Content

Towards a prediction of time consumption during knowledge transfer

N. Gronau and M. Grum

Abstract. A growing number of business processes can be characterized as knowledge-intensive. The ability to speed up the necessary transfer of knowledge between individuals in business processes can lead to a huge competitive advantage, for instance in product development. This paper introduces a time-dependent knowledge transfer model with the intention of predicting and furthermore accelerating the speed of knowledge transfer between people. Empirical results show the validity of this approach. For the first time, it will be possible to discover exactly how to improve the transfer of knowledge between members of an organization and calculate the quantitative effect of this measure on the amount of time needed for the process.

5 - 10 Keywords. Knowledge Management, Product Development, Knowledge Transfer Velocity, Regression Analysis, Experimentation, Process Optimization, Process Simulation, Process Design

1 Introduction

Initial Problem. A knowledge-intensive business process is characterized by the exchange of knowledge and information between process participants (Gronau and Weber 2004; Marjanovic and Freeze 2011; Gronau 2012; Strambach 2008; Sigmanek and Lantow 2015). While many aspects of knowledge-intensive processes have been examined in-depth, e.g. modeling methods, the use of information systems in business processes and the potential of knowledge management systems (KMS) for knowledge transfers, findings on the speed of knowledge transfer are quite rare and never have been quantified by empirical research. Since it is so far statistically not proven which factors influence the velocity and quality of knowledge transfers, it is unclear how the effects can be controlled and used in IS in order to effectively transfer knowledge among organizational units (Alavi and Leidner 2001).

Motivation. Simulation allows researchers to determine the ex-ante velocity of newly designed business processes (Kellner et al. 1999; Raffo and Kellner 2000). But what controls the speed of knowledge transfer from one person to another in a business process context? And is it possible to influence that speed? If it would be possible to construct a time-dependent knowledge transfer model and to empirically prove it, then this model could be used in simulations in order to examine how the transfer of knowledge can be accelerated to achieve faster results - with the same quality as before. If it were possible to adjust the speed of knowledge transfer, it might be useful to adapt it to the time allotted for that specific task. In regard to the design of IS, the research presented here can be mapped to the design of business processes, to the automatization of organizational routines, to the establishment of technical strategies and to the provision of specialized KMS, so that knowledge transfers are facilitated and the speed of knowledge creation is enhanced.

Research Questions. Within this setting, the following research questions will be addressed:

1. Which factors influence the velocity of knowledge transfer?
2. How can their influence be explored empirically?
3. How can influencing factors and target dimensions be operationalized?
4. How can empirical findings be mapped onto business contexts and therefore lead to competitive advantages?