

The Use of Cooperative Visualization in the Enhancement of Corporate Planning in Small and Medium-Sized Enterprises

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Abstract. Small and medium-sized enterprises (SMEs) significantly contribute to the majority of national economies. Often they are confronted with difficulties. This paper reports on a project that was carried out in order to help managers of small and medium-sized enterprises to improve managerial processes. This work proposes a visual model for diagnosing corporate planning in SMEs. Developed computer programs contain tests that allow collaborative examination of the state of planning in SMEs and visually analyzing the results. By using this model, managers of small and medium-sized enterprises in collaboration with experts can improve corporate planning. The proposed visual model was tested in small and medium-sized enterprises and proved to be valuable for enhancing corporate planning.

Keywords: cooperative visualization, small and medium-sized enterprises, planning.

1 Introduction

Cooperative visualization is used widely in science, especially in medicine, fluid mechanics, meteorology, and some others areas. The application of visualization in business processes seems to be a rather promising direction that is presently in the initial stages of development [4]. Small and medium-sized business development is a subject of support from the governments of many countries. The application of visualization in this sector has great potential.

Small and medium-sized enterprises (SMEs) play an important role in the economy. In the EU, for example, they provide jobs for 75 million people and count for 99% of all registered enterprises [5]. However, doing business is not always an easy task for SMEs. Small and medium-sized firms face financial, resource (including human resource), managerial, and other problems more often than their larger counterparts. Access to new, expensive technologies is limited for SMEs.

The necessity of a visual model for diagnosing planning in SMEs emerged during a survey of management processes in small and medium-sized enterprises and through in-depth interviews with SMEs managers in Ukraine [6]. The survey results showed that planning is the weakest element in SMEs' management: 76% of examined executives do not use planning at all in their every-day practice.

In-depth interviews demonstrated that entrepreneurs often a) do not realize the importance and necessity of planning for their business, and b) simply are not familiar with planning methods and techniques.

Under these circumstances, I have decided to create a tool that will assist entrepreneurs to better plan their business. I pursued several goals. First, this instrument should serve research aims: to aid in investigating the current state of planning in SMEs. Second, it should show a manager responsible for planning in an SME whether his/her planning efforts are effective and sufficient. Third, it should be a means for productive cooperation between SME managers and scientists (or consultants from business support organizations). The latter give recommendations regarding changes that ought to be undertaken to enhance planning effectiveness.

Such an instrument should meet the following criteria: be simple, low-cost, non-time consuming, user-friendly, and presentable. As the result, I have developed a visual diagnostic model for planning in SMEs that lets managers to determine existing problems and establish a framework for using planning instruments in management.

The paper is organized as follows. The next section presents the visual model for diagnostic of planning in SMEs. Then I illustrate the results of testing the visual model in a small enterprise. The paper terminates with conclusions and proposals for future research.

2 The Visual Model for Diagnosing Corporate Planning in SMEs

The visual model for diagnosing corporate planning in SMEs is a mechanism used in the general process of forming or upgrading an existing planning system. Schematically this process is depicted in Fig.1.

The method of diagnostics is based, on the one hand, on the principle of 'best practice benchmarking' [2]. On the other hand, it is grounded on the procedure of logical analysis that consists of the two following stages.

1. Set down the main aspects of the subject of research – the planning system in SMEs – through the interpretation of the concept that expresses its essence. That is to say, the corporate planning system (CPS) is the extent of conscious utilization of specific methods to forecast the future of the small and medium-sized enterprises depending on objective and subjective factors.
2. Determine the operational concepts that the main concept – the state of the corporate planning system - can be broken into. Such constituents, in my opinion, are:
 - The degree of business dependence on business risks,
 - The level of planning independence as a function of management,
 - The extent of goals' diversity,
 - The comprehension of the role of planning by enterprise executives (and/or owner-manager),
 - The planning horizons,