

## KNOWLEDGE MANAGEMENT IN SCENARIOS OF WIELKOPOLSKA DEVELOPMENT

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The purpose of this publication is to present the knowledge management and recommendations of IT tools in foresight scenarios of Wielkopolska development. The presented work was created based on analysis of development scenarios, resulting from research carried out in research projects: "Foresight – Wielkopolska economic networks. Scenarios of knowledge transformation supporting innovative economy" and "Wielkopolska Foresight". The article contains information about the nature of Foresight. Furthermore, it presents the concept of knowledge and knowledge management as a basis to promote region's innovativeness. Further part of the work contains collected and systematized recommendations regarding the knowledge management in Wielkopolska. The last part indicates main directions of Wielkopolska development strategy about knowledge management.

Keywords: foresight, knowledge management, Wielkopolska

### 1. Introduction

During last years one could observe that many organizations tries to create scenarios for the future on basis of the Foresight methodology. Studies concerning development scenarios of the industry, region or determined area of knowledge, are arising [12].

The present work has a demonstrative character and it shows the future prospect of knowledge management in Wielkopolska and it points at possibilities of

implementing selected IT tools. This work is based on results of studies and results obtained in foresight project concerning the development of Wielkopolska that have been realized: “Wielkopolska economic network” – scenarios for transition of knowledge supporting the innovative economy” and “Regional Foresight for Wielkopolska”. Authors of this publication have participated in these projects as the chief director and the expert.

The present paper encloses information concerning the essence of foresight. The next part shows the idea of knowledge management in a way it was interpreted along the project realization. Authors also present selected research results concerning attitudes of Wielkopolska inhabitants with reference to the knowledge and methods of using it (with particular reference to IT technology). Next collected and systematized recommendations for knowledge management in Wielkopolska, were presented. This chapter is based among others on the analysis of the optimistic scenario concerning the development of the region (it is presented in form of a final report of scientific projects mentioned before); however authors also used results of specified research, which are presented in other reports. The final part encloses main directions for the development of the strategy of Wielkopolska in the area of knowledge management and possibilities of using IT technologies.

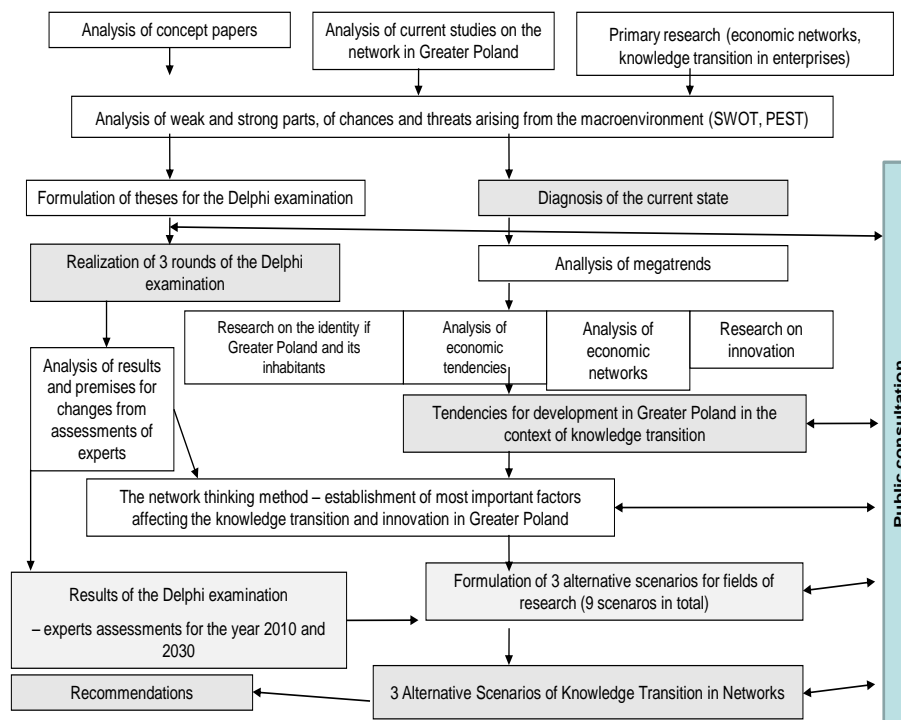
## **2. The nature of foresight**

The idea of foresight is to create an image of the future that would combine element of the environment that can be monitored, tendencies for changes and possibilities to influence reality. Foresight is in the group of strategic research of the future, it is composed and uncertain. It tries to anticipate the future in reference to numerous factors affecting it: social, technological, economic, politic [1, 2]. foresight type projects are realized in teams, with participation of different social groups, with participation of experts in determined sectors, who initiate debates directed to the future between different parties and conducting public consultations. Usually foresight is realized in the course of a four stages process [2]. The first figure illustrates the methodology of realization of the project “Wielkopolska economic network” – scenarios for transition of knowledge supporting the innovative economy”. Works on the project were realized in accordance to a classic scenario of operations of foresight character. They enclosed following stages of work [21]:

- 1) analyses (quantitative, qualitative) of the current state and tendencies,
- 2) building a model (network of dependencies, management process model),
- 3) verification through public consultations,
- 4) preparation of assumptions concerning the implementation (scenarios, recommendations).

There has been also initiated an experiment within frames of the project. Its aim was to search an answer to a question whether it is possible to create in the compu-

ting environment models and simulations of processes of transition of knowledge (with use of Witness Optimizer). Apart from classical methods, the construction of scenarios was additionally based on analyses made on basis of the methodology of the network thinking. Aims were established, the problem and parties were defined, a network of influences of Wielkopolska on the innovation was built. 51 factors were taken into account in this work. Next it has been analyzed and pointed active and critical factors out [21].



**Figure 1.** The method of realization of a foresight Project presented on the example of “Wielkopolska economic network” – scenarios for transition of knowledge supporting the innovative economy”. Source: [17, 21]

Scenarios are most often the foresight’s final effect. A scenario is not only determining the final state; it also shows what should be done for achieving the expected state. The point of departure for creating scenarios is the study concerning the current state of phenomena, for which the foresight is being taken under. Analyses are being conducted and factors that can influence the course of action and thus lead to various versions of the future, are being identified. Generally scenarios are created for 5 to 15 years periods [5, 7, 8, 9, 10, 13].

One of fundamental tasks in foresight research concerns public consultations [2]. Usually following types of organizations take part in them: trade unions, employer organizations, economic self-government, socio-professional organizations e.g. of farmers, churches and religious connections, non-governmental organizations (associations, foundations, chambers of commerce).

### **3. Knowledge management**

#### 3.1. The definition of knowledge management

In the economic approach, knowledge is a carrier of value and its importance is the bigger, the more its use can contribute to achievement of economic objectives [15]. In the knowledge based economy knowledge is both the cost and the result. It is significantly dependent from the production and diffusion of knowledge. Preparation and transmission of determined knowledge for other objects do not guarantee that it would be used in practice. Both, institutions and individual people benefit the knowledge very selectively [20]. It is possible to talk about knowledge in the organization only if one take under account the fact that it is built of individual components, which are varied, connected with different resumes, experiences and diversified professional expectations, and from the other hand it is a communicated knowledge, gathered in “the collective consciousness” of employees or in work descriptions (procedures, instructions for individual workstations, implementation guidelines, cultural habits functioning in a particular organization).

Knowledge management concerns operations for identification, perseverance, popularization and use of the explicit and tacit knowledge of members of the organization [16]. The basic risk connected with the knowledge management is related to the promise of reaching so-called “ultimate solutions” and “finally making order” in prepared “bases”, “files”, “archives”, which often are unstructured, not always actual or verified data, information and messages. This lead to situations of paradox, where following trainings and ventures, usually very carefully selected, for the purpose of making the flow of information more efficient, lead to more bureaucracy, they are suppressing the creativity of individuals and teams. Of many researchers and practitioners believes in the beneficial effect of information and communication techniques, but do not notice that “computerization of the mess” generally brings more disorientation and confusion. Computer solutions based on the Internet are usually simplified, superficial and sometimes they make reaching the proper information or sharing knowledge more difficult.

The research team that worked in the project related to the transition of knowledge in economic networks suggested a so-called “road map” for Wielkopolska, which is shown in the figure 2. It presents clearly the role of knowledge, which is one of three main pillars of innovation and creativity in the region.

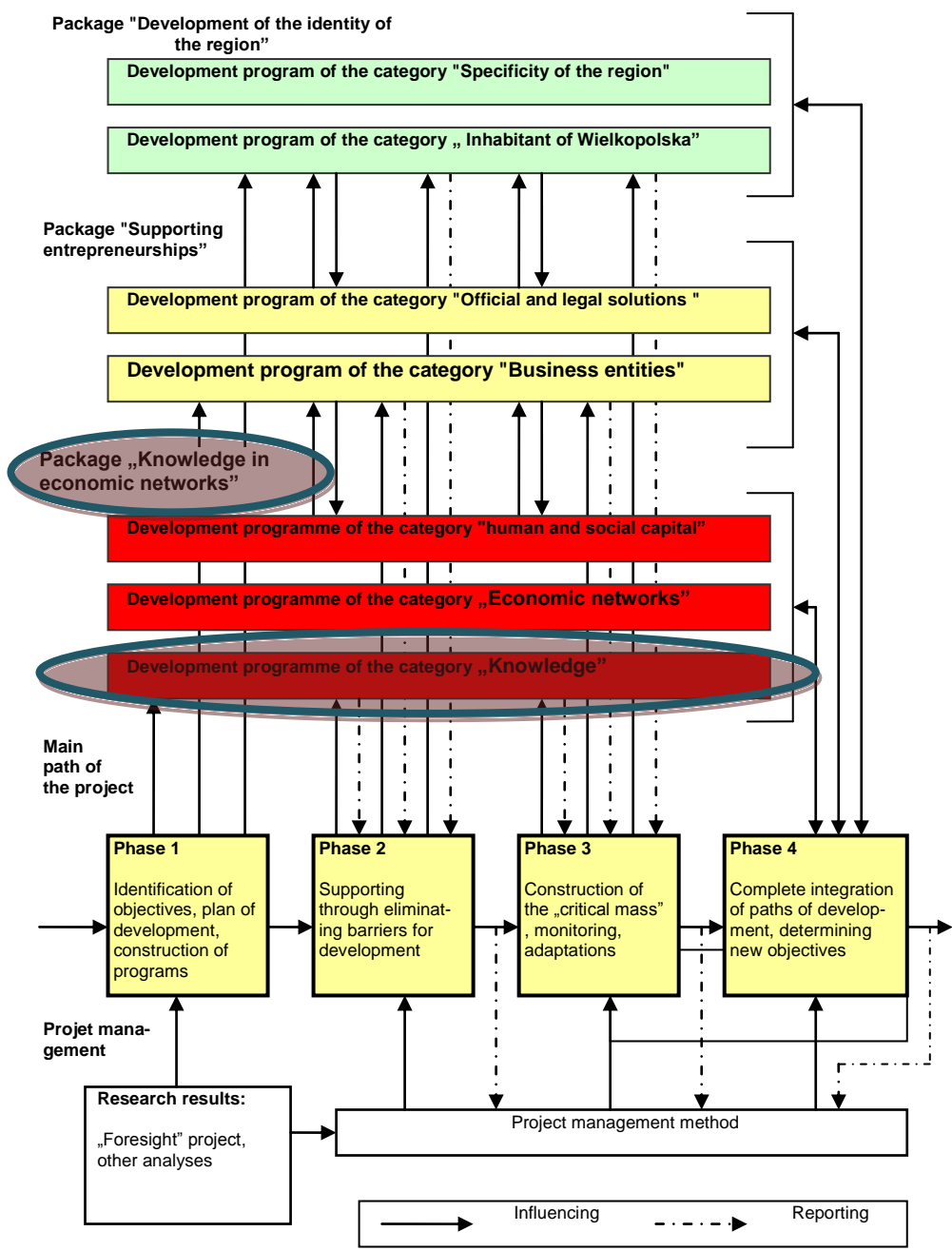
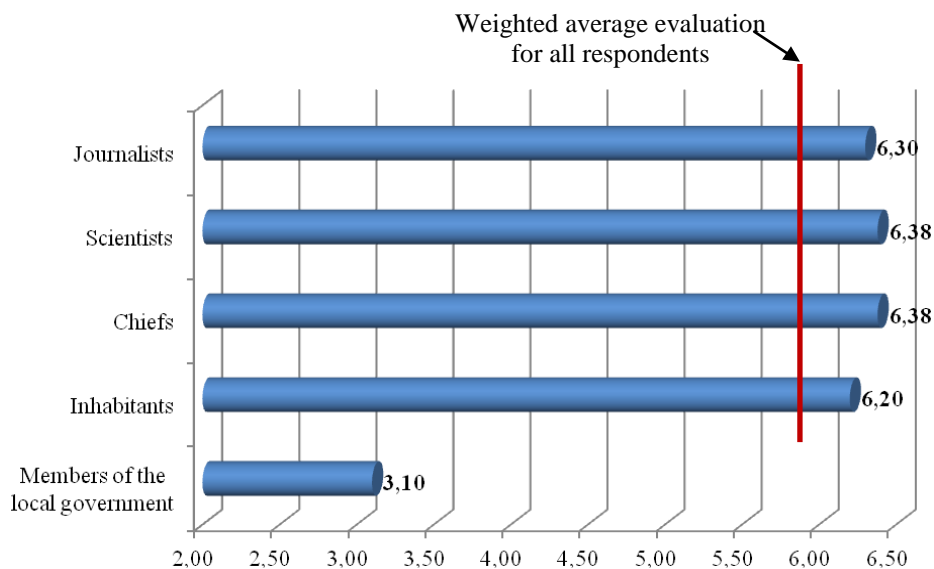


Figure 2. Frame "road map" forming effective transformation knowledge. Source: [6, 17]

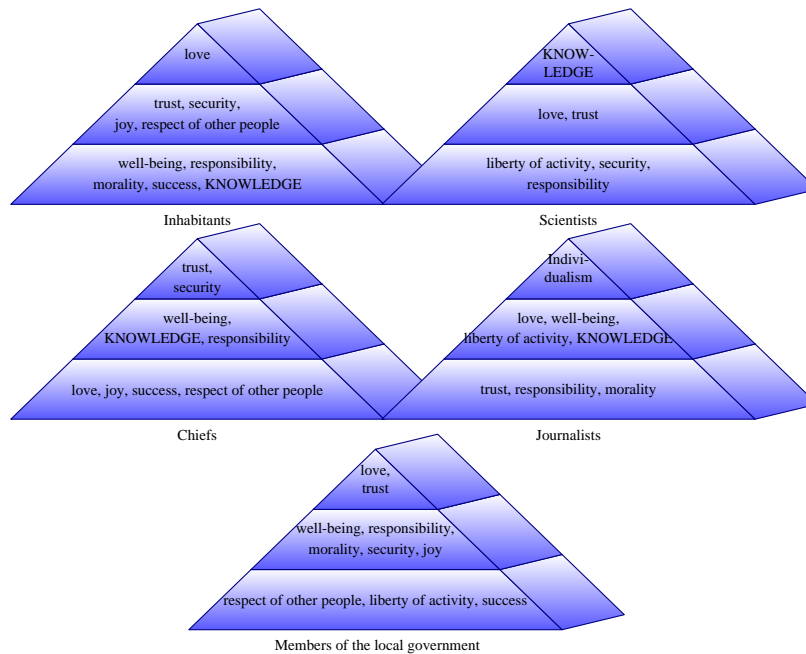
### 3.2. Attitude of inhabitants of Wielkopolska to the knowledge

Research conducted in 2010 concerning the identity of Wielkopolska and its inhabitants enclosed questions about values, which are important for respondents (in the scale 1-7). Examined people answered that most important features are: love, trust, security, joy, respect of other people, a sense of well-being, responsibility, morality, success [11]. Knowledge was also mentioned between these values, but its position, in reference to the weighted evaluation for all respondents, was lower than characteristics mentioned before. The analysis of particular categories of respondents gives the observation that scientists and managers give knowledge a high value, journalists and inhabitants also find it important, but local government clerks didn't find knowledge valuable enough to take it under consideration in their hierarchy of value!



**Figure 3.** Assessment of “knowledge” as a value in life for different types of respondents

In the analysis of the place of knowledge in the hierarchy of values for respondents from particular categories, it is possible to notice that knowledge is on the first, second or third level of declared practical values (apart from recalled local government clerks) – fig. 4.



**Figure 4.** Three groups of characteristics in the hierarchy of values for particular categories of respondents

In the course of the Delphi research, experts assessed 37 theses describing the state of the region in 2010 (in scale 1-5) and the predicted state in 2030. Three these were directly related to the knowledge management and the use of IT tools [19]:

1. The state described by the thesis “information system about research achievements in the region” was assessed by expert as bad (average 2.41). the negative evaluation of this issue has been manifested in experts commentaries, for example:
  - lack of proper solutions in this area, in form of for example integrated database,
  - information about academic achievements is available mainly at the professional press, which is unavailable for people from out of scientific society; in consequence this leads to a paradox that scientists inform themselves about their achievements and potential receivers of these achievements, i.e. entrepreneurs, don't have the possibility to reach this

knowledge. In result the information on scientific achievements is not transformed or transferred to the economy,

- lack of information about scientific achievements on websites of authorities of the Region.
2. Experts assessed the state related to the thesis „Internet accessibility” as medium (average 3.63). their positive opinions concerned following aspects:
- the use of Internet in almost all firms in the region,
  - very fast development of broadband Internet connections at support of EU funds.

There has been also paid attention to the problem of high prices for access to the internet and lack of support of the local authorities in the process of development of broadband Internet connections in cities of the region of Wielkopolska.

3. Experts described the state illustrate by the thesis „universality of applying the IT technology in the business activity” as medium (average 3.4). There has been noticed that big enterprises IT technologies are used universally. However, their appliance in the sector of small and medium business is rather small and it is usually limited to sending offers via e-mail. Unfortunately, there is lack of so-called e-business platforms. The main obstacle for implementing advanced technologies to business is their high cost.

The use of suitable tolls for communication is very important in the process of management. Research concerning this issue were made to needs of the project „Foresight – Wielkopolska economic network” [18] encloses detailed results and selected conclusions are as follows:

- most often people, who search knowledge in the Internet are students and pupils, employees do it more seldom,
- most often students search information in magazines, radio and television programs,
- pupils most often use the internet for playing and for listening,
- e-learning as a form of additional forming employees is used very rarely,
- there are certain barriers concerning creating social relations on basis of cooperation, will to search and adopt new knowledge as well as the will of the self-improvement oneself,
- the will to experiment, search different methods of action, or simply searching for reasons is being assessed as poor.



#### **4. Knowledge management in optimistic scenario of Wielkopolska development**

There have been also realized two other foresight projects in Wielkopolska: “Wielkopolska economic network” – scenarios for transition of knowledge supporting the innovative economy” and “Regional Foresight for Wielkopolska”. There have been accepted determined assumptions in each of foresight projects [12].

Scenarios of development of Wielkopolska largely focused on knowledge as the principal tool for increasing the innovation of the region and rise of the quality of life of inhabitants of this region. The project „Foresight – Wielkopolska economic networks” was concerning knowledge transition. In „Wielkopolska Foresight” knowledge and its accessibility was one of fundamental elements for research deliberations. The synthesis presented below, which concern the optimistic scenario of development of Wielkopolska in reference to knowledge management was prepared on basis of [3, 14]. Recommendations which appeared in other reports or during consultation and discussion were also considered.

In the optimistic scenario for development of Wielkopolska in 2030 external conditions will be the most favorable possible. The structure of economy and the society in the region will change. Competing with low labor costs will be left in favor to innovative products and services. Innovative products, especially IT services, will constitute the major part of the GDP of the region. “Inhabitants of Wielkopolska will expect novel solutions in the area of economy, as well as in everyday life and they will create it themselves” [3]. High specialization and innovation will be achieved in traditional sectors of the region: food industry, household appliance, consumer electronics and in the new industry of environmentally friendly products.

Business units co-working with each other will form economic networks and they will conduce scientific and development activity on basis of local scientists. They will generate innovative knowledge and they will become a source of solid and verified in practice knowledge. The scale of innovation in the region will significantly exceed the average in Poland. The geographic concentration of enterprises that cooperate in particular parts of the voievoship will create a name “Wielkopolska Silicon Valleys” for them. the leading enterprises will create technological, organizational and communication standards. This will facilitate processes of transfer and transition of knowledge between companies, as well as with the sector of small and medium business. The increase of the small and medium business will be favorable for creating informal networks and strengthening the cooperation between enterprises with use of tools of e-business.

The development of IT systems will cause changes in social structures of employment, in organizational structures of enterprises, as well as in methods of management (telelearning, teleshopping, teleworking). “E-business tools will facilitate the research of new partners in business and forming new economic networks. The

competition on the market of e-tools suppliers will cause the reduction of prices; this will increase their accessibility. E-business will also develop because of the growth of social competences. The development of e-business will be connected with the development of e-administration; this will eliminate barriers for entrepreneurs and it will upgrade free competition” [3].

Decisions of local government authorities on regional and local level will be the crucial factor affecting the knowledge management in Wielkopolska. These decisions will be connected with a pro-innovative structure of expenditure in budgets of units of the local government and with supporting investments suited to the knowledge based economy. “The local government will stimulate and co-finance the formation of centers of competences, centers of investor service, network initiatives observatories, which will be responsible for collecting reliable data. The process of knowledge transition will take place with active participation of all partners of the Wielkopolska System of Innovation” [3].

Readiness for the innovation one of most important factors supporting the knowledge management in Wielkopolska. “It will be instilled to the society (including particularly entrepreneurs) and strengthened thanks to popularizing such attitudes in media, increasing expenditures on research and development that support the implementation of innovative ideas, as well as institutions of the business environment that will support this process” [3].

## **5. Conclusion**

Foresight research project creates scenarios. They represent different variants of the state of development of the economy and the society and they depend from external conditions. Mostly a project forms three scenarios of development. The optimistic scenario is preferred. It should be realized as first. When the environment doesn't enable making it real, one should act in accordance to the most probable scenario and search for chances and aim to return to the optimistic version. It is important to take under consideration guidelines of the pessimistic scenario and try to minimize the probability to operate according to these suggestions. The fourth chapter present a synthesis of the optimistic scenario for the development of the region, in reference to the knowledge management. These are the main conclusions selected by authors [4, 14, 17, 21]:

- one should overcome the stagnation in innovative activity of entrepreneurs and universities of Wielkopolska and make the transfer of knowledge between them more,
- industry and service will become more important in role of active partners, who create new knowledge and popularize it,

- it is necessary to decide what key skills, and which values should decide about the unique character of Wielkopolska,
- one should develop a widely interpreted e-economy,
- one should implement the Regional System of Information (RSI), which will enclose information on scientific achievements in the region,
- Internet should be accessible for everybody in the entire area of Wielkopolska (in every household and in every firm),
- the use of IT technology will become popular because enterprises will try to keep the standard of their competitors; costs of implementation of IT tools will fall, employees will be well educated from the area of use of these tools,
- results of analyses confirm that IT systems enable access, fasten the transfer and facilitate the creating archives of data; they significantly upgrade the efficiency of realization of standard operations. However they still cannot replace man – the specialist, who has an individual package of expert knowledge, experience; who wisely colligates fact suitable to particular situation,
- studies of the transfer of knowledge in *high-tech* concerns have shown that knowledge flows in the organization on principles of a transaction; therefore the good method for realizing an efficient knowledge management is to gather individual competencies of people working in the organization.

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