

## **Summary of doctoral thesis**

### **„Organizational structure as an instrument of knowledge management in high-tech enterprises”<sup>1</sup>**

MSc Eng Sylwia Flaszewska

Due to dynamic economy the role and management of non-material resources is becoming increasingly appreciated in today's enterprises with knowledge being of key importance in building competitive advantage of high-tech companies. In view of the foregoing, the dissertation discusses the problem of knowledge management in high-tech companies. A number of instruments contribute to better use of knowledge though, unfortunately, they are frequently misidentified as IT solutions exclusively. The dissertation points out that IT tools cannot replace a man who is the main knowledge owner. With this in mind, the focus has been given to organizational structure which, designed appropriately, can serve as an instrument for supporting the implementation of processes of allocating, acquiring, building, sharing, using and retaining knowledge and transferring it outside.

The thesis aims to determine structure-forming factors and attributes of organizational structure that support knowledge management and, based on that, to develop a model of organizational structure suited to the nature of high tech organizations with dynamic flow of knowledge taken also into account. While formulating the research problem the following specific questions were raised:

- Q1 What does knowledge management in high-tech companies mean and what processes are involved?
- Q2 What hampers the implementation of knowledge management in high-tech companies and what importance structural barriers have?
- Q3 What instruments support knowledge management in high-tech companies?
- Q4 What is the key (of strongest influence) structure-forming factor in high-tech companies?
- Q5 How do individual attributes of organizational structure affect knowledge management process, including particular sub-processes?
- Q6 What types of organizational structures support (have positive implications) dynamic flow of knowledge in high-tech companies?

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Whereas questions of explanatory type were followed by making research hypotheses, diagnostic ones, that require descriptive research, were addressed with research questions leading to the formulation of the three following hypotheses:

H1 The key structure-forming factor in high-tech companies is strategy.

H2 The major attribute of organizational structure in high-tech enterprise supporting knowledge management is flexibility.

H3 Modern approach to structuring organizations fosters dynamic flow of knowledge in high-tech enterprises.

In order to allow for attainment of the thesis goal, find answers to research questions and verify the hypotheses, the following were undertaken:

- desk research,
- focus group interviews,
- surveys.

This doctoral dissertation is therefore theoretical and empirical and its structure consists of four chapters and a summary. The first chapter describes the notion of knowledge, its features and types, and then focuses on knowledge management process and the role of executives in it, which serves as the background to discuss knowledge management models further in the chapter and characterize selected instruments that may support knowledge management in the enterprise. The second chapter presents organizational structure from the perspective of knowledge management. It discusses features, functions, factors and principles that create organizational structures. In addition, it takes a critical look at classical organizational structures and characterizes selected modern organizational structures described as supporting knowledge management. The third chapter describes detailed procedure, including all research objectives, questions and hypotheses, scope and methods of research along with characteristics of high-tech enterprises in Poland, being the subject of research, and presents the results of focus group interviews. The fourth chapter demonstrates quantitative research results. It begins with the characteristics of the research sample that was the basis for the analysis of the data collected from companies surveyed and respondents. Further in the chapter the results of research on knowledge management in high-tech companies and on the so-far applied solutions and approach to organizational structure are presented. On this basis the reference was made to research hypotheses and an authored model of organizational structure was created, including its constraints and limitations, as an instrument of knowledge management in a high-tech enterprise. The dissertation ends with the

summary of major findings, conclusions, recommendations and directions for further research.

Desk research, focus group interviews, and surveys conducted in 100 high-tech companies allowed to answer research questions and verify hypotheses. Hence, dissertation fills the identified theoretical and empirical gap in the area of organizational structure-related determinants for knowledge management in high-tech enterprises and helps to extend the concept of knowledge management as well as contributes to the organization theory with respect to organizational structure design. It does not, however, eliminate all cognitive gaps leading to further scientific exploration.