Chapter 51

The Empirical Analysis of Cloud Computing Services among the Hungarian Enterprises

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ABSTRACT

Innovation capability has increasingly been searched by the ICT sector in cloud computing applications recently. This chapter describes the economic potentials of cloud computing and explores the characteristics of its usage among Hungarian enterprises. Although enterprises are aware of the basic concept of cloud computing, they have concerns about its application mainly due to data security issues and the lack of education. The chance of using cloud computing services is mainly facilitated by the creation of easier application and consultation would positively affect their usage. According to microenterprises and corporations, faster information flow and remote access are the key benefits of cloud usage. In the case of small-sized enterprises, the two main advantages are easier system recoverability and a higher level of mobility in case of a system breakdown. For the medium-sized enterprises, remote access and greater data security were the key benefits of using cloud computing services in 2014.

1. INTRODUCTION

The increasingly fierce economic competition requires companies to respond to the environmental changes as quickly as possible. Keeping pace with the speed of the technological development is difficult but the identification of revolutionary innovations and their adaptation within a short period of time might be a turning point in the life of an organization. The development level of information technology (IT) at an enterprise also indicates its ability to innovate because in lack of proper equipments innovation is impossible (Sasvari, 2012).

IT tools provide support for an enterprise in several areas. With their help, inter alia, production processes can be optimized, communication can be facilitated, information flow becomes faster and
data processing becomes more efficient. However, the operation of an IT department involves challenges as well. Establishing the IT-infrastructure is on the one hand a capital-intensive task, not to mention the additional maintenance and development costs. On the other hand, system operation requires a high level of expertise, which is reflected both at management and employee levels (Shaw, 2011).

If the organization’s information technology is not cost-effective and its operation is not in proper hands, it doesn’t support the implementation of targets. Cloud computing offers solution for the two mentioned basic as well as many other problems.

The newest stage in the evolution of IT is the emergence of cloud, which has fundamentally changed the industry. The English definition of “cloud computing” means a service. Its essence is that the customer obtains IT tools via Internet connection, so their IT department or at least a part of it can be outsourced.

The appearance of the model has a complex impact on the whole economy in the long term. This concept is not only present at a company-level but also in the everyday life of people. The range of services involves not only the simple e-mail sending but also the data storage and the operation of web-based management functions in the company. There were many professional studies dealing with the questions that served as a basis when the secondary research was carried out.

We focused on the enterprise as a customer and a recipient of cloud-based services. The aim of our research was to find out what the impact of the partial or full changeover to the new technology was in the case of Hungarian organizations in their everyday life and competitiveness. The basic questions of the research were the following:

- To what extent is the concept of cloud computing known among the Hungarian enterprises?
- What are the characteristics of using this technology in Hungarian organizations?
- What are the critical decision factors?
- Is the use of cloud computing services effective?

2. DEFINITION AND CLASSIFICATION OF CLOUD COMPUTING

In the background of cloud computing development is the idea, according to which information processing method is much more efficient when it is accessible via network and it is processed through centrally aligned computer and storage systems.

The term “cloud” is derived from how the Internet is presented on network diagrams, with which the unknown or irrelevant parts of the system are marked.

In the practice the most widely accepted definition was developed by the U.S. National Institute of Standards and Technology (NIST). This definition is also used in the European Union’s publications which reads as follows:

“Cloud technology is a model that enables anywhere a convenient and on-demand access to shared set of customized IT resources (networks, servers, storage, applications, services), while it requires minimal administrative activities and service intervention.”

The clouds can be classified in many ways. The cloud models can be differentiated on the basis of how many tenants have the resources used by the customer, by whom the background infrastructure is operated, where the tools are located (Bőgel, 2009). According to Mell and Grance (2011), four types of clouds can be differentiated:

- Private cloud,
- Community cloud,
- Public cloud,
- Hybrid cloud.