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Private Cloud Computing and Delegation of Control

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Abstract

Cloud Computing has changed the way we are thinking about computer security and the way how corporations organize their internal processes. With more and more Cloud service providers on the market, corporations can outsource IT department and rent the IT services, on that way corporations can cut their operational costs and be more competitive on the market. Before organization take any steps they need to think which way is best to protect sensitive corporate data and how to keep rented services on desired level.

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Keywords: cloud computing; delegate; control; responsibility; security

1. Introduction

The possible migration of information systems, their development, maintenance and operations to locations no longer physically collocated, lead to the shift of paradigmatic approaches to business and information area. Due to paradigm of objective approach to the information systems' development, abovementioned possibilities result in paradigm of Cloud Computing. The basic advantage of Cloud Computing is providing organisations and individuals with a solid environment for planning the needed resources, cutting the business costs and applying the safety standards on the highest level. Finally, the possible implementation of latest hardware technologies and broadband Internet provide a million users with a solid ground for making a business and developing own products.

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Information services have always tried to retain a complete control of information and/or computer system within a belonging business system. Recently, the principle of such control has taken another shape out of several reasons. Probably the most important reason is disappearance of client/server architecture or its evolution to three-layer and (multi-layer) architecture of information system. The actual shape of Cloud Computing (CC) leads to distributed computing and consequently to distributed control. There are two main reasons why IT managers don't want to easily let go of control over the infrastructure: decrease of risk and differentiation of responsibility and forms. Among knowledge management theories prevail theories of pessimistic and optimistic decision making. Subsequently it seems logical that IT managers try to maintain control over their own infrastructure. The lack of control may lead to the worst possible scenarios and enormous damage to business system and its reputation on the market. Some of the possible issues refer to: safety systems' attacks, the violation of law regulations or performance issues.

Market place offers different deployment model of Cloud Computing. Corporations should recognize trend of outsourcing IT services to Cloud. Research shows if and how companies use Cloud Computing services, do they make it part of their business process, which deployment model (public, private, hybrid) is preferred, and on which level company is making decision about strategy and outsourcing IT services in Cloud Computing. Questionnaire also research how employees perceive data security (safety) and compatibility between applications in Cloud Computing.

Propulsion of informatics, from the aspect of recent achievements, and through technical and technological lenses, is in a certain matter considerably afore achievements and aspirations in other sciences. The fact is, management as a scientific discipline, theoretically and practically should be afore such aspirations. To be more specific, safety of information system is a prerequisite for a safe and quality managerial system. In such conditions, several factors are of crucial importance:

- If the information system migrates to Cloud Computing frames, are all workers aware of advantages/disadvantages of such organisation?
- Has organisation developed all required prerequisites for such a migration?
- Have the feasibility study of such organisation and the possible Return-on-Investment been prepared?
- Which form of migration has been anticipated and is it sufficient?
- How does a business system that migrates to cloud reorganise responsibilities and hierarchy?
- How qualitative is a legal support to such organisation?

Paper tried to offer a review of organisations applying Cloud Computing structure with a reflection to business function. It also tried, through a compilation, to demonstrate forms of Return-on-Investment and explain a feasibility of Cloud Computing organisation. However, the main research hypotheses concerned with the analysis of awareness upon all advantages and disadvantages of such organisation. Hypotheses and research were analysed in Chapter 6.

2. Cloud computing and the basic issues: how and what; chaos vs. control

From era of huge mainframe super computers in the last Century's 1960-ies and 1970-ies, hardware and software computer platforms have gone through many changes. During the 1980-ies personal computers become a technology which dominance endures till present days. Recently trend of Cloud Computing is given an important place in business world with a tendency of strengthening its position. Experts' anticipations imply that in the future a majority of global demands for computer resources will be realised within a Cloud. Various technological platforms in Cloud around the globe can perform a whole range of complex tasks defined by final users. Access to Cloud platforms has been simplified through the usage of mobile technologies. [1]

According to evaluation made by networkworld.com portal in 2013 the Cloud industry was evaluated to 47.4 billion US dollars while predictions to 2017 increase the sum to 107 billion US dollars. [2]

Paper [10] offers a review of recent trends in the area of cloud services' transfer with a retrospect to a concrete form of transfer to Cloud Computing, without discussing the certain assumptions. Though it is advisable to have generic samples as a basis for planning modifications, such as transfer to Cloud Computing, it is necessary to provide all other assumptions within concrete situations as well. Paper [11] argues a problem of so called data takeover situation, with a possibility of paralysing the current version of information system and even a worse possibility of