Cloud Computing

Bulut Bilişim

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SUMMARY

What is Cloud computing? What are its benefits? This document tries to answer these questions while giving some use case examples. These examples may give the idea of how operations may ease, resilient and inexpensive using cloud computing.

Keywords
Cloud Computing, Bulut Bilişim.

INTRODUCTION

The idea of cloud computing has evolved from the computer time-sharing visions, through distributed computing and the rise of networks, to the Internet and the online services found today. While some online services that are part of the cloud have been around for a while - such as email, information hosting, and data storage - the concept of the cloud as a platform for applications and application tools are evolving.

Cloud Computing is a strategic approach that creates business value by changing the way of IT is produced and consumed. It is a strategic approach in terms of how it is dramatically changing IT's relationship with the business. Cloud computing is a movement that changes the business of IT..

Easily scales up and scales out. Cloud computing is business driven resourcing, highly scalable, with infrastructure managing the scaling, not applications.

Cloud computing offers a centralized, remote facility for computing, leading to economies of scale in both the use of hardware and software and a reduction in required resources for administrative management.

Maybe giving some information about some use cases would show the importance of Cloud computing and how it may change our daily lives.

DEFINITION OF CLOUD COMPUTING
Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction (NIST definition). This model promotes availability and is composed of five essential **characteristics,** three **service models**, and four **deployment models**.

BENEFITS OF CLOUD COMPUTING

With today's economic uncertainty, cloud-based computing services present an attractive alternative to traditional enterprise-owned IT infrastructures. The cloud provides cost efficiency, business efficiency, business agility and flexibility when compared with the static IT infrastructure.

Immediate benefits we face first in IT. Reduce in cost, is happening with the billing model which is pay as per usage and non purchased infrastructure and low maintenance since you do not purchase the infrastructure. By reducing hardware footprint and streamlining IT management via intelligent, SLA-focused automation, companies can save big on both CAPEX and OPEX.

And there are some benefits in efficiency, energy efficiency in terms of cost savings as well as environmental responsibility.

In terms of the operational efficiencies it accelerates the movement of IT service delivery closer to the efficiency and agility goals.

By transforming computers from something that we buy and operate ourselves to something that is operated by a third party increases flexibility in IT.

System die? Move the container. We may recover a system today in under 30 minutes..

Virtualization gives that flexibility and to test new versions (or even different versions) of any operating system as installed into the "virtual" environment. And Service Oriented Architecture enables innovation through collaboration and flexibility..

Improved Customer Satisfaction and Retention; Because cloud services enable providers to offer better performance guarantees (and live up to them), customers will be happier and more likely to stay with that service.

Cloud computing speed ups development and testing cycles, improves the quality of the application giving developers.

At next stage we would face with enhance collaboration and user experience, facilitate business agility and better services for citizens

As long term we see promoting sustainability, transforming Education empower individuals and accelerate innovation as benefits of cloud computing.
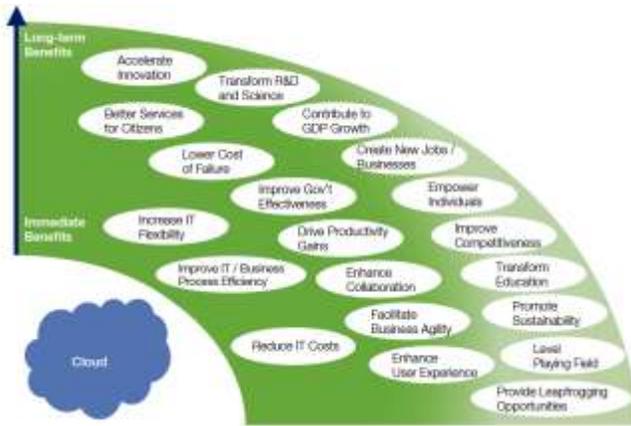

Figure 1 Benefits of Cloud Computing

CLOUD USE CASES
- End-user to Cloud (Public Services)
- Enterprise to Cloud (Outsourced Services)
- Enterprise to Cloud to End User(Enhanced Services)
- Private Cloud (Private Services ="IntraCloud")
- Enterprise to Cloud to Enterprise (Shared Services ="ExtraCloud")
- Hybrid Cloud (MultiCloud Services ="InterCloud")
- Changing Cloud Vendors ("Migration")

	SaaS	PaaS	IaaS
Public Services	Google Apps, Zoho, MS Office Web, Facebook	Google App Engine, Facebook Platform	Amazon Web Services (AWS), Sun, vCloud Express
Outsourced Services	Salesforce.com	Force.com, 3Tera,	Terremark, Savvis, Rackspace, AWS, ATT
Enhanced Services	Cloud Analytics	Microsoft Azure	IBM, AWS Virtual Private Cloud
Private Services	Internal applications billed by usage	Gigaspaces, Appistry	IBM, HP, VMware vCloud
Shared Services	Commerce Hubs	Cross – Enterprise BPM Tools for Cloud	IBM
MultiCloud Services	Workflow applications	RightScale	Eucalyptus

Table 1 Use Cases vs. Service Levels Examples

SOME USE CASES

To cover most of the topics first I would like to talk about use cases at government side. To do that, I try to go forward by ministries. Then I want to mention general use cases such as E-mail system which all of government agencies may use.

Health

HP has announced that it recently developed wireless and mobile healthcare applications into a solution that also includes cloud computing. It will be hosted at its data center design for cloud computing lab in Singapore. This solution is meant to come up with a solution to improve and prevent heart disease.

Cloud computing is the practice of using a network of remote servers hosted on the Internet to store, manage, and process data, rather than a local server or personal computer.

Since almost a third of all deaths in Singapore in 2009 were attributed to cardiovascular events, HP's goal is to improve the early detection, treatment and prevention of cardiovascular symptoms and conditions, according to ibtimes.com.

To effectively treat these diseases, medical professionals require regular updates on patients' vital signs. The HP Mobile Health (mHealth) Monitoring Solution will offer remote treatment of cardiac disease, including checking of vital signs, check and record a patient's blood pressure and then share that information with healthcare professionals, wherever they're located, according to the story on ibtimes.com. Any irregularity in the users' health data will trigger alerts to the healthcare service provider

HP is currently conducting a trial where 100 patients from Frontier Healthcare wear HealthSTATS' wireless BPro® watch-like monitoring devices, according to HP's Web site. HealthSTATS software translates patient data, such as 24-hour blood pressure and heartbeat patterns, into meaningful clinical readings.

The information is then relayed wirelessly to a centralized healthcare data repository powered by SingTel's cloud infrastructure, as reported on the Web site.

HP integrates these different components and technologies into a single, secure health monitoring application. In addition, HP offers a service portal, where doctors' comments, patient medical diaries and graphical clinical readings can be accessed anytime on any Internet-connected device.

"Since common chronic conditions, such as hypertension, may remain undiagnosed in some patients, access to the most accurate and up-to-date health information can save many lives," said Lloyd Oki, vice president of Asia Pacific Sales, communications & media solutions, HP, as reported by ibtimes.com.

Oki also said that eradicating the need for users to visit hospitals and clinics for routine check-ups will be seen as major progress in healthcare and expects that mHealth will monitor other life-threatening conditions in the future, a report on HP's website said.

HP is also using cloud computing to monitor and reduce malaria in Botswana, according to topsession.net.

http://trialx.com/curetalk/2011/06/mobile-health-monitoring-clinical-study-conducted-in-singapore-by-hp-singtel-shows-promise/

Education
Moving to cloud structure in Education;

For delivering courses;

- Enables elasticity for courses,
    - Lab deadlines, final project demos don't collide
    - Donation from AWS; even more cost effective
- VM image simplifies courseware distribution
    - Prepare image ahead of time
    - Students can be root if need to install weird SW, libs...
- Students get better hardware
    - cloud provider updates HW more frequently
    - cost associativity
- VM images compatible with Eucalyptus—enables hybrid cloud computing

For managing registrations;

It is possible to,

- Shorten the registration period
- Speed up and automate the registration process

For managing online-library;

- Library will be Available 7/24online
- Collaboration can be establish
- Archiving is easier and fast with VM

Social security

Workers may use to confirm employment eligibility using internet-based application on cloud infrastructure. Implementing a private cloud capability may enhance sharing sensitive information among department employees

To support retirement, disability, entitlement, and other claims by citizens cloud telephony system may be launched that will provide faster access and greater efficiency.

Defense
With deploying a cloud-based multimedia tool to communicate information (news, emergencies, weather conditions, etc.) and by displaying content on digital displays, diversifies traditional communication, such as email, intranet, Internet, and printed media. The solution may allow for rapid prototyping as well as an application that does not require a software footprint on a user's computer.

Web and mobile applications which are hosted on a cloud may support troops at home and abroad..

Transportation
A cloud-based Geospatial Information System platform, which will visualize transportation-related data through maps and other tools, makes them more understandable and useable. In addition, the data will be presented in formats that users may be downloaded and use in their own applications.

Environmental
The Veterans Benefits Management System may being developed to process Veteran Compensation and Pension claims in a paperless cloud environment. Goals like reducing time for processing Veterans claims may set.

Interior
The resulting cloud-based e-mail system will provide new capabilities such as instant messaging and a guaranteed uptime of 99.9% to the department.

Justice

The Department of Justice may look to the cloud to provide a hybrid cloud storage solution for the Executive Office for attorneys to increase the overall data storage capacity and reduce the overall cost of data storage for the organization (reduce cost per gigabyte of storage).

Moving to private cloud offering they may use a solution for investment planning, lifecycle cost tracking, portfolio management and annual budget exhibit preparation.

Commerce

To automate workflow and calendar sharing centralized collaboration environment and providing an online resource library for agency staff on cloud infrastructure may help Commerce department serve to citizens better.

The Trademark Document Retrieval System may offer the public and Patent and Trademark Office staff an advanced electronic portal for viewing, downloading, and printing an array of information and documents in the official trademark application file, including all decisions made by trademark examining attorneys and their reasons for making them. It may allow users to download the trademark artifacts in both their native/original format as well as in PDF, provides access to larger size documents than before and may give users access to multi-media.

Archive

Cloud-based Security Clearance Tracking System (SCTS) to manage and track data for background investigations and security clearances may be use.

A cloud solution may concurrently manage and track cases for mediation of FOIA(freedom of information act) requests cases as well as provide a public web portal to communicate to and educate the public on matters related to FOIA and FOIA disputes.

Treasury

The Enterprise Content Management Initiative may allow the Department of Treasury to electronically capture, store, search/analyze, share and manage documents.

By moving to a cloud environment, Bureau of Engraving and Printing may save over 50% in operating and maintenance costs while also automating processes for manufacturing, financial management, acquisition, and supply chains.

Labor

The cloud solution may allow disability website to triple the number of people it serves by making it possible for the site to host special events for outreach, a capability not previously available.

Like Environmental department Labor department may use Veterans Benefits Management System in a cloud.

Office of Personnel Management

In order to have an effective document workflow in a cloud, document management system which includes correspondence tracking and document review may use.

Agriculture

By using cloud CRM software, Agriculture department may be able to organize customer information and provide the means to track correspondence across offices and throughout the agency.

In general

E-mail

By moving e-mails to cloud-based services, will improve reliability with built in redundancy, improve the ability to conduct e-discovery and greatly enhance ability to collaborate among a geographically dispersed enterprise.

.Web hosting

To handle the elevated traffic to the websites cloud computing technology may in use also to provide cost-effective and accurate delivery of the services to the public. Additionally, by using a cloud solution feature video clips, blogs and other interactive content motivate citizens for participation.

The capital planning tool

The capital planning tool may be run private cloud hosting platform to serve all departments. This budget management and reporting tool allows departments to more effectively manage their resources and track how they are spending taxpayer dollars.

Trip cost estimator

Trip Cost Estimator as a web-based budget planning tool may allow users to calculate the travel costs of temporary duty assignments, including air, hotel, car, and meals. Keeping the estimator on cloud all departments may use it.

Social media tools

People everywhere use social media to network, begin new ideas, and be more productive. In order to harness the power of social media internally, a cloud service may be deployed to provide tools such as Profiles, Wikis, Blogs, Communities, Activities, Files and Bookmarks to reach new heights in inter-agency interaction, productivity, and efficiency.

CONCLUSION

The idea of cloud computing has evolved from the computer time-sharing visions, through distributed computing and the rise of networks, to the Internet and the online services found today.

Cloud Computing is a strategic approach that creates business value by changing the way of IT is produced and consumed. It is a strategic approach in terms of how it is dramatically changing IT's relationship with the business. Cloud computing is a movement that changes the business of IT.

Economic downturns also forced IT leaders to work on solutions since 1960's. And in 1997 Ramnath Chellappa used the words "Cloud computing" first time by saying "...computing paradigm where the boundaries of computing will be determined by economic rationale rather than technical limits alone.."

Actually, I think in addition to the economic downturns there are three main factors for the interests in Cloud Computing:

1. Rapid decrease in hardware cost and increase in computing power and storage capacity,

2. The exponentially growing data size in science, Internet publishing and archiving

3. The wide-spread adoption of Services in Computing and Web 2.0 applications.

Cloud Computing is not revolution but with all the technologies behind it can be considered as evolution at IT arena. It is a new business model wrapped around a set of technologies—such as server virtualization—that reduce the cost of using information technology resources. . Cloud computing takes advantage of Web based mechanisms that allow scalable, virtualized IT resources to be provided as a service over a network.

One of the big payoffs of cloud computing for an organization is that it freed up a lot of the time used to spend managing hardware. Redirection of the time to managing the data and information that feeds our business applications has a much bigger impact on the effectiveness of day-to-day business operations.

Cloud computing isn't just about cost cutting. It's also about using IT to drive innovation and respond to changes in the business. A more flexible infrastructure, whether hosted internally or externally, encourages more experimentation and iteration, which in turn lets businesses introduce new Technologies and services more quickly and more often.

We see many types of clouds and delivery models for the simple reason that not all customers are alike.

They have different security and compliance requirements, which may even be mandated by the government. They have different levels of IT skills. A given application may be more or less central to their core business. They may be large or small. They may have big, sophisticated IT departments, or IT could be a part-time job for one person.

• Just 11 percent of enterprises plan to implement cloud computing in the coming 12 months.

• 75 percent prefer the private cloud, with 52 percent implementing both on-premises and off-premises cloud.

• Approximately 70 percent of enterprises rate IT automation disciplines as highly important to cloud computing.

Source: "The Responsible Cloud," Enterprise Management Associates, 2010

In the final, cloud computing is not just about data center technology. It's about streamlining business processes to make organizations and people more strategic, more responsive to change and more oriented to service delivery.

THANKS

I would like to thank to TBD which is organizing Bilişim 2012 Kurultayı for giving me the opportunity to talk about cloud computing..

CV(S)

OYA ŞANLI
Since the beginning of my first job, I have exhibited thought leadership on a variety of technology and business topics. Invited as a speaker to It Summit in Istanbul, E-Leader Conference at Budapest and at Zagreb, and one of my projects was selected as a success story by Microsoft Turkey.

I am a business-savvy and tech-savvy leader with hands-on expertise in the programming, design, deployment and maintenance of secure environments.

I have delivered solutions to solve critical business problems, meet key business initiatives, reduce costs, and mitigate risk for variety of public and private organizations, as both an individual contributor and IT leader.

KEY CONTRIBUTIONS INCLUDE:

Lecturing Cloud101- An Introduction to Cloud Computing selective course at Kadir Has University. Now, building Eucalyptus-Ubuntu in the lab environment.

Achieved organizing CloudCamp Turkey four times ; http://cloudcamp.org/istanbul
http://cloudcamp.org/ankara
Here is my own experience at CloudCamps :
http://blog.cloudcamp.org/turkey/about

Achieved presenting topics Cloud Computing and Social Strategy & Social Media Marketing at E-Leader Conference Zagrep in June.
http://www.g-casa.com/E-Leader-Zagreb_program.htm

You can view the conference:
https://picasaweb.google.com/g.casa.oliver/ELeaderZagreb2011?authkey=Gv1sRgCIy61OGHy7HK0AE&feat=directlink#

You can view ppt slides:http://g-casa.com/E-Leader-Zagreb_program.htm

You may reach my publication : http://g-casa.com/PaperDatabase.htm

To Cite my publications: Sanli, Oya, "Cloud Computing", Refereed Program of the E-Leader Conference at Zagreb, Croatia, http://www.g-casa.com, ISSN 1935-4819, Chinese American Scholars Association, New York, New York, USA, June 2011.

Achieved preparing a webtv program about Cloud computing at http://bit.ly/RollOutCloud Program still continues, and it is in Turkish/English.

Achieved presenting Cloud computing at Advanced IT Technologies conference at ITU Istanbul (2011), and at Doğuş University (2011)

Achieved presenting Cloud computing at Academic Informatics Summit 2011, Malatya. Attend Wome&IT panel as speaker.
http://ab.org.tr/ab11/liste.html (34 and 216)

Achieved presenting Cloud computing & Health at E-Health Conference (Organizator:Epsilon Eğitim Yönetim Danışmanlık)

Organized SSICamp (Social Strategy&Social Media Marketing Innovation) 24th September, 2010 Istanbul www.ssicamp.org
Prepared a paper and a presentation in topic Management issues in IT Management for E-Leader Conference at Budapest (http://www.g-casa.com/E-Leader-Budapest_program.htm)
and achieved to be a board member of Chinese American Scholars Association (CASA).

Achieved to prepare and dliver Word2007 training to Fora Avukatlık Bürosu.

Always developed technology roadmaps and maintained secure environments for every company I worked for and for my customers.

Following up technical innovation, and put them in the practice for the benefit of the IT sector in Turkey. (Exclusive interview about "Cloud computing" for Cio Club magazine)

I saved time and money via centralizing data using Windows terminal services. (Done for Perfetti Van Melle Türkiye, Selected as a success story by MS Türkiye)

Using barcode readers at the hot sales operations, let salesman to visit 1/3 more shops, let accountants to prepare the invoice faster and to collect the payments at the time.(Done for Perfetti Van Melle Türkiye, Invited as a speaker to the It Summit)

Achieved the target of building infrastructure for supporting 100 users across 5 different cities in Turkiye. and Implemented Exchange 2000 server. In order to have security implemented Isa server for Perfetti Van Melle Türkiye, a chewing gum producer.

Built infrastructure supporting 140 users and implemented NT server and Exchange 3.5 server. I wrote programs in Oracle tools to ease import/export operations for Ram Dış Ticaret, an Import/ Export company of Koç Holding.

Doing all, company was able to communicate with all the group companies in and out of Türkiye, Especially with Ramstore at Baku. Import/Export departments of company were able to get all documents like Certificate of Origin, Proforma Invoice, Packing List, Bill of Landing, from their pcs'

Achieved to build the infrastructure supporting 15 users and managed the vendors to use barcode readers at the sales and collected the sales data at nights via readers modem. Collecting sales data, Ascott Konfeksiyon San. Tic A.Ş. was able to choose next season products, and therefore marketing department were able to prepare efficient seasonal collection.(Interviewed one of the It paper called Monitor). Achieved the transferring the sales data from local software to Ms Access first version. Forecast most selling shirt's colors in the shops because of slowdown on sales.

I wrote programs about accounting and cost accounting in DBVI for a transformer manufacturer in Turkey. Accounting department easier and more accurate receipt entries began.

I wrote programs about stocks in warehouse, accounting in Cobol language for Arçelik, a white-goods manufacturer in Istanbul Türkiye.
With the help of Quality control system software that I wrote, company began to get more accurate products

Certificates:

70-432 SQL Server 2008 Implementation & Maintenance

MCT 2010 (www.oyasanli.com/OyaSanliMctCert.jpg)

MCAS – May 2010 Using Word 2007

MCTS - April 2010 Internet Security and Acceleration Server 2006, Configuring

MCT Plus Train the Trainer March 16-19 2010 (www.oyasanli.com/si1.jpg, www.oyasanli.com/si2.jpg)

July 2007 Ax-30-206 Ms Axapta Installation & Configuration

August 2007 Ax-30-204 Ms Axapta Trade & Logistics

Specialties:

Trainer, Consultant, Erp, Axapta, Team Building, Staff Mentoring, IT Operations, Technology Management, Disaster Recovery, Strategic Planning, Change Management, Project Management, Vendor Management, Governance, Budget Planning, Capacity Planning, Technology Integration, IT Infrastructure, Network Architecture & Design, Web design, LAN, WAN, Security.

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http://oyasanli.wordpress.com
http://blog.cloudcamp.org/turkey

Partnerships: Eucalyptus (USA), Cloud Standards Customer Council (USA)

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Son sayfanın sütunları yaklaşık olarak aynı uzunlukta olmalıdır.