

## Chapter 2.10

# Process Model for Knowledge Potential Measurement in SMEs

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### **ABSTRACT**

Knowledge measurement is developing into a new research field in the area of knowledge management. To ensure that a company is successful, business, technology, and human elements must be integrated and balanced into a knowledge measurement system. The introduction of a knowledge audit with the objective to uncovering the tacit knowledge in an organization and of identifying the existing management practices is needed. This chapter uses the quantum mechanical thinking as a reference model for the development of a knowledge potential measurement system. This system is influenced by three measurement components: (1) Person-dependent variables, (2) System-dependent variables and (3) knowledge velocity. Based on several case studies conducted

in small and medium-sized enterprises, a process model for the implementation of the knowledge potential framework is discussed and introduced. Future research and limitations of the model are discussed in the final part.

### **KNOWLEDGE MEASUREMENT INTRODUCTION**

In recent years, not only knowledge management, but also primarily the measurement of knowledge (Holsapple, 2008; Jennex, 2007; Skyrme, 1998; Tiwana, 2000) is developing into a new research field. Skyrme (1998) sees the measurement and management of knowledge-based assets as one of the most important issues for knowledge organizations. As a result, new methods, new methodologies, and new tools have to be developed to measure the knowledge of organizations and of

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the knowledge workers. A range of quantitative measures - mainly money-based - is available to measure the value of a firm and its intellectual capital. The focus is primarily in the measurement of stocks or flows. Business measurements are the bases for decision making. Defining and measuring the value of a company are key strategic concerns in contemporary companies. In the knowledge-economy, the value of the company's knowledge and its measurements are the key drivers for success. In the knowledge-based economy (Stewart, 1997), the management and the measurement of intangible assets has become one of the most important issues. Historically, business focused on the measurement of tangible assets such as the return on investment, cash flow, and the cost of sales. In the recent years, the focus shifted towards measuring intangible assets such as customer satisfaction and the knowledge of the company personnel. In light of this transition, companies are trying to combine both financial and nonfinancial measurements to achieve optimal organizational well-being.

Already in 2000, the OECD (Organization for Economic Co-operation and Development) research area concentrates on the measurement of the knowledge and learning (OECD, 2000). Knowledge measurement systems can help policy makers identify where outcomes fall short of expectations. In the near future, it will be more important to calculate the amount of knowledge in specific sectors and the rate at which knowledge is produced with much more accuracy. The importance of measurement systems for knowledge also is pointed out by Pearson (1990). To ensure that a company is successful, business, technology, and human elements must be integrated and balanced. The key players in a knowledge organization are the experts with their skills and experiences. Amar (2002) points out that experts in knowledge organizations work together not only to achieve the goals of the organizations, but also to achieve the fulfilment of their own goals by using the organization as a vehicle to achieve them.

Managers in organizations have to recognize that the uniqueness and creativity of each knowledge worker will lead to customer satisfaction and to the success of the company. Knowledge workers are characterized by a high individuality and by the denial of formal and bureaucratic structures. The major competitive advantage of a knowledge organization is the pool of knowledge workers who find creative and quick problem solutions, hence seven identified characteristics should be taken into consideration (Amar, 2002):

- To connect the doer's work with the system outcome, end products, or services, and/or with incoming factors, inputs, services, or raw materials;
- To have professional and social interaction within and outside the organization provided by or through the knowledge work;
- To perform a variety of knowledge tasks and skills;
- To know how important and how visible the knowledge worker's part is in the organization's scheme of things, project, product, or service to the outcome;
- To believe others have a high regard for this work;
- To employ state-of-the-art technology in performance of this work;
- To provide opportunities for new learning and personal growth.

In general, knowledge measurement approaches can be clustered into two mainstream areas: (1) Cognitive Science and (2) Management Approaches. *Cognitive Science* deals with the nature of intelligence, and it rests on empirical studies that describe the performance of human subjects in cognitive tasks. Another way to structure cognitive science is to understand that field more deeply and to know the disciplines that contributed to its foundation. Simon and Kaplan (Simon & Kaplan, 1989) identify six disciplines which determine the field: philosophy, psychology, neurosciences,

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