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Measuring and managing IT agility as a strategic resource — examining the IT application systems landscape

A company's ability to change increasingly depends on the ability to change its IT, something referred to as «IT agility» here. High IT agility can contribute to increased business agility and thus create a competitive advantage. In this paper we look at which factors influence IT agility and how the IT agility can be increased. The main body of the paper, however, is devoted to the research question how IT agility can be measured and actively managed. Here, the focus is on the IT application systems landscape, a resource of significant importance for the IT agility and competitiveness of a company.

Keywords: IT agility, IS architecture metrics, enterprise architecture management, IT value contribution, design science research.

1. Introduction and Motivation

The business of companies and thus their business processes and products are changing over time. These changes almost always have an impact on the company's IT in the sense that IT systems need to be adapted. Frequently, two problems occur:

1. The change of IT systems can be realized only with great delays; in extreme cases some requirements are infeasible.

2. The planning and implementation of changes in the IT systems cause major financial and human efforts.

The consequence of these circumstances is that

• the business must absorb with a lot of manual work the period until the IT side has implemented the change,

• revenues are lost, for example in sales required changes are implemented too late,

• corporate IT lacks behind the business changes and thereby often a change backlog forms so that the problems described above amplify (snowball effect).

At the same time, IT penetration of the core business processes in companies in recent decades has increased continuously. There is hardly a company which can survive long without IT. Thus, the change ability of enterprises increasingly depends on the ability to change the IT [8].

Surveys in recent years among IT managers show that a key requirement for the IT organization is the ability to adapt to the needs of the professional business. In 2012 Capgemini questioned 156 CIOs of large and medium-sized enterprises about the most important issues for the coming year [15]. In nine of the fourteen most frequently mentioned aspects change and the ability to change the IT plays a key role, such as in the topics «Business Process Improvement» and «Supporting Business Change». The importance of IT agility is also underlined by statements of leading market research companies, for example, Gartner [23] or Forrester [50]. Despite this high practical relevance Gronau states, from a scientific perspective, that the adaptability of the IT architecture is treated in business informatics only to a small degree. Moreover, as far as mutability of IT is concerned, the focus lies