvia, Romania, Poland and Bulgaria<sup>13</sup>, which is seen in Figure 4.

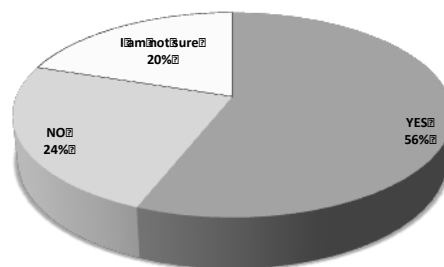


Fig. 5. Entrepreneurial mind-set among students at the Kielce University of Technology  
 Source: Pomietlorz, et al., 2014<sup>16</sup>.

Recent analyses of the entrepreneurial mind-set among students conducted at the Kielce University of Technology in Poland indicate that 56% of them confirmed they are entrepreneurial persons<sup>16</sup>. Part of them are not sure if they are or not entrepreneurial persons (20%), and 24% of them are certain they are not entrepreneurial, as it is seen in Figure 5.

An adverse symptom is also the fact that a low level of interest in starting their own business characterizes the same students. This is in contrast with results for students for highly developed countries. As an example Figure 6 presents answers from students if they are interested to open their own business. Among students of the Kielce University of Technology the 37% of them said yes, while 17% were against, and 46% were not sure if they would decide to open their own business when they obtained the university diploma.

<sup>16</sup> Pomietlorz M., Ozdoba J., Bartosik A., *Analiza postaw przedsiębiorczych wśród studentów Wydziału Zarządzania i Modelowania Komputerowego Politechniki Świętokrzyskiej*. Politechnika Świętokrzyska, Kielce 2014.

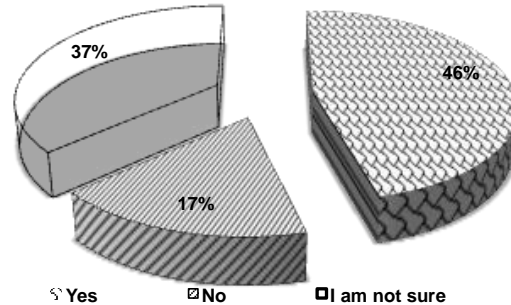


Fig. 6. Students interested in opening their own business when they obtain a university diploma

Source: own resources.

The results presented in Figure 6 are below the declaration of students from highly developed EU countries. Low self-confidence and low ability to solve problems, and lack of faith in success could be the main reasons why students who participated in the questionnaire gave such answers. The aforementioned arbitrary chosen indicators, as:

- performance in linkages and entrepreneurship,
- number of patents and rights of protection for utility models,
- performance in open, excellent and effective research systems,

are very important if someone considers comparing between countries with the level of knowledge-based economy and the level of modern educational system. According to Florida's hypothesis, the traditional working class plays an increasingly smaller role as the importance of traditional industrial economy is decreasing<sup>17</sup>. In addition, the working class and the managerial class lost their dominant influence on the values, norms and attitudes of society. Creative class, which includes engineers, artists, scientists, and creative workers, now takes a dominant role, due to their income level, and their role in the economic development. The strength and size of the creative economy is due to the quality of human resources. For this reason developing a support system for creative students plays an important role in their further activities as members of creative class in near future.

Understanding the needs to support the development of academic entrepreneurship, the Kielce University of Technology has launched a nationwide project *Support System for Students Invention (SSSI)*. The project has been subjected to the competition in the context of the *Wizard of innovation - support for innovative academic entrepreneurship*, conducted by the National Centre for Research and Development. The project was implemented in period from 2012 to 2013.

The main purpose of the paper is to present a methodology and results of the support system oriented to students' invention, which was implemented as a nationwide pilot project.

<sup>17</sup> Florida R., *Environmental Psychology. Creative Class*, Basic Books, Random House 2008.

## 2. METHODOLOGY OF SUPPORT SYSTEM ORIENTED TO STUDENTS' INVENTION

In the present paper the following hypothesis was defined: there is influence of developed methodology on students' engagement in developing protection rights such as patents, utility models, and industrial designs. It was found that statistical data confirmed there is influence of the project *Support System for Students Invention* on engagement of Polish students on application for protection rights, which will be proved in chapter 4.

If we intend to develop a support system for students' invention, we have to include several components, which create a chain of interrelated correlations. The main components of such a system are:

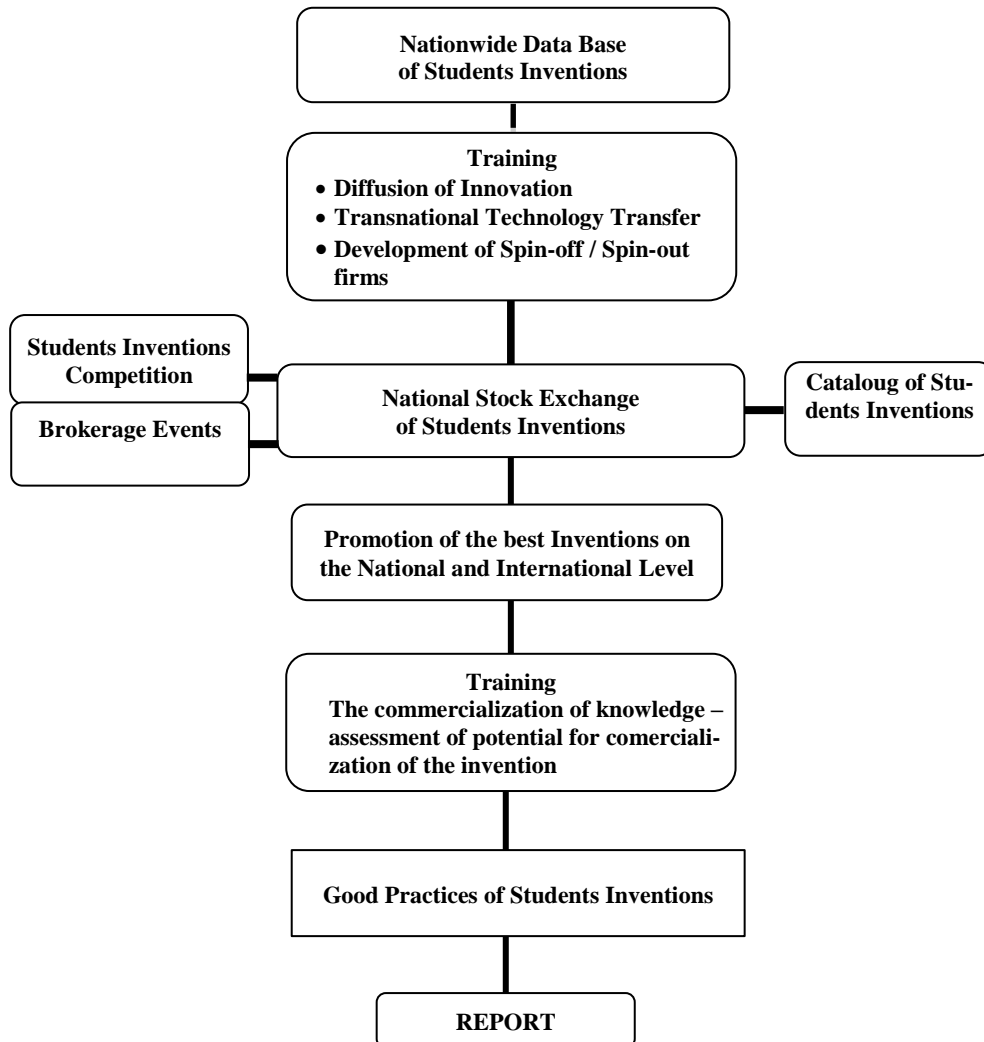
- nationwide database of students' inventions,
- training for students, which mainly includes: assessment of potential for commercialization of an inventor, process of creating spin off /out firms, transnational technology transfer, financial support, diffusion of innovation, etc.,
- national stock exchange of students' inventions,
- brokerage events which include the edition of catalogue of students' invention,
- promotion of students' inventions by:
  - participation in national and international exhibitions,
  - publication of *Good Practices of Students Invention* distributed among students and universities.

The essence of the pilot project *Support System for Students Invention* was to increase awareness, knowledge, and a platform for continuous exchange of creative thoughts between students, scientists, and business environment, which includes research institutions, entrepreneurs, business partners, centres for innovation and technology transfer, scientific parks, business angels, etc.

The general idea of the project *Support System for Students Invention* is shown in Scheme 1. The main components of the nationwide project, presented in Scheme 1, include the following:

- building and developing of data base of students' invention,
- national stock exchange of students' invention:
  - students' invention competition,
  - brokerage events,
  - catalogue of students' invention,
  - assessments of potential to commercialization of the awarded invention,
- promotion of the best inventions on the national and international level,
- training of students,
- publication of *Good Practices of Students Invention*.

Some aspects of the chosen components from the aforementioned list are shortly described in the next subchapters.



Scheme 1. The main idea of the project *Support System of Students Invention*

Source: own resources

### 2.1. Database of Students Inventions

The results of the action taken to develop a nationwide Database of Students Invention, which in addition to basic information about the inventors, includes declaration of students if they are interested in any cooperation in order to develop their invention, or whether they prefer to transfer the property rights, or commercialize a patent, utility model, or industrial design or whether they are interested in selling their rights. The database is available at the following link [www.wynalazca.tu.kielce.pl](http://www.wynalazca.tu.kielce.pl) and is built in a simple, clear and easy way to operate intuitively. Any claim to make a contact with the patent owner is made through the database administrator, which is managed by the Intellectual



Property Protection Centre at the Kielce University of Technology. Despite the fact that the pilot project ended on 31 December 2013 the database is administered continuously. Each student may register his or her invention at any time. Access to the description of the invention is open to any client. Access to a possibility of making amendments is open to owners of patents, and to the database administrator. The database can be directed to the queries by visitors to a website. Currently, there are far more than 400 patents, patent applications, utility models, and industrial designs registered in the Database of Students Inventions.

## 2.2. National Stock Exchange of Students Invention and Brokerage Events

An important component of the project was the organization of the *National Stock Exchange of Students Invention*, which was held in Kielce city in October 2012 and October 2013. The National Stock Exchange brought together in one place and time environment the students, researchers, entrepreneurs and representatives of many institutions, mainly business supporting organisations. In the two-day event there was a Conference on the first day, while on the second day the Brokerage Event. During the Conference, there was an introductory presentation and then students presented their own inventions submitted to the national competition, which were evaluated by the Jury. In 2012 and 2013 more than 50 students' invention was qualified for the national competition. The winners were awarded medals, and rewards. In addition, the Jury distinguished four patents each year, for which experts elaborated assessments of their potential for commercialization.

During the two-day event of the National Stock Exchange, both in 2012 and 2013, there were exhibitions of inventions presented as posters. At least 60 posters were presented each year. During the two-day event of the National Stock Exchange of Students Invention there were contests addressed to all university students with questions regarding knowledge related to the intellectual property rights.

On the second day of the National Stock Exchange the Brokerage Event was organized to allow them to establish direct contacts *Inventor – Business Partner*. In order to increase the efficiency of the Brokerage Event, the *Catalogue of Students Invention - Technology Offers* was edited, distributed broadly 2 months before the event. In 2012, there were 62 inventions provided in the Catalogue<sup>18</sup> and in 2013 there were 115 inventions<sup>19</sup>. The catalogue was sent to the potential stake holders representing businesses, universities, financial institutions, including business angels, Polish members of the European network EEN (Enterprise Europe Network) dealing with the transnational technology transfer, scientific parks, etc. Direct meeting in one place and time of young inventors and potential clients, interested in further development or commercialization or buying of the products or intellectual rights, resulted in establishing direct contacts *Inventor–Inventor*; *Inventor–BusinessPartner*; *Inventor–Scientist*. During Brokerage Event in the 2012 and 2013, in total, 64 meetings of inventors with business partners were held.

## 2.3. National Competition of 'Student–Inventor'

Organizing a nationwide competition, addressed to the students-inventors, required the

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<sup>18</sup> Bartosik A., *Katalog Wynalazków Studenckich – Oferty Technologiczne*, Wyd.Politechniki Świętokrzyskiej, Kielce 2012.

<sup>19</sup> Bartosik A., *Katalog Wynalazków Studenckich – Oferty Technologiczne*, Wyd.Politechniki Świętokrzyskiej, Kielce 2013.

development of competition rules and ethical standards, which are included in the regulations: *National Competition 'Student-Inventor'* and the *Competition Commission for Jury*, which are integral part of the pilot project. In 2012, there were 63 inventions qualified for the competition *Student-Inventor*, while in 2013 there was a substantial increase in candidates as 115 inventions were qualified. Inventions submitted to the National Competition were obligatorily registered in the Database of Students Invention. As an example Figure 7, Figure 8, Figure 9.a and Figure 9.b present very valuable patents awarded by the *Competition Commission* to the Polish students.



Fig. 7. Seat for birth action

Source: own resources.



Fig. 8. Robot for rehabilitation of upper limb

Source: own resources.



Fig. 9.a. The cap on the finger with a replaceable cartridge – design 1  
Source: own resources.



Figure 9.b. The cap on the finger with a replaceable cartridge – design 2  
Source: own resources.

Five winners of the *National Competition of 'Student-Inventor'* in 2012 participated in the *40<sup>th</sup> International Exhibition of Inventions* held in Geneva. The organizers of the Geneva Exhibition granted medals to all five Polish *Students-Inventors*, which included 2 gold medals, 1 silver medal, and 2 bronze medals.

Five winners of the *National Competition 'Student-Inventor'* in 2013 participated in the *41<sup>st</sup> International Exhibition of Inventions* held in Geneva. Again, students were granted five medals at the Geneva Exhibition, which included 2 gold, 2 silver medals, and 1 bronze medal.

It is worth emphasising that the participation of young people in such exclusive event as the International Exhibition of Inventions in Geneva, is of vital significance to students, as it is the best possible boost of their commitment in further development of their inventions.

### 3. DISCUSSION

The effect of the pilot project *Support System for Students Invention (SSSI)* is valuable and visible. It is worth emphasising that in the Polish Patent Office Report in 2011 there is a noticeable increase in the number of protection of inventions sent by the Polish students. It should be clarified that before the project started the Kielce University of Technology, together with the Polish Agency for Enterprise Development (PARP), launched a preliminary project in 2010. The preliminary project was aimed to answer the question if there is a market of students' patents in Poland. The preliminary project found there were at least 50 inventions across Poland submitted by students to the Polish Patent Office.

The statistical data confirmed the influence of the project *Support System for Students Invention* on the engagement of Polish students in developing patents, utility models or industrial designs, which is presented in Table 1.

Table 1. Number of applicants to the National Competition *Student-Inventor*

<b>National Competition <i>Student-Inventor</i></b>	<b>I Edition (2012)</b>	<b>II Edition (2013)</b>
<b>Number of applicants to the competition <i>Student-Inventor</i> in subsequent editions, including:</b>	<b>63</b>	<b>115</b>
Patent applications of Polish students to the Polish Patent Office in <b>2009</b>	7	9
Patent applications of Polish students to the Polish Patent Office in <b>2010</b>	12	13
Patent applications of Polish students to the Polish Patent Office in <b>2011</b>	37	34
Patent applications of Polish students to the Polish Patent Office in <b>2012</b>	7	50

Source: own resources.

Analysing years from 2009 to 2013, as can be seen in Table 1, there is a tendency to increase the number of submitted inventions, developed with the participation of students, to the Polish Patent Office. The number of applicants for the competition of *Student-Inventor* was 63 in 2012, while in 2013 it was increased by 82%, and was equal to 115, which is seen in Table 1. It can be confusing to someone that for instance in the 1<sup>st</sup> edition of the National Competition '*Student-Inventor*' in 2012 there are 7 patent applications of the Polish students reported to the Polish Patent Office. It must be clarified that the National Competition *Student-Inventor* was organised in February 2012, therefore 7 patent applications were submitted in January and February 2012. The same regards the 2<sup>nd</sup> edition of the National Competition *Student-Inventor* in 2013, where we can see in Table 1 the 9 patent applications of the Polish students to the Polish Patent Office in 2013, which is due to the fact that the competition took place in February 2013.

Taking into account the national competition of *Student-Inventor*, which took place in February 2012, it is seen in Table 1 that the number of applications of the Polish students to the Polish Patent Office was 37 in 2011. This is almost 3 times higher comparing to

2010 and 5 times higher comparing to 2009. On the other hand, the increase in number of applicants for the second edition of the competition *Student-Inventor* in 2013 (in total 115) was possible as the number of applications of the Polish students to the Polish Patent Office was 50 in 2012. This is almost 50% increase comparing to 2011 (34 applications to PPO) and almost 400% increase comparing to 2010 (13 applications to PPO).

To sum up, considering the number of inventions submitted to the National Competition *Student-Inventor*, in terms of dates of applications for protection in the Polish Patent Office, it should be noted there was a year-on-year increase in the number of inventions with the participation of students.

Continuing the action initiated under the project *Support System of Students Invention*, the Kielce University of Technology preceded to the next editions of the national competition of *Student-Inventor*, which in 2014, and 2015 joined 84, and 56 respectively. It must be noted, however, that the range of the actions taken for competitions in 2014 and 2015 are much below that in 2012 and 2013 when financial resources from the pilot project were available. In 2013 the *Students-Inventors* signed, at least five cooperation agreements. The University does not know the details of cooperation as they include commercial information.

The positive examples of the academic entrepreneurship, undoubtedly, include the project *Support System for Students Invention*. The Kielce University of Technology has set itself the target for the project to be continued despite the expiry of the pilot project, which was granted till the end of the year 2013.

Considering European scale it must be noted there are many known efforts to develop knowledge-based society. Positive effects arise when we are able to implement an appropriate innovation policy in the region, country, or in the relevant field of economic life. Positive examples of academic entrepreneurship can be Aachen in Germany, because there is lack of free spaces at the University RWTH for signs of companies. Professors and students mainly run the companies. Another positive example for Germany is Dresden. Professors of Dresden Technical University are partially exempt from teaching in order to participate in research and cooperation with industry and in order to develop small, short-acting professors companies for specific projects and topics of master's thesis. Another positive example is the Wrocław Incubator and Technology Park in Poland, in which several companies belong to professors and students.

#### 4. CONCLUSIONS

Developing academic entrepreneurship is the main goal of modern university education. In order to do that it is necessary to create entrepreneurial attitudes of students during their studies. This requires building a support system for entrepreneurial attitudes among students. Such a system can include various actions oriented to talented students. The example of the project *Support System for Students Invention* indicates that there are talented students who deserve to have access to the support system, which would allow them to develop further their products or commercialize them, or promote their achievements on the national and international level. Continuous organization the National Stock Exchange, and the Brokerage Events, and competitions among students on the national and international level can strengthen the process of modern university education.

Considering the developed methodology of the pilot project, the *Support System for Students Invention*, one can say, boosts students' engagement in building knowledge soci-

ety. In conclusion, it can be noted that the national competition of *Student-Inventor* activates academic environment in the process of evaluating the results of scientific research in order to identify the emergence and legitimacy of intellectual property protection, as well as accelerates the development process of applications addressed to the Polish Patent Office. The project corresponds to the expectations of the scientific community, students and potential investors, positively affecting the involvement of students in the research process and encouraging them to seek innovation for their own businesses. The result of the project is also the platform of exchange of creative thoughts of *Students-Inventors* with entrepreneurs, business partners, business environment institutions, research centres, and the support of the commercialization of knowledge and promotion of young inventors on the national and international level. The results of the project are published as the best practices of *Student-Inventor*, to be followed by student's environment<sup>20</sup>.

Building a support system for student's invention requires considering several components, like for instance:

- the role of the higher education system should be converted into creating opportunities for students during their studies to develop their own attitudes and talents,
- increase universities innovation skills to attract enough top global talents,
- increase student's self-confidence by developing 'learning by doing' during university studies.

The above components could be treated as a supplement to the list of recommendations defined by EU Council for Education, Youth, Culture and Sport, already presented in the Introduction<sup>10</sup>.

#### ACKNOWLEDGMENT

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#### PRZEDSIĘBIORCZOŚĆ STUDENCKA

Rynek pracy dla młodych osób w Unii Europejskiej staje się coraz bardziej konkurencyjny. Wymaga to zmian w systemie kształcenia uniwersyteckiego, które powinno zostać zorientowane na wzmocnienie kształtowania postaw przedsiębiorczych. Wiedza, umiejętności i kompetencje to trzy główne filary obecnego kształcenia studentów. Jednakże wymagają one wzmocnienia systemowego, które zapewniłoby studentom dostęp do udziału w badaniach naukowych oraz w rozwiązywaniu codziennych problemów przedsiębiorstw.

Celem artykułu jest zaprezentowanie metodologii i wyników wsparcia wynalazczości studenckiej, które testowano w ramach pilotażowego projektu zatytułowanego *Systemowe Wsparcie Wynalazczości Studenckiej* w latach 2012-2013. Głównymi elementami zaproponowanego systemu wsparcia było zorganizowanie krajowej giełdy wynalazczości studenc-

kiej, spotkań brokerskich, specjalistycznych szkoleń, a także zorganizowanie promocji wynalazków studenckich na forum krajowym i międzynarodowym.

Realtaty pilotażowego projektu *Systemowe Wsparcie Wynalazczości Studenckiej* wskazują, że istnieje niemała grupa studentów, którzy są twórcami lub współtwórcami wynalazków i którzy oczekują systemowego wsparcia w zakresie rozwijania swojego produktu, lub komercjalizacji, lub promocji wynalazku na poziomie krajowym i międzynarodowym. Zgromadzone dane statystyczne potwierdzają wpływ projektu na pobudzenie aktywności polskich studentów w przekształcaniu swoich pomysłów w patent, wzór użytkowy lub przemysłowy. We wnioskach końcowych zwrócono uwagę na współzależność między zaproponowanymi rozwiązaniami i oczekiwaniami środowiska studenckiego, naukowego, a także przedsiębiorców i potencjalnych inwestorów.

**Słowa kluczowe:** przedsiębiorczość, wynalazczość studencka, polityka rozwoju innowacji.

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