KNOWLEDGE MAKES OUR FUTURE

In the course of the last two decades basic conceptual changes took place in our society. The last century stressed information. We had often heard the phrase that we were "living in an information society". This situation has quickly evolved. Our new millennium is a world of knowledge. Knowledge is a new phenomenon influencing the market environment of our global world. This influence will increase more and more.

Commonly and frequently used words have taken on new meanings. Words like "data, information and knowledge" have a different meaning today, than they have had twenty years ago. So far we did not need to differentiate between categories of data, information and knowledge – these objects still have relatively the same meanings. Nowadays knowledge has nevertheless become an object, which strongly influences all aspects of our social life. It has brought about deep changes in our way of working and living and it is accompanied by organisational, commercial, social and legal innovations.

The society of today may be defined as a "Knowledge Society", a society in which information is put into action with great stress on the fact, that the most valuable asset is *investment in intangible, human and social capital.* The key factor determining this investment is knowledge, followed by creativity.

There will be new and challenging opportunities for future societies – new employment will be possible, more fulfilling jobs will be available with new tools for education and training, access to public services will be easier, inclusion of disadvantaged people or regions will also increase.

In the area of *social life*, the more "Knowledge Society" advances, the more will social and economic opportunities depend on the progressive usage of information and communication technologies. Thus the strategic challenges for *e*-inclusion policies will in due course overcome traditional forms of social exclusion, whilst ensuring that all citizens benefit from the "Knowledge Society". At the same time *e*-inclusion brings new digital opportunities and also new job opportunities for socially disadvantaged people by overcoming traditional barriers of limited mobility and geographic distance.

The spread of knowledge is changing the functional aspects of *organisations and institutions*. Knowledge, as an economic power, induces deep organisational changes in jobs, in production and delivery of products and services. New forms of organisational structures, based on knowledge management and knowledge engineering principles, emerge as an essential prerequisite for the development of sustainable economic growth, with more and better jobs and stronger social cohesion.

Education and training will become increasingly important in a knowledge-based society. At the Lisbon European Council Meeting (held 23–24 March, 2000), European heads of State and Governments have set their new strategic goals and expect that Europe should become the most competitive and dynamic knowledge-based economy in the world by 2010. In order to achieve this goal the educational and training systems in Europe must adapt, both to the demands of the knowledge society and to the need for an improved level and quality of employment. Education and training are of fundamental importance in preparing the way for a true "Knowledge Society".

The spread of knowledge will also have impacts on the *quality of life*, most notably on employment, promotion of quality in work as well as in job-related health and safety issues. Improved work quality increases productivity which in turn increases the standards of living and sustainable economic growth. This may positively influence urban and regional development.

The processes emerging in connection with a "Knowledge Society" also influence Higher Educational Institutions (HEI), placing them into a competitive and quickly changing environment wherein they have to apply new and more sophisticated methods of management. Although a HEI has many common features with any other enterprise, the processes of changes in these institutions differ substantially. Changes in enterprises are managed and controlled by professionals on the level of top and middle management and when accomplished the institution usually produces better results. Making changes within a HEI is more complicated. At a HEI decisions are made in a risky and more uncertain environment. Though the managerial teams at faculties consist mainly of highly educated professionals, within these teams there are rarely professional managers. And, last but not least, the process of changes at a HEI is permanent. Most changes are made, so to say, on the march. The word "change" as well as the words "knowledge based curriculum" belong to the most frequently used words among academics in recent years.

This special issue of Scientia offers several articles which present results of a rather big grant project: *"Information and knowledge support of strategic management"* (Endorsed by the Ministry of Education of the Czech Republic under grant Nr. MSM6046070904). Started in 2005 the research will go on for 7 years. Problems solved cover both basic as well as applied research in knowledge environment. Today knowledge is examined as an "object" and/or as a "process". The "object" knowledge is identified, mined and elicited, transferred, stored, solved or purchased. The processed knowledge is shared, taught, transmitted, assessed and evaluated. Working with knowledge necessarily implies *knowledge management, knowledge engineering* and of course *education*. All these aspects are studied in the presented articles. Special attention is given to the mathematical modelling process which allows integration of both aspects of knowledge, namely behaviour and knowledge manipulation. According to Nonaka's concept, the four processes defining the knowledge life cycle are *socialisation,*

externalisation, combination and internalisation. They can be identified in the human mind as well as in a company. The presented research results lead to interesting conclusions, i.e. that the same processes are identified in the steps performed within *mathematical systems modelling and meta-modelling*. Mathematical models and relevant methodology of mathematical modelling serve as a special knowledge environment which – on the highest abstract and representative level – can manipulate with knowledge and imitate the four above mentioned processes; in our mind or in a company. Existing results promise further development in the course of this research.

Although topics solved and presented in the following articles concern different problems of knowledge management and knowledge engineering they all stress the process aspect of knowledge, e.g. the process of knowledge sharing – education. Without education and training knowledge would become a dead object, with no influence whatsoever on our present or our future lives.

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