

Innovations In Educating Employees of Micro-Enterprises

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Abstract

Knowledge plays a decisive role in stimulating economic and social development in the contemporary economy. Among the factors affecting the development of knowledge based economy, it is education and quality of human resources that are mostly mentioned, apart from research and development activity, scientists' mobility, information and telecommunication technologies and services [Matusiak, 2009]. The lifelong development of employees' professional competence has become the order of the day, not questioned by anyone. Permanent and instant changes occurring in the field of technologies (especially those advanced) require professional education and training systems to be adapted to them in order to equip current and future employees with competence necessary for knowledge transformation processes and advanced technology implementation.

The article presents assumptions and results (a story of success) of research-implementation work within the EQUAL Community Initiative Program and their continuation in the Strategic Project. The purpose of the research was to develop a model of knowledge transfer to micro-enterprises and human resource development for their permanent and sustainable development. Over 400 micro-enterprises, owners and employees, people of all ages coming from various professional trades have participated in the research.

Quickly changing administration conditions, which can be observed in Poland nowadays, force a need for employees' permanent training. The main aspect of the project works conducted and pilot implementation was to stimulate enterprising attitudes among micro-enterprises' employees to help them maintain their jobs, as well as to increase their enterprises' competitiveness through the development of new methods of education / vocational training taking advantage of information technologies. Specially developed programs (as a result of investigating most urgent needs) have been made available for pilot self-study, developed in a modular system with strictly planned stages of self-study progress. The model developed contains general solutions, addressed to all micro-enterprises, and also to specially selected trades exposed to particularly fierce competition, goods import or rapid technical progress. The use of applicable standards in making an innovative model facilitated its development and compatibility with new technologies. The key element of such objectives was, above all, to create opportunities for a fast, simple and not requiring considerable financial outlays access to services supporting micro-enterprises. Supporting micro-enterprises shall positively affect local development. It also fulfils conditions necessary for the creation of information society.

1. Introduction

Scientific and technical progress, high technology, an innovative economy, the rapidly changing work environment, the personality and work duties of every employee at every job post all entail new relationships between people and their work environment, family and society.

Educational strategies for the development of man, institutions and society are justified by an innovative economy, knowledge-based society, learning organizations, intense competition in the economy and on the labour market. New technologies and, in particular, computer technology, have a special role in these changes.

We are witnessing a considerable pace of environmental changes, labour forms and content, intellectualisation of work as a result of technical progress, integration and globalisation processes. We are dealing with an increasingly fast process of developing and implementing new materials, using innovative technologies. Knowledge and professional habits are

becoming outdated very fast. Requirements set down for employees are becoming higher and higher, they are expected to have broader, comprehensive education, willingness for development and innovativeness. Keeping up with the changing reality, especially in the period of system and economic transformations, as well as European integration, requires permanent improvement of general and vocational qualifications.

Whether or not it is possible to participate in the processes of both creation and implementation of new solutions and advanced technologies, depends to a large extent on employees' qualifications, that is widely understood intellectual capital [Religa, Koprowska 2010].

Rapidly changing administration conditions, which can be observed in Poland nowadays, force a need for employees' permanent training. A scale of the need for training to a large extent depends on the economic situation, level of affluence, as well as the awareness (conviction) that education "pays"; qualifications determine a position on the labour market. Qualifications improvement is an element of professional development and staff system whose aim is to supplement knowledge, skills and competence necessary for the appropriate performance of tasks in a current or future job. *Training programs aim to maintain and improve the efficiency of work currently performed, whereas improvement programs aim to develop skills needed in a future job [Bednarczyk, 1998].* It is also obvious that a demand for training is bigger in the period of intensive economic growth and smaller in bad economic situation.

Polish companies' managerial staff should notice and appreciate importance of skilful management of information, knowledge, people; it should establish self-teaching organisations based above all on knowledge. The creation and implementation of a self-teaching organisation is a complex process and requires all participants' involvement. Employers, in their own interests, should try to create and support opportunities for their employees' professional development. Sending to training may exemplify an element of the employee's motivation system. It is an investment in human resources, and its skilful use will lead to the improvement and development of employees' entrepreneurship, creativity and initiative.

The presented example of a success and good practice results from project research and works conducted within the framework of EQUAL Community Initiative Program *Entrepreneurship in the Web – Internet – the Opportunity for Growth of Competitiveness*, which is pursued under the 'F' theme – *Supporting the adaptability of firms and employees to structural economic change and the use of information technology and other new technologies.*

According to the partnership principle applicable while implementing projects within EQUAL Community Initiative, projects are implemented not by single project authors, but a partnership of a few organizations and institutions – the so-called Partnership for Development..

Presenting the story of a success, we would like to encourage entrepreneurs to open to information technologies, the Internet as a new opportunity for an access to knowledge and information, as well as the development of employers and employees' qualifications

The Web-based Vortal „Internet Counsellor for an Entrepreneur” is an integrated IT tool, designed and produced in order to implement the **Project EQUAL *Entrepreneurship in the Web, Internet – the Opportunity for Growth of Competitiveness***. The project's goal is to increase the competitiveness of micro-enterprises by using modern information and communication technologies to increase the quality and universal accessibility of support services, professional consulting, information and training.

The vortal's basic tasks include:

- providing information on the subjects of: managing an enterprise, marketing, promotion, logistics, new national and European legislation, IT systems, as well as specialist knowledge on running a business in the selected sectors;
- delivery of e-learning and self-learning of owners and employees of small companies;
- providing professional consulting in the areas: determined by the subjects of e-learning; initiated by Consultants (pertaining to modern technologies and solutions, new products, new legislation, fairs and expositions, etc.), as well as subjects proposed by the micro-entrepreneurs participating in the project [Bednarczyk, Koprowska 2008].

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2. Methodological assumptions – objectives, research methods, beneficiaries

The article deals with the following research problems:

- *How to improve the quality of vocational education?*
- *How to correlate the needs of microenterprises with vocational education?*
- *How to implement new standards and innovative programmes of vocational education?*

By proposing a thesis that e-counselling, e-learning and e-work are already present today in every organised activity, we want to introduce a research report, a diagnosis of the situation of such activity, specify the needs, and with the help of computer technologies develop support mechanisms for micro-enterprises.

Our ideas were implemented within the framework of Project EQUAL Community Initiative: *Entrepreneurship In the Web. Internet – an Opportunity for Competitive Growth*.

EQUAL Community Initiative was part of the European Union's strategy aiming to create new, better workplaces and ensure an equal access to them. As a community initiative funded by the European Social Fund, it was a platform allowing to search and learn new ways of achieving objectives of the *European Employment Strategy* and Social Integration Process. The initiative worked as a laboratory generating new ideas for the benefit of the European Employment Strategy and social inclusion process. It was different from ESF mainstream programs as it was an instrument serving the purpose of developing new ways of combating discriminations and inequalities on the labour market, providing examples of good practices within the area of innovative approaches, emphasizing active cooperation among the member states, ensuring the use and popularisation of most positive solutions in the European Union.

The objective of the good research practice and development of new solutions discussed in the example was the growth of a micro-enterprise's competitiveness through the implementation of a model of using information technologies with a view to increasing the quality and common availability of supporting services.

Detailed objectives:

1. Equalisation of micro-enterprises employees' opportunities, including women operating on the labour market.
2. An increase in the competence of micro-enterprises' managerial staff regarding the importance of investments in human resources in order to maintain jobs and company's development.
3. A change in micro-enterprise employers and employees' attitudes and behaviour towards establishing cooperation and implementing examples of good practices.

4. An increase in employees' territorial and vocational mobility, development of enterprising attitudes.
5. An increase in the quality of supporting services, including development of methods and models of knowledge transfer to micro-enterprises based on modern information technologies.
6. A change of the extent to which micro-enterprises take advantage of supporting services, including e-learning based on self-teaching modules, consultancy.

In this case *research methods* would be: analysis of documents (EU reports, adopted strategic priorities), diagnostic survey (research into educational needs and operational barriers to companies, determination of a competence gap), educational experiment and pilot implementation.

A group subject to research is micro-enterprises. Beneficiaries participating in the implementation of results developed constitute a group of 400 micro-enterprises, owners and employees of all ages, coming from different trades, such as clothing, printing, footwear, photographic, wood industry – those being to the largest extent on the verge of collapse and liquidation. The most of beneficiaries are companies established in 1990-2000, 80% of which are represented by natural persons running manufacture or service activity of multi-product nature. The group of beneficiaries has been selected in the period of conducting research and experimental verification of all tools. The control group participated in the project for the period of 12 months. The group of beneficiaries was, apart from typical sociological research, a direct source of the knowledge on opportunities and threats to the project, as well as micro-entrepreneurs' needs and opportunities. The rule of empowerment has been fully used, that is, direct beneficiaries' participation in creating efficient solutions at every stage of creating and using a tool. The group of micro-enterprises has been chosen not only because of limited human resources, but also psychological barriers relating to a lack of the habit of learning and gaining new competence, a fear of new challenges, as well as employees and company owners' low self-esteem.

Micro-enterprises play a considerable role in economy. It is where people with enterprising skills and predisposition are mostly employed, and where 27.4% of the society finds a job. In general, they represent nearly 97% of all existing companies (2.5 million micro-enterprises employ 3.5 million employees), and their share in making the Growth Domestic Product is 33%, that is almost a half of what is contributed by all companies [Bednarczyk 2008]. That sector is, however, very fragmented. One of the main problems of micro-enterprises is the lack of cooperation, capability of working together in a network. While operating, they encounter a great deal of barriers, such as financial restrictions, legal and high labour costs. They are also contending with the problem of implementing technological and organisational innovations on their own. The barriers to a large extent result from a restricted access to professional information and consulting services. The situation on the Polish labour market, in particular the opening of foreign markets and economic migration, affects the necessity of opening to the cooperation with other countries and taking up related challenges. Development of new technologies also requires entrepreneurs and their employees to have a skill of adapting to permanent changes on the market and improving their qualifications. The adopted conception of innovative solutions was connected with:

- the use of information technologies for training, consultancy and improvement of the level of knowledge in the area of entrepreneurship,

- development of an interactive vertical portal for micro-entrepreneurs, facilitating improvement of companies' competitiveness through the use of the Internet on the basis of information technologies.

3. Idea and innovative solutions supporting human resources' development

In this case, work or study via the Internet has become both a means to gain knowledge, and an end as such since it familiarised micro-enterprises' representatives with the potential of contemporary information technology and encouraged them to use this medium for the promotion of their own activity, searching for new business partners and service sale.

A proposed and pilot implemented innovative solution was process-oriented and entailed the development of new methods and tools for solving the problem of restricted micro-entrepreneurs' access to supporting services, including: lifelong learning, consultancy.

Conducting the research and project work was based on a few key principles:

- **Partnership:** joining together main participants (local and regional authorities, training institutions, state employment agencies, NGOs, companies, social partners) into the Partnership for Development, operating in geographical and sector dimension in order to solve identified problems,
- **Thematic approach:** concentrating activities on thematic areas as per the European Employment Strategy, but also resulting from surveys and region development strategies adopted.
- **Innovativeness:** researching and testing innovative methods and formulating, undertaking and implementing lifelong education.
- **Empowerment:** ensuring equal participation in the Partnership's activities and decisions to groups facing problems in vocational and social integration.
- **Transnationality:** making it possible to learn from each other and ensuring effective cooperation above national borders.
- **Mainstreaming:** developing and testing new principles of integrating best practices into rules of employment and social inclusion.

In the context of social policy, learning from other countries or regions' experience, exchange of ideas, know-how, employees, as well as joint implementing, undertaking and financing activities offering a value added are simply good management tools. Therefore, a fundamental element was to develop transnational action programs which emphasized national achievements and developed them. Transnationality helped create European identity as a supplement of the regional or national identity.

For many years cooperation above existing borders – those organisational, state or regional ones – has often been used as a way of gaining an access to information and new ideas, stimulating and supporting innovativeness, as well as gaining skills and means allowing to improve the completion of actions. The cooperation has been used as a way of supporting the process of learning which allows for more aspects than those obvious or already known, thus contributing to achieving results reaching further than expected. For instance, it has developed a Toolbox supporting companies in terms of the management process. It has been based on tools already functioning in individual partner countries (e.g. company innovativeness level control tool, business incubator), but unavailable or unknown to entrepreneurs for various reasons.

The presented example of research conducted was of pilot nature. Its task was to verify a proposed thesis that one of the most important factors affecting a micro-enterprise's weak development possibilities is the lack of knowledge on widely understood entrepreneurship and possibilities of obtaining funds ensuring company development – mainly taking advantage of opportunities arising from structural funds, but also weak

information technology background and lack of motivation for the change of qualifications among entrepreneurs and their employees.

4. Model design and implementation – a story of success

At the beginning of work conducted within the project, an analysis of economic and educational environment was conducted; diagnosis and analysis of barriers was made; directions of the growth of micro-enterprises' competitiveness were determined. Research on the needs and barriers was conducted among 202 micro-enterprises within trades participating in the project. The research concerned the following:

- training needs,
- activities supporting company operation,
- assessment of human resources' competence and development,
- use of modern information technologies in company operation,
- cooperation with company environment and partners,
- ways of adapting to market changes, specific to given trades.

From the perspective of the project goals presented, training and consulting needs were most important to micro-enterprises examined.

The survey results showed that over 40% of micro-enterprises need a knowledge of:

- customer winning strategies,
- marketing and sale,
- fund raising,
- company management.

Another group of needs concerned a knowledge of:

- new technologies, innovations (31%),
- economic law, finance management, business plan preparation, negotiations and communication in business, safety at work legislation (13%),
- environmental protection (9%).

Source documents and materials (the available ones, as well as own reports on the research on barriers and educational needs, the diagnosis of micro-enterprises' condition) served as a starting point to design model operation assumptions. The training and consultancy market lacks a model of knowledge and supporting services transfer to enterprises. The solution proposed had a very innovative design. As a result of using information technologies, it allowed employers and employees to improve qualifications (at any time and place, regardless of enterprise localisation), introduce a tailored course of education or vocational training, maintain employment and increase motivation for work.

The model developed favoured trade integration, intergeneration communication and equal opportunities for men and women. It also eliminates disproportions in an access to knowledge and services, offers solutions for specially selected trades exposed to the particularly disadvantageous, fierce competition.

Selected model elements:

- **Library of modular programmes of vocational training** (space to conduct e-learning training) – innovative modular programmes have been developed on the basis of an analysis of results from the research “Needs and barriers of micro-enterprises”. The base of the library of modular programmes for the classical and e-learning form of education consists of general education programmes addressed to all industrial sectors and concerning marketing, company's promotion via the Internet, winning external sources of investment financing (including: Union funds), specialist programmes developed for a particular sector concerning new products, technologies, new materials, machines and equipment.

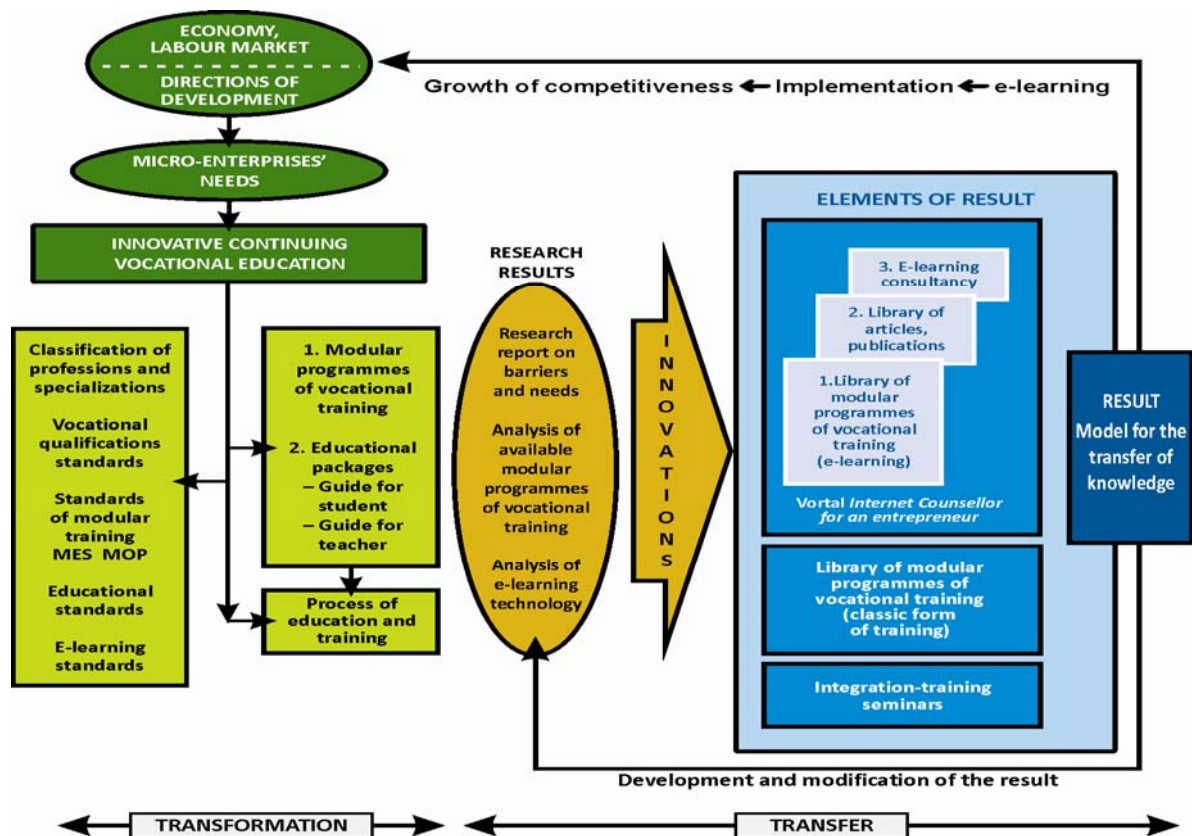


Fig.1 Functional diagram of knowledge transfer to micro-enterprises

Source: Own compilation – Equal Community Initiative “Entrepreneurship in the Web – Internet – the Opportunity for Growth of Competitiveness” (F0320)

- **Library of articles, publications, web pages, examples of good practices** (Info guide)
 - selected publications broadening general knowledge about company management, finance, new domestic and Union’s legislation; reports, handbooks of good practices, also knowledge about European companies, their products and commercial offer. Selected issues were presented in a general industrial sector-related form.
- **e-learning consultancy** (the space of counselling services). A system of managing and organizing counsellors’ work, the scope of their counselling had been developed (on the basis of the research into needs of micro-enterprises and barriers they encounter). E-counselling was launched. Companies could use the general and specialist expertise. Communication with counsellors was accomplished by means of communication tools, such as a forum, chat, e-mail and Skype.
- **Integration/Training seminars**. One of the main problems which micro-enterprises face is lack of co-operation, ability to collaborate in the Web. Local meetings (within a voivodeship) and meetings within one sector enabled direct exchange of knowledge and experiences, allowed for solving some problems pertaining to micro-enterprise competitive growth and raising awareness of the role of lifelong learning. Moreover, micro-enterprise representatives, who were not prepared for using a computer and the Internet had a chance to participate in a training event demonstrating the basics of computer and Internet use which was based on the modular training programme. All participants were awarded certificates confirming the acquired IT skills.

Knowledge transfer took place by means of designing and developing a flexible IT tool – a vertical portal for micro-enterprises – *the Internet Entrepreneur’s Counsellor*.

Table 1: Project innovation

Innovation	Current situation	Project results
Portal for micro-enterprises	<p>In virtual space there are web pages meant for companies including SMEs, but there are no offers directly addressed to them. Existing offers are for all enterprises.</p> <p>There is no specialized offer addressed to micro-enterprises.</p> <p>E-learning training events are offered by different firms but their basic drawback is the fact that they are paid, which constitutes a serious barrier to micro-enterprises taking advantage of them.</p>	<p>Greater significance of IT in micro-enterprises leading to an increase in their competitiveness.</p> <p>Using the Internet for product sale and promotion, upgrading knowledge in the company and using the computer as a management assistance tool in the company.</p> <p>Reducing the risk of digital exclusion; growing tendency towards building an information-based society.</p>
	<p><i>Innovativeness of the vortal relies on concentrating different services for micro-entrepreneurs in one place and transferring them by electronic means.</i></p>	
E-learning packages adapted to expertreal identified needs	<p>Micro-entrepreneurs are not strongly convinced about the necessity to upgrade the competences of their own employees. Yet, on the basis of their own experiences, they are able to specify areas of knowledge indispensable for achieving success. Currently, the process of building self-study modules on the basis of consultations with the module addressees is functioning to a small extent.</p>	<p>Growing tendency towards upgrading one's own competences in micro-enterprises.</p> <p>Taking advantage of the proposed offer and searching for new directions in self-development.</p> <p>Practical application of acquired knowledge for the development of the company.</p>
Permanent access to expertreal counselling	<p>Direct counselling provided by expert firms is costly. Internet counselling is available to a small extent but there are no standards for Internet counselling. Creating such an offer for a concrete recipient could be innovative.</p>	<p>Increased number of solutions to current problems resulting from the micro-enterprise functioning with the participation of professional counselling aid.</p> <p>Building a culture where the professional services of experts are used.</p>
Co-operation networks, including transnational co-operation	<p>Micro-enterprises engaged in their current operations are not always interested or ready to get involved in co-operation with other, similar companies neither at home nor abroad.</p>	<p>Long-lasting co-operation networks between institutions involved in similar activities resulting in increased competitiveness of the companies and exchange of experiences.</p>
Engagement of the groups	<p>Low level of direct contact between scientific institutions and enterprises, and counselling institutions and service recipients.</p>	<p>Transfer of new technologies and knowledge targeted at the recipient's actual needs. Reducing the distance between: research, design, and counselling institutions and enterprises.</p>

Source: EQUAL CIP documentation „Entrepreneurship in the Web: Internet – an opportunity to increase competitiveness” (F0320) – (unpublished materials).

Basic tasks of the vertical portal include:

- provision of information on company management, marketing, promotion, logistics, new domestic and EU legal acts, information technology programs and expertise on running business activity in selected trades;
- provision of e-learning training courses and self-education to small enterprises' owners and employees;
- offering professional consultancy in the areas determined by e-learning training themes, initiated by counsellors (on modern technologies and solutions, new products, new legal acts, organised fair, displays, etc.), as well as initiated by micro-entrepreneurs participating in the project themselves.

Within the e-learning consultancy, enterprises could make use of skill and knowledge supplementing general and specialist consultancy. Communication tools used on the vertical portal allowed to provide consultancy on an individual and group basis, in real time (synchronously) or asynchronously. The following **communication tools** were used:

- a discussion forum – a channel of group consultations allowing information exchange among all vertical portal users. The forum is an asynchronous information channel, which means that answers to the questions asked do not usually appear systematically, however, a discussion participant receives information to his/her e-mail box on the answer appearing in a given topic. It is possible to browse all previous topics on the forum, which makes the forum not only a place for systematic experience exchange, but also a store of knowledge, which can be easily searched through.
- Chat – similarly to the forum, allows holding group consultations, however, as opposed to the forum, consultations held by means of that tool take place in real time.
- Consultation panel – an information channel meant for information exchange between the entrepreneur and consultant. The panel is an individual work tool, which means that both questions and answers are available only to a given entrepreneur. [Koprowska, 2008]

The key point was to create opportunities for an access to services supporting the operation of micro-enterprises in a fast and simple way, without considerable financial outlays. So the requirements of actions aimed at the development of information society were fulfilled. Supporting micro-enterprises will have a positive influence on local development. The project's value added was about the entrepreneur taking advantage of a knowledge gained in the field of entrepreneurship and computer equipment operation with a view to developing his/her own company in a direction initially not assumed in the context of the model application, but charted by the beneficiary himself / herself.

5. Success factors, achieved results

An unusually significant factor was comprehensive support of activities including training, consultancy and access to information. Possibilities of gaining support for enterprises from European Union funds have been checked and used with the help of counsellors. Assumed and achieved benefits of the **model's implementation include:**

- stimulation of attitudes involving activeness and entrepreneurship,
- better use of computers and the Internet as tools meant for the company development,
- stimulation of activity and readiness for establishing cooperation and experience exchange on the national and transnational level,
- access to prepared self-education programs (testing and customization is possible),
- access to current information relating to the management and operation of a micro-enterprise (inter alia technological novelties, innovations),

- promotion of micro-enterprises participating in the project during trade meetings, specialist conferences, seminars, exhibitions, on the Internet or in publications,
- gaining European experiences in micro-enterprise management,
- modernisation of computer hardware or obtaining new computers together with software; refund of Internet access costs.

One of the most valuable and prospective achievements of the Project was the creation of the Polish Network of Innovation and Micro-Enterprise Cooperation and Virtual Network of over 100 enterprises representing six EU member states interested in the cooperation and knowledge and innovative solution transfer. Presence in the network provided entrepreneurs with an access to new markets with unique products and services.

The continuation of the results achieved is the next research undertaking being under way – studying to what extent Polish companies' staff is ready for the transfer of innovative solutions and advanced technologies, as well as identification of any competence gaps, which has become an objective of the Strategic Program implemented in 2010-2014 within the framework of Innovative Economy Operation Program. It provides for the development of model mechanisms and structures supporting innovative processes, as well as new technologies of intellectual capital development in order to stimulate economy innovativeness. Within the framework of one of research-implementation tasks *Human Resource Development System – Training for Innovative Economy Employees* (task I.5.2), system support has been planned for the development of economic sector employees. Setting about to work, the following research problems have been identified:

- To what extent is Polish companies' staff ready for the implementation of innovative technological solutions?
- What are the competence gaps among managerial staff and senior technical staff which hamper effective knowledge and technology transfer to Polish enterprises?
- Are there any other barriers impeding the above mentioned processes conditioning the growth of our economy competitiveness and what measures may be taken to minimize their negative influence?

Conclusions

The process of introducing changes with a view to improving education efficiency and quality, opening education systems to the environment and the world, as well as increasing an access to education through, inter alia, an opportunity for lifelong learning and distant learning development requires diagnostic activities within the area of the development of information and communication technology in distant learning. Unquestionable advantages of e-learning, such as training cost reduction, an increased access to them, permanent access to knowledge, possibility of expert consultations, education customization, progress in learning permanent control, as well as the state's involvement in the development of this education technology allow to forecast that e-learning will bring a new quality to the adult continuous education and will, through the development of individuals and enterprises, contribute to the development of the whole society. We assumed that the most efficient support in the contemporary economy would be to prepare owners and employees for making use of computer technologies, the Internet, and providing e-counselling and e-learning in scattered micro-enterprises by means of such technologies. We have made entrepreneurs, coaches, experts, employees aware of the reasons for preventing adult working people from participating in lifelong education. We are convinced that it will be easier for managerial staff, company owners to take decisions on investing in human resources, and employees will be more sensitive to advantages resulting from the improvement of their own competence.

The fact that knowledge becomes outdated is inextricably linked with fast technological progress, emergence of new products and services. An access to them will be reserved for those who will be determined to permanently develop their competence.

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