Cloud Computing as Network Environment in Students Work[*]

Öğrenci Çalışmalarında Ağ Ortamı olarak Bulut Bilişim

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Abstract

The purpose of the paper is to show the need for literacy education from a variety of services available in the cloud computing as a specialist information field of activity. Teaching at university in the field of cloud computing related to the management of information could provide tangible benefits in the form of useful learning outcomes. This allows students and future information professionals to begin enjoying the benefits of cloud computing SaaS model at work, thereby freeing up of buying expensive licenses and installing on your PC commercial software.

Paper brings wider issues of cloud computing. The aim of the presentation is to show the ability to use a variety of services and applications available in the cloud as a workshop. These include: office and communication, tools, graphics editors, presentation software, dropbox, applications allowing the managed time and many others. The term "cloud computing" is related to the concept of virtualization. Moreover, paper also addresses the issue of data security in the cloud.

Keywords: *Cloud computing, SaaS, Network environment, Cloud services*

Öz

Makalenin amacı, bir uzmanlık alanı olarak bulut bilişim hizmetleri konusunda mevcut çeşitli hizmetlerden yola çıkarak ilgili eğitimin gerekliliğini göstermektir. Üniversitelerde bilgi yönetimi ile bağlantılı olarak Bulut Bilişim konusunda eğitim verilmesi etkili bir öğrenme surecine somut katkılarda bulunabilir. Böyle bir girişim öğrencilerin ve geleceğin bilgi profesyonellerinin iş yerlerinde SaaS Bulut Bilişim modelinden faydalanmalarına olanak tanıyacaktır. Böylece pahalı lisanslı ticari yazılımlara ödeme yapmak zorunda kalmayacaklardır.

Çalışmada, Bulut Bilişim sorunları incelemekte ve Bulut Bilişim teknolojisi çerçevesinde kullanımda olan çeşitli uygulama ve hizmetlerin kapasitesini göstermeyi hedeflemektedir. Araştırma da ofis ve iletişim, araçlar, grafik editörleri, sunum yazılımı, Dropbox ve benzeri birçok, zaman yönetimine olanak tanıyan, uygulamalar ele alınmıştır. Terim olarak Bulut Bilişim Sanallaştırma kavramı ile ilgilidir. Çalışmada ayrıca Bulut Bilişim veri güvenliği konusuna da değinilmektedir.

Anahtar sözcükler: *Bulut bilişim, SaaS, Ağ ortamı, Bulut hizmetleri*

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Introduction

The purpose of the paper is to show the need for literacy education from a variety of services available in the cloud computing as a specialist information field of activity. Teaching at university in the field of cloud computing related to the management of information could provide tangible benefits in the form of useful learning outcomes. This allows students and future information professionals to begin enjoying the benefits of cloud computing SaaS model at work, thereby freeing up of buying expensive licenses and installing on your PC commercial software. Using cloud resources on a PC, tablet or Smartphone would contribute to an informed and more effective use of the Network in the very first years of study.

## Introduction to Cloud Computing

Cloud computing is a model based on the using of services provided by the service provider. Functionality is understood as the necessary infrastructure offered by the software. This means eliminating the need to purchase a license or to install and administer software. The consumer pays for the use of a particular service e.g. the ability to use a spreadsheet. He does not have to purchase hardware or software. The term "cloud computing" is related to the concept of virtualization. In cloud computing, we deal with following resources for the needs of the customer.

Cloud's Models

Nowadays more and more new features are being placed in the cloud computing model. Access to the top virtualization - the transfer of all software (including the operating system) to the server, and the user having *thin client* installation, only with the interfaces to communicate with the person serving it - is a matter of time. There are several models of cloud computing:

◊   Collocation,
◊   Infrastructure as a Service (IaaS),
◊   Platform as a Service PaaS),
◊   Software as a service (SaaS).

SaaS is a model in which the client receives the specific functionality and software he needs. He uses such software he needs. He is not interested neither in equipment nor in work environment. But he has only provided access to specific functional tools - not necessarily connected with each other through a single interface. Programs run on your server. The customer is not forced to buy a license for them.
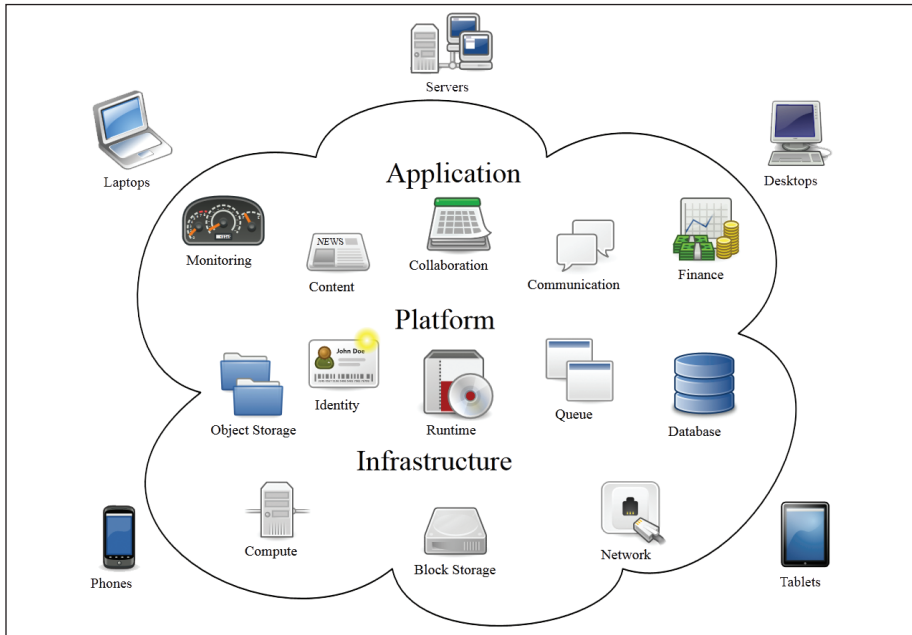
Figure 1. Cloud Computing (CC BY-SA 3.0)
Source: http://pl.wikipedia.org/wiki/Plik:Cloud_computing.svg

Services in the Cloud Useful at Work

Web applications are a particular asset that tends to be interested in the cloud. On the Web there are hundreds of useful tools and students can use the SaaS model, which includes the following services:

◊   files in the cloud and Dropbox,

◊   office tools,

◊   presentations online,

◊   graphic software,

◊   photo editors,

◊   communication tools and organizing time.

The Files in the Cloud and Dropbox

By using the cloud to store files you can get online access to the services through a web browser and the software installed on the hard drive. If you use more than one computer or work with several people on the same data package, folder of synchronization can be

useful. So-called drop-boxes were created in forrapid sharing of important data. These are the folders in the cloud, which we use the same way as traditional disk directories / or folders. The only difference is that the data is instantly synced to the cloud and other devices that are running the "boxing". The best service of this kind is Dropbox or Google Drive. An important issue is the maintenance of security in the cloud, for example, by encrypting stored data. To achieve this, sample applications like cloudfogger and boxcryptor are provided.

Figure 2. Files in the Cloud

Graphics Editors

Retouch of photos in the browser cannot naturally be as extensive as in the installed program on the disk. But there are interesting applications, particularly useful in high-speed machining. One of the most advanced online image editors is Pixlr. This is a free program that works with a web browser, strongly modelled on Photoshop, not only in the visual. A major advantage of the editor is the service layers. They make it possible not only to achieve transparency effects and move one object to another, but also to

Figure 3. Graphics Editors

compose images from multiple components, each of which can be freely edited independently. You can choose from the 18 filters. In addition to the standard, such as blur, sharpen, noise, pixel, there are also more spectacular kaleidoscope of waves and water.

Office Tools

Google Docs - based on the SaaS model, it is available free of charge from Google web office suite. It allows you to create and edit documents online in co-operation with other users at the same time. It was created by integrating services together Google Spreadsheets, Writely and technological presentation Tonic Systems. The Google Docs includes: word processor - Document, a program to create multimedia presentations - Presentation, spreadsheet - Spreadsheet, questionnaire - Form and vector graphics editor - Drawing.

Figure 4. Office Tools

Online Presentations

The Prezi is included in the model of cloud computing (SaaS) and is a software of creating and presenting of the so-called present on virtual canvas. The Prezi is used as a platform for combining linear and non-linear information, and as a tool for presentation

Figure 5. Online Presentations

in the form of casual brainstorming as well as structured model. The texts, photos, videos and other types of content are posted on canvas with the possibility of grouping the frames. Authors can then set the relative size and relative position of all objects of the presentation, as well as move them and change their size.

Organizing Time

Even in the world of modern software, tracking the progress of work, ticking the following tasks from the list or remember about projects and deadlines is not easy. The boundary between the office and life is gradually blurred. Increasingly, we work on different computers, and on the go - on mobile devices. We have tasks related to work, school, family, home, and reinterpretations of the order. Increasingly, we could use the possibility to combine different lists and put them in one easily accessible place. There are a numbers of comprehensive, free solutions for managing tasks and time, but one of the most stable and the most mature is a website called Remember the Milk. Since the *Remember the Milk* is an online service, so it can easily connect personal tasks, corporate and family.

Figure 6. Organizing Time

Can We Trust the Cloud?

The security issue of the data stored in the service provider cloud computing is mainly raised by opponents of the new solutions, who are afraid of losing the current status of technology vendors and tools used in practice "niechmurowych" - "not cloud computing". If you look closer, there are really no grounds for fear and that for several reasons. Firstly, the security level guaranteed by the cloud computing service provider is much higher than the level of security in a single statistical company, because spending on security systems and procedures and on a staff training in safety systems are significantly higher in a external service provider than in a single firm statistical. Secondly, the provider of such services must, by definition, use much more advanced practices and procedures in the area of security than a single company, which also significantly increases the level

of data security guarantee in relation to internal processing centres. This ensures the full protection of data - both before the acquisition by unauthorized users and prevent damage or deletion.

Training in the Field of Cloud Computing

With training in the field of cloud computing in the fields of information management, students can acquire the knowledge, skills and competence useful both at work and college. However, the acquisition of these skills could be achieved by implementing sample exercises using cloud resources and eLearning platform. The most important learning outcomes would be:

◊   structured knowledge on modern information and communication technologies,

◊   the ability to use services and applications in the cloud computing,

◊   understanding the need for the formulation and communication of knowledge about modern technologies and other aspects of the business information.

Figure 7. Students in the Class of Cloud Computing, Institute of Information Science and Book Studies, Faculty of History, Nicolaus Copernicus University in Toruń, Polonia

Summary

Cloud computing heralds a revolution in the world of new technologies. It creates the situation when buying more and more new parts and better computers is less important. All data is already at your fingertips, and the documents, presentations and videos can be edited both on the PC and using the tablet or smartphone. In light of the above attention should be paid to the need for education in the field of cloud computing to the studies related to the information management. Students in their work would begin to enjoy the benefits of cloud computing SaaS model, thereby freeing up of buying expensive licenses, installing on your PC commercial software for more effective communication and collaboration support

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