

# Cloud Computing

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DCAP609

Edited by:  
Dr. Manmohan Sharma



**L** OVELY  
**P** ROFESSIONAL  
**U** NIVERSITY

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# **CLOUD COMPUTING**

Edited By  
Dr. Manmohan Sharma

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# SYLLABUS

## Cloud Computing

*Objectives:* To enable the student to understand the technicalities of resource sharing on network, various security issues, development of cloud, components of clouds, SaaS, PaaS, IaaS.

Sr. No.	Description
1	<b>Understanding Cloud Computing:</b> Cloud Computing, History of Cloud Computing, Cloud Architecture, Cloud Storage, Why Cloud Computing Matters
2	<b>Understanding Cloud Computing:</b> Advantages of Cloud Computing , Disadvantages of Cloud Computing, Companies in the Cloud Today, Cloud Services
3	<b>Developing Cloud Services:</b> Web-Based Application, Pros and Cons of Cloud Service Development, Types of Cloud Service Development, Software as a Service, Platform as a Service, Web Services, On-Demand Computing, Discovering Cloud Services Development Services and Tools, Amazon Ec2, Google App Engine, IBM Clouds.
4	<b>Cloud Computing for Everyone:</b> Centralizing Email Communications, Collaborating on Schedules, Collaborating on To-Do Lists, Collaborating Contact Lists,
5	<b>Cloud Computing for Everyone:</b> Cloud Computing for the Community, Collaborating on Group Projects and Events, Cloud Computing for the Corporation.
6	<b>Using Cloud Services:</b> Collaborating on Calendars, Schedules and Task Management, Exploring Online Scheduling Applications, Exploring Online Planning and Task Management,
7	<b>Using Cloud Services:</b> Collaborating on Event Management, Collaborating on Contact Management, Collaborating on Project Management.
8	<b>Using Cloud Services:</b> Collaborating on Word Processing, Collaborating on Databases, Storing and Sharing Files.
9	<b>Other ways to collaborate Online:</b> Collaborating via Web-Based Communication Tools, Evaluating Web Mail Services, Evaluating Web Conference Tools.
10	<b>Other ways to collaborate Online:</b> Collaborating via Social Networks and Groupware, Collaborating via Blogs and Wikis.

## Unit 1: Introduction to Cloud Computing

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### Objectives

After studying this unit, you will be able to:

- Explain the definition of cloud computing
- Describe the history of cloud computing
- Discuss about the working of cloud computing
- Explain the importance of cloud computing

### Introduction

Majority of data is stored on local networks with servers that may be clustered and sharing storage. This approach has developed into a stable architecture, and provides decent redundancy when arranged right. Cloud computing, a relatively new technology demands attention as it is fast changing the direction of the technological scenario.

Be it Amazon's robust Amazon S3 cloud storage model or Google's unique and scalable Google File System, it is clear that cloud computing has arrived with much to be picked up from.

**Notes**

It is easy to misunderstand what makes up the structure and function while dealing with the abstract term, “the cloud”. The basic function is what occurs from “the cloud”. This is mainly output while input is what makes the cloud instant. Cloud computing must not be confused with the term data centre, as it is characteristically on top of the latter.

In an era of technological advancements, world that sees new technological trends blossoming and fading from time to time, but one new trend still promises more longevity and permanence. This trend is called cloud computing, and it promises to change according to the way you use your internet and your computer. Cloud computing is better understood as distributed computing. It refers to the ability to run a program on many connected computers at the same time.

Cloud computing signifies a major change in the way we run various applications and store our information. Everything is hosted in the “cloud”, a vague assemblage of computers and servers accessed via the Internet, instead of the method of running programs and data on a single desktop computer. Cloud computing makes accessing of all significant information, applications and documents from across the world easy and quick. It, thus, frees you from the confines of the desktop, making it easier for group members in different places to come together.

A study indicates that today’s global IT service industry is undergoing a collective movement towards cloud computing. The emergence of cloud computing is the computing equivalent of the electricity revolution of a century ago. Prior to the arrival of electrical utilities, businesses and farms produced their own electricity from separate generators. After the creation of the electrical grid, farms and businesses shut down their generators and bought electricity from the utilities, at lower prices and with much greater reliability and consistency than they could produce on their own.

Expect the similar revolution to occur as cloud computing takes command. The desktop-centric notion of computing that is prevalent today is bound to take a backseat. As cloud computing promises to fulfill our expectations of universal access, 24/7 reliability and ubiquitous omnipresent collaboration.

### **1.1 Definition of Cloud Computing**

In the usual traditional desktop computing, you run copies of software programs on the computer you own. The documents created are then stored on the same computer. Here, even though documents can be accessed from other computers on the network, they can’t be accessed by computers not connected to the network.

With cloud computing, the software programs you use are stored on servers accessed via the Internet and are not run from your personal computer. Hence, even if your computer stops working, the software is still available for use. Similarly, the documents you create are stored on a collection of servers accessed via the Internet. It, thus, facilitates individuals with permission to not only access the documents, but also to edit and work together on those documents in actual time. This cloud computing model is not PC centric, like traditional computing, it is instead document-centric. Let us look in more detail at what cloud computing is and what it is not.

It is essential to realise that despite apparent similarities, outsourcing and networking computing cannot be considered cloud computing.

Cloud computing goes beyond the concept of traditional outsourcing. It is not traditional outsourcing as in this a company out sources its computing services to another organisation. While an outsourcing firm might have a firm’s applications and other data, these documents and other programs are not accessible to any other person besides the company’s employees that too via the company’s network. This data is not accessible to the entire world via Internet. It can, thus, be observed that cloud computing is very different from outsourcing.

One must understand that cloud computing is also very different from network computing. With network computing, applications or documents are crowded on a single company's server and accessed over the company's network. Cloud computing is much bigger than that. It includes various companies; various servers, and multiple networks. Additionally, cloud services and storage are accessible from anywhere in the world over an Internet connection. However, with network computing, access is only over the network of the company.

The "cloud" itself is the key to the definition of cloud computing. The cloud is usually defined as a large group of interconnected computers. These computers include network servers or personal computers. These computers can be both public as well as private. For instance, Google hosts a cloud that consists of both small PCs and large servers. Google's cloud is a private cloud. This means that Google enjoys its ownership. It can be easily accessed by Google's users.

This cloud of computers goes beyond one enterprise or company. The documents, applications and data provided by the cloud are available to users of different enterprises and across various platforms. They can access any amount of information via Internet. The documents, applications and other such relevant information can be retrieved from any computer over any internet connection by an authorised person. In this process, the infrastructure and technology at the back of the cloud is not visible to the user. This data is not visible and in most cases it does not matter whether the cloud services work on the basis of HTML, HTTP, JavaScript, XML or other identifiable technologies.

Google, enjoys the status of being amongst a few pioneers of cloud computing. Its perspective will enhance our understanding on the concept of cloud computing. From Google's perspective, there are six key properties of cloud computing:

- **Cloud computing is powerful:** It means that the computing power that is created by connecting hundreds or thousands of computers together is way beyond the computing power of one single computer. Thus, it is impossible for a single desktop PC to create power even close to that when thousands of computers are created.
- **Cloud computing is user-centric:** This means that once you become a user and are connected to the cloud, then all the stored information be it – documents, images, messages, applications, become yours and can be easily accessed by you. Yet another advantage of being a user is that not only can you access all the data but you can also share it with other individuals. As a result, any other device that accesses your data in the cloud also becomes yours.
- **Cloud computing is intelligent:** As all the information and data are stored on the computers in a cloud, data mining and analysis are essential to access all the available information in an intelligent manner. One must, therefore, scrutinize all the information carefully before using it.
- **Cloud computing is task-centric:** The focus remains on what an individual can do and how the application can do it for him/her. One must instead focus on the application and what it can do. Traditional applications like spreadsheets, word processing, emails and so on are losing their importance when compared to the documents they create.
- **Cloud computing is programmable:** This means that the tasks necessary with cloud computing must be automated. For instance, the cloud's programming should automatically redistribute a computer's data to a new computer in the cloud in case one computer goes off-line.
- **Cloud computing is accessible:** This means that one is not limited to a single source of data, as one is with a desktop PC. This is because when data is stored in the cloud, users can instantly find and retrieve more information and from multiple repositories.

**Notes**

Draft of Web-hosted, group collaborative, Internet-accessible applications are currently available, with many more on the way.



*Example:* The most popular examples of cloud computing applications today are the Google family of applications like Google Docs Spreadsheets, Gmail, Google Calendar, Picasa, etc. These are the best examples of cloud computing.

All of these applications available on Google's servers can be accessed by any user having an Internet connection. It can also be used for group collaboration and associations from anywhere in the world.

Cloud computing thus encourages a shift from the computer to the user, from applications to tasks, and from isolated and restricted data to data and information that can be accessed from anywhere in the world and can be shared with everyone. With this facility of cloud computing, the user need not take on the task of data management on its shoulder. In fact, the user need not even remember where the data is, since, even that can be easily accessed. However, one must remember that this data should be in the cloud only then can it be accessed, and be immediately available to that user and to other authorized user.

## **1.2 History of Cloud Computing**

Cloud computing has its ancestors both as client/server computing and peer-to-peer distributed computing. It is all about how centralized storage of data and content facilitates collaborations, associations and partnerships. Here, it is also essential to know how multiple computers work together as a unit and increase computing power.

### **1.2.1 Client/Server Computing: Centralized Applications and Storage**

Everything was operated on the client/server model in ancient days of computing. Back then huge mainframe computers called servers where home to all the controls, all the software and all significant information and other relevant data. The user back then had to connect to the mainframe, gain appropriate access, and then do business while essentially "renting" the program or data from the server, in case the user wanted to access specific data or run a specific program.

Users usually connected to the server via a computer terminal, also referred to as the client or the workstation. Due to the lack of any storage space, memory and processing power, this computer was many a times called a dumb terminal. It was nothing more than a device that connected the user to the mainframe computer and enabled him to use it.

Only when granted permission could the users access the mainframe. The IT staff was, however, always careful while handing out access. Processing power is limited even on the mainframe computer. The IT staff guarded that power. Two users could not access the same data at that specific time and this access was not immediate.

Beyond that, users pretty much had to take whatever the IT staff gave them with no variations. Want to customize a report to show only a subset of the normal information? Cannot do it. Want to create a new report to look at some new data? You cannot do it, although the IT staff can, but on their schedule, which might take weeks from now.

When multiple people are sharing a single computer, even if that computer is a huge mainframe, you have to wait your turn. Need to rerun a financial report. There is not always immediate access in a client/server environment, and seldom is there immediate gratification.

So the client/server model, while providing similar centralized storage, differed from cloud computing in that it did not have a user-centric focus; with client/server computing, all the

control rested with the mainframe and with the guardians of that single computer. It was not a user-enabling environment.

### 1.2.2 Peer-to-Peer Computing: Sharing Resources

As you can imagine, accessing a client/server system was kind of a “hurry up and wait” experience. The server part of the system also created a huge bottleneck. All communication between computers had to go through the server first, however inefficient that might be.

The obvious need to connect one computer to another without first hitting the server led to the development of Peer-to-Peer (P2P) computing. The P2P computing defines a network architecture in which each computer has equivalent capabilities and responsibilities. This is in contrast to the traditional client/server network architecture, in which one or more computers are dedicated to serving the others. (This relationship is sometimes characterized as a master/slave relationship, with the central server as the master and the client computer as the slave.)

The P2P was an equalizing concept. In the P2P environment, every computer is a client and a server; there are no masters and slaves. By recognizing all computers on the network as peers, P2P enables direct exchange of resources and services. There is no need for a central server; because any computer can function in that capacity when called on to do so.

The P2P was also a decentralizing concept. Control is decentralized, with all computers functioning as equals. Content is also dispersed among the various peer computers. No centralized server is assigned to host the available resources and services.

Perhaps the most notable implementation of P2P computing is the Internet. Many of today’s users forget (or never knew) that the Internet was initially conceived, under its original ARPAnet guise, as a peer-to-peer system that would share computing resources across the world. The various ARPAnet sites—and there were not many of them—were connected together not as clients and servers, but as equals.

The P2P nature of the early Internet was best exemplified by the Usenet network. Usenet, which was created back in 1979, was a network of computers (accessed via the Internet), each of which hosted the entire contents of the network. Messages were propagated between the peer computers; users connecting to any single Usenet server had access to all (or substantially all) the messages posted to each individual server. Although the user’s connection to the Usenet server was of the traditional client/server nature, the relationship between the Usenet servers was definitely P2P and presaged the cloud computing of today. That said, not every part of the Internet is P2P in nature. With the development of the World Wide Web came a shift away from P2P back to the client/server model. On the Web, each Website is served up by a group of computers, and sites’ visitors use client software (Web browsers) to access it. Almost all contents and controls are centralized, and the clients have no autonomy or control in the process.

### 1.2.3 Distributed Computing: Providing More Computing Power

One of the most important subsets of the P2P model is that of distributed computing, where idle PCs across a network or across the Internet are tapped to provide computing power for large, processor-intensive projects. It is a simple concept, all about cycle sharing between multiple computers.

A personal computer, running full-out 24 hours a day, 7 days a week, is capable of tremendous computing power. Most people do not use their computers  $24 \times 7$ , however, so a good portion of a computer’s resources go unused. Distributed computing uses those resources.

When a computer is enlisted for a distributed computing project, software is installed on the machine to run various processing activities during those periods when the PC is typically

**Notes**

unused. The results of that spare-time processing are periodically uploaded to the distributed computing network and combined with similar results from other PCs in the project. The result, if enough computers are involved, simulates the processing power of much larger mainframes and supercomputers—which is necessary for some very large and complex computing projects.



*Notes* Genetic research requires vast amount of computing power. Left to traditional means, it might take years to solve essential mathematical problems. By connecting together thousands (or millions) of individual PCs, more power is applied to the problem, and the results are obtained that much sooner.

Distributed computing dates back to 1973, when multiple computers were networked together at the Xerox PARC labs and worm software was developed to cruise through the network looking for idle resources. A more practical application of distributed computing appeared in 1988, when researchers at the DEC (Digital Equipment Corporation) System Research Centre developed software that distributed the work to factor large numbers among workstations within their laboratory. By 1990, a group of about 100 users, utilizing this software, had factored a 100-digit number. By 1995, this same effort had been expanded to the web to factor of a 130 digit number.

It was not long before distributed computing hit the Internet. The first major Internet-based distributed computing project was distributed.net, launched in 1997, which employed thousands of personal computers to crack encryption codes.

Many distributed computing projects are conducted within large enterprises, using traditional network connections to form the distributed computing network. Other larger projects utilize the computers of everyday Internet users, with the computing typically taking place off-line, and then uploaded once a day via traditional consumer Internet connections.

### 1.2.4 Collaborative Computing: Working as a Group

From the early days of client/server computing through the evolution of P2P, there has been a desire for multiple users to work simultaneously on the same computer-based project. This type of collaborative computing is the driving force behind cloud computing, but has been around for more than a decade.

Early group collaboration was enabled by the combination of several different P2P technologies. The goal was (and is) to enable multiple users to collaborate on group projects online, in real time.

To collaborate on any project, users must first be able to talk to one another. In today's environment, this means instant messaging for text-based communication, with optional audio or telephony and video capabilities for voice and picture communication. Most collaboration systems offer the complete range of audio or video options, for full-featured multiple-user video conferencing.

In addition, users must be able to share files and have multiple-users work on the same document simultaneously. Real-time whiteboarding is also common, especially in corporate and education environments.

Early group collaboration systems ranged from the relatively simple (Lotus Notes and Microsoft NetMeeting) to the extremely complex (the building-block architecture of the Grove Networks system). Most limited to operation over the companies private networks.



*Caution* Security and confidentiality risk is involved. If the client has an unusual set of confidentiality standards and that security must be a core competency of their own, cloud may be a risk.



*Did u know?* Microsoft launched the Windows Azure Platform in February 2010, promising “a wide range of Internet services that can be consumed from both on-premises environments or the internet”.

### 1.2.5 Cloud Computing: The Next Step in Collaboration

With the growth of the Internet, there was no need to limit group collaboration to a single enterprise’s network environment. Users from multiple locations within a corporation, and from multiple organizations, desired to collaborate on projects that crossed company and geographic boundaries. To do this, projects had to be housed in the “cloud” of the Internet, and accessed from any Internet-enabled location.

The concept of cloud-based documents and services took wing with the development of large server farms, such as those run by Google and other search companies. Google already had a collection of servers that it used to power its massive search engine. Why not use that same computing power to drive a collection of Web-based applications and, in the process, provide a new level of Internet-based group collaboration?

That is exactly what happened, although Google was not the only company offering cloud computing solutions. On the infrastructure side, IBM, Sun Systems, and other big iron providers are offering the hardware necessary to build cloud networks. On the software side, dozens of companies are developing cloud-based applications and storage services.

Today, people are using cloud services and storage to create, share, find, and organize information of all different types. Tomorrow, this functionality will be available not only to computer users, but to users of any device that connects to the Internet—mobile phones, portable music players, even automobiles and home television sets.

### Self Assessment

State whether the following statements are true or false:

1. A network architecture in which each computer has equivalent capabilities and responsibilities is called Peer-to-Peer computing.
2. With cloud computing, the software programs you use are stored on servers accessed via the Internet and are not run from your personal computer.
3. Google hosts a cloud that consists of both small PCs and large servers.
4. Cloud computing has its ancestors both as client/server computing and peer-to-peer distributed computing.
5. The P2P was also a decentralizing concept.

### 1.3 Working of Cloud Computing

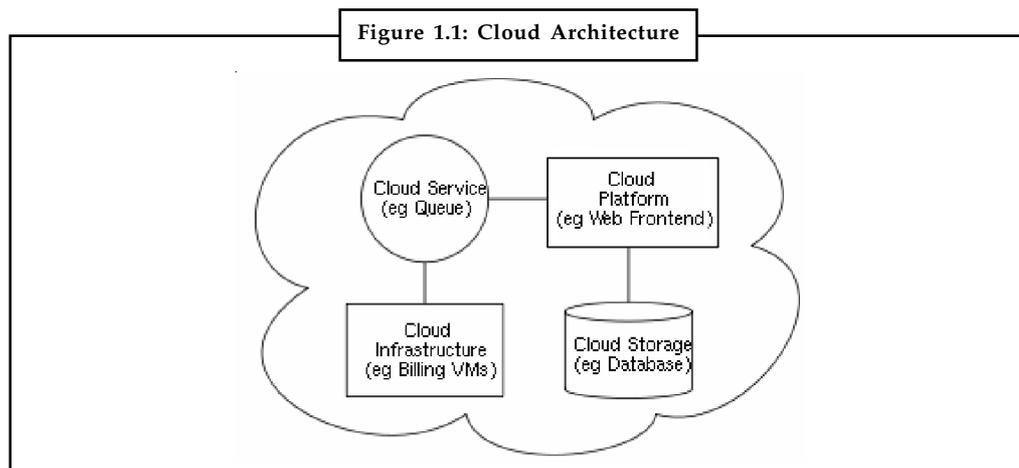
Sun Microsystems's slogan is "The network is the computer," and that is as good as any to describe how cloud computing works. In essence, a network of computers functions as a single computer to serve data and applications to users over the Internet. The network exists in the "cloud" of IP addresses that we know as the Internet, offers massive computing power and storage capability, and enables wide scale group collaboration.

But that is the simple explanation. Let us take a look at how cloud computing works in more detail.

#### 1.3.1 Cloud Architecture

Cloud computing architecture refers to the components and subcomponents required for cloud computing. These components typically consist of a front end platform (fat client, thin client, mobile device), back end platforms (servers, storage), a cloud based delivery, and a network (Internet, Intranet, Intercloud). Combined, these components make up cloud computing architecture.

The zero or ultra-thin client initializes the network to gather required configuration files that then tell it where its OS binaries are stored. The entire zero client device runs via the network. This creates a single point of failure, in that, if the network goes down, the device is rendered useless.



Source: <http://www.giftians.com/images/cloud%20202..png>

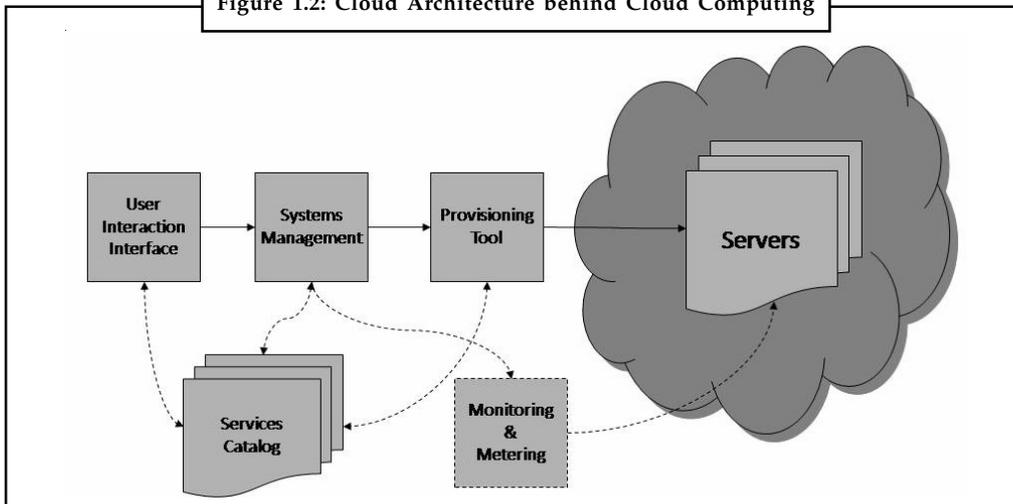
An online network storage where data is stored and accessible to multiple clients. Cloud storage is generally deployed in the following configurations: public cloud, private cloud, community cloud, or some combination of the three also known as hybrid cloud.

In order to be effective, the cloud storage needs to be agile, flexible, scalable, multi-tenancy, and secure.

This cloud architecture is deceptively simple, although it does require some intelligent management to connect all those computers together and assign task processing to multitudes of users. This is how users select a task or service (either starting an application or opening a document). The user's request then gets passed to the system management, which finds the correct resources and then calls the system's appropriate provisioning services. These services carve out the necessary resources in the cloud, launch the appropriate web application and

either creates or opens the requested document. After the web application is launched, the system's monitoring and metering functions track the usage of the cloud so that resources are apportioned and attributed to the proper user(s).

Figure 1.2: Cloud Architecture behind Cloud Computing



Source: <http://www.fabricatingandmetalworking.com/wp-content/uploads/2011/05/architecture.jpg>

As you can see, key to the notion of cloud computing is the automation of many management tasks. The system is not a cloud if it requires human management to allocate processes to resources. What you have in this instance is merely a twenty-first-century version of old-fashioned data centre-based client/server computing?

Generally, the cloud network layer should offer:

- **High bandwidth:** Allowing users to have uninterrupted access to their data and applications.
- **Agile network:** On-demand access to resources requires the ability to move quickly and efficiently between servers and possibly even clouds.
- **Network security:** Security is always important, but when you are dealing with multi-tenancy, it becomes much more important because you're dealing with segregating multiple customers.

### 1.3.2 Cloud Storage

Cloud storage is a model of networked enterprise storage where data is stored not only in the user's computer, but in virtualized pools of storage which are generally hosted by third parties, too. Hosting companies operate large data centers, and people who require their data to be hosted buy or lease storage capacity from them. The data center operators, in the background, virtualize the resources according to the requirements of the customer and expose them as storage pools, which the customers can themselves use to store files or data objects. Physically, the resource may span across multiple servers. The safety of the files depends upon the hosting websites.

Cloud storage services may be accessed through a web service Application Programming Interface (API), a cloud storage gateway or through a Web-based user interface.

One of the primary uses of cloud computing is for data storage. With cloud storage, data is stored on multiple third-party servers, rather than on the dedicated servers used in traditional networked data storage.

**Notes**

When storing data, the user sees a virtual server—that is, it appears as if the data is stored in a particular place with a specific name but that place does not exist in reality. It is just a pseudonym used to reference virtual space carved out of the cloud. In reality, the user’s data could be stored on any one or more of the computers used to create the cloud. The actual storage location may even differ from day-to-day or even minute-to-minute, as the cloud dynamically manages available storage space. But even though the location is virtual, the user sees a “static” location for his data, and can actually manage his storage space as if it were connected to his own PC.

Cloud storage has both financial and security-associated advantages. Financially, virtual resources in the cloud are typically cheaper than dedicated physical resources connected to a personal computer or network. As for security, data stored in the cloud is secure from accidental erasure or hardware crashes, because it is duplicated across multiple physical machines; since multiple copies of the data are kept continually, the cloud continues to function as normal even if one or more machines go off-line. If one machine crashes, the data is duplicated on other machines in the cloud.



*Task* Draw a chart differentiating peer-to-peer computing from distributed computing.

### 1.3.3 Cloud Services

Any Web-based application or service offered via cloud computing is called cloud services.

A cloud service is any resource that is provided over the Internet. The most common cloud service resources are Software as a Service (SaaS), Platform as a Service (PaaS) and Infrastructure as a Service (IaaS).

SaaS is a software distribution model in which applications are hosted by a vendor or service provider and made available to customers over a network, typically the Internet. PaaS refers to the delivery of operating systems and associated services over the Internet without downloads or installation. IaaS involves outsourcing the equipment used to support operations, including storage, hardware, servers and networking components, all of which are made accessible over a network. SaaS, PaaS and IaaS are sometimes referred to collectively as the SPI model.

Cloud services are the same thing as Web services. However, the term cloud services has been more commonly used as cloud computing has become more pervasive.

Cloud services offer many advantages. If the user’s PC crashes, it does not affect either the host application or the open document; both remain unaffected in the cloud. In addition, an individual user can access his applications and documents from any location on any PC.



*Did u know?* Small businesses face less workforce resistance to cloud adoption. Half of the U.S. government IT workers say that they have moved work to the cloud.

## 1.4 Why Cloud Computing Matters?

One of the biggest buzz terms in technology today is cloud computing. Companies all over the world are utilizing the cloud for their businesses, allowing users to access their technology anytime, anywhere. Essentially, organizations who are using the cloud, or cloud computing, have their files, software, information and resources available anywhere in a virtual network. Cloud computing is really becoming popular worldwide as it offers innumerable benefits to the clients. Most of the companies have realized the importance of this technology as it offers plenty

of storage options. This type of a storage process permits all these organizations to take benefit in this process without actually having to reimburse any additional costs that are usually connected with such type of storage resources.

There are many implications of cloud technology, for both developers and end users.

For developers, cloud computing provides increased amount of storage and processing power to run the applications they develop. Cloud computing also enables new ways to access information, process and analyze data, and connect people and resources from any location anywhere in the world. In essence, it takes the lid off the box; with cloud computing, developers are no longer boxed in by physical constraints.

For end users, cloud computing offers all those benefits and more. A person using a Web-based application is not physically bound to a single PC, location or network. Cloud computing simply means network access from just about anywhere worldwide. You just need to log in to your account using an internet connection in order to extract the important information from the service provider's website. This is an important feature of cloud computing as it really helps in generating the best possible results.

Documents hosted in the cloud always exist, no matter what happens to the user's machine so all your data is stored in the cloud.

It is cost efficient as you can easily access to your information with minimal upfront spending. The best thing about cloud computing is that it comes with a pay per use feature. This is the reason why more and more companies are choosing it for the purpose of storage. The usage fee of cloud computing is never a big problem for the enterprises as you just need to pay for the services that you make use of. You don't need to pay in advance and thereby block your money. Once you use it for a specific period of time, you will just have to pay for that amount of time. Software updates and renewals are also handled by the cloud vendor and occur several times a year at no cost to the customer. This ensures that the user interface remains modern and up-to-date with business demands.

And then there is the benefit of group collaboration. The rise of cloud computing is changing collaboration. Basic tools such as Outlook and Word are transforming into cloud-based tools. Cloud-based collaboration means that many of the initial barriers to entry for collaboration, such as expensive initial investment in infrastructure, have been removed. Instead, it allows for pay-as-you-go usage and enables workers to keep using the tools they're already used to, only with cloud-based features added on.

With this benefit of group collaboration users from around the world can collaborate on the same documents, applications and projects, in real time. Cloud computing does all this at lower costs, because the cloud enables more efficient sharing of resources than does traditional network computing. With cloud computing, hardware does not have to be physically adjacent to a firm's office or data centre. In addition, additional cloud resources are always at the ready, companies no longer have to purchase assets for infrequent intensive computing tasks. If you need more processing power, it is always there in the cloud and accessible on a cost-efficient basis.

### Self Assessment

Fill in the blanks:

6. A ..... is a massive network of servers or even individual PCs interconnected in a grid.
7. With ....., data is stored on multiple third-party servers, rather than on the dedicated servers used in traditional networked data storage.

Notes

8. With cloud computing, the software programs you use are not run from your personal computer, but are rather stored on servers accessed via the .....
9. For ....., cloud computing provides increased amount of storage and processing power to run the applications they develop.
10. Any Web-based application or service offered via cloud computing is called .....



Case Study

### Cloud Computing and Web 2.0 Separated at Birth?

If you are at all familiar with the concept probably also heard of something called Web 2 with, on the face, sounds suspiciously similar to cloud computing. In fact, cloud computing is similar to Web 2.0; in many ways, the one is a subset of the other.

What exactly is Web 2.0? To my mind, it is a bit of a buzzword that different people define in different ways. Tim C'Reilly, the so-called Godfather, father of Web 2.0, defines it as "the network as platform, spanning all connected devices." Others define the concept of Web 2.0 as network as a transition from isolated information silos (Web 1.0) to interlinked computing, platforms that function like locally available, software in the perception of the user. Still others define Web 2.0 in collaborative terms, because all the websites get their value from the actions of users. These definitions of Web 2.0 sound a lot like cloud computing, but, without the technological underpinnings. That is, cloud computing is defined by its architecture and infrastructure (a grid of interconnected computers/servers functioning as a whole), whereas Web 3.0 is defined by how the user sees/is serviced by the system. In other words, cloud computing is about computers, Web 2.0 is about people. Or, as Tim O'Reilly puts it:

Cloud computing refers specifically to the use of the Internet as a computing platform; Web 2.0, as I have defined it, is an attempt to "explore and explain the business rules of that platform".

Perhaps the terms cloud computing and Web 2.0 are just two different ways of looking at the same phenomenon. Or, equally likely, perhaps cloud computing is a specific Web 2.0 technologies. In any instance, know that both terms sprang up at about the same point on computing evolutionary timeline and both concepts promise similar results to end users.

At the end of the day, it does not matter whether you view something like Google Docs or Microsoft Live Mesh as a cloud service or a Web 2.0 application, or as both. What matters more than a particular label is how that technology impacts the user. In this respect, both cloud computing and Web 2.0 offer very real benefits for all involved.

**Questions:**

1. What is the difference between cloud computing and Web 2.0?
2. What are the benefits of Web 2.0?

Source: Cloud Computing by Miller Michael

### 1.5 Summary

- Majority of data is stored on local networks with servers that may be clustered and sharing storage. This approach has developed into a stable architecture, and provides decent redundancy when arranged right.

- In an era of technological advancements, world that sees new technological trends blossoming and fading from time to time, but one new trend still promises more longevity and permanence. This trend is called cloud computing.
- Cloud computing signifies a major change in the way we run various applications and store our information. Everything is hosted in the “cloud”, a vague assemblage of computers and servers accessed via the Internet, instead of the method of running programs and data on a single desktop computer.
- In the usual traditional desktop computing, you run copies of software programs on the computer you own. The documents created are then stored on the same computer. Here even though documents can be accessed from other computers on the network, they can't be accessed by computers not connected to the network.
- With cloud computing, the software programs you use are stored on servers accessed via the Internet and are not run from your personal computer. Hence, even if your computer stops working, the software is still available for use.
- The “cloud” itself is the key to the definition of cloud computing. The cloud is usually defined as a large group of interconnected computers. These computers include network servers or personal computers.
- Cloud computing has its ancestors both as client/server computing and peer-to-peer distributed computing. It is all about how centralized storage of data and content facilitates collaborations, associations and partnerships.
- The obvious need to connect one computer to another without first hitting the server led to the development of Peer-to-Peer (P2P) computing. The P2P was an equalizing concept. The P2P was also a decentralizing concept.
- Today, people are using cloud services and storage to create, share, find, and organize information of all different types. Tomorrow, this functionality will be available not only to computer users, but to users of any device that connects to the Internet-mobile phones, portable music players, even automobiles and home television sets.
- One of the primary uses of cloud computing is for data storage. With cloud storage, data is stored on multiple third-party servers, rather than on the dedicated servers used in traditional networked data storage.
- Any Web-based application or service offered via cloud computing is called cloud services. Cloud services can include anything from calendar and contact applications to word processing and presentations.
- For developers, cloud computing provides increased amount of storage and processing power to run the applications they develop. For end users, cloud computing offers all those benefits and more. A person using a Web-based application is not physically bound to a single PC, location or network. His applications and documents can be accessed wherever he is, whenever he wants. Gone is the fear of losing data if a computer crashes.

## 1.6 Keywords

**Amazon S3 cloud storage:** Amazon S3 is storage for the Internet. It is designed to make web-scale computing easier for developers.

**Cloud:** The cloud is usually defined as a large group of interconnected computers. These computers include network servers or personal computers.

**Notes**

**Distributed Computing:** Distributed computing is any computing that involves multiple computers remote from each other that each have a role in a computation problem or information processing.

**Group collaboration software:** It provides tools for groups of people or organizations to share information and coordinate activities.

**Local database:** A local database is one in which all the data is stored on an individual computer.

**Peer-to-Peer (P2P) computing:** Peer-to-peer computing or networking is a distributed application architecture that partitions tasks or workloads between peers. Peers are equally privileged, equipotent participants in the application.

### 1.7 Review Questions

1. Explain cloud computing.
2. Differentiate between peer-to-peer computing and distributed computing.
3. Elaborate on the properties of cloud computing as given by Google.
4. What are cloud services?
5. What is cloud storage?
6. What is the use of cloud storage in cloud computing?
7. Discuss the history of cloud computing briefly.
8. Write a note on the importance of cloud computing.

### **Answers: Self Assessment**

- |                  |                    |
|------------------|--------------------|
| 1. False         | 2. True            |
| 3. True          | 4. True            |
| 5. True          | 6. cloud           |
| 7. cloud storage | 8. Internet        |
| 9. developers    | 10. cloud services |

### 1.8 Further Readings



Books

Bill Williams, 2012, *The Economics of Cloud Computing*, Cisco Systems, Inc.

Borko Furht & Armando Escalante, 2010, *Handbook of Cloud Computing*, Springer.

Kevin Jackson, 2012, *OpenStack Cloud Computing Cookbook*, Packt Publishing.

Rajkumar Buyya, James Broberg & Andrzej Goscinski, 2011, *Cloud Computing: Principles and Paradigms*, John Wiley & Sons.

Sarna, David E. Y., 2010, *Implementing and Developing Cloud Computing Applications*, Taylor & Francis.

Williams, Mark I., 2010, *A Quick Start Guide to Cloud Computing: Moving Your Business into the Cloud*, Kogan Page Ltd.

**Notes**



*Online links*

<http://www.forbes.com/sites/microsoft/2011/06/30/collaboration-in-the-cloud-why-arent-you-doing-it/>

<http://www.piracle.com/cloud-computing-important/>

## Unit 2: Cloud Computing Features

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*Contd....*

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## Objectives

After studying this unit, you will be able to:

- Debate on the advantages of cloud computing
- Describe the disadvantages of cloud computing
- Explain the benefits of cloud computing
- Know the uses of cloud computing
- Elaborate on the companies in the cloud today

## Introduction

Cloud computing is definitely the next big thing. This however does not make it the best thing for everyone. Now that we know about cloud computing and how it works, how should you judge whether cloud computing is right for you or not? How must you judge whether it will be beneficial for you or not? To answer these questions, lets first examine the pros and cons of cloud computing. We must also first try finding the kind of users who benefitted most from what cloud computing has to offer to everyone. Only then, you can decide whether you want to accept and adopt cloud computing.

## 2.1 Advantages of Cloud Computing

A detailed analysis of cloud computing must address the advantages and disadvantages this growing technology offers to individuals. Let's take a look at the positives and negatives of cloud computing. Let's start our discussion with the advantages offered by cloud computing.

### **2.1.1 Low Cost Computers for Users**

A quantitative financial advantage is that you do not need a high-priced or a high-powered computer to run cloud computing Web-based applications. All applications runs in the cloud and not on the desktop PC. Thus, there is no need for the desktop PC to have a processing power or hard disk space that is demanded by traditional desktop software. Thus, in cloud computing the client can use lower priced computers. Also computers with, less memory, smaller hard disks, more efficient processors, etc. can be conveniently used in cloud computing. In fact, in this scenario the client computer does not even require a CD or DVD drive, as there is no need to load software programs or save any document files.

### **2.1.2 Better Performance**

The apps are run from the cloud when a desktop PC does not have to run or store a number of software-based applications. Users will see better performance from their PCs when there are lesser bulky programs and other applications occupying the computer's memory. However, if you simply put computers in a cloud computing system, then they will boot up faster and run faster, as there will be fewer processes and programs loaded into memory.

### **2.1.3 More Flexibility**

The very minute a firm needs more bandwidth than usual, cloud based service can instantly meet the demand. This is because of the vast capacity of the service's remote server. This is a very significant advantage of cloud computing.

### **2.1.4 Reduced IT Infrastructure Costs**

The IT departments in large organisations can enjoy lower costs from the adoption of the cloud computing models. The IT staff can use the computing power of the cloud to supplement or replace internal computing resources instead of spending on more powerful servers.

### **2.1.5 Less Maintenance Issues**

Cloud computing is also very beneficial as it significantly reduces both hardware and software maintenance for all big, small and medium sized organizations.

Maintenance costs are immediately lowered as less hardware and few servers are necessary in most organization so maintenance costs are automatically reduced. As for the software maintenance, there is no software on the firm's computers for the IT staff to maintain. This is because all the cloud applications are centred somewhere else.

Cloud services are usually based on HTTP, XML, HTML, JavaScript, and other similar technologies. Therefore, the infrastructure and technologies behind the cloud are not visible to the user.

### **2.1.6 Less Software Costs**

Cloud computing reduces software costs as it reduces the need to purchase various software packages for separate computers. Instead of buying various software packages for each individual computer in a firm, only those employees genuinely using an application need access to that particular application in the cloud. The IT staffs are saved the cost of installing and maintaining the programs regularly, on every desktop in the organization.

Speaking about the software costs, it is possible that some cloud computing companies will charge as much to “rent” their applications as traditional software companies charge for software purchases. However, it has been observed that cloud services will be priced significantly lower than similar desktop software. Many companies like Google offer their Web-based applications for free. Such an offer attracts most large organizations as they don’t need to pay the high prices quoted by Microsoft and other such desktop software suppliers.

### **2.1.7 Instant and Automatic Software Updates**

Yet another software-related advantage to users of cloud computing is that they do not have to choose between latest and obsolete soft wares. In a Web-based application, updates happen automatically and are available to the user the next time he logs in to the cloud.

A cloud provider will also be able to upgrade a software keeping in mind the feedback it received from the previous software releases.

Another advantage is that when a Web-based application is accessed by you, you will automatically get the latest version for free. You will also not feel the need to download an upgrade, since, it will be automatically downloaded.

### **2.1.8 Environment Friendly**

Organisations that use cloud computing only use the server space they need which decreases their carbon footprint. Using the cloud results in at least 30% less energy consumption and carbon emissions than using on-site servers. Thus, cloud computing also proves to be environment friendly.

### **2.1.9 Improved Computing Power**

You have the power of the entire cloud at your disposal. You can now perform supercomputing-like tasks utilizing the power of thousands of computers and servers since you are no longer stuck to a single desktop PC and you do not have to worry about what single desktop PC can do. You can, therefore, perform more tasks in the cloud than as compared to your desktop.

### **2.1.10 Unlimited Storage Capacity**

The cloud offers a near limitless storage ability. Imagine a situation wherein your desktop is running out of storage space. In this case, your computer’s hard drive is nothing when compared to the millions of gigabytes or hundreds of petabytes available in the cloud. You can therefor conveniently store whatever you need to.

### **2.1.11 Increased Data Safety**

All the data stored in the cloud stays in the cloud only. Unlike in desktop computing, where a hard disk crash can destroy all important data and information, a computer crashing in the cloud does not affect the storage of your data. This happens since data in the cloud is automatically duplicated, so nothing is ever lost. In other words, in case your personal computer crashes, all your data is still safe and preserved in the cloud and is, therefore, still accessible. In a world where few individual desktop PC users back up their data on a regular basis, cloud computing can safely keep all the data and it also make this data easily accessible.

Notes

### **2.1.12 Less Personnel Training is Needed**

It takes fewer people to do more work on a cloud, with minimal learning curve on hardware and software issues.

### **2.1.13 Improved Compatibility between Operating Systems**

In the cloud, it is the data that matters, not the operating system. You can connect your Windows computer to the cloud and share documents with computers running Apple's Mac OS, Linux, or UNIX.

### **2.1.14 Disaster Recovery**

Organisations that rely on cloud based services, do not need any disaster recovery plans anymore. Cloud computing providers take care of many issues and at a much faster and reliable speed. It has also been observed that businesses that used cloud could resolve their issues much faster than the other businesses that did not use cloud computing.

### **2.1.15 Improved Document Format Compatibility**

There is absolutely no worry about whether the documents you create on your machine are compatible with other user's applications or operating systems. In a world where computer running Word 2003 cannot open Word 2007 documents, all documents created by Web-based applications can be read by any other user accessing that application. There are no format inconsistencies when everyone is sharing documents and applications in the cloud.

### **2.1.16 Easier and Increased Group Collaboration**

Cloud computing increases collaboration by allowing all employees – wherever they are to synchronize and work on documents and shared applications simultaneously, and follow colleagues and records to receive critical updates in real time.

Sharing documents leads directly to collaborating on documents. To people this is an important advantage of cloud computing. It encourages the ability for multiple users to easily collaborate on projects and documents.

Imagine that you, a colleague in your India office, and a consultant in London all need to work together on an important project. With the help of cloud computing, each of you can access the project's documents at the same time. The edits and other modifications made by one user are automatically reflected in the screen of the other users. The other users can therefore see the edits and other changes onscreen which was not possible before cloud computing. Back then you had to email the relevant documents from one user to another, and work on them in sequence. Not so with It is all possible with cloud computing because the documents and other data are hosted in the cloud and not on your individual computers. Thus for collaborating all you need is a computer with an Internet connection and your work is done.

Faster completion of most group projects, with full participation from all involved is the actual meaning of group collaboration becoming easier. It also helps in group projects across different geographic locations. With cloud computing, anyone anywhere can collaborate in real time.

### **2.1.17 Universal Access to Documents**

Cloud computing relieves you from the effort of carrying your documents and projects with you all the time. With this technology you need not take your documents with you. Instead, they

stay in the cloud, which means that you can access them from anywhere you have a computer and an Internet connection. All your documents are easily available from wherever you are. Cloud computing can thus help in situations where you forget an important document that you need to work on at home in your office. Also imagine a situation where you have a conference to attend and discover you forgot to bring along your presentation. In such circumstances, cloud computing helps you to access your documents conveniently.

### 2.1.18 Latest Version Availability

Yet another document-related advantage of cloud computing is that the cloud always hosts the latest version of the document you're working on. Thus with cloud computing you are never in danger of having an outdated version on the computer you are working on.

### 2.1.19 Removes the Tether to Specific Devices

The ultimate advantage of cloud computing is that you are no longer tied to a single computer or network. Even if you change computers regularly, your existing documents and applications follow you through the cloud. Even if you move to a portable device, your documents are still available. There's no need for you to save your document in a device-specific format or to buy a special version of a program for a specific device.



*Did u know?* In 1997, the firm NetCentric tried to trademark the term "cloud computing", but gave up the effort two years later.

## Self Assessment

Multiple Choice Questions:

- A computer crashing in the cloud doesn't affect the ..... of your data.
  - Software
  - Storage
  - Speed
- Cloud computing increases ..... by allowing all employees wherever they are to synchronize and work on documents and shared applications simultaneously.
  - Data Safety
  - Computing power
  - Storage Capacity
  - Collaboration

State whether the following statements are true or false:

- Using the cloud results in at least 30% more energy consumption than using on-site servers.
- Desktop PC does not need the processing power or Hard disk space demanded by traditional desktop software.

## 2.2 Disadvantages of Cloud Computing

Like every other technology, cloud computing also has a few disadvantages. Certain reasons of yours might restrict you from adopting cloud computing for your specific needs. Let's examine a few of the risks related to cloud computing.

### **2.2.1 Needs Constant Internet Connection**

Cloud computing is not possible without an Internet connection. Without an internet connection you cannot access your documents and applications. No Internet connection means no work, in areas with low or no internet connection or an unreliable one, could affect the business in a big way.

If you are working on a document when you are at a restaurant for lunch, or in your car, accessing cloud based documents and applications will be hard if you don't have a strong Internet connection at the all those locations. When you are depending on Web-based application a lot of what is nice about portable computing becomes challenging.

### **2.2.2 Outages**

While choosing a company for hosting make sure that the company has a strong and reliable cloud server system. Additionally, your Internet connection will determine whether or not you and your business have access to your network.

### **2.2.3 Does not Work Well with Low-speed Connections**

A low-speed Internet connection, such as that found with dial-up services, makes cloud computing difficult and often impossible. Web-based applications and other large documents need lots of bandwidth to download. If you are struggling with a low-speed dial-up connection, it might take a lot of time to just switch between pages in a document, forget about introducing a feature-rich cloud service. Cloud computing is not for the slow or broadband-impaired.

### **2.2.4 Less Control**

Even utilising the public cloud in business has an obvious disadvantage. By using this technology you risk losing a level of control over your organisation. While many IT managers are experimenting with various ways of implementing an in-house cloud system that runs on delivered metered services, this is not always the most lucrative business move.

### **2.2.5 Can Be Slow**

Even on a fast connection, there is a possibility that Web-based applications maybe slower than opening a similar software program on your desktop PC. That happens because everything about the program and other information, right from the interface to the document you are working on, is sent back and forth from your personal computer to the computers in the cloud. Also you might not get the instant access you are used to with desktop applications, if the cloud servers happen to be backed up at that time or if the Internet connection is slower than usual.

### **2.2.6 Futures might be Limited**

This disadvantage might change in the near future but today many Web-based applications are not complete with all the features their desktop-based associates may have. For instance, if we compare the features of Microsoft PowerPoint to that of Google Presentations; you realise that lots more can be done with PowerPoint than with Google's Web-based contribution. With basics being the alike, the cloud application is still incapable of performing many tasks as it still lacks many of PowerPoint's advanced features.

We must, however, remember that many Web-based applications add keep adding more advanced features from time to time. For instance, Google Docs and Spread sheets, which started

out somewhat slow later added many of the niche functions found on Microsoft Word and Excel. You still must look at the features before you adopt cloud computing. Before giving up on your traditional software, be sure that the cloud-based application you choose can do everything you need it to do.

### 2.2.7 Stored Data might not be Secure and Confidentiality Issues might exist

Cloud computing means Internet computing. It means that all your data is stored on the cloud that is on the Web. So avoid using cloud computing applications that involve using or storing data that you are not comfortable having on the Internet. Be sure to have strong security technologies and protocols established before using cloud computing.

### 2.2.8 Possible Downtime

Cloud computing makes small business dependent on the reliability of your Internet connection. When it's offline, you're offline. Even the most reliable service providers suffer server outages time and again.

### 2.2.9 You can get in trouble if cloud Loses your Data

We know that data stored in the cloud is unusually safe and it is duplicated across multiple machines. That said, you must remember that there are chances that you may have no physical or local backup in case your data might go missing. If you systematically download all your cloud documents to your own desktop which not everybody does, you may secure your data.



**Caution Risk Tolerance:** If you don't have an appetite for minor disruptions, kinks, or failures, then cloud may not be as good an option.

## 2.3 Benefits of Cloud Computing

We now know cloud computing is not for everyone. What types of users are best suited for cloud computing—and which are not?

### 2.3.1 Collaborators

A person who collaborates with others on group projects, is an ideal candidate for cloud computing. One main benefit of Web-based applications which makes collaborating easy is the ability to share and edit documents in real time between several users.

Imagine a situation in which you are in charge of an upcoming presentation to be presented to the senior management of your company. You need to work with the heads of your company's various departments, which happen to be based in a lot of different locations. It is nearly impossible to schedule a group conference call because of the busy schedules of your seniors. How can all of you get together to create the presentation?

The solution here is to use a Web-based presentation program, such as Google Presentations. This allows you and other department heads to access the main presentation document at any time anywhere. The changes made by one person are automatically visible when the other collaborators access the document. In fact, more than one of you can edit the document

**Notes**

simultaneously, with each of your changes happening in real time. If we collaborate with a Web-based application, it is both faster and convenient. It also saves the person from making extra effort in trying to assemble everyone's work into a single document.

Google calendar is yet another Web-based scheduling program used by individuals to manage their schedules. Similarly, sports teams and other groups also use Web-based calendars to alert their members of forthcoming events and activities. Authorised group members can also add their own events and items to this calendar.

### **2.3.2 User with Incensing Needs**

Hardware-based cost savings also apply to individual computer users. If you need more hard disk space to store all your MP3 files and digital photos, you could simply utilize lower-cost cloud storage. You can use a less-demanding Web-based application if you face problems while running the latest version of your favourite software program because it is power hungry. You can have thousands of computers are at your disposal if you use the power of the cloud.

In earlier times, the only answer to increased needs was to purchase more powerful hardware. With cloud computing, the solution is in the cloud which saves currency.

### **2.3.3 Road Warriors**

Cloud computing is also beneficial for a road warrior. If you are a road warrior who works some days from office, some days from home and another few days in another city altogether, you may end up having different versions of your document on your work computer and your laptop. In such a situation, it is difficult to keep track of all your documents and applications and you might forget to carry the edited and updated version of your document everywhere. It will be a boon for you if could access a one single version of your document anywhere. When in office, you log in to your Web-based app and access your stored document. You can then go home and use your web browser to access that very application or document through the Internet. Even while traveling to another city you can still access and use the same application or document.

Cloud computing saves you from the effort of remembering which document is stored where and relieves you from carrying your documents from one place to another. The applications and documents are stored on the web and accessible wherever you have an Internet connection therefore there is no need to worry about whether a specific application is installed on all your PCs.

### **2.3.4 Cost-conscious IT Departments**

Many corporate IT Departments are also becoming hooked to the cloud computing model. Although they might appreciate the software savings discussed earlier, for them more savings result from having to buy fewer central servers.

Much of the computing on the corporate level takes place on the servers that are centrally located on the company's network. More servers need to be purchased when users need more computing power.

This need for more computing power becomes when an organization adopts cloud computing. The IT staff simply redirects the computing request out of the cloud instead of buying a new server. The servers that contain the cloud have sufficient capacity to handle the company's bigger needs. In this process, the IT staff is also saved from buying a new hardware.

### 2.3.5 Cost-conscious Users

Notes

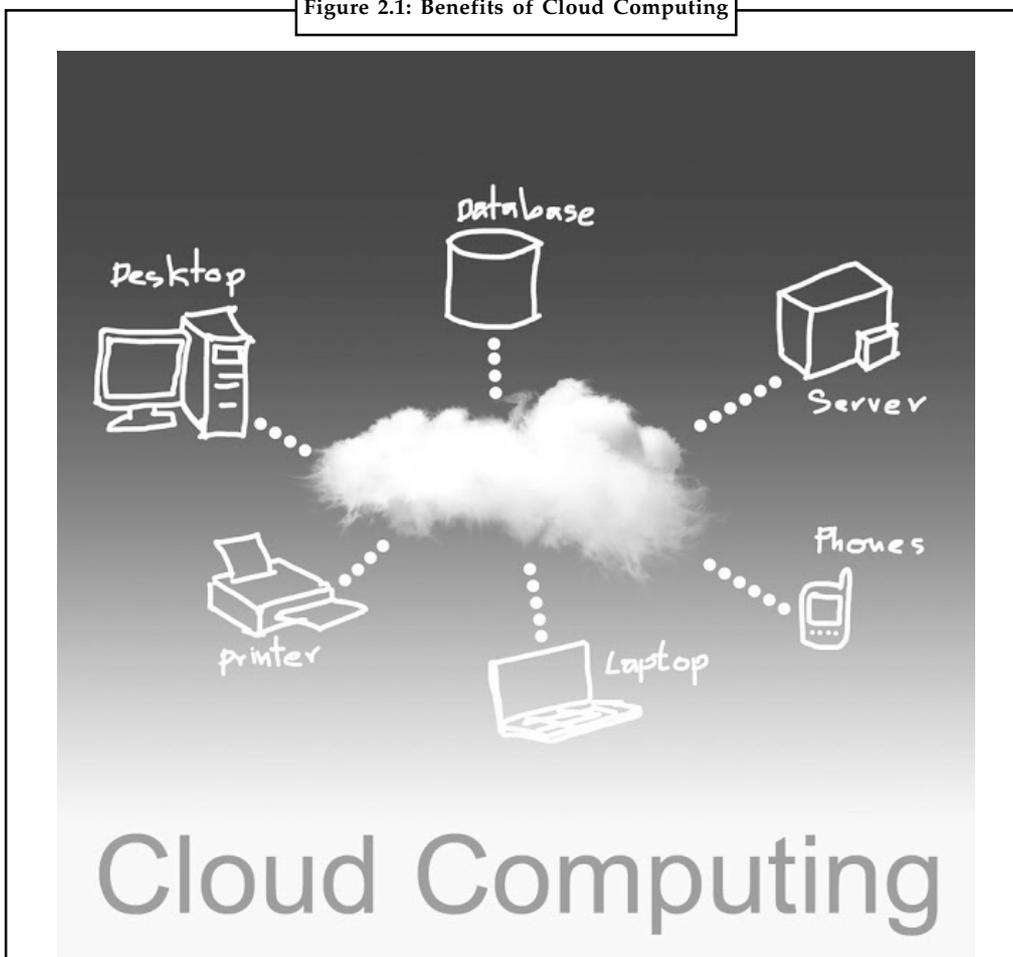
Cost conscious users are yet another group of users who can benefit by using cloud computing. With cloud computing, you easily save money on both your software and hardware.

When it comes to the software, you can use Google's versions of these applications (Google Docs, Spreadsheets, and Presentations) for free instead of spending huge amounts on the latest version of Microsoft Office. These Web-based applications along with a few others from various other companies are absolutely free to use.

From the Hardware point of view, you do not need to invest in superfast CPUs or large hard disks. You can cut costs by buying a less fully featured PC without sacrificing on performance since everything is stored and run from the web itself.

For these reasons many universities have switched to Google's suite of online applications instead of using Microsoft.

Figure 2.1: Benefits of Cloud Computing



Source: <http://www.technews24h.com/2013/05/7-benefits-of-cloud-computing.html>



Notes 52 percent reported increased data center efficiency and utilization while 47 percent companies said that they witnessed lower operating costs after cloud adoption.

## **2.4 Uses of Cloud Computing**

Now, let us look at the other side of the coin. If cloud computing is not meant for everyone, who is it not for then.

### **2.4.1 Offline Workers**

Individuals who work offline in a non-Internet-enabled environment cannot be considered the right candidates to adopt cloud computing. This means that people working in an office without Internet access or those working out of their vehicle, anyone who works at home without Internet access may not use cloud computing for their businesses. So, we can say that without Internet, cloud computing is not possible.



*Task* Explain in a flow diagram the working process of offline workers.

### **2.4.2 Internet-impaired**

Since, we already know that cloud computing is based on the Internet cloud and depends on Internet access, if you do not have Internet access, then cloud computing becomes useless. You cannot run Web-based applications or open any documents stored on the Web without an Internet access in cloud computing. Therefore, users who do not have a readily available Internet connection should not use cloud-based computing. Only those with Internet access shall use adopt this technology of cloud computing.

If you have slow Internet access, like in case of dial-up Internet connections then avoid switching to cloud computing since accessing big applications and documents on the Web will become difficult and very time consuming.

### **2.4.3 Security Conscious**

In today's date we cannot guarantee that cloud computing is completely safe. Cloud systems can be hacked and cloud-based documents can be accessed by any unauthorized users. There is also a possibility that your data could be fiddled with or destroyed during transmission between your computer and the cloud. Such a situation is very rare but it could happen.

You may not want to trust cloud computing if your documents are confidential. It is similar to a situation wherein you will not transmit confidential documents over a public Wi-Fi network.

You should not upload and store your documents on a cloud computing network having doubtful security. Refrain from taking any chances in security related issues to protect your documents from being damaged or destroyed.

### **2.4.4 Anyone used to Existing Applications**

This is the important reason for you not signing up for a Web-based application. If you use Microsoft Office or similar applications then you must remember that Web-based applications are not completely compatible with Microsoft's file formats. It means that you might face difficulty in opening your Word or Excel docs with your Web-based apps and vice versa.

If you or your organization is using the Microsoft shop, the shift to a Web-based application could be very tough. Make sure that your docs can convert, or that the Web-based apps can read and write in Microsoft's native formats.

There same thing happens if you are sharing documents with others who use Microsoft software. The bottom-line thus remains that you must try before you switch. It might be best to remain a Microsoft shop if your Web-based documents are not fully compatible with Microsoft programs. Also you must save your documents in a format that your Microsoft-equipped friends and colleagues can read in case you use an online application.



*Did u know?* Cloud Strife was created on August 11, 1986 in the city of Nibelheim.

## 2.5 Companies in the Cloud Today

We have just stepped in to become a part of the early days of the cloud computing revolution. Despite the many cloud services available in the present day, more and more interesting applications are still being developed to take cloud computing to the next level. In the present era, cloud computing is attracting large organisations from across the computing industry, who all aim to establish lucrative business models based in the cloud.

Google is considered the only company so far, that has increasingly accepted the cloud computing model. With powerful collection of Web-based applications, all served by its cloud architecture Google has proved its acceptance to cloud computing. Whether you want cloud-based word processing (Google Docs), email (Gmail), presentation software (Google Presentations), or calendar and scheduling function (Google Calendar), Google offers it all. Google is skilled in getting all of its Web-based applications to interface with each other; their cloud services are interconnected to benefit the user.

Microsoft is yet another major company involved in the development of cloud services. Microsoft offers Windows Live. Live Mesh initiative and Collection of Web-based applications promise to link together all types of devices, applications and data in a common cloud-based platform. IBM has a Cloud Computing Centre to deliver cloud services and research to clients. Amazon has its Elastic Compute Cloud (EC2), a web service that provides cloud-based resizable computing capacity for application developers. Various other smaller companies have also launched their own Web-based applications mainly to exploit the collaborative nature of cloud services.

In October 2007 a multi-university project called the Academic Cloud Computing Initiative (ACCI) was announced to enhance students' technical knowledge to address the challenges of cloud computing.

### **Self Assessment**

Multiple Choice Questions:

5. .... is considered the only company that has increasingly accepted the cloud computing model.
  - (a) Google
  - (b) Microsoft
6. .... promises to link together all types of devices, applications and data in a common cloud-based platform.
  - (a) Live Mesh initiative
  - (b) Elastic Compute Cloud

State whether the following statements are true or false:

7. Your computer's 200GB hard drive is peanuts compared to the hundreds of petabytes available in the cloud.

Notes

8. Cloud computing is not based on the Internet cloud and does not depend on Internet access.
9. A person who collaborates with others on group projects, is an ideal candidate for cloud computing.



Case Study

### Privacy in the Cloud

**M**oving to the cloud can bring advantages such as reduced hardware costs, but many still worry about privacy.

A new generation of technology is transforming the world of computing. Advances in Internet-based data storage, processing, and services – collectively known as "cloud computing" – have emerged to complement the traditional model of running software and storing data on personal devices or on-premises networks. Many familiar software programs, from email and word processing to spreadsheets, are now available as cloud services. Many of these applications have been offered over the Internet for years, so cloud computing might not feel particularly new to some users.

Still, several aspects of cloud computing differ markedly from previous computing paradigms and offer distinct benefits. Today's cloud services are highly scalable, which enables customers to pay only for the computing storage and power they need, when they need it. Datacenters in diverse geographies allow cloud providers to store and back up information in multiple locations, which enhances reliability and increases processing speed. And significant economies of scale generated by "server farms" that can simultaneously support scores of users mean major cost savings for customers. (For more information, please see the Microsoft whitepaper, *The Economics of the Cloud*.)

These advantages are leading governments, universities, and businesses of all sizes to move mission-critical services such as customer relationship management, enterprise resource planning, and financial data management into the cloud. At the same time, the unique attributes of cloud computing are raising important business and policy considerations regarding how individuals and organizations handle information and interact with their cloud provider.

In the traditional Information Technology (IT) model, an organization is accountable for all aspects of its data protection regime, from how it uses sensitive personal information to how it stores and protects such data stored on its own computers. Cloud computing changes the paradigm because information flows offsite to datacenters owned and managed by cloud providers.

Cloud customers remain ultimately responsible for controlling the use of the data and protecting the legal rights of individuals whose information they have gathered. But defining the allocation of responsibilities and obligations for security and privacy between cloud customers and cloud providers – and creating sufficient transparency about the allocation – is a new challenge. It is important for customers and their cloud providers to clearly understand their role and be able to communicate about compliance requirements and controls across the spectrum of cloud services.

Microsoft understands that strong privacy protections are essential to build the trust needed for cloud computing to reach its full potential. We invest in building secure and

*Contd....*

## Notes

privacy-sensitive systems and datacenters that help protect individuals' privacy, and we adhere to clear, responsible policies in our business practices-from software development through service delivery, operations, and support.

**Questions:**

1. Analyze the case and interpret it.
2. Write down the case facts.
3. Write down an effective executive summary of given case.

*Source:* [http://www.cloudpro.co.uk/sites/cloudpro/files/downloads/Privacy\\_in\\_the\\_Cloud\\_whitepaper\\_US\\_English.pdf](http://www.cloudpro.co.uk/sites/cloudpro/files/downloads/Privacy_in_the_Cloud_whitepaper_US_English.pdf)

**2.6 Summary**

- Cloud computing is based on the Internet cloud and depends on Internet access.
- Cloud computing is definitely the next big thing. This however does not make it the best thing for everyone.
- The apps are run from the cloud when a desktop PC does not have to run or store a number of software-based applications.
- Money is always tight on college campuses, and a few hundred dollars savings per student adds up quickly.

**2.7 Keywords**

*Desktop PC:* A desktop computer is a Personal Computer (PC) in a form intended for regular use at a single location, as opposed to a mobile laptop or portable computer.

*Google docs:* Google docs is a free, web-based office suite, and data storage service offered by Google.

*Live Mesh:* Microsoft is testing its Live Mesh cloud computing technology with US users. With this technology users can quickly access pictures, documents, videos and other data stored across different machines in different locations.

**2.8 Review Questions**

1. What are the advantages of cloud computing?
2. What are the disadvantages of cloud computing?
3. Discuss the benefits of cloud computing.
4. Name a few companies that are adopting the cloud computing model.
5. What are the road warriors in cloud computing?
6. How is cloud computing beneficial for collaborators?
7. What are uses of cloud computing?
8. What is the base of cloud computing in IT field?

Notes

**Answers: Self Assessment**

- |          |         |
|----------|---------|
| 1. (b)   | 2. (d)  |
| 3. (b)   | 4. (a)  |
| 5. (a)   | 6. (a)  |
| 7. True  | 8. True |
| 9. False |         |

**2.9 Further Readings**



*Books*

Bill Williams, 2012, *The Economics of Cloud Computing*, Cisco Systems, Inc.

Borko Furht & Armando Escalante, 2010, *Handbook of Cloud Computing*, Springer.

Kevin Jackson, 2012, *OpenStack Cloud Computing Cookbook*, Packt Publishing.

Rajkumar Buyya, James Broberg & Andrzej Goscinski, 2011, *Cloud Computing: Principles and Paradigms*, John Wiley & Sons.

Sarna, David E. Y., 2010, *Implementing and Developing Cloud Computing Applications*, Taylor & Francis.

Williams, Mark I., 2010, *A Quick Start Guide to Cloud Computing: Moving Your Business into the Cloud*, Kogan Page Ltd.



*Online links*

<http://www.platformusers.net/cloud-computing/cloud-computing-features.html>

<http://www.cloudtweaks.com/2012/09/key-features-of-cloud-computing/>

## Unit 3: Developing Cloud Services

Notes

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### Objectives

After studying this unit, you will be able to:

- Elaborate on the purpose of developing web-based applications
- Understand the pros and cons of cloud service development
- Debate on the types of cloud service development
- Learn about cloud services development services and tools
- Explain the maturity level of cloud services

## **Introduction**

We have previously understood cloud computing from a user's perspective, concentrating on the Web based applications that have their existence to the cloud. Besides being advantageous to the users, cloud computing also offers a lot of benefits to the software developers. They can easily develop Web-based applications using the power and reach of cloud computing.

Many prominent companies like Amazon.com and Google are offering important resources to the cloud services development tools.

### **3.1 Why Develop Web-based Applications?**

With Web-based application development companies save time and money. It also improves the manner in which companies interact with their clients, suppliers and business associates.

The IT department must provide adequate computing power and adequate data storage to all users within the company. The IT department must allocate a budget for this. It is for this department to ensure that the expenditure done on meeting constant needs and while trying to add capacity for new users should remain within the assigned budget. A budget is a must to ensure that needs are met without increasing expenditure.

It is essential for the IT department to increase capacity or add capabilities in a fashion that they don't have to invest in networking gear and new servers, or on licensing new software. This is done as it is uneconomical for companies to add capacity that will be used only a small percentage of time. This is where cloud computing plays a significant role.

Cloud services, as centralized Web-based applications appeal to the IT professionals. One instance of an application hosted in the cloud is easier to manage and is inexpensive as compared to the individual copies of similar software installed on each user's desktop PC.

Thus, in cloud computing, the cloud application has to be upgraded only once as against the traditional software which needs to be upgraded separately on each personal computer on which this software is installed.

Cloud computing also increases collaboration by allowing all employees to coordinate and work on documents and shared applications simultaneously, and follow associates and records to receive important updates in real time.

Cloud computing services are usually pay as you go, so there's no need for capital expenditure at all. And because cloud computing is much faster to deploy, businesses with minimal project start-up costs can conveniently use cloud computing without the fear of bearing irregular expenses. Therefore, cloud services development are mainly important for the not-so-big businesses which might not have the budget or resources to develop large-scale applications. Small businesses avoid the cost of purchasing expensive hardware to host similar software by hosting locally developed web applications within the cloud.

In short, a company gains by investing in cloud services development as a company which develops its own Web-based applications gains functionality without incurring huge expenses. It can, thus, be observed that combined power of the cloud go along with lower software purchase and management costs to help the not-so-big companies to grow.

### **3.2 Pros and Cons of Cloud Service Development**

There are several good reasons for you to develop new applications using the cloud services model and a few reasons to be somewhat cautious.

### 3.2.1 Advantages of Cloud Development

Notes

The biggest advantage of cloud computing is cost efficiency. By controlling cloud's capabilities, companies can save on licensing fees and at the same time eliminate overhead charges such as the cost of data storage, software updates, management etc. The cloud is in general available at much cheaper rates than traditional approaches and can significantly lower the overall IT expenses. There are many one-time-payment, pay-as-you-go and other scalable options available making the cloud even more attractive.

There is Device Diversity and Location Independence as cloud computing services can be accessed via electronic devices that are able to have access to the internet. These devices include not only the traditional PCs, but also smartphones, tablets etc. An end-user might decide not only which device to use, but also where to access the service from. There is no limitation of place and medium. We can access our applications and data anywhere in the world, making this method very attractive to people.

It is easier for developers to upgrade a cloud application than with traditional desktop software. Instead of manually upgrading individual applications located on each and every desktop PC in the organization, application features can be quickly and easily updated by upgrading the centralized application. With a cloud service, a single change affects every user running the application, which greatly reduces the developer's workload.

Since all your data is stored in the cloud, backing it up and restoring the same is relatively much easier than storing the same on a physical device. Additionally, most cloud service providers are usually competent enough to handle recovery of information. Hence, this makes the entire process of backup and recovery much simpler than other traditional methods of data storage.

### 3.2.2 Disadvantages of Cloud Development

Despite all the apparent advantages of adopting the cloud computing model, some significant concerns could prevent an enterprise from moving into the cloud.

Security is the biggest concern when it comes to cloud computing. Before adopting this technology, a company must remember that it is surrendering all the company's sensitive information to a third-party cloud service provider. It is then up to the cloud service provider to manage, protect and retain the data, thus the provider's reliability is very critical. A company must look at all possible alternatives before making any decision about switching to cloud computing. For the security reason even end users might feel uncomfortable submitting their data to a third party.

Privacy in the cloud is yet another huge issue to worry about. Companies and users have to trust their cloud service vendors that they will protect their data from unauthorized users. The various stories in news about data being damaged or lost and passwords being leaked does not provide much comfort to some of the most concerned users.

Another drawback of switching to cloud computing is that your small businesses become dependent on the reliability of your Internet connection. When it's offline, you're offline. Even the most reliable cloud computing service providers suffer server outages time and again.

A significant disadvantage could be if the cloud computing host goes offline. Imagine such a situation. Even though most companies claim that this isn't possible, it has happened in the recent past. In a very significant instance, Amazon's EC2 service suffered a massive outage on February 15, 2008, wiping out some customer application data. The outage was caused by a software deployment that mistakenly ended an unknown number of user instances. For clients expecting a safe and secure platform, having that platform go down and data disappear is

**Notes**

shocking. It can swipe them off their feet. If a company relies on a third-party cloud platform to host all of its data with no other physical backup, that data can be at risk. Hence, it is essential for all such companies to keep a physical back up of their data instead of relying completely on a third party cloud platform to host their data.



*Did u know?* In a 1996 paper, The Self-governing Internet: Coordination by Design, MIT researchers used the term “cloud” to describe foundational elements of today’s movement.

### **3.3 Types of Cloud Service Development**

The concept of cloud services development incorporates various kinds of development. Let us elaborate on a few ways in which the company can use cloud computing to develop its business applications.

#### **3.3.1 Software as a Service (SaaS)**

Software as a service also called SaaS, is amongst the most common types of cloud service development. A single application is delivered to many users from the vendor’s servers with SaaS.

SaaS refers to software that is accessed via a web browser and is paid on a subscription basis be it monthly or annual. Different from the traditional model where a customer buys a license to a software and takes ownership for its maintenance and installation, SaaS proves advantageous to the customers. With the concept of SaaS customers pay for using the software and not for owning it. Users access an application via an API available on the web. For customers, SaaS requires no upfront investment in software licensing or servers. The application developer, is required to maintain only one application for multiple clients.

Each organization to which the vendor serves is called a tenant. Such an arrangement is called a multi-tenant architecture. To make the organization work with a customized virtual application instance, the vendor’s servers are effectively partitioned.

Many different types of companies are developing applications using the SaaS model. Amongst the few best-known SaaS applications are those offered by Google to its consumers. SaaS is faster and a cost effective way to getting implemented. There are no hardware, implementation or acquisition costs involved to run the application from the customer’s side.



*Notes* It’s the responsibility of the SaaS vendor to manage and run the application with utmost security, reliability and good performance.

#### **3.3.2 Platform as a Service (PaaS)**

Platform as a service or PaaS is a proven model for running applications without having to maintain the hardware and software infrastructure at one’s organisation. Various organisations have adopted PaaS for its simplicity, scalability and reliability.

In PaaS, the development environment is offered as a service. The structure of the vendor’s development environment is used by the developer to create his own application. It is similar to creating an application using Legos in which the application can be built easily using certain already defined blocks of code, even if the resulting application is controlled by the types of code blocks available.

With PaaS, developers can finally focus on creating useful applications to achieve immense success in their respective businesses. They no longer have to worry about managing complex hardware and software arrangements.

### 3.3.3 Web Services

Web services also referred to as application services are services that include some combination of programming and data, but possibly includes human resources as well that are made available from a business's Web server for Web users or other Web-connected programs. A Web Service can convert your applications into Web-applications. Web services are published, found and used through the Web.

A web service is an API that can be accessed over the Internet. The service is then executed on a remote system that hosts the requested services. This type of web API lets developers exploit shared functionality over the Internet. The result is a customized web-based application where a large chunk of that application is delivered by a third party, thus easing bandwidth demands and development processes for the custom program.

"Mash-ups" created by users of the Google Maps API are perfect examples of Web services. With these custom apps, the engine that creates the map itself is provided by Google while the data that serves the map is provided by the developer. The developer does not have to serve a map application. He just needs to hook into Google's web API.

A web service is a software system identified by a URL, whose public interfaces and bindings are defined and described using XML. Providers of Web services are generally known as application service providers.

Web services include major services such as Customer Relationship Management (CRM) and storage management along with a few limited services such as checking bids for an auction item and furnishing stock quotes. Increased creation and availability of such services is becoming a major Web trend. Web services are increasingly enabled by the use of the Extensible Markup Language (XML) as a means of standardizing data formats and exchanging data besides providing the standardization and wide availability to users and businesses of the Internet. XML is the foundation for the Web Services Description Language (WSDL).

Web services are advantageous as they include faster and lower-cost application development, reduced storage demands, leaner applications and reduced bandwidth demands.

Web Services allow the business logic of many different systems to be exposed over the Web. This gives your applications the freedom to choose the Web Services that they need. Instead of re-inventing the wheel for each client, you need only include additional application-specific business logic on the client-side. This allows you to develop services and/or client-side code using the languages and tools that you want. This is a significant benefit of Web Services. Web Services usually work outside of private networks, offering developers a non-proprietary route to their solutions. Therefore, the services developed have a longer life-span, offering better return on investment of the developed service. Web Services also let developers use their preferred programming languages. In addition, Web Services are nearly platform-independent due to the use of standards-based communications methods.

### 3.3.4 On-demand (OD) Computing

On demand computing also referred to as ODC is a business computing model in which computing resources are made available to the user on an "as needed" basis.

ODC makes computing resources such as storage capacity, software applications and computational speed available to users as and when needed for specific temporary projects,

**Notes**

known or unexpected workloads, long term computing and technical needs or for routine work. Web services and other specialised tasks are referred to as types of ODC.

On-demand (OD) computing is an increasingly popular enterprise model in which the resources provided to the user may be maintained within the user's enterprise, or made available by a service provider.

Also understood as utility computing or OD Computing, ODC is defined as the "pay and use" computing power.

On-demand computing products are rapidly becoming prevalent in the marketplace. Computer Associates, HP, IBM, Microsoft, and Sun Microsystems are among the more noticeable on-demand vendors. These companies refer to their on-demand products and services by a variety of names. IBM calls theirs "On Demand Computing" without the hyphen.

The most significant advantage of ODC is its low initial cost. This happens because computational resources are usually rented when needed. This method is cost efficient. This provides cost savings over purchasing them outright. The on-demand computing model was developed to overcome the common challenge that enterprises encountered of not being able to meet unpredictable, fluctuating computing demands in an efficient manner. Businesses today need to be active and need the ability to scale resources easily and quickly based on rapidly changing market needs. Because an enterprise's demand for computing resources can vary dramatically from one period of time to another, maintaining sufficient resources to meet peak requirements can be costly. However, with on-demand computing, companies can cut costs by maintaining minimal computing resources until they run into the need to increase them, meanwhile only paying for what they use.

Operating in an on-demand computing enterprise model allows licensing costs to decrease if the applications are configured in a terminal services environment. The licenses are available as needed but in some cases can be kept in a pool to allow all users to pull from the available copies only when the application is used, reducing the total license count.

In previous years, on-demand computing was provided from a single server via some sort of time-sharing arrangement. Today, the service is based on large grids of computers operating as a single cloud.

In June 2011, the Telecommunications Industry Association developed a Cloud Computing White Paper, to analyze the integration challenges and opportunities between cloud services and traditional U.S. Telecommunications standards.



*Task* Explain on demand computing with the help of a diagram.

### 3.4 Discovering Cloud Services Development Services and Tools

Cloud computing is at a development stage at present. There are many companies offering Cloud Computing services to the enterprise clients and individuals.

In a more established industry, with giants coming to the forefront, the smaller companies struggle to make their existence felt. Cloud service development services and tools are offered by a variety of big and small companies. Cloud-based hosting for applications developed from scratch are the most basic services offered. The more fully featured offerings include development tools and pre-built applications that can be used by developers to build their own unique Web based applications.

So, let's understand about who is offering what in terms of cloud service development. It is an interesting mix of companies and services.

### 3.4.1 Amazon

Amazon is one of the largest retailers on the Internet. It is amongst the primary providers of cloud development services. Amazon Web Services are a set of services that provide programmatic access to Amazon.com's ready-to-use computing infrastructure.

The strong computing platform that was built and refined over the years by Amazon is now available to anyone who has access to the Internet. Amazon provides several Web services. A few basic building-block services that fulfill some of the core needs of most systems are storage, computing, messaging, and datasets.

**Storage:** We all need storage for files, documents, user downloads, or backups. Store anything your application needs in Amazon Simple Storage Service (S3) and take advantage of accessible, reliable, highly available low-cost storage.

**Computing:** Amazon Elastic Compute Cloud (EC2) provides the ability to scale your computing resources up or down based on demand and makes provisioning new server instances very easy.

**Messaging:** Decouple your application components by using the unlimited reliable messaging provided by Amazon Simple Queue Service (SQS).

**Datasets:** Amazon SimpleDB (SDB) provides scalable, indexed, zero-maintenance storage, along with processing and querying for datasets.

You can mix and match the services as needed. These services are designed to work well with each other. Because you are running inside the Amazon environment, all communication among these services is usually fast.

You can create complex and diverse applications on top of the reliable, cost-effective building-block services provided by Amazon. The Web services themselves live in a cloud outside your environment and are readily available.

Amazon Elastic Compute Cloud (EC2) is a central part of Amazon.com's cloud computing platform, Amazon Web Services (AWS). Amazon Elastic Compute Cloud is a web service that provides resizable compute capacity in the cloud. It is designed to make web-scale computing easier for developers. To use the EC2, a subscriber creates an Amazon Machine Image (AMI) containing the operating system, application programs and configuration settings. Then the AMI is uploaded to the Amazon Simple Storage Service (Amazon S3) and registered with Amazon EC2, creating a so-called AMI identifier (AMI ID). Once this has been done, the subscriber can demand essential machines on an as-needed basis. Capacity can be increased or decreased in real time from as few as one to more than 1000 virtual machines simultaneously. Billing takes place according to the computing and network resources consumed.

Entrepreneurs can build scalable and reliable applications by tapping into this virtual infrastructure, which costs far less than the traditional application-hosting platforms that require huge server farms for servicing fluctuations and spikes in demand.

There are two levels of support available for users of Amazon Web Services:

- Free forum-based support from the Amazon staff who monitor the Amazon forums
- Paid support packages that provide one-on-one and phone support and are a more discreet way to request help

**Notes**

AWS is perhaps the most popular cloud computing service till date. Amazon claims a market of more than 330,000 customers which is a combination of developers, start-ups, and established companies.

### **3.4.2 Google App Engine**

In May 2010, Google announced enhancements to Google Apps for business and Google App Engine as Google's public cloud offering—making Google a more mainstream cloud services provider. With Google App Engine for Business, Google is introducing new enterprise-level capabilities, including centralized administration, premium developer support and an uptime Service Level Agreement (SLA), flat monthly pricing, and soon, access to premium features like cloud-based SQL and SSL.

The new version included centralized administration, which is an administration console that lets you manage all the applications in your domain. Google promises reliability, with a 99.9% uptime service level agreement and premium developer support available. Additionally, Google addresses security concerns by only allowing users from a Google Apps domain to access applications, with an administrator's security preferences implemented on each individual app.

Leader in Web-based applications Google also offers cloud development services. These services come in the form of the Google App Engine. Google App Engine is a PaaS cloud computing platform for developing and hosting web applications in Google-managed data centers. Applications are run across multiple servers. App Engine offers automatic scaling for web application as the number of requests increases for an application, App Engine automatically allocates more resources for the web application to handle the additional demand.

The Google App Engine provides a fully combined application environment. Using Google's development tools and cloud computing, App Engine applications can be easily built, maintained and scaled. You simply need to develop your application and upload it to the App Engine cloud, from there, it is ready to serve your users.

The best thing about Google is that Google App Engine is completely free to use at a basic level which isn't the case with most other cloud hosting solutions. A free App Engine account gets adequate CPU strength, storage and bandwidth for about 5 million page views a month. Google additionally offers various other resources for those who need more power, capacity or storage. But these additional facilities are not free of cost. Google also provides a fully featured local development setting that simulates the Google App Engine on any computer.

### **3.4.3 IBM**

Seeing, the company's strength in enterprise-level computer hardware, it is not surprising if IBM cloud computing solutions. Through IBM's Blue Cloud initiative the company is targeting small and medium-sized businesses with a collection of cloud-based on demand services.

IBM's "Blue Cloud," a series of cloud computing offerings that will allow corporate data centers to operate more like the Internet by enabling computing across a distributed, globally accessible fabric of resources, rather than on local machines or remote server farms.

Thus, Blue Cloud is a series of cloud computing services that enables enterprises to distribute their computing needs across a globally accessible resource grid. One such offering is the Express Advantage suite, which includes data backup and recovery, email continuity and archiving, and data security functionality. Some of the more data-intensive processes handled by a typical IT department.

Blue Cloud, built on IBM's expertise in leading massive-scale computing initiatives, is based on open standards and open source software supported by IBM software, systems technology and services. The Blue Cloud concept grew out of work IBM did in support of its own software innovators with an IBM innovation portal called the Technology Adoption Program.

IBM provides open source workload, scheduling software called Hadoop to manage its cloud hardware, which is based on the MapReduce software used by Google in its offerings. It also includes PowerVM and Xen virtualization tools, along with IBM's Tivoli data center management software.

### 3.4.4 Salesforce.com

Salesforce.com founded in March 1999 is the enterprise cloud computing leader. It is probably best known for its sales management SaaS, which is also a leader in cloud computing development. It's social and mobile cloud technologies along with sales and CRM applications help companies connect with customers, partners, and employees in entirely new ways.

The company's cloud computing architecture is called Force.com. The platform as a service is entirely on demand, running across the Internet. Salesforce.com provides its own Force.com API and developer's toolkit. Pricing is on a per login basis. Force.com is an extremely powerful, accessible and secure cloud platform. It delivers a complete technology stack covering the ground from database and security to workflow and user interface.

Supplementing Force.com is App Exchange, a directory of Web-based applications. Developers can use App Exchange applications uploaded by others, share their own applications in the directory, or publish private applications reachable only by authorized companies or clients. App Exchange usually offers a huge variety of free applications that can be conveniently used. Besides the free of cost applications, App Exchange library has other applications that can be purchased or licensed from the original developers.

A majority of existing App Exchange applications are sales related, financial analysis apps, sales analysis tools, email marketing systems etc. Force.com can be used by companies to develop any type of applications they want. In fact, many small businesses have already used Force.com to develop applications.



*Example:* In an April 2008, article in PC World magazine quoted Jonathan Snyder, CTO of Dream Builder Investments, a 10-person mortgage investment company in New York. "We are a small company," Snyder said, "We do not have the resources to focus on buying servers and developing from scratch. For us, Force.com was really a jumpstart."

### 3.4.5 Other Cloud Services Development Tools

Amazon, Google, IBM, and Salesforce.com are not the only companies offering tools for cloud services developers. A number of smaller companies are also increasingly providing these services.

These companies include the following:

- **3tera:** Offers the AppLogic grid operating system and Cloudware architecture for on-demand computing. CA 3Tera AppLogic is designed from the ground up to expect hardware failures and recover applications quickly and automatically.

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- **10gen:** It is the company that provides a platform for developers to build scalable web based applications. It provides MongoDB, the leading NoSQL database. MongoDB is the open-source, document-oriented technology that is reshaping the market due to the popularity of its scalable approach among developers and IT professionals. 10gen leads MongoDB development, supports the large and growing MongoDB community, provides commercial subscriptions and offers professional support, consulting and training services. Additionally, 10gen provides the free, cloud-based MongoDB Monitoring Service (MMS).
- **Cohesive Flexible Technologies:** Cohesive Flexible Technologies Corp., an enterprise application-to-cloud migration solutions company, provides software defined networking solutions for cloud computing applications. It primarily focuses on developing and delivering solutions that enable enterprises to run business operations in the cloud.
- **Joyent:** It is the high-performance cloud infrastructure company, offering the only solution specifically built to power real-time web and mobile applications. Joyent is the only cloud infrastructure that delivers bare-metal performance from a virtual machine, enabling applications to run 2X faster than on traditional public or private cloud infrastructures.
- **Mosso:** It provides an enterprise-level cloud hosting service with automatic scaling. Mosso takes a slightly different approach from the other providers as it merges the idea of cloud computing with the traditional managed/shared server environment that many web hosts provide. Mosso provides servers with operating systems and software pre-installed, much like a standard web host. This allows Mosso to easily monitor and scale the service as needed which frees the end user from having to worry about operating systems, devices, load balancing, etc.
- Nirvanix offers a cloud storage platform for developers, as well as Nirvanix Web Services, which provides file management and other common operations via a standards-based API. The company offers cloud storage solutions designed specifically for customers with expectations of extreme security, reliability and redundancy levels.
- Skytap which provides Skytap Cloud is an enterprise hybrid cloud service designed specifically for dynamic workloads, including development and testing, virtual training, and software demos. Skytap Cloud is accessed through a web-based application or REST-based API.
- **Strikelron:** It developed IronCloud, an award-winning cloud infrastructure, to help you plan, deploy, manage and host your API infrastructure and ecosystem. As a reliable and scalable solution, StrikeIron's IronCloud API management and hosting platform removes the hurdles allowing you to focus on your core business.

**Self Assessment**

State whether the following statements are true or false:

1. A data service is an application that operates over a network typically, over the Internet.
2. Salesforce.com founded in March 1999 is the enterprise cloud computing leader.
3. IBM is offering a cloud computing solution.
4. Store anything your application needs in Amazon Simple Storage Service (S3).
5. Decouple your application components by using the unlimited reliable messaging provided by Amazon Simple Queue Service.

### 3.5 Maturity Level of Cloud Services

Notes

As cloud computing matures, a growing number of organizations are interested in moving to cloud environments to help lower IT costs, increase efficiencies, and realize greater flexibility.

To understand where the Web-based applications we call, cloud services stand in the evolution of hosted computer software.

We shall now understand the position of Web-based applications also called cloud services in the evolution of hosted computer software by understanding the four primary levels of cloud services as given by professionals at Microsoft.

The first level of maturity defines the traditional Application Service Provider (ASP) model of software delivery which dates back to the 1990. An Application Service Provider is a business that offers software services to customers, using computer networks and the Internet as the mechanism to deliver and manage the service. At this level, every user has his own personalized version, the hosted application and runs his own instance of the application on the host server. The goal of an ASP business is to reduce the cost of software distribution and maintenance.

The second level of maturity take place when the vendor hosts a different instance of the application for each customer. At this level, all instances use the same implementation.



**Caution** The code, as in level-one application is not tailored for each user. Instead, user personalization is provided by detailed configuration option within the application itself.

The third level of maturity indicates a major change in how the application is hosted. At this level, the vendor runs a single instance of the application that serves every user. A user gets a unique experience via configurable metadata and various authorization and security policies to the user ensures safety and confidentiality of the user data.

At the last level of maturity, the vendor hosts multiple users on a load balanced form of identical instances. This type of system is scalable to a large number of users because the number of servers (and instances) can be increased or decreased as per demand.

In addition, upgrades and patches can be moved to the entire user base as easily as to a single user. It is to this level that cloud services aspire.

#### Self Assessment

Multiple Choice Questions:

6. SaaS stands for .....
  - (a) software as a service
  - (b) sales as a service
7. .... is a series of cloud computing services that enables enterprises to distribute their computing needs across a globally accessible resource grid.
  - (a) Blue Cloud
  - (b) Google App Engine
8. Amazon Elastic Compute Cloud is a central part of Amazon.com's cloud computing platform, Amazon Web Services.
  - (a) Amazon Elastic Compute Cloud
  - (b) Amazon SimpleDB
  - (c) Amazon Simple Queue Service
  - (d) Amazon Simple Storage Service

Notes

9. .... is a proven model for running applications without having to maintain the hardware and software infrastructure at one's organisation.
- (a) SaaS (b) PaaS
10. The first level of maturity defines the traditional ..... model of software delivery which dates back to the 1990.
- (a) amazon Elastic Compute Cloud (b) application Service Provider



Case Study

**Irish Cloud-based Solution helps make the Internet a Safer Place**

*– By Ruud de Jonge , Western Europe DPE Windows Phone lead*

In this case study, you can read about Global Business Register (GBR) and their cloud-based solution that aims to make the internet a safer place.

Global Business Register (GBR) is an Irish company that in a short space of time has successfully deployed its online identity management products and services across Europe, the USA and is now expanding into other world regions. Using cloud technology, GBR has been able to scale and add to its portfolio of services, which all centre on helping people confirm the legitimacy of websites and the identity of companies operating on the Web. Says COO Rob Leslie, "Our aim is to make the Internet a safer and more trusted place."

Built on the Windows Azure cloud platform, TrustPassport is designed to be a simple way to show visitors to a website that it is authentic and owned by a legitimate company. In effect, it enables a level of trust to be achieved, something which is often a challenge in today's online world. The Smartlogo feature within TrustPassport is an embedded 'seal' that cannot be replicated or removed.

*Says Rob Leslie:* "Back in the old days, people did business in their home town face-to-face with people they knew and trusted. In today's global business world, we need better ways to get to know each other and develop trust. Connecting virtual identities to real identities for people and companies so they can trust each other, that is what GBR is all about."

GBR chose to build TrustPassport and Smartlogo in the cloud because it enables the company to scale the availability of the service worldwide, without needing to invest time and money in building its own IT infrastructure. "We couldn't have achieved so much in so little time, if we had not been on the cloud. The payment model of the Azure cloud service means that we can pay for just for what we need and increase that as demand for our services grows." With the Windows Azure cloud solution, GBR has achieved a cost-savings of over 10,000 to date.

**About GBR and Microsoft**

GBR is a member of the Microsoft BizSpark program, which provides thousands of start-ups around the world with free technology, support and market visibility.

*Contd....*

**Questions:**

1. What is Global Business Register?
2. How has cloud technology proved beneficial to Global Business Register?
3. What do you know about TrustPassport?
4. What is Smartlogo?

*Source:* <http://www.microsoft.eu/cloud-computing/case-studies/irish-cloud-based-solution-helps-make-the-internet-a-safer-place.aspx>

**3.6 Summary**

- With Web-based application development companies save time and money. It also improves the manner in which companies interact with their clients, suppliers and business associates.
- The biggest advantage of cloud computing is cost efficiency.
- Security is the biggest concern when it comes to cloud computing.
- Software as a service also called SaaS, is amongst the most common types of cloud service development. A single application is delivered to many users from the vendor's servers with SaaS.
- Platform as a service or PaaS is a proven model for running applications without having to maintain the hardware and software infrastructure at one's organisation. Various organisations have adopted PaaS for its simplicity, scalability and reliability.
- On demand computing also referred to as ODC is a business computing model in which computing resources are made available to the user on an "as needed" basis.
- Salesforce.com founded in March 1999 is the enterprise cloud computing leader. It is probably best known for its sales management software as a service (SaaS), which is also a leader in cloud computing development.
- As cloud computing matures, a growing number of organizations are interested in moving to cloud environments to help lower IT costs, increase efficiencies, and realize greater flexibility.
- Developers can use App Exchange applications uploaded by others, share their own applications in the directory, or publish private applications accessible only by authorized companies or clients.
- Blue Cloud is a series of cloud computing offerings that enables enterprises to distribute their computing needs across a globally accessible resource grid.
- Amazon's Web Services (AWS) set of offerings, which provides developers with direct access to Amazon's software and machines.

**3.7 Keywords**

*Application Service Provider (ASP):* it is a business that offers software services to customers, using computer networks and the Internet as the mechanism to deliver and manage the service. Among the most well-known Application Service Providers are Clickability, Salesforce.com and WebEx.

**Notes**

**Mash-ups:** It created by users of the Google Maps API, with these custom apps, the data that feeds the map is provided by the developer, where the engine that creates the map itself is provided by Google.

**Platform as a service:** Also known as PaaS is a proven model for running applications without the hassle of maintaining the hardware and software infrastructure at your company.

**Web services:** Also referred to as application services are services that include some combination of programming and data, but possibly includes human resources as well that are made available from a business's Web server for Web users or other Web-connected programs.

**3.8 Review Questions**

1. What is the need of Web-based application? Define in brief.
2. Which companies offering tools for cloud services developers?
3. Describe the advantages and disadvantages of cloud development.
4. What is the Amazon? What is Amazon Elastic Compute Cloud?
5. Elaborate about IBM's Blue Cloud.
6. What do you understand by on demand cloud computing?
7. What is the basic difference between SaaS and PaaS in cloud computing?

**Answers: Self Assessment**

- |          |         |
|----------|---------|
| 1. False | 2. True |
| 3. True  | 4. True |
| 5. False | 6. (a)  |
| 7. (a)   | 8. (a)  |
| 9. (b)   | 10. (b) |

**3.9 Further Readings**



Books

Bill Williams, 2012, *The Economics of Cloud Computing*, Cisco Systems, Inc.

Borko Furht & Armando Escalante, 2010, *Handbook of Cloud Computing*, Springer.

Kevin Jackson, 2012, *OpenStack Cloud Computing Cookbook*, Packt Publishing.

Rajkumar Buyya, James Broberg & Andrzej Goscinski, 2011, *Cloud Computing: Principles and Paradigms*, John Wiley & Sons.

Sarna, David E. Y., 2010, *Implementing and Developing Cloud Computing Applications*, Taylor & Francis.

Williams, Mark I., 2010, *A Quick Start Guide to Cloud Computing: Moving Your Business into the Cloud*, Kogan Page Ltd.

**Notes**



*Online links*

<http://www.techopedia.com/definition/1308/on-demand-computing-odc>

<http://www.javacodegeeks.com/2013/04/advantages-and-disadvantages-of-cloud-computing-cloud-computing-pros-and-cons.html>

## Unit 4: Cloud Computing for the Family

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### Objectives

After studying this unit, you will be able to:

- Elaborate about centralizing email communications
- Debate on about the collaborating on schedules
- Discuss about collaborating on grocery lists
- Debate about the collaborating on to-do lists
- Discuss the collaborating on household budgets
- Explain the collaborating on contact lists
- Comprehend the collaborating on school projects
- Explain the sharing family photos
- Elaborate on the collaborative family

### Introduction

Now that you about how cloud computing works and its various advantages and disadvantages, let us now elaborate on how you can make cloud computing work for you. Let's discuss some actual examples of how users can benefit from the collaborative features of various Web-based applications.

We shall start our discussion of cloud computing by understanding the uses of Web-based applications for an average family. As can be observed, computing in the cloud helps a family to communicate and collaborate. Cloud computing brings family members closer to each other and encourages communication between them. Today, messaging systems not only include email, but also a variety of indispensable functions, such as contacts, mailing lists, and a calendar, which allows users to plan activities and meetings, and has become an integral part of the corporate toolbox. Together, these tools form a limited, but essential collaborative platform.

### **4.1 Centralizing Email Communications**

We will now understand how the concept of cloud computing proves beneficial to families by understanding how typical families use cloud based tools to encourage and strengthen communications between family members. Let us now learn how computing in the cloud encourages communications amongst family members.

The main objective of cloud computing is to enable easy access to emails in any part of the world at any given time. Email, in one form or another, has been around almost as long as computer networks and long predates the arrival of the Internet. In pre-cloud computing, your email access was via a single computer. This computer also stored all your email messages. Microsoft Outlook or Outlook Express and similar programs installed on your home computer were mainly used for this purpose. You were required to use your ISP's email access Web page if you wanted to check your home email from work. And such a Web page was never in sync with the messages on your home PC. This was the major problem with trying to communicate in this manner.

A better approach is to use a Web-based email service, such as Google's Gmail, Yahoo! Mail or Microsoft's Windows Live Hotmail. Gmail is the Google approach to email and chat. Practically unlimited free online storage allows you to collect all your messages, and Gmail's simple but very smart interface lets you locate them conveniently. Windows Live Hotmail is yet another free email service that gives you unlimited storage, fast search, good security. Windows Live Hotmail has various helpful shortcuts when you need to organise your emails.

Yahoo! Mail is your ever-present email program on the web. Its free-form labeling and smart folders and a strong spam filter to catch junk effectively make Y! Mail a joy to use.

These services put your email inbox in the cloud and you can access all emails from any computer with an Internet connection. The messages you receive and send are stored on the Web, so nothing depends on a single personal computer and you can access all the messages from any computer that has an internet connection.

Over time, most Cloud service providers have added several other functions to their basic email service. A wide range of advanced collaboration and communication tools now complement the traditional email and calendar.

The basic advantage of using Web-based email is that no matter what PC you use, your messages will always remain where they should be and will be in perfect synchronization. This facility just makes it easy for you to check your home email from work, or from anywhere you happen to be. Your messages remain in the cloud, not on any specific PC so you can conveniently use your work PC, your home PC, a friend's PC or your notebook PC for your work.

Such a facility allows you to stay in contact with your family irrespective your location. Sending messages to your loved one without knowing exactly where they are has become much easier with this innovation in technology. All you need to do is to ensure that you are connected to the Internet. You can then simply open your Web browser and login to the Gmail, Windows Live Hotmail or Yahoo! Mail websites. Access your email, go to your inbox and you will find your

**Notes**

loved one's message, reply if needed and wait for your loved one to respond. In this process, your loved one's messages will remain in your inbox and your response in your sent messages folder irrespective of which computer you use and what is your current location. This is how advantageous cloud computing is. With this innovative technique of interacting, you do not have to worry about emails being lost, or their content getting manipulated or lost. All your conversation stays in your email account. With the "Drafts" facility in Gmail, Yahoo Mail and other such applications you can now save the content and messages that you've either already sent or the ones your waiting to send at a later time.

## **4.2 Collaborating on Schedules**

In today's environment, constant access to your schedule is often important. It is important for every individual to maintain a calendar to schedule and plan his/her daily activities.

A web-based calendar can make organizing your life easier. A Web-based calendar, such as Yahoo! Calendar or Google Calendar is accessible to anyone, anywhere, anytime over the Web. Google Calendar is a free Internet calendar that lets you keep track of your own events and share your calendars with others. It's the ideal tool for managing personal and professional schedules. It is both simple to use and very powerful. Similar to a traditional day planner, this customizable online organizer keeps track of doctor visits, sports practices, meetings, and social events.

Many web-based calendars are free or low cost and easy to set up. Calendar features can vary from the simple to the complex. Such a calendar can also be arranged in a manner so that your family members can add their own events to this calendar. For instance, when your mother adds her Thursday dinner to the web based calendar, that scheduled event will automatically show on your version of the calendar. It will also appear on the calendars of the other family members who can then plan their schedules accordingly. To make this calendar accessible to your other family members, you just need to create a public calendar and authorize access to all the members of your family. Then your family members can see all currently scheduled events and can add new events of their own when they login to the calendar site. To add an event to a Google calendar, you just need to click on a day in month view or an hour in day or week views. A dialog box points to the day or time and lets you quickly schedule the event. Or you can click on the more details link and add more details. You can also add events from text links on the left. You can also import a whole calendar full of events at once from your Outlook, iCal, or Yahoo! calendar. Google Calendar doesn't sync directly with software like Outlook or iCal, so you'll have to keep importing events if you use both tools.

Web-based calendars are beneficial as you can:

- Create appointments, list events, and note tasks.
- Schedule recurring items such as anniversaries, birthdays, and meetings.
- View a day, week, month or year.
- Revise or add notes to calendar entries.
- Create a personal calendar or create a group calendar for club or organization.
- Provide the ability to send yourself reminders via email.
- A way to keep in touch and coordinate with family, friends and associates.
- No dealing with paper unless you decide to print them out.
- You can access your schedule from anywhere
- Your calendar is associated with your email account so no one else can access it without a valid login name and password.

### 4.3 Collaborating on Grocery Lists

Google Docs is a free, Web-based word processor, spreadsheet, presentation, form, and data storage service offered by Google. It allows users to create and edit documents online while collaborating in real-time with others. With Google Docs several people in different locations can work simultaneously on the same document, from any computer having an internet access.

Google docs is very useful as it makes day to day functioning convenient. With this Web-based word processing program families can manage their grocery lists. To start using a program like Google Docs all you need to do is to create a document, and then authorize access for you and your other family members you want should put their inputs in this document. Enter the items you need onto the list, one line at a time, and tell your other family members to do the same.

You can also prepare grocery lists using Google docs. This saves you and other members in your family the effort of preparing grocery lists on paper and updating them from time to time. It also encourages communication between family members. All the members authorized to use the list can add things they need from the grocery store. It additionally keeps members informed about the needs and demands of the other family members which need to be fulfilled.



*Example:* Your aunt needs a soap, she can simply add this product to the grocery list. Your son needs a chocolate and he can update this on the list.

Keep the list going for the week or so to allow your family members to add items to the list as per needed. At the end of the week, when you are ready to go to the supermarket, connect to the Internet, access the grocery list on Google docs and print out a copy of your grocery list at your home or office printer. This enables you to conveniently look through the list and purchase the items according to the list.



*Did u know?* Cloud computing gives organizations a green boost. About 64 percent of organizations say that adopting cloud based solutions has helped them reduce waste and lower energy consumption.

### 4.4 Collaborating on To-Do Lists

A grocery list is just one type of to-do list. With a lot of household chores and repairs to do, it is evident that to do list for your household will be much longer.

Web-based word processing applications can be used by you and your family to collaborate on your to-do list. You can also use dedicated web-based planning programs to do so.

Applications, such as Zoho Planner can be used as such applications let you create multiple to-do lists on the Web. A Zoho Planner is an online planner with a calendar, to-do lists, pages, and email reminders for collaboration with other users. You can set email reminders to remind you when a task is due. You can strike off the task once it is done. This component competes with Microsoft Outlook, and more closely with Google Calendar. It is, however, being criticized as unlike Google Calendar and 30 Boxes, Zoho Planner is currently unable provide SMS reminders.

You can also use simpler Web-based to-do list applications like Remember the Milk and Ta-da List if the above mentioned applications are a bit too advanced for you. Remember the Milk (RTM) is an application service provider for Web-based task and time-management. It allows users to manage tasks from a computer or smartphone, both online and offline. It is like a simple notepad that helps you remember your tasks.

**Notes**

**Ta-da List** is yet another Web-based to-do list application. It is a minimalist, traditional tool to make lists of tasks you need to do. It's **perfect for people who like to keep things simple**. Ta-da List takes a very traditional approach to to-do tools, create a list of things you need to do and mark off each item as you complete it. You can re-order, edit and delete lists, and once every item has been ticked, the list will disappear from your dashboard.

**Self Assessment**

State whether the following statements are true or false:

1. Zoho Planner can be used by you and your family to collaborate on your to-do list.
2. Google Docs is a free, Web-based word processor, spreadsheet, presentation, form, and data storage service offered by Google.
3. You are connected to the Internet, and then open Web browser and login to Gmail website.
4. The solution here is to use a Web-based planning program to manage your joint grocery lists.

**4.5 Collaborating on Household Budgets**

You can minimize your household expenses by creating your budget on a Web-based spreadsheet program and collaborating with your family members on this household budget. With a Web-based spreadsheet program, such as Google Spreadsheets which is a part of the Google Docs suite you can easily create your budget with regular inputs in it from your family members. Google Spreadsheet can be defined as a Web-based application that allows users to create, update and modify spreadsheets and share the data live online. Google Spreadsheet has the ability to add, delete and sort rows and columns. The application also enables multiple, geographically dispersed users to collaborate on a spreadsheet in real time and chat through a built-in instant messaging program. Users can upload spreadsheets directly from their computers.

Remember an upcoming expenditure while watching TV at home? Just switch on your home PC, access the internet, login to the Web-based spreadsheet, and enter that expense. With this facility of Google Spreadsheet creating, updating and editing budgets anywhere anytime has become possible.

Such budget collaborations are interactive. For instance, you want a new laptop and you enter this item into your Web-based budget with its cost. Your brother however feels that it is expensive and can wait. Your brother can simply go online and lower the budget for that item or delete it.

**4.6 Collaborating on Contact Lists**

Contacts are important. It can get difficult to manage hundreds of contacts. A good option of storing and managing contacts of friends, family, business associates and others is to use a Web-based program for contact management. There are few different ways to save contacts that can be retrieved when needed.

Web-based email program such as Gmail, Yahoo! Mail, etc. can be used as essential contact management programs. All such programs help you to keep your contacts in place. With these web based email programs you can create and save all significant information about your contacts in your email account. However, the only drawback of using such email oriented programs for saving contacts is that every time you or any other family member needs to look for a specific contact, they will have to sign in using the same email program and same email address.

Thus a dedicated Web-based contact management program is what you really need. With My events ([www.myevents.com](http://www.myevents.com)) you can store your contacts online, and the next time you're away from your personal computer, you'll still have access to those phone numbers and addresses via any web browser. If you are an advanced user you can also synchronize your calendar, contacts, and tasks from any of your groups to popular programs such as Palm Desktop, Outlook, and Lotus Organizer using My events.

You can also use another dedicated Web-based contact management program called Highrise. Created by 37signals, Highrise is an online system designed to manage contacts and communication with clients. It's simple interface makes it easy to follow up on projects and interactions with contacts. Since, the system is online and not a downloadable software, all information is accessible from a web browser and can be shared with others. With Highrise, contacts and communication history can be shared across your entire company.

Both these programs include the Customer Resource Management (CRM) features needed for business and sales force management.

Always remember that irrespective of the program you choose to use, you need to authorize access for yourself and other members who you want should give their inputs to your contact list. This way you all can import your existing Outlook contacts or contacts from software that exports vCard format whenever needed. Once added, contacts are easily viewed via the "Contacts" tab and sorted by people, companies, or recently added, viewed or imported. When viewing an individual contact, all details are available including an "about" section and related dates to remember important information about the person or company.

#### **4.7 Collaborating on School Projects**

Nowadays not only adults but even school children need to collaborate for school projects. Since, group projects and presentations demand the students to work on the same project together, it is not always possible for the parents to drive their kids around to each other's' houses. The solution here is that kids can conveniently collaborate over the Web from their own homes.

Various Web-based presentation programs such as Google Presentations which is a part of the Google Docs suite of programs encourages online communication between children, thus making it possible for kids to prepare and complete their projects and other presentations on time. To work with Google Docs and Presentations is very easy and all your data remains online. The only thing you need is an Internet connection and a web browser. Google presentation enables children from different locations to collaborate simultaneously on the same presentation or document, from any computer with Internet access. For instance, Aaliya, Anuja and Rohit are working on a school project together and they need to create a presentation and a drawing to show to other kids involved in the project. Once Aaliya has made the required changes to the presentation, Rohit and Anuja can respond to these changes immediately. Here, we must remember that they are living in different places. All three of them are working on the same presentation. When one member adds a new slide, other team members see that slide immediately on their own computer screens.

Instead of using Web-based email programs, it is better that the children sign up to an instant messaging service, such as AOL Instant Messenger ([www.aim.com](http://www.aim.com)) or Yahoo! Messenger ([messenger.yahoo.com](http://messenger.yahoo.com)), so that they can text each other quickly.

For simpler projects, Web-based calendar program, such as Google Calendar or Zoho Planner can be used. For other complicated projects dedicated project management application such as Basecamp should be used. Everyone involved in a project can work together on Basecamp. You have full control over who sees which project, and who sees each other.

**Notes**

You can also create groups to keep people organized or to make presentations together using Basecamp.

These students can give the presentation in a lot of ways. If they have a live Internet connection in the classroom, they might as well use Google Presentations to display the final presentation. They can also save the Google presentation in PPT format, and use the classroom's copy of PowerPoint to give the live show.



*Task* Design a presentation on your family photos.

### 4.8 Sharing Family Photos

Most families today have digital photographs which can be uploaded on the web or can be shared via email. Online photo sharing also referred to as Web-based photo sharing service has become increasingly popular as most individuals share their photographs with others by publishing these online or mailing them to others. Photo sharing can thus be defined as a process of publishing or transferring digital photos online, thus enabling the user to share these photos with other users. This function is provided through both websites and applications that facilitate the upload and display of images. The term also includes the use of online photo galleries that are set up and managed by individual users.

In the present era, lots of commercial and non-commercial photo sharing sites are available. Flickr ([www.flickr.com](http://www.flickr.com)) is a very popular non-commercial online photo management and sharing application. It has a huge community of users and tons of ways to interact with them. You can share or simply store all your digital photos privately using this application.

When you have photos you want to share with friends and family, the best way is to use a Web-based photo sharing service. Certain commercial online photo sharing sites such as Shutterfly ([www.shutterfly.com](http://www.shutterfly.com)) takes photo sharing to an advanced level as it allows visitors to order prints of the photographs you upload. This site sells you prints of your photographs and other products. Using these sites you can create your own online photo albums. You then upload digital photographs to these albums. You then send the album as URL to your friends and family and they can view your photos online.

Another benefit you get from uploading to a photo-sharing site is the ability to send your images to professional photo finishers. Even more ambitious than this is to create a book from your photos, something Blurb.com excels at. Most photo hosting sites can send your pictures to the local pharmacy chain where you can pick up prints, and services that print the photos on mugs and tee-shirts, calendars, and greeting cards are very common.

Web-based photo editing applications such as Adobe's Photoshop Express can be used to edit photographs before sharing them or uploading them on the online photo-sharing sites. With easy-to-use photo editing tools you can edit your photographs easily.



*Task* Make a list of some online photo sharing sites.

### 4.9 Collaborative Family

In earlier times, there were fewer time constraints across the board as family members had a set routine of work and relaxation. The scenario has changed today as with demanding work hours

## Notes

parents are struggling to take out time for their kids. Children burdened with their class works and home assignments are also making continuous efforts to take out time for fun and play. Such busy schedules leave families with almost no time to collaborate and spend quality time with each other. The demanding work or study hours cause time and schedule stress among all the members of your family, from the oldest to the youngest. Technology in such circumstances can prove beneficial as it makes you better organized at the work and home front by helping you manage your schedules well. When we talk of technology, Cloud computing technology deserves a special mention. It is proving quite useful in helping people keeping track of various tasks and activities, and coordinate and collaborate with others to get things done in a better manner. Despite time constraints cloud computing increases collaboration amongst family members as it allows them to interact with each other via emails, instant messages etc. Google Docs is yet another beneficial application as it helps you and your family organize tasks and manage your schedules on a day-to-day basis. The most significant advantage of Google Docs is that it is available online, you can work easily, without downloading any programs or software. This also encourages family interactions and collaborations as all members of your family can collaborate with each other from anywhere across the globe via the internet. Also all your data and other information remains online. It saves you the effort of carrying your laptop everywhere. It enables you and other family members to access the data from any computer or laptop having an internet connection. To work with Google Docs & Spreadsheets you only need to have Internet connection and a web browser. All the data is stored on Google's giant servers. Google docs and other such applications are extremely advantageous as they encourage interactions and collaborations amongst family members and built and the family bonds.



*Notes* In addition to the collaborative tools described, Google and other companies offers advanced online communication tools. These tools may be used for either asynchronous or real-time communication. Asynchronous communication tools are like specialised websites where users gather to exchange ideas and collaborate on projects. They communicate through shared messages that are available to everyone. With asynchronous communication, users generally expect messages to be saved for a certain time. This allows people to collaborate over a long period, which is not always the case with real-time communication.

### Self Assessment

Multiple Choice Questions:

5. You can minimize your household expenses by creating your budget on a Web-based ..... program and collaborating with your family members on this household budget.
  - (a) Spreadsheet
  - (b) Presentation
  - (c) Contact Management
  - (d) Photo-sharing Service
6. Online photo sharing also referred to as ..... has become popular amongst individuals who share their photographs using this application.
  - (a) Web-based photo sharing service
  - (b) Web-based Contact Management program
  - (c) Web-based Presentation program
  - (d) Web-based Spreadsheet program

Notes

7. Google ..... which is a part of the Google Docs suite of programs encourages online communication between children so that they can complete their projects and presentations on time.
- (a) Spreadsheet (b) Presentation  
(c) Contact Management (d) Photo-sharing Service
8. ....is a popular non-commercial online photo management and sharing application.
- (a) flickr.com (b) shutterfly.com  
(c) Yahoo! Messenger (d) AOL Instant Messenger



Case Study

**Cloud Computing: Web-based Applications that Change the Way You Work and Collaborate Online**

Computing as you know it has changed. No longer are you tied to using expensive programs stored on your computer. No longer will you be able to only access your data from one computer. No longer will you be tied to doing work only from your work computer or playing only from your personal computer.

Enter cloud computing-an exciting new way to work with programs and data, collaborate with friends and family, share ideas with coworkers and friends, and most of all, be more productive! The "cloud" consists of thousands of computers and servers, all linked and accessible to you via the Internet.

With cloud computing, everything you do is now web-based instead of being desktop-based; you can access all your programs and documents from any computer that's connected to the Internet. Whether you want to share photographs with your family, coordinate volunteers for a community organization, or manage a multi-faceted project in a large organization, cloud computing can help you do it more easily than ever before. Trust us. If you need to collaborate, cloud computing is the way to do it.

- Learn what cloud computing is, how it works, who should use it, and why it's the wave of the future.
- Explore the practical benefits of cloud computing, from saving money on expensive programs to accessing your documents ANYWHERE.
- See just how easy it is to manage work and personal schedules, share documents with coworkers and friends, edit digital photos, and much more!
- Learn how to use web-based applications to collaborate on reports and presentations, share online calendars and to-do lists, manage large projects, and edit and store digital photographs.

**Questions:**

1. Define cloud computing.
2. What are the benefits of cloud computing?

Source: [books.google.com/books?isbn=0768686202](https://books.google.com/books?isbn=0768686202)

## 4.10 Summary

- The main objective of cloud computing is to enable easy access to emails in any part of the world at any given time. In pre-cloud computing, your email access was via a single computer. This computer also stored all your email messages.
- The basic advantage of using Web-based email is that no matter what PC you use, your messages will always remain where they should be and will be in perfect synchronization.
- A web-based calendar can make organizing your life easier. A Web-based calendar, such as Yahoo! Calendar or Google Calendar is accessible to anyone, anywhere, anytime over the Web.
- Google Docs is a free, Web-based word processor, spreadsheet, presentation, form, and data storage service offered by Google.
- Web-based word processing applications can be used by you and your family to collaborate on your to-do list. You can also use dedicated web-based planning programs to do so. Applications, such as Zoho Planner can be used as such applications let you create multiple to-do lists on the Web.
- You can also use simpler Web-based to-do list applications like Remember the Milk and Ta-da List to collaborate on your to-do list.
- Online photo sharing also referred to as Web-based photo sharing service has become increasing popular as most individuals share their photographs with others by publishing these online or mailing them to others.

## 4.11 Keywords

**Customer Resource Management (CRM):** The customer relationship management is an information industry term for methodologies, software, and usually Internet capabilities that help an enterprise manage customer relationships in an organized way.

**Google Docs:** It is a free, Web-based word processor, spreadsheet, presentation, form, and data storage service offered by Google.

**Google Spreadsheet:** It can be defined as a Web-based application that allows users to create, update and modify spreadsheets and share the data live online. Google Spreadsheet has the ability to add, delete and sort rows and columns.

**Instant Messenger (IM):** Instant messaging is a form of real time direct text-based chatting communication in push mode between two or more people using personal computers or other devices, along with shared clients.

**Web Browser:** Also known as a Browser, is a software application used to enable computers users to locate and access web pages.

## 4.12 Review Questions

1. Elaborate on the centralizing email communication.
2. Discuss about the collaborating on schedules.
3. How does cloud computing help in online photo sharing?
4. How can you use cloud computing for the collaborating on grocery lists?

**Notes**

5. Discuss the collaborating on to-do lists.
6. How is cloud computing beneficial for children?
7. What is the collaborating on household budgets?

**Answers: Self Assessment**

- |         |          |
|---------|----------|
| 1. True | 2. True  |
| 3. True | 4. False |
| 5. (a)  | 6. (a)   |
| 7. (b)  | 8. (a)   |

**4.13 Further Readings**



*Books*

Bill Williams, 2012, *The Economics of Cloud Computing*, Cisco Systems, Inc.

Borko Furht & Armando Escalante, 2010, *Handbook of Cloud Computing*, Springer.

Kevin Jackson, 2012, *OpenStack Cloud Computing Cookbook*, Packt Publishing.

Rajkumar Buyya, James Broberg & Andrzej Goscinski, 2011, *Cloud Computing: Principles and Paradigms*, John Wiley & Sons.

Sarna, David E. Y., 2010, *Implementing and Developing Cloud Computing Applications*, Taylor & Francis.

Williams, Mark I., 2010, *A Quick Start Guide to Cloud Computing: Moving Your Business into the Cloud*, Kogan Page Ltd.



*Online links*

<http://geekitdown.com/cloud-computing-for-families/>

<http://mashable.com/2012/08/22/cloud-tips-family/>

<http://www.pcmag.com/article2/0,2817,2403025,00.asp>

## Unit 5: Cloud Computing for the Community

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### Objectives

After studying this unit, you will be able to:

- Discuss about the communicating across the community
- Debate on the community cloud
- Provide explanation on the collaborating on schedules
- Debate on the collaborating on group projects and events
- Discuss about the virtual communities in the cloud

## **Introduction**

Cloud computing is beneficial for the entire community, home users to sports teams to school organizations and so on. Any time any group of people in the community need to communicate and collaborate, they need to switch to Web-based applications. Web based applications are the ultimate way to take advantage of today's technology to enhance your organizations productivity and efficiency. Web based application gives you an opportunity to access your business information from anywhere in the world at any time. It also facilitates you to save time and money and improve the interactivity with your customers and partners.

Web-based applications are easy to use and can be implemented without interrupting your existing work process. Whether you need a content managed solution or an e-commerce system, we can develop a customized web application that fulfills your business requirements.

This unit, therefore, takes a look at a few typical community uses of cloud computing. After examining the Web-based approach, it is hard to imagine going back to the old way of doing things.

### **5.1 Communicating Across the Community**

Most essential component of any community collaboration is communication. Let us now learn how computing in the cloud encourages communications amongst community members.

The main objective of cloud computing is to enable easy access to emails in any part of the world at any given time. Email has been around almost as long as computer networks and long predates the arrival of the Internet. Communication might occur during office hours on work computer or during any spare time a person gets. Thus using a traditional desktop email, such as Microsoft Outlook or Windows Mail may not be a convenient option.

A better approach is to use a Web-based email service, such as Google's Gmail, Yahoo! Mail or Microsoft's Windows Live Hotmail. Gmail is the Google approach to email and chat. Practically unlimited free online storage allows you to collect all your messages, and Gmail's simple but very smart interface lets you locate them conveniently. Windows Live Hotmail is yet another free email service that gives you unlimited storage, fast search, good security.

Yahoo! Mail is your ever-present email program on the web. Its free-form labeling and smart folders and a strong spam filter to catch junk effectively make Y! Mail a joy to use.

Some community activists in order to communicate with their community or group members create a unique Web-based email account just for their community communications. This way they do not confuse personal emails from those involving their community activities.

#### **5.1.1 Layers of Abstraction**

The cloud provides options for approach, sourcing, and control. It delivers a well-defined set of services, which are perceived by the customers to have infinite capacity, continuous availability, increased agility, and improved cost efficiency. Different levels of abstraction, aimed at different market segments are the following.

##### **Infrastructure-as-a-Service (IaaS)**

Infrastructure as a Service is a provision model in which an organization outsources the equipment used to support operations, including storage, hardware, servers and networking components. The service provider owns the equipment and is responsible for housing, running and

maintaining it. The client typically pays on a per-use basis. **IaaS** is a standardized, highly automated offering, where compute resources, complemented by storage and networking capabilities are owned and hosted by a service provider and offered to customers on-demand. Customers are able to self-provision this infrastructure, using a Web-based graphical user interface that serves as an IT operations management console for the overall environment. API access to the infrastructure may also be offered as an option.

### **Platform-as-a-Service (PaaS)**

Platform as a Service is a way to rent hardware, operating systems, storage and network capacity over the Internet. The service delivery model allows the customer to rent virtualized servers and associated services for running existing applications or developing and testing new ones.

Platform as a Service is an outgrowth of Software as a Service, a software distribution model in which hosted software applications are made available to customers over the Internet. PaaS has several advantages for developers. With PaaS, operating system features can be changed and upgraded frequently. Geographically distributed development teams can work together on software development projects. Services can be obtained from diverse sources that cross international boundaries. Initial and on-going costs can be reduced by the use of infrastructure services from a single vendor rather than maintaining multiple hardware facilities that often perform duplicate functions or suffer from incompatibility problems. Overall expenses can also be minimized by unification of programming development efforts.

On the downside, PaaS involves some risk of “lock-in” if offerings require proprietary service interfaces or development languages. Another potential pitfall is that the flexibility of offerings may not meet the needs of some users whose requirements rapidly evolve.

### **Software-as-a-Service (SaaS)**

Software as a Service is a software distribution model in which applications are hosted by a vendor or service provider and made available to customers over a network, typically the Internet. SaaS is becoming an increasingly prevalent delivery model as underlying technologies that support Web services and Service-oriented Architecture (SOA) mature and new developmental approaches, such as Ajax, become popular. Meanwhile, broadband service has become increasingly available to support user access from more areas around the world.

Software as a Service delivers business processes and applications, such as CRM, collaboration, and email, as standardized capabilities for a usage-based cost at an agreed, business-relevant service level.

SaaS is closely related to the ASP (application service provider) and on demand computing software delivery models. IDC identifies two slightly different delivery models for SaaS. The hosted application management (hosted AM) model is similar to ASP: a provider hosts commercially available software for customers and delivers it over the Web. In the software on demand model, the provider gives customers network-based access to a single copy of an application created specifically for SaaS distribution.

Benefits of the SaaS model includes easier administration, automatic updates and patch management, compatibility wherein all users will have the same version of software, easier collaboration for the same reason and global accessibility. SaaS provides significant efficiencies in cost and delivery in exchange for minimal customization and represents a shift of operational risks from the consumer to the provider. All infrastructure and IT operational functions are abstracted away from the consumer.

**Notes**

The traditional model of software distribution, in which software is purchased for and installed on personal computers, is sometimes referred to as software as a product.

**Figure 5.1: Levels of Abstraction in Cloud Computing**



Source: <http://www.silverlighthack.com/image.axd?picture=2011%2F2%2FCloudServiceTerms.png>

**5.1.2 Concerns**

The Cloud Computing model is not without concerns, as others have noted, and we consider the following as primary:

**Failure of Monocultures**

The uptime of Cloud Computing based solutions is an advantage, when compared to businesses running their own infrastructure, but often overlooked is the co-occurrence of downtime in vendor-driven monocultures. The use of globally decentralized data centers for vendor Clouds minimizes failure, aiding its adoption.

The basic problem with a monoculture is that it's all vulnerable to the same attack. There are certain risks in networked computer systems. If everyone is using the same operating system or the same applications software or the same networking protocol, and a security vulnerability is discovered in that OS or software or protocol, a single exploit can affect everyone.

When a cloud fails, all organizations dependent on the Cloud cripple. In a computing monoculture, all of the nodes/servers are identical and share the same vulnerabilities. So any attack that can take over a single node can take over the entire cloud. This was illustrated by the Amazon (S3) Cloud outage, which disabled several other dependent businesses.

In addition, by adding a layer of software to coordinate the individual computers, the cloud creates more complexity, which means more opportunities for something to go wrong and create a vulnerability by mistake.



*Example:* Hypervisors, the software that manages the multi-tasking and virtualization process at the heart of cloud computing, add additional complexity to cloud computing nodes.

**Convenience vs. Control**

The growing popularity of Cloud Computing comes from its convenience, but also brings vendor control, an issue of ever-increasing concern. Cloud computing is a classic example of the

issue of Convenience vs. Control. Cloud computing is advantageous as you don't need to worry about software installation or maintenance, you can also access your files from anywhere. But we cannot ignore the flaws of cloud computing which invites the virus threats. We really depend on technology for all our work, sometimes without even knowing it. Letting the easy convenience of having Amazon look after our ebooks, Apple our music collections, Google with pretty much the rest of our lives. A recent example is Adobe making their software subscription only. The downside of systems built around convenience is that when they go wrong, they are pretty difficult to fix. They aren't designed for the user to fix them and often these companies aren't able to cope, either.



*Example:* Google Apps for in-house email provides higher uptime, but its failure highlights the issue of lock-in. This issue comes from depending on vendor Clouds.

The even greater concern is the loss of information privacy, with vendors having full access to the resources stored on their Clouds.

This same issue of privacy and confidentiality of information stored forced the British Government to consider a 'G Cloud' for Government Business Applications. G-Cloud is the UK government's framework for introducing cloud-based ICT services into government IT departments and streamlining IT procurement across, eventually, the entire group of public sector organisations. As part of the program, the government introduced the cloud store, a digital marketplace for cloud services.

In particularly sensitive cases of SMEs and start-ups, the provider-consumer relationship that Cloud Computing fosters between the owners of resources and their users could potentially be detrimental, as there is a potential conflict of interest for the providers. They profit by providing resources to up-and-coming players, but also wish to maintain dominant positions in their consumer facing industries.

## Self Assessment

Fill in the blanks:

1. .... gives you an opportunity to access your business information from anywhere in the world at any time.
2. .... is a provision model in which an organization outsources the equipment used to support operations.
3. Platform as a Service (PaaS) is an outgrowth of ..... a software distribution model in which hosted software applications are made available to customers over the Internet.
4. .... is the UK government's framework for introducing cloud-based ICT services into government IT departments.

## 5.2 Community Cloud

A community cloud in computing is a collaborative effort in which infrastructure is shared between several organizations from a specific community with common concerns of security, compliance, jurisdiction, etc. whether managed internally or by a third-party and hosted internally or externally. The costs are spread over fewer users than a public cloud so only some of the cost savings potential of cloud computing are realized.

**Notes**

The C3 arises from concerns over Cloud Computing, specifically controlled by vendors and lack of environmental sustainability. The Community Cloud aspires to combine distributed resource provision from Grid Computing (a form of distributed computing in which an organization be it a business or university uses its existing computers to handle its own long-running computational tasks) along with distributed control from Digital Ecosystems and sustainability from Green Computing (Green computing, or green IT is the environmentally responsible and eco-friendly use of computers and their resources. Green IT practices include the development of environmentally sustainable production practices, energy efficient computers and improved disposal and recycling procedures). Cloud computing combines these with the use cases of Cloud Computing, while making greater use of self-management advances from Autonomic Computing (which is a self-managing computing model and this system controls the functioning of computer applications and systems without input from the user). Vendor Clouds were replaced by shaping the underutilized resources of user machines to form a Community Cloud, with nodes potentially fulfilling all roles of a consumer, producer and a coordinator.



*Did u know?* The Cloud is so easy that employees are adopting cloud solutions independently.

### 5.2.1 Conceptualization

The conceptualization of the Community Cloud is based on Cloud Computing, Grid Computing, Digital Ecosystems, Green Computing and Autonomic Computing. A example for Cloud Computing in the community that do not depend on Cloud vendors are Google Amazon or Microsoft.

#### Community

The Community Cloud is a cloud infrastructure that is shared by several organisations and supports a specific community that has shared concerns around mission, policy and compliance considerations. Carrying with it a degree of economic scalability, without which there would be diminished competition and potential stifling of innovation as risked in vendor Clouds.

#### Openness

Removing dependence on vendors makes the Community Cloud equal to vendor Clouds. It therefore identifies a new dimension in the open versus proprietary struggle that has emerged in data, code and standards. It still needs to be expressed in the arena of hosted services.

Vendors are just beginning to see the competitive advantages of providing community clouds, and the earliest players so far have been providers that already have industry-specific products and services. It is believed that community clouds becoming more widespread.

#### Identity

A community cloud operates to serve multiple organizations who have entered into sharing arrangements with one or more cloud providers. Members of the participating organizations may also collaborate on shared projects, which may lead them to exercise shared control over virtual machines or other cloud-hosted resource instances. Software running in the cloud instances may serve the community members or act on their behalf. For these reasons a framework for identity and authorization is essential for community clouds.

In the Community Cloud each user possesses a unique identity, which combined with the structure of the Community Cloud should lead to a change in currently predominant membership model. So, users can simply add the Website to their identity and grant access. Allowing users to have multiple services connected to their identity, instead of creating new identities for each service.

Identity attributes may represent a user's membership in a group. The Shibboleth ecosystem includes web-based services to manage group memberships. These services continue to evolve. Amazon's IAM also enables groups within an identity domain (account) and has recently introduced some more general support for roles.

### **Graceful Failures**

The Community Cloud does not depend on the success or failure of any firm as it is not owned or controlled by anyone organization. It is, therefore, resistant to failure.

### **Community Currency**

An important theme in the community cloud is that of nodes being contributors as well as consumers. This will require a community currency to reward users for offering resources. This will also allow traditional cloud vendors to participate by offering their resources to the community cloud to gather considerable community currency. The relative cost of resources should fluctuate based on market demand. So a node of the network would gather community currency by performing tasks for the community, which its user could then use to access resources of the community cloud.

### **Quality of Service (QoS)**

Understanding QoS is vital for successful use of the cloud. Maintaining target QoS metrics will result in services and apps that meet your business needs.

QoS is a set of technologies that provide you with the ability to cost-effectively manage network traffic and to enhance user experiences in enterprise environments, small offices, and even home networking environments.

Ensuring acceptable quality of service in a diverse system will be a challenge. The Community Cloud could provide a better QoS than vendor Clouds, utilizing time-based and geographical variations advantageously in the dynamic scaling of resource provision. Instance QoS determines the expected running performance. The QoS metrics of interest are R/W transfer rate, latency for a single transaction and I/O operations per second (IOPS). Each storage type will have different metrics. Obtaining QoS metrics from a cloud provider may be a challenge. Some vendors spec IOPS and transfer rates for select levels of storage while being silent on other cheaper kinds.

### **Environmental Sustainability**

While cloud computing is generally more energy efficient and has a smaller carbon footprint than on-premise server rooms, not all clouds are created equal: some clouds are greener than others.

Through server consolidation and optimal resource utilization cloud computing can make more efficient use of resources. This means a corresponding reduction in carbon footprint. With public cloud, there is the added advantage that the resource used is off-premise.

**Notes**

Businesses using cloud computing only use the server space they need, which decreases their carbon footprint. Using the cloud results in at least 30% less energy consumption and carbon emissions than using on-site servers.

**Service Composition**

The great promise of service oriented computing is that the marginal cost of creating the nth application will be virtually zero, as all the software required already exists to satisfy the requirements of other applications. In a Cloud-computing environment, consumers, brokers, and service providers interact to achieve their individual purposes. In this regard, service providers offer a pool of resources wrapped as web services, which should be composed by broker agents to provide a single virtualized service to Cloud consumers. In the real world a service in a business is usually composed of many component services. These component services join together to form a composite of components. The trustworthiness of component services determines the trustworthiness of this composite.

Digital Ecosystems advocate service composability to avoid centralized control by large service providers, because easy service composition allows coalitions of SMEs to compete simply by composing simpler services into more complex services those only large enterprises would otherwise be able to deliver. So, we should extend decentralization beyond resource provision and up to the service layer, to enable service composition within the Community Cloud.

**5.2.2 Architecture**

Cloud computing architecture refers to the components and subcomponents required for cloud computing. These components typically consist of a front end platform (fat client, thin client, mobile device), back end platforms (servers, storage), a cloud based delivery, and a network (Internet, Intranet, Intercloud). Combined, these components make up cloud computing architecture.

Cloud computing is an emerging architectural paradigm driven by the sharp drop of technology costs followed by radically improved performance. Social changes and economic advances have created a huge number of consumers and producers of various content artefacts (text, photo, music, video, etc.) representing huge user clouds and large communities (in the order of 100s of millions people). Thus, we see cloud computing developing on an unprecedented scale and dynamics on a global basis.



*Did u know?* Cloud solutions are not new. In 1961, Stanford professor John McCarthy became one of the first people to envision a time-share, service bureau-computing model.

**5.3 Collaborating on Schedules**

In this section, we will study about the following sub-sections.

**5.3.1 Sports Team Schedules**

The best way to manage your sports events is to use a Web-based calendar tool, such as Google Calendar ([calendar.google.com](http://calendar.google.com)), Yahoo! Calendar ([calendar.yahoo.com](http://calendar.yahoo.com)), or Calendar Hub ([www.calendarhub.com](http://www.calendarhub.com)).

Google Calendar is a free online calendar application from Google that makes it easy to keep track of life's important events all in one place. It's the ideal tool for managing personal and

professional schedules. It is both simple to use and very powerful. Similar to a traditional day planner, this customizable online organizer keeps track of doctor visits, sports practices, meetings, and social events.

Many web-based calendars are free or low cost and easy to set up. Calendar features can vary from the simple to the complex. Such a calendar can also be arranged in a manner so that your team members can add their own events to this calendar.

Just create a public calendar and provide the URL to all the team members. After you add all your team activities to the calendar, team members simply have to log in to see what is coming up this week and next.

Dedicated sports team Website builder sites offer tools designed specifically for sports teams, including home pages complete with schedule, player profiles, box scores, etc. There are several of these Web-based applications, including eteemz ([www.eteemz.com](http://www.eteemz.com)), League Athletics ([www.leagueathletics.com](http://www.leagueathletics.com)), LeagueLineup ([www.leaguelineup.com](http://www.leaguelineup.com)), and TeamSnap ([www.teamsnap.com](http://www.teamsnap.com)).

eteamz is a team website design, website hosting, and website builder. From baseball leagues to basketball teams, eteamz is a popular sports website and software provider for teams and leagues.

You may never know who follows your team's progress. While the players, parents, and boosters follow along with scores and schedules, former athletes and fans may also keep an interest in how their team does, League Athletics is an up-to-date sports website and keeps everybody involved and informed.

### 5.3.2 School Schedules

Web-based calendars are also ideal for keeping track of various school schedules and other activities. Be it homework assignment for a class or a school wide event schedule, it is easy for a teacher or school to post that schedule on a Web-based calendar. Various Web-based presentation programs such as Google Presentations which is a part of the Google Docs suite of programs encourages online communication between children, thus making it possible for kids to prepare and complete their projects and other presentations on time. A web-based calendar can make organizing your life easier. A Web-based calendar, such as Yahoo! Calendar or Google Calendar is accessible to anyone, anywhere, anytime over the Web.

### 5.3.3 Community Group Schedules

Any community group can be benefitted from organizing their activities via a Web-based calendar. All group activities can easily be managed online, in the cloud, using a Web-based calendar.

### 5.3.4 Event Schedules and Management

With Web-based calendars, it's easy to keep track of life's important events all in one place. It helps you to post dates and schedules for specific public events, such as school plays, or for all events in a given community.



*Example:* Zvents ([zvents.com](http://zvents.com)) is a Web search engine for local events. Zvents can be used to post announcements of your community events online. Zvents is a popular producer of local entertainment guides online. Upload your event schedule into the Zvents database. It enables others to know about the all the upcoming events. Users can also search for events by type, location, and date.

**Notes**

The suite of event management software from ServiceU ([www.serviceu.com](http://www.serviceu.com)) included the EventU application, which offers event, resource, and facility scheduling for organizations. ServiceU manages all your event details in a single-entry system that reduces error and increases efficiency while offering real-time status updates. It also publishes all necessary event details instantly to your website that can be made public or private.

## **5.4 Collaborating on Group Projects and Events**

Community groups usually have a lot of tasks to accomplish. In such cases group members depend on each other to accomplish a shared goal or task. In order to carry out all the activities one must know how to get started. In this time of cloud computing, the best way to carry out all the tasks Web-based applications should be used. These applications can be accessed by anyone in the group. A web based application is a software package that can be accessed through the web browser. Web based applications are the ultimate way to take advantage of today's technology to enhance your group's productivity and efficiency in achieving goals. An application that is usable only with an active Internet connection is called a Web-based application. It uses HTTP as its primary communications protocol.

### **5.4.1 Collaborating on Task Management**

Use a Web-based task management application for managing more complex tasks, because a simple to do list might not help. Web based task management application is a collection of programs, processes and information that is used to manage various phases of a project and that is accessible on the Internet.

Basic task management can be accomplished with applications such as HiTask ([www.hitask.com](http://www.hitask.com)) which originated as a friendly and easy-to-use task management system and Zoho Planner ([planner.zoho.com](http://planner.zoho.com)). A Zoho Planner is an online planner with a calendar, to-do lists, pages, and email reminders for collaboration with other users. You can set email reminders to remind you when a task is due. You can strike off the task once it is done. For the most complicated projects, you can use dedicated project management applications, such as Basecamp ([www.basecamp.com](http://www.basecamp.com)) or Goplan ([www.goplan.com](http://www.goplan.com)).

Basecamp is a web-based project-management tool developed by 37signals. Basecamp offers to-do lists, wiki-style web-based text documents, milestone management, file sharing, time tracking, and a messaging system. With Basecamp you can create special calendars for vacation time, holidays, meetings, or anything else that isn't specifically tied to a project. Goplan is an online project management and collaboration tool for individuals and teams. Goplan, built by WBS is a tool that manages our projects, communicates with clients and organizes our personal lives.

You must first remember to set a due date for your project. Then divide the project amongst all group members. Group members can then go online to access the application from their respective computers and update the project with their own individual progress.

### **5.4.2 Collaborating on Event Management**

Whether it's a music gig, a festival, a conference or a public lecture: all events need lots of hard work and people power.

While organizing an event such as a concert or conference, you have to manage the tasks involved with putting together the event. You also handle attendee registration, event marketing, ticket sales. Web-based event management tools have made organizing events much easier and hassle free.

With Web-based event management applications, the cloud hosts everything you need to schedule and market your events. These applications provide event planners with a complete solution to increase event attendance and decrease event costs. By automating the event management processes, Web-based event management applications enable you to focus your time on strategic decisions rather than repetitive, time consuming tasks. For example, create an online event calendar to inform attendees about all present and future events. Web-based event registration and payment tool such as Eventzilla which is an online event registration and ticketing software for anyone hosting an event, conference, seminar, fund-raising event or training workshop helps you to manage various tasks involved with registrations to and event and making payments online. Various event organizers around the world use Eventzilla to accept registrations and payments online and offline, promote events on Facebook and Twitter and manage attendee communications and cancellations. Such Web-based event management applications help you get more attendees for your events and they are Simple to use and affordable. They allow you to promote and sell tickets through your blog and Facebook.



*Caution* With such applications there are no security and reliability issues.

You can use such applications via notebook PC with Internet connection. Most of these applications also offer task and budget management functions.

Popular applications capable of handling every last detail over the Web include Cvent ([www.cvent.com](http://www.cvent.com)) and RegOnline ([www.regonline.com](http://www.regonline.com)).

RegOnline is made for those managing large events or conferences. It has the ability to set registration limits for each session within a multi-track event, to allow one person to pay for someone else's registration. It also allows attendees to learn about the event and provides good discounts to them. RegOnline charges a fixed price and is not free of cost.

Cvent is a more sophisticated online event-management tool which includes event-registration function along with support for various day to day events. Cvent typically has a setup fee to get started.

Unlike some other Web-based applications, these are not free which assures quality and reliability.



*Notes* Google entered the enterprise cloud marketplace late when they launched Google Apps Premier Edition in early 2007.

### 5.4.3 Collaborating on Event Marketing

Most event management applications deal with basic event marketing. Event marketing can be defined as a Promotional strategy that links a company to a special event be it sponsorships of a sports competition, or festival, etc. to support corporate objectives. It can also be understood as the activity of designing or developing a themed activity, occasion, or exhibit such as a music festival, fair, or concert to promote a product, cause or an organization. It is also called event creation.

When you want to promote your community related events, you want to switch to the more innovative forms of marketing. For example, there is an event that you want to announce. You plan to create a brochure, a leaflet or a pamphlet to announce this event. However your seniors and colleagues want to look at your work before these brochures get distributed. In pre-cloud computing days showing your piece to everybody would have been a tedious and time consuming

**Notes**

task. But today with the introduction of Web-based application such as Google Docs you can conveniently create your piece and show it to everyone online for their approvals and appreciation. In this process, however, you must remember to authorize all the members of your organization who you think should view your document and hold the power to make necessary changes to the document.

Web-based local search sites such as Zvents can be used to post announcements of your community events online. Zvents is a popular producer of local entertainment guides online. It has a comprehensive, high-quality storehouse of local event and business information on the web. It helps people to find some interesting things to do in their local area. This in turn helps thousands of event advertisers as it increases attendance at their events.

You may even want to use cloud-based social media sites, such as Youtube, Facebook, MySpace etc., to promote your events online by creating and sharing videos, photographs and other audio and visuals. These you can share and circulate to people online. And, after the event, you can post pictures of the event on community photo-sharing Photo sharing sites such as Flickr and Shutter fly. Thanks to cloud computing all this is conveniently possible.



*Task* Prepare a chart stating examples of how cloud computing has helped you in collaborating in your daily life.

### **5.5 Green Cloud**

Talking of energy reduction and carbon footprint savings, cloud computing is also inevitable because it is more green. Today, most internal company data centres run their servers at around thirty per cent capacity. In contrast, the servers in a large cloud data centre typically run at eighty per cent capacity or more. This means that less energy is wasted, with the carbon footprint of each unit of computing power being reduced.

Cloud computing is also more environmentally friendly than traditional computing because it removes the need for most users to have high-power PCs and laptops. As discussed on the green computing page, lower-power computers based around processors such as Intel’s Atom are perfectly sufficient to run cloud applications. Their use can also cut end-user energy bills and carbon footprints by as much as eighty per cent.

### **5.6 Virtual Communities in the Cloud**

A virtual community is a community of people sharing common interests, ideas, and feelings over the Internet or other collaborative networks. A possible inventor of this term and one of its first proponents was Howard Rheingold, who created one of the first major Internet communities, called “The Well.” In his book, *The Virtual Community*, Rheingold defines virtual communities as social aggregations that emerge from the Internet when enough people carry on public discussions long enough and with sufficient human feeling to form webs of personal relationships in cyberspace.

Virtual communities might be thought of as subgroups within Marshall McLuhan’s notion of cyberspace as a “global village.” Before the Web, virtual communities existed on Bulletin Board Services (BBS) and many still do. Some virtual communities or facilitators of them use the metaphor of a coffee house or something similar to help users visualize the community. In general, there are two kinds of communication among virtual community members: message postings and real-time chat. Usenet newsgroups are an example of the former. Many Websites,

such as Geocities, foster subject information exchanges. For real-time chat, Internet Relay Chat (IRC) is a system used by many Websites that foster virtual communities.

Today, the Internet is synonymous with the Web, and almost all virtual communities are Web-based. The biggest home of virtual communities today are Facebook, MySpace, and other social networking sites. A virtual community becomes a real community when there is a constant interaction and exchange of thoughts and ideas between group members-which is what happens on a popular Facebook or MySpace page.

## Self Assessment

State whether the following statements are true or false:

5. QoS is a set of technologies that provide the ability to cost-effectively manage network traffic.
6. Google Calendar is a an paid online calendar application from Google that keeps track of all important events all in one place.
7. A Zoho Planner is an online planner with a calendar, to-do lists, pages, and email reminders for collaboration with other users.
8. Goplan is an not online project management and collaboration tool for individuals and teams.
9. The Internet is synonymous with the Web, and almost all real communities are Web-based.
10. A virtual community is a community of people sharing common interests, ideas, and feelings over the Internet or other collaborative networks.



Case Study

### Understanding the Cloud Computing Stack: SaaS, PaaS, IaaS

#### Software as a Service

Software as a Service (SaaS) is defined as...software that is deployed over the internet... With SaaS, a provider licenses an application to customers either as a service on demand, through a subscription, in a "pay-as-you-go" model, or (increasingly) at no charge when there is opportunity to generate revenue from streams other than the user, such as from advertisement or user list sales.

SaaS is a rapidly growing market as indicated in recent reports that predict ongoing double digit growth. This rapid growth indicates that SaaS will soon become commonplace within every organization and hence it is important that buyers and users of technology understand what SaaS is and where it is suitable.

#### Characteristics of SaaS

Like other forms of Cloud Computing, it is important to ensure that solutions sold as SaaS in fact comply with generally accepted definitions of Cloud Computing. Some defining characteristics of SaaS include:

- Web access to commercial software

Contd....

Notes

- Software is managed from a central location
- Software delivered in a "one to many" model
- Users not required to handle software upgrades and patches
- Application Programming Interfaces (APIs) allow for integration between different pieces of software

**Where SaaS Makes Sense**

Cloud Computing generally, and SaaS in particular, is a rapidly growing method of delivering technology. That said, organizations considering a move to the cloud will want to consider which applications they move to SaaS. As such there are particular solutions we consider prime candidate for an initial move to SaaS;

- "Vanilla" offerings where the solution is largely undifferentiated. A good example of a vanilla offering would include email where many times competitors use the same software precisely because this fundamental technology is a requirement for doing business, but does not itself confer an competitive advantage
- Applications where there is significant interplay between the organization and the outside world. For example, email newsletter campaign software
- Applications that have a significant need for web or mobile access. An example would be mobile sales management software
- Software that is only to be used for a short term need. An example would be collaboration software for a specific project
- Software where demand spikes significantly, for example tax or billing software used once a month

SaaS is widely accepted to have been introduced to the business world by the Salesforce Customer Relationship Management (CRM) product. As one of the earliest entrants it is not surprising that CRM is the most popular SaaS application area, however email, financial management, customer service and expense management have also gotten good uptake via SaaS.

**Where SaaS May Not be the Best Option**

While SaaS is a very valuable tool, there are certain situations where we believe it is not the best option for software delivery. Examples where SaaS may not be appropriate include;

- Applications where extremely fast processing of real time data is required
- Applications where legislation or other regulation does not permit data being hosted externally
- Applications where an existing on-premise solution fulfills all of the organization's needs

Software as a Service may be the best known aspect of Cloud Computing, but developers and organizations all around the world are leveraging Platform as a Service, which mixes the simplicity of SaaS with the power of IaaS, to great effect.

**SaaS Allows Groupon to Scale Customer Service**

Launched in November 2008, Groupon features a daily deal on the best stuff to do, see, eat and buy in more than 500 markets and 40 countries. The company has thousands of employees spread across its Chicago and Palo Alto offices, regional offices in Europe,

Contd....

## Notes

Latin America, Asia and Africa with local account executives stationed in many cities. Groupon seeks to sell only quality products and services, be honest and direct with customers, and provide exceptional customer service.

"Within a few months of our founding, our customer base exploded," says Joe Harrow, Director of Customer Service, Groupon. "At first, I was spending 10 percent of my time responding to customer requests. It gradually became a job for several agents. We realized we simply couldn't go on without a real ticketing solution."

Convinced that Groupon's rapid growth would continue, Harrow researched several enterprise-level support solutions. But he didn't find a good fit.

"The enterprise-level solutions seemed complicated and difficult to set up," Harrow recalls. "They would have increased our efficiency, but at the cost of hampering the customer experience." Harrow then searched the web for online support software and found Zendesk. After a quick evaluation of Zendesk, Harrow knew he had the right solution.

"Right off the bat, Zendesk was intuitive to use," Harrow says. "It seemed more powerful and robust than other online support solutions, and it had been rated very highly in reviews we'd read. Plus, we knew that because it was a web-based solution, it could easily scale to support our increasing volume."

Groupon now employs more than 150 customer support agents, who handle nearly 15,000 tickets per day. Zendesk's macros, which are predefined answers to FAQs, are Groupon's favorite Zendesk feature. These macros help Groupon train its agents to deliver one of the company's customer service hallmarks: one-touch resolution.

Groupon has also found it easy to integrate Zendesk with other solutions. By integrating Zendesk with GoodData, Groupon has extended and enhanced its reporting - going well beyond the limits of its old spreadsheets. As an example of the sort of scalability that SaaS brings, Groupon recently processed its millionth customer ticket.

#### Questions

1. Define SaaS.
2. Discuss about the characteristics of SaaS.
3. What is Groupon? How did SaaS allow Groupon to Scale Customer Service?

Source: [http://www.rackspace.com/knowledge\\_center/whitepaper/understanding-the-cloud-computing-stack-saas-paas-iaas](http://www.rackspace.com/knowledge_center/whitepaper/understanding-the-cloud-computing-stack-saas-paas-iaas)

### 5.7 Summary

- Cloud computing is beneficial for the entire community, home users to sports teams to school organizations and so on. Any time any group of people in the community need to communicate and collaborate, they need to switch to Web-based applications.
- The main objective of cloud computing is to enable easy access to emails in any part of the world at any given time. Email has been around almost as long as computer networks and long predates the arrival of the Internet.
- Using Web-based email service, such as Google's Gmail, Yahoo! Mail or Microsoft's Windows Live Hotmail is a more convenient option for communication.
- Infrastructure as a Service is a provision model in which an organization outsources the equipment used to support operations, including storage, hardware, servers and networking components.

Notes

- Platform as a Service (PaaS) is a way to rent hardware, operating systems, storage and network capacity over the Internet.
- Software as a Service (SaaS) is a software distribution model in which applications are hosted by a vendor or service provider and made available to customers over a network, typically the Internet.
- The uptime of Cloud Computing based solutions is an advantage, when compared to businesses running their own infrastructure, but often overlooked is the co-occurrence of downtime in vendor-driven monocultures. The use of globally decentralized data centers for vendor Clouds minimizes failure, aiding its adoption.
- A community cloud in computing is a collaborative effort in which infrastructure is shared between several organizations from a specific community with common concerns of security, compliance, jurisdiction, etc. whether managed internally or by a third-party and hosted internally or externally.
- The C3 arises from concerns over Cloud Computing, specifically controlled by vendors and lack of environmental sustainability.
- The uptime of Cloud Computing based solutions is an advantage, when compared to businesses running their own infrastructure.
- The Community Cloud is as much a social structure as a technology paradigm, because of the community ownership of the infrastructure. The Community Cloud is not owned or controlled by single organization, and therefore not dependent on the life-span or failure of single organization.
- A virtual community is a community of people sharing common interests, ideas, and feelings over the Internet or other collaborative networks.

### 5.8 Keywords

**Community Cloud Computing (C3):** Community Cloud Computing offers an alternative architecture, created by combing the Cloud with paradigms from Grid Computing, principles from Digital Ecosystems, and sustainability from Green Computing, while remaining true to the original vision of the Internet.

**Green computing:** Also known as green IT, refers to environmentally sustainable computing or IT.

**Grid computing:** It is a form of distributed computing in which an organization (business, university, etc.) uses its existing computers (desktop and/or cluster nodes) to handle its own long-running computational tasks.

**Public cloud:** It is established where several organizations have similar requirements and seek to share infrastructure so as to appliance. In addition, it can be economically attractive as the resources (storage, workstations) utilized and shared in the community are already exploited.

**Quality of Service (QoS):** The quality of service refers to several related aspects of telephony and computer networks that allow the transport of traffic with special requirements.

**Software-as-a-Service (SaaS):** Software as a Service is a software distribution model in which applications are hosted by a vendor or service provider and made available to customers over a network, typically the Internet.

**Virtual community:** It is a community of people sharing common interests, ideas, and feelings over the Internet or other collaborative networks.

**Web-based application:** It is a software package that can be accessed through the web browser. The software and database reside on a central server rather than being installed on the desktop system and is accessed over a network.

Notes

## 5.9 Review Questions

1. Explain community cloud computing.
2. Explain the communication across the community.
3. Explain the significance of community currency in the community cloud.
4. What do you understand by collaborating on group project and events?
5. Define event marketing. Explain the concept of collaborating on event marketing.
6. Elaborate on the concerns of the community cloud model.
7. Give an insight into architecture of community cloud.
8. What is the difference between IaaS, PaaS and SaaS?
9. Explain the concept of virtual communities in the cloud.
10. Write a short note on:
  - (a) Collaborating on budgets
  - (b) Collaborating on tasks
  - (c) Collaborating on school projects
  - (d) Collaborating on event management

## **Answers: Self Assessment**

- |                                 |                                |
|---------------------------------|--------------------------------|
| 1. Web based application        | 2. Infrastructure as a Service |
| 3. Software as a Service (SaaS) | 4. G-Cloud                     |
| 5. True                         | 6. False                       |
| 7. True                         | 8. False                       |
| 9. False                        | 10. True                       |

## 5.10 Further Readings

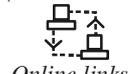


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Online links

<http://explainingcomputers.com/cloud.html>

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## Unit 6: Cloud Computing for the Corporation

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## Objectives

After studying this unit, you will be able to:

- Describe the managing schedules
- Discuss managing contact lists
- Understand managing projects
- Discuss collaborating on reports
- Describe collaborating on marketing materials
- Understand collaborating on expense reports
- Explain collaborating on budgets
- Understand the collaborating on financial statements
- Describe collaborating on presentations
- Understand presenting on the road
- Discuss accessing documents on the road

## Introduction

Amazon and Google may be the biggest names in cloud computing today, but don't discount the built-in advantage telcos have when it comes to infrastructure. "Building publicly accessible cloud infrastructure is not inexpensive or uncomplicated," Pund-IT analyst Charles King says. "The service providers already have those infrastructures in place – the data center assets, connectivity and billing." Amazon is one of the true innovators in Web-based computing, offering pay-as-you-go access to virtual servers and data storage space. In addition to these core offerings, Amazon offers the SimpleDB (a database Web service); the CloudFront (a Web service for content delivery); and the Simple Queue Service (a hosted service for storing messages as they travel between computers). By launching the Elastic Compute Cloud in 2006, well before most of its competitors, Amazon has become almost synonymous with "cloud computing." But criticisms are starting to pop up regarding Amazon's reliability and service-level agreements.

### 6.1 Managing Schedules

The scheduler developing requires the input as submit jobs. The assumptions made for algorithm has to be designed are as follows:

1. There is a master node which is the only node responsible for users to submit jobs into the cloud service.
2. The master node-approved jobs are the only ones running on any node in cloud infrastructure. Master node evaluates the best node which can execute the application on the basis of the CPU availability of slave machines.

Let's suppose you need to schedule a meeting sometime next week with a dozen different attendees. You punch in the details of the meeting and the desired attendees, and the scheduling app finds the first available timeslot when all attendees are free. Alternatively, the app might have to pick a timeslot when the maximum number of people can attend. This kind of "best case scenario" scheduling might be the only way to get you meeting on the calendar in a reasonable period of time.

Web-based scheduling programs let you schedule both in-person meetings and teleconferences with attendees from multiple locations. You are not limited to just those people located in your office; you can work with the schedules of people around the country and even in different firms.

Of course, much of this can be accomplished with simple Web-based calendar programs, such as Google Calendar ([calendar.google.com](http://calendar.google.com)) and Yahoo! Calendar ([calendar.yahoo.com](http://calendar.yahoo.com)). To take advantage of the more advanced automatic scheduling features, however, you need to use an industrial strength scheduling application, such as Appointment Quest ([www.appointmentquest.com](http://www.appointmentquest.com)), hitappoint ([www.hitappoint.com](http://www.hitappoint.com)), and Schedule book ([www.schedulebook.com](http://www.schedulebook.com)). Naturally, these enterprise-level apps cost more to use than the free Web-based calendars; expect to pay anywhere from INR 960 to INR 9600 subscription fees per month.

## Self Assessment

Fill in the blanks:

1. There is a ..... node which is the only node responsible for users to submit jobs into the cloud service.
2. Master node evaluates the best node which can execute the application on the basis of the CPU availability of ..... machines.
3. Web-based scheduling programs let you schedule both ..... meetings and ..... with attendees from multiple locations.
4. Enterprise-level apps cost more to use than the free ..... calendars.

## 6.2 Managing Contact Lists

Out of all of the features on your average smart phone, the standard, run-of-the-mill Contacts app is one that induces a fair amount of ambivalence. Sure, it's a fine bin to stash the numbers and email addresses of your family, friends and acquaintances, but it's got an exceptional ability to be, across the board, completely and totally unexceptional. The blase nature of the traditional contacts app can be taken or just as easily left in a folder for minimal use.

But, perhaps most importantly, what the traditional contact managers actually show is the relative little change it made in the process from analog to digital. In a lot of ways, a contact manager can incorporate new, innovative services to not only help users take a smarter approach to meeting new people but also transmit readily available information from social media profiles directly into that contact profile. That sort of drastic improvement could turn the service from dust-gathering afterthought to a must-use system.

Here's a breakdown of five applications that are breaking the barriers of the traditional contact managing system on the computer as well as mobile devices. The best part? Most of them have free options that give a good bang for your (non-existent) buck.

### 6.2.1 Plaxo

One of the many startup love-children of Napster entrepreneur Sean Parker, Plaxo launched in 2002 as a combination address book/social network. The company had some decent success, partnering with the likes of AOL and Comcast before the latter acquired the startup in 2008.

Last year, the company did a pivot, dropping its social networking arm in favor of going all-in one contact management. The result is a sophisticated contacts manager that juggles multiple accounts and backs up a comprehensive list of contacts across all platforms.

**Notes**

**Pros**

Once you're all plugged in to Plaxo — which supports imports from the usual suspects including Gmail and your smartphone — the system maintains a consistent sync among all devices its linked to. With extra integration of Facebook, the system also populates your list with the profile photos of all your contacts — something that could tickle even the most fickle completist. If analog access to your contacts is what you seek, the service offers a free print-out of all contacts.

From a maintenance perspective, Plaxo achieves the two necessary components of a good address book: constant syncing and backup. And, in most cases, it can do a couple of notches better, particularly with its responsive deduping system that recognizes and merges contacts that have somehow appeared double in your phone. Plaxo also offers a Personal Assistant upgrade, which automatically monitors a user's address book and updates out-of-date or missing information throughout the contact system using publicly available information from the White Pages, LinkedIn and Facebook.

**Cons**

Plaxo's Personal Assistant, as well as its other premium features, does not come cheap — use of the system costs an extra \$6.67 per month. Add in the company's Platinum Sync feature, which allows for syncing directly with Gmail and Outlook, and users could be paying a hefty \$118 per year for a contact manager.

Even with just the bare bones, Plaxo isn't exactly the most intuitive application on the market. It's the only service that required a sync workaround to run its iPhone application, and its current directions on how to do so were confusing even for a tech-fluent person. Furthermore, the online vehicle takes some getting used to, especially when initially figuring out the services and goals of the system. It has a steep learning curve — something that seems out of place for a contact manager.

**Bottom Line**

Plaxo loves its premium members, and its premium members will love them. If you want to pay to have a contact manager to take care of it, you've found a perfect match.

**6.2.2 Evernote Hello**

Hello rolled out its service for iPhone late last year, and followed up with an updated Android counterpart in late May. It's certainly not the first foray into alternative products that the company has dove into — it achieved moderate success with its acquisitions (Skitch and Penultimate) as well as its own developments (Evernote Food).



*Did u know?* Evernote Hello is the first venture into contact management for the highly regarded note-taking cloud giant.

Hello's development was ushered in, according to Evernote CEO Phil Libin, as a response to the traditional, brain-blocking features of an address book. Focused more on meeting new people than sorting out the ones you already have, Evernote Hello is a visual approach to the contact management scene.

**Pros****Notes**

Conceptually, it's the most innovative system in the roundup. Rather than focusing on the management of contacts, Hello helps users get through the actual pains of the first meet. In an ideal use case, like in a populated mixer or on the convention floor, Hello can be passed to a new acquaintance or filled in by the user — and all contacts are encouraged to leave behind photos. Hello also collects location and time data to create an “encounter,” meaning that users can log repeat meetings of the same person.

All of this data is managed in a beautiful mosaic — a visually powerful UI that logs by face rather than by name. The aim of Hello is to commit new acquaintances quickly to memory and to build a history and context around meeting others. Conceptually, it's strong, and that's enough to warrant at least a spin.

**Cons**

One major flaw is that it actually *doesn't* keep all of your contacts in one place — and there's no efficient batch process to import contacts seamlessly into the system and build a history with longstanding friends. Furthermore, Hello doesn't really adapt well to longstanding friends at all — it's only best when working with new people.

Another difficulty of Hello is that it doesn't optimize execution among a group of people. The process for inserting a new contact into Hello is one-way and with finite steps, so it can be time consuming passing among a group of people. And, while the challenge is supposed to be expedited via a partnership with LinkedIn that imports contact info with a quick snap of a business card, this shortcut is only accessible via Android. This feature — and many others — are meant to be incorporated across all platforms with new updates, but for now it's a waiting game.

**Bottom Line**

Hello is great for networkers and early adopters who see many faces but have a penchant for forgetting names.

**6.2.3 Smartr**

In a calculated rebranding achievement by longstanding contact management startup Xobni, Smartr is a social contact manager available for Gmail and Outlook as well as iPhone, Android and Blackberry. Smartr is a variation of Xobni's heavy hitting pro service, which carefully searches through inboxes for conversations and appointments to give a comprehensive look at all interactions with a given contact.

While the basic service doesn't have the Pro's proprietary cloud backup, it still has plenty of features that Xobni has developed in the last six years.

**Pros**

For a free service, Smartr definitely packs a wallop. Xobni markets Smartr as a “Magic Address Book,” and it is able to achieve this magic via smart integrations with social media apps. The more you put in to Smartr, the more you get out — the service is able to collect data across all platforms and condense it into handy, in-depth contact profiles for everyone you've encountered. A typical Smartr contact profile is packed with information — including a “History” tab that shows how long you've been corresponding with someone and what your first email exchange was and a “Mutual Connections” tab to see who you both have in common. Even better, the app regularly pulls information from connections to ensure all data is relevant and useful.

## Notes

Due to its vast resources, Smartr pulls together many more contacts than are actually stored in the traditional contacts app. And, in doing so, it's the only contact application that does the work for you.



*Example:* If you have been corresponding with a new connection via email, Smartr will produce automagical links to connect with him on Twitter and Facebook, even if you had no idea he was on that social media site. Because of these benefits, Smartr actually encourages a user to interact with its easy to navigate interface and to learn more about connections that have been made regularly.

## Cons

There actually isn't a whole lot to hate about the Smartr system, but a couple of stumbling blocks do keep the experience from reaching the level of mind-blowing.

One important thing that feels missing from the Smartr equation is the ability to access a comprehensive and organized list of all contacts. Because the system works so hard to cull contacts from email and social media, it ultimately boosts the number of reachable folks by an order of magnitude. But, there's no way to actually see who Smartr has pulled from your system and the closest you can get to a browsing feature is disorganized jumble of all contacts available when you perform a blank search. It can be a pain point, especially for those who are eager to optimize their contact system.

Another difficulty with Smartr is its lack of useful list maintenance tools. You won't find a deduper, although at times it is desperately needed, and the service's additive nature means that any cleanup of a list is a pain. The service is what it is, and it doesn't offer much in the way of personal organization or cleanup. You just have to embrace the chaos.

## Bottom Line

Smartr adds so much to the contact list experience, and that alone makes it an attractive feature to have in any productivity arsenal. But type-A personalities beware: clean is not an option.

## 6.2.4 Tacts

Tacts for iPhone is the product of Chinese startup Terntek, and it has broken through internationally with its English language version, which was released in 2010. Although it's not a major player in the contacts service, its steady and reliable platform has enabled Tacts to increase in popularity over time — now it is considered one of the more formidable next-gen contact managers.

It's important to note that Tacts is a contact manager primarily, but also offers in-app purchases to boost the service's capabilities. These premium additions, which include a functional T9 text predictor and various icon sets, can also be had through the procurement of virtual coins; users can earn coins by either downloading and opening a specific list of apps that Tacts has partnered with or by using another meeting service, Bump, to exchange contact information. For the sake of brevity, none of these other services were included in the test run of Tacts.

## Pros

Tacts has a primary goal of organization — and what it does, it does well. Once the user's address book is imported, Tacts enables the ability to group contacts in any sort of manner via a simple tap interface. The service also develops "Smart Groups," which lumps contacts together by

defining characteristics such as their hometown or by contact completeness. Contact favorites can be chosen within the system, but Tacts also keeps track of contact profiles you spend the most time interacting with to develop a “Top Contacts” list — sort of like an anticipation for who you need to reach rather than a predefined set of people. Perhaps the most important characteristic of Tacts’ organizational capabilities is that once groups are made within the service, the address book is altered to reflect those changes. So, Tacts groups pop up across other contact services, making it considerably less difficult to reorganize over time.

It’s also easy on the eyes. Out of all of the applications reviewed, Tacts had the most interesting and visually friendly UI. Its dark background is accented with interesting neon lettering and designs, and its stock of more than 50 icons allows for plenty of personalization within the service. It’s definitely pretty, and it gets the job done.

### Cons

Unfortunately, Tacts doesn’t offer much of a rich experience beyond organization — which is a bit of a letdown because groups functionality is already present in native contact management software. And, while Smart Groups is a novel concept, it leans heavily on the diligence of the user and it’s counter-intuitive to modern contact sharing. For example, how can you have a list of contacts by city if you don’t have a new acquaintance’s address? Furthermore, does it matter? Because there’s no way to create your own Smart Group based on custom parameters, the concept is not very useful.

The app itself is also less intuitive than it looks at first blush. Rhythms of tapping and adding contacts to a particular group can be rapidly halted with an accidental push of the “Store” button, which never seems far enough away from the action. It’s also easy to get caught up in the minutiae of organizing and developing groups, so there’s a high risk for that turned-around feeling that can happen when you unintentionally navigate away from your intended target. It’s not laid out to maximize efficiency, and that is frustrating.

### Bottom Line

Tacts does all the organizing you could ever want, but it won’t offer you much more than that. If you’re trying to get away from traditional contact managers, then this is not for you.

## 6.2.5 Soocial

Dutch startup Soocial burst onto the scene in 2006, and quickly gained steam as a popular contact management app for those outside the US. Boasting address unification across 500 different platforms and messaging services, Soocial capitalized on the cloud computing boom to create a universal contacts list. Though it maintained a small, scrappy team of only 4 workers in Amsterdam, Soocial was getting attention.

And that attention became an acquisition late last year, when professional networking site Viadeo incorporated the Soocial team into its products. The French social network is the number 1 non-English professional site in the world, but the company is looking to capitalize on Soocial’s service within emerging markets. All that aside, Soocial is still up and available for users via online or mobile.

### Pros

Soocial is classic cloud software, relying on a “home base” online to keep operations running and offering peripheral applications on mobile and tablet. Importing and managing a contact

**Notes**

list is simple, and Ssocial runs imports in the background of the service to allow for free browsing during information processing. Users can also individually manage each source to cull only the most important, relevant or complete contacts from any given place, or filter every new user into a special group.

Ssocial also excels in general maintenance of contact lists. Rather than just providing a simple sync, Ssocial frequently backs up the entire contact list for safekeeping. That backup can then be emailed to a specified destination or utilized in the event of a complete address book meltdown. The service also boasts a batch deduper and cleaner, which can fix all URLs within the contact list and remove formatting from phone numbers to keep a standardized look. Any changes can then be easily synced to a mobile device with a simple tap of a button.

**Cons**

Ssocial suffers from a lot of the similar challenges as Tacts in that there really isn't much interactivity beyond simple contact management tasks. Lack of integration from social networks, despite the service's rich source connections, can be a pain point for those who are looking for a more comprehensive contact system that includes mainstays like Twitter. In addition, the lack of smarter connections means that most of the time, the contact list looks woefully incomplete. Users will have to be interested in completing their contact list one by one in order for Ssocial to feel 100% usable. However, this problem has the potential to be solved over time with further integration with Viadeo, but it's unlikely to help with English-speaking networkers.

Another difficulty that arises frequently with Ssocial is that its basic tools seem relatively lackluster. The deduper isn't as strong as ones found on other services, and there really is no way to see whether the cleaner did correct much formatting. Even more disheartening is that the company's Premium service, which costs \$5 per month, doesn't have enticing enough features to merit an upgrade. For all of its good work, Ssocial seems in-between products, and it's begging for a new direction.

**Bottom Line**

Compulsive backup fiends will enjoy Ssocial's easy, fast and secure syncing, but networkers may find the system to be unappealing due to its startling lack of social network compatibility. Ssocial has the highest potential for a new and exciting pivot, but the jury's out as to whether it will benefit English-speaking countries.

**Self Assessment**

Fill in the blanks:

5. The blase nature of the traditional ..... app can be taken or just as easily left in a folder for minimal use.
6. A contact manager can incorporate new ..... services to transmit readily available information from social media profiles directly into that contact profile.
7. .... supports imports from the usual suspects including Gmail and your smartphone.
8. Hello collects location and time data to create an .....

**6.3 Managing Projects**

Cloud computing is particularly useful to support a lean and digitize approach to project management. In this paper, a method is presented to take into account the opportunities of cloud

computing. When Project Management Clouds (PM Clouds) are available at an affordable price, as and when needed, they can impact project management in the following ways:

Notes

- Provides leapfrog opportunities to emerging economies and small enterprises able to compete globally by leveraging “best-in-class” PM clouds
- Fosters innovation as companies leverage more affordable PM cloud options to experiment
- Minimizes the divide between small and large enterprises. Provides equal opportunities as project management clouds become available at an affordable price
- Allows for global collaboration with project talent around the world
- Facilitates global and interactive learning at an affordable price

Project management applications include additional functions valuable in the management of group projects. These features may include group to-do lists, Web-based file sharing, message boards, time and cost tracking, and so on. And the most robust of these apps lets you manage multiple projects simultaneously; users can schedule their time across multiple projects and make sure they are not doing two things at once.

### Self Assessment

Fill in the blanks:

9. Cloud computing is particularly useful to support a ..... and ..... approach to project management.
10. Project management applications include additional functions valuable in the management of ..... projects.

### 6.4 Collaborating on Reports

This type of collaboration is useful, for example, to add a reminder to investigate low sales figures for a particular product, or to explain an anomaly in the data that could be a cause for concern. Collaborating on a Web-based document is surprisingly easy. Most projects start with the team leader creating a new document online and giving it a bit of form, some sort of content and style template. The leader then assigns sections of the report to appropriate individuals, and provides the document URL to each individual. These contributors then work on their own sections of the report, logging into the master document via their web browsers. When all the individual sections are complete, the project leader then looks at the document as a whole, editing for consistency and making sure that all appropriate data is included.

The best Web-based word processors work in conjunction with full-fledged Web-based office suites. Google Docs, for example, encompasses word processing, spreadsheet and presentation functions. Zoho’s suite of apps includes similar word processing, spreadsheet and presentation functions as well as a neat little project management module.

### 6.5 Collaborating on Marketing Materials

Moving over finance, marketing is another area which could immensely benefit from Cloud enabled systems.

Putting together a catalogue requires data from several different departments. For example, effective direct mail campaign benefits from marketing, sales, and fulfillment input. Online PR needs participation from marketing, product, and technical staff.

**Notes**

Moreover, when it comes to creating marketing materials, usage of web based applications would be the best approach to comfortably collaborate between different departments and would also ensure proper and hassle free management of the supply chain system and personnel involved.

The required marketing materials, the cash needed for the same, and the approval or disapproval for the same from the management can all be logged into the same system and can be accessed anytime anywhere, thus reducing the time lag and also eliminating communication gap between various parties involved.

The marketing materials themselves can be created using Web-based word processing applications. This puts the draft materials on the web, for everyone on the team (including appropriate senior management) to see, comment on, and even contribute to. After everyone's had his or her say, you can finalize the document and send it to your printer or website.



*Task* Create a marketing material of your preference through a web based application.

**Self Assessment**

Fill in the blanks:

11. Collaborating on a ..... document is surprisingly easy.
12. The best Web-based word processors work in conjunction with full-fledged Web-based .....
13. Putting together a ..... requires data from several different departments.
14. The marketing materials themselves can be created using Web-based ..... applications.

**6.6 Collaborating on Expense Reports**

A better solution for many companies is to put the expense reporting function on the web. Employees from any location can access the website to enter their expenses; it can even be accessed while employees are still traveling, with no need to wait for reimbursement until they get home. Then the web-based expense report gets electronically circulated to everyone who needs to approve it or, more likely, a link to the web-based report is emailed instead. Finally, after the last approval is entered (electronically, of course), the accounting department is notified and a check is cut. No costly paper trail is generated, no documents spend days waiting in someone's inbox, and the entire process is expedited—which means employees get reimbursed faster.

The benefit of Web-based expense management is that you can quickly and easily ensure that all employees follow your company's rules and regulations. Just add your own rule base into the app's management console, and the employees will have to follow your company's policies when entering their expenses.

**6.7 Collaborating on Budgets**

The budgets for collaborative activities will vary greatly depending on the scope of the proposed problem or project and on the number of people involved. The Foundation recognizes that funding must be appropriate to an activity's specific scope and needs. It also recognizes that

organizing and implementing such an activity can be exceedingly time consuming. Unlike Research Award budgets, Collaborative Awards may request administrative support to facilitate the collaborative aspects.

### 6.7.1 Models of Budgetary Collaboration

The two main models of budgetary collaboration are as follows:

1. **Aligned budgets:** Where the partners each consent to assign an agreed part of their own budgets in support of the common initiative or shared responsibility. In so doing, each partner retains responsibility and accountability for their own spending contributions.
2. **Pooled budgets:** Where partners contribute resources to a special fund to achieve common objectives to which all have agreed. Two alternative approaches present themselves for such pooled arrangements. On the one hand, they may involve a 'hosting' approach in which one of the partners takes lead responsibility for managing the special fund, and into which all the other partners pay their contributions. On the other, is a 'third-party' approach in which a special unit is established to provide independent and dedicated leadership in relation to the functional activity or service, and through which the partners 'pool' their financial contributions.

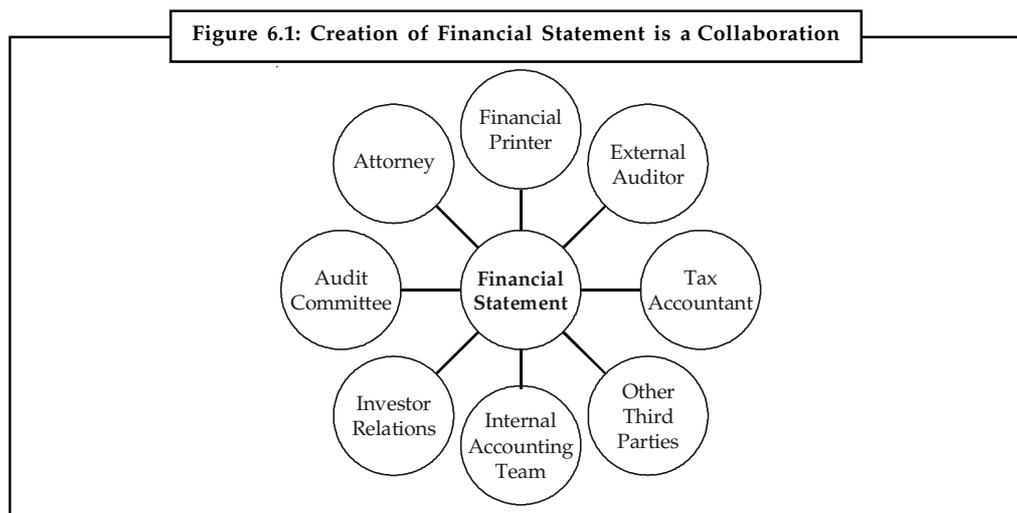
### Self Assessment

Fill in the blanks:

15. The benefit of Web-based ..... management is that you can quickly and easily ensure that all employees follow your company's rules and regulations.
16. The ..... for collaborative activities will vary greatly depending on the scope of the proposed problem.

### 6.8 Collaborating on Financial Statements

The creation of an external financial statement is collaboration between multiple parties. This collaboration is both inter- and intra-organization. The graphic below shows many of the parties which collaborate to create an external financial statement.



Source: <http://xbrl.squarespace.com/journal/2011/10/6/creation-of-financial-statement-is-a-collaboration.html>

**Notes**

Before the internet existed, many of the means of collaboration we take for granted today were either simply impossible or cost prohibitive for all but the largest organizations. As such, collaboration could be considered “efficient” by pre-internet standards. However, by today’s standards with the capabilities enabled because of the internet, those same efficient looking processes seem quite inefficient.

Before the internet collaboration with external parties took the form of the postal service, the fax, couriers, etc. Even collaboration with internal parties required these types of resources. Today, we all know that this is different and that anything which is in a digital form or can be put into a digital form can be anywhere on the planet in milliseconds.

**6.9 Collaborating on Presentations**

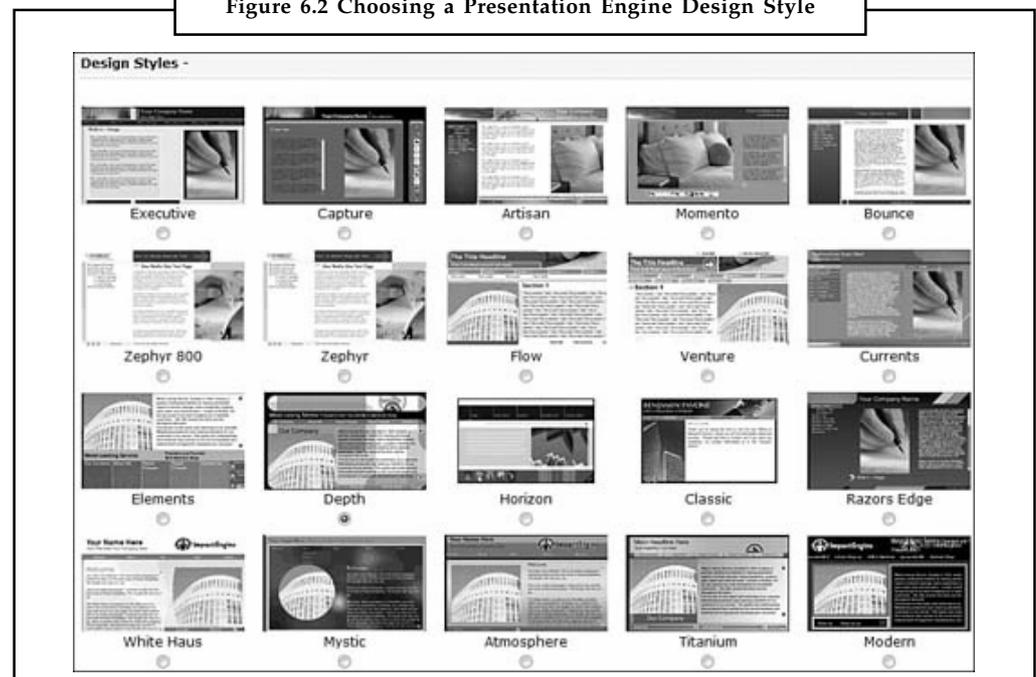
Following section will explain you how to collaborate on presentations:

**6.9.1 Presentation Engine**

Presentation Engine ([www.presentationengine.com](http://www.presentationengine.com)) is an advanced presentation program with an eye toward snazzy graphics and transition effects. It offers a level of graphics sophistication not found in competing online applications.

You start by selecting a design style from the list shown in Figure 6.2. You then choose background music and a color scheme for your presentation, and then start adding the text for your slides. The result is a multimedia presentation, like the one in Figure 6.3, saved as an executable file that can be run from the web or downloaded to your PC.

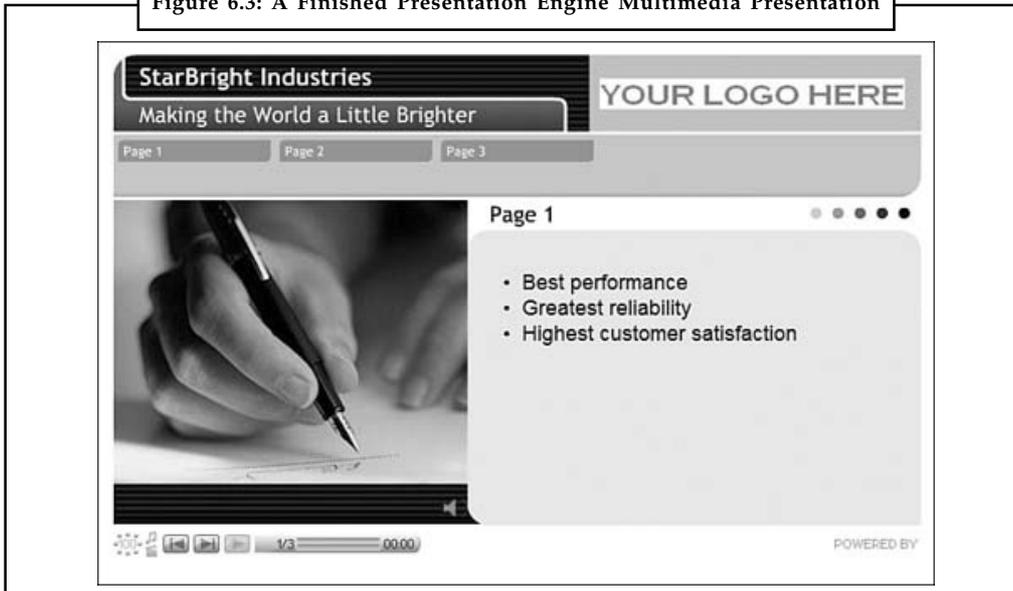
**Figure 6.2 Choosing a Presentation Engine Design Style**



*Source:* [http://allcomputers.us/windows\\_azure/collaborating-on-presentations—evaluating-web-based-presentation-applications-%28part-2%29.aspx](http://allcomputers.us/windows_azure/collaborating-on-presentations—evaluating-web-based-presentation-applications-%28part-2%29.aspx)

What you don’t get with Presentation Engine is a lot of flexibility? Want to add a chart? You can’t. Want to vary from the suggestion slide transitions and animations? You can’t. But if you like Presentation Engine’s visual flair, you should be satisfied with the quality of the results.

Figure 6.3: A Finished Presentation Engine Multimedia Presentation

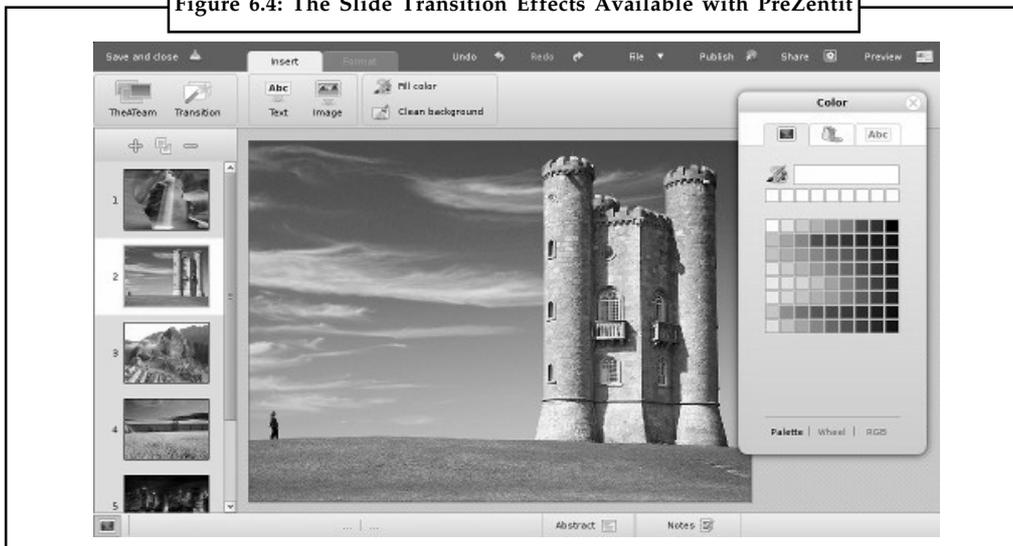


Source: [http://allcomputers.us/windows\\_azure/collaborating-on-presentations—evaluating-web-based-presentation-applications-%28part-2%29.aspx](http://allcomputers.us/windows_azure/collaborating-on-presentations—evaluating-web-based-presentation-applications-%28part-2%29.aspx)

## 6.9.2 PreZentit

PreZentit ([www.prezentit.com](http://www.prezentit.com)) is a slick-looking application that offers features not found with competing programs. You get a library of graphics you can use for slide backgrounds, a bevy of slide transition effects (shown in Figure 6.4) and easy sharing and collaboration with authorized users. What you don't get is a chart-creation function, but then again, most competing applications don't have that either.

Figure 6.4: The Slide Transition Effects Available with PreZentit



Source: [http://allcomputers.us/windows\\_azure/collaborating-on-presentations—evaluating-web-based-presentation-applications-%28part-2%29.aspx](http://allcomputers.us/windows_azure/collaborating-on-presentations—evaluating-web-based-presentation-applications-%28part-2%29.aspx)

The presentations you create with PreZentit are saved in HTML format. You can run your presentations from the web or download to your PC for offline viewing.

### 6.9.3 SlideRocket

SlideRocket ([www.sliderocket.com](http://www.sliderocket.com)) is one of the newest web-based presentation applications. As you can see in Figure 6.5, SlideRocket offers an appealing interface with lots of advanced features.

Figure 6.5: SlideRocket—One of the Most Advanced web-based Presentation Applications



Source: [http://allcomputers.us/windows\\_azure/collaborating-on-presentations—evaluating-web-based-presentation-applications-%28part-2%29.aspx](http://allcomputers.us/windows_azure/collaborating-on-presentations—evaluating-web-based-presentation-applications-%28part-2%29.aspx)

You get a lot of features in SlideRocket that aren't available in competing applications. For example, SlideRocket offers pre-designed static and motion themes; slide transitions and builds; a variety of 3D effects; the ability to import audio, video, and animations on your slides; a powerful chart creator; and group collaboration and presentation building. You can then present your work via the web in real time or download your presentations for offline use.

If you're a power PowerPoint user or just have advanced needs, SlideRocket is definitely worth checking out.

### 6.9.4 ThinkFree Show

ThinkFree Show ([www.thinkfree.com](http://www.thinkfree.com)) is the presentation component of ThinkFree's suite of office applications. As you can see in Figure 6.6, Show looks a lot like pre-2007 PowerPoint, minus the charting function. You do, however, get both slide transition effects and custom animations for text and objects on a slide, as well as the ability to inset tables and shapes.

Sharing is accomplished via ThinkFree's My Office Webtop, which is also where you share other types of ThinkFree documents. You can share presentations for viewing only or for group editing, and then play back your presentations from any Internet-connected computer.

Figure 6.6: The PowerPoint-like Interface of ThinkFree Show

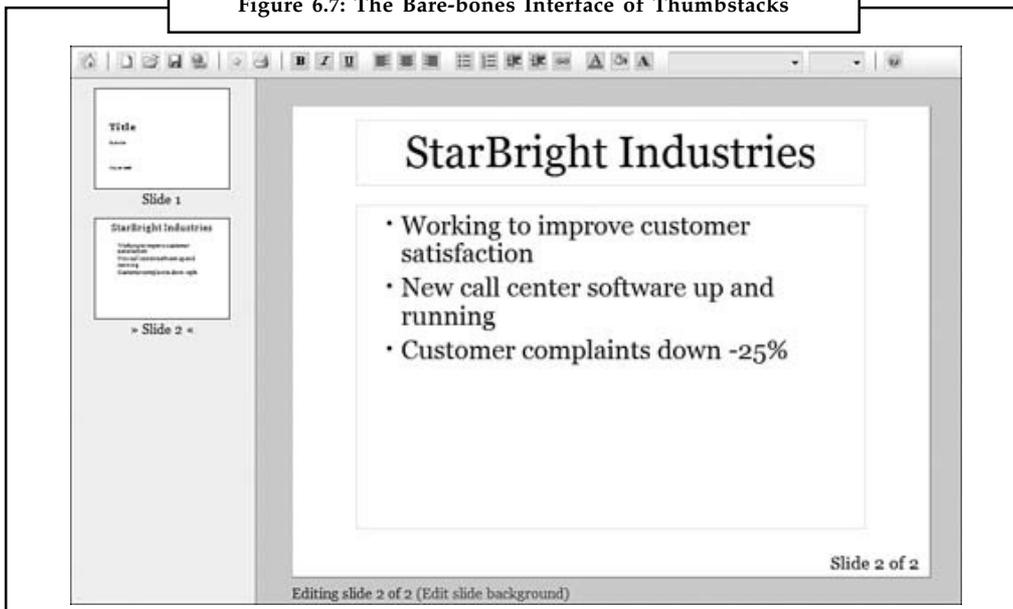


Source: [http://allcomputers.us/windows\\_azure/collaborating-on-presentations—evaluating-web-based-presentation-applications-%28part-2%29.aspx](http://allcomputers.us/windows_azure/collaborating-on-presentations—evaluating-web-based-presentation-applications-%28part-2%29.aspx)

### 6.9.5 Thumbstacks

Thumbstacks ([www.thumbstacks.com](http://www.thumbstacks.com)) is a bare-bones online presentation program. The interface is easy enough to use, as you can see in Figure 6.7, but you're pretty much limited to plain text slides; there are no tables, charts, or transition effects.

Figure 6.7: The Bare-bones Interface of Thumbstacks



Source: [http://allcomputers.us/windows\\_azure/collaborating-on-presentations—evaluating-web-based-presentation-applications-%28part-2%29.aspx](http://allcomputers.us/windows_azure/collaborating-on-presentations—evaluating-web-based-presentation-applications-%28part-2%29.aspx)

### 6.9.6 Zoho Show

Zoho Show (show.zoho.com), shown in Figure 6.8, is probably the weakest link in the Zoho Office suite. Like Google Presentations, Zoho Show lets you create good-looking text-based slides, but that’s about all. There is no chart-creation function, no tables, and no slide transition effects.

Figure 6.8: The Zoho Show Web-based Presentation Program



Source: [http://allcomputers.us/windows\\_azure/collaborating-on-presentations—evaluating-web-based-presentation-applications-%28part-2%29.aspx](http://allcomputers.us/windows_azure/collaborating-on-presentations—evaluating-web-based-presentation-applications-%28part-2%29.aspx)

That said, Zoho Show integrates well with Zoho’s other web-based applications and offers easy sharing and collaboration. So if you want a good basic presentation with few bells or whistles, it’s worth checking out.

### 6.9.7 Sharing Your PowerPoint Presentations

If you already have a PowerPoint presentation and just want to share it with others via the web, you might be interested in a presentation-sharing site. These sites, such as SlideBurner ([www.slideburner.com](http://www.slideburner.com)) and SlideShare ([www.slideshare.net](http://www.slideshare.net)), work kind of like YouTube, but for presentations rather than videos.

These sites, like YouTube, are file-sharing communities that are free for anyone to use. Once you sign up, you can upload any presentation in PPT (PowerPoint), PDF, or ODP (OpenOffice) format. The presentations you upload are then made available to the site’s community; you can make your presentations private (viewable by invitation only) or public (meaning anyone can see them).

Of course, you can also use these sites to host the presentations you give on the road or broadcast to remote colleagues. Just send the URL for your uploaded presentation to your colleagues or enter it into your own web browser. Your presentation can then be viewed in its default viewing window or, on most sites, full screen.



*Notes* A presentation sharing site makes sense if you don’t want to switch from PowerPoint to a web-based application but still need to share your final presentation with others in remote locations.

It's also a good idea if you want to give a presentation on the road but don't want to haul your notebook with you, or even if you just want a backup while you're traveling. What you can't do, of course, is edit the presentations you upload; these services are for sharing, not for collaboration.

## Self Assessment

Fill in the blanks:

17. The ..... collaboration with external parties took the form of the postal service, the fax, couriers, etc.
18. Presentation Engine is an advanced presentation program with an eye toward ..... graphics and transition effects.
19. The presentations you create with PreZentit are saved in ..... format.
20. SlideRocket offers pre-designed ..... and ..... themes.

## 6.10 Presenting on the Road

Some of the applications include additional features that add functionality to remote presentations.



*Example:* Zoho Show includes integration with Zoho Chat, which lets you have real-time text-based interaction with interested participants. It's like adding a chat room to your presentation; participants ask you questions and you respond, in real time, during the course of the presentation.

Then you have web-based applications such as Cisco's WebEx ([www.webex.com](http://www.webex.com)) and Microsoft Office Live Meeting ([office.microsoft.com/en-us/livemeeting/](http://office.microsoft.com/en-us/livemeeting/)). These are hosted applications that let you stage live meetings and presentations—called *web conferences*—over the internet. All group members log onto a designated website and then view the presenter's presentation or participate in real-time audio and video discussions. Granted, a web conference of this sort may be expensive overkill, but it's a very effective way to get the job done—especially if you want live feedback on what you're presenting.

Even better, many Web-based presentation programs let you give your presentation without even being there. That is right; you can give a remote presentation—at multiple locations at the same time—by having all participants login to the same Web-based spreadsheet. Make sure that they have read-only access, dial everyone into a conference call (so that you can provide the audio walk-through), and then go into presentation mode. All attendees at all locations will see the same presentation, and you do not even have to buy a plane ticket.

## 6.11 Accessing Documents on the Road

With the prevalence of cloud storage and mobile devices lots of people are interested in the most efficient ways to share their work. There is no one right answer to it but some of the options available are explained below:

**The digital hub:** If you've used a Mac for a while you may recall Apple's "digital hub" strategy. The idea is that the Mac operated in an octopudinal way, where you'd tether your various devices to it and manage all your stuff with your computer—no cloud necessary as everything you needed was on your computer.

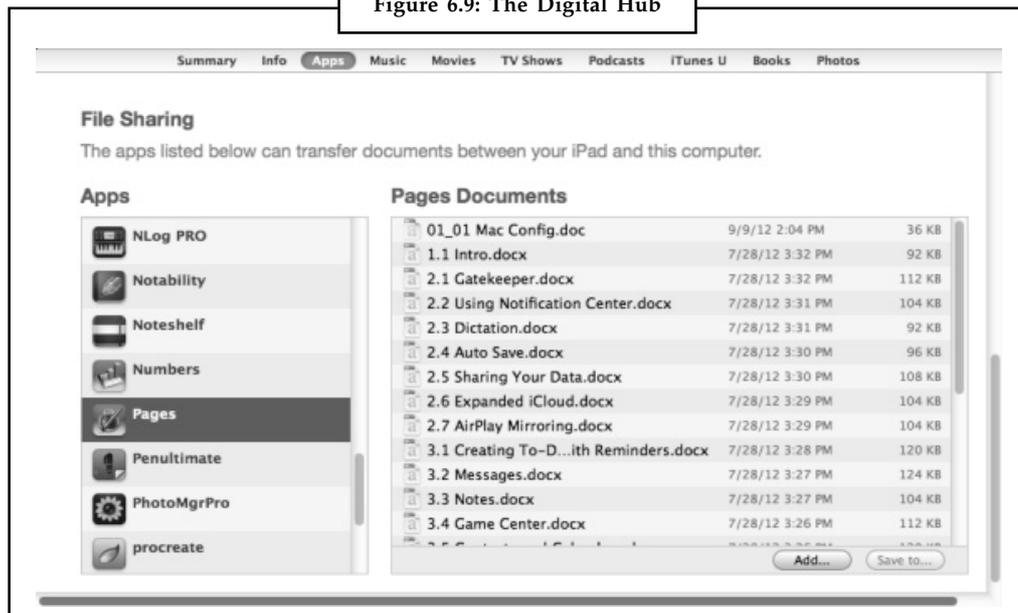
There's no crime in continuing to manage your stuff this way. Just copy all the files you could possibly need to your Mac. Should you wish to put some of those files on your iPad, attach the

Notes

iPad to your laptop with its syncing cable, launch iTunes, select the iPad in iTunes' Source list, click the App tab in iTunes main window, move down to the File Sharing area, select the app you want to share files with (Pages, for example), and drag the compatible files you want to sync into the sharing area. They'll be copied to the iPad and available from within the app you chose.

One of the attractions of iOS devices in this regard is that—unlike with other kinds of media—iTunes won't throw a fit if you've jacked in an iPad, iPhone, or iPod touch that a particular Mac isn't synced with. Apple wisely allows "unknown" iOS devices to be plugged into any Mac for the purposes of file sharing.

Figure 6.9: The Digital Hub



Source: <http://www.macworld.com/article/2013341/having-it-all-accessing-files-from-the-road.html>

**Add Files to Your iPad within iTunes' File Sharing Area**

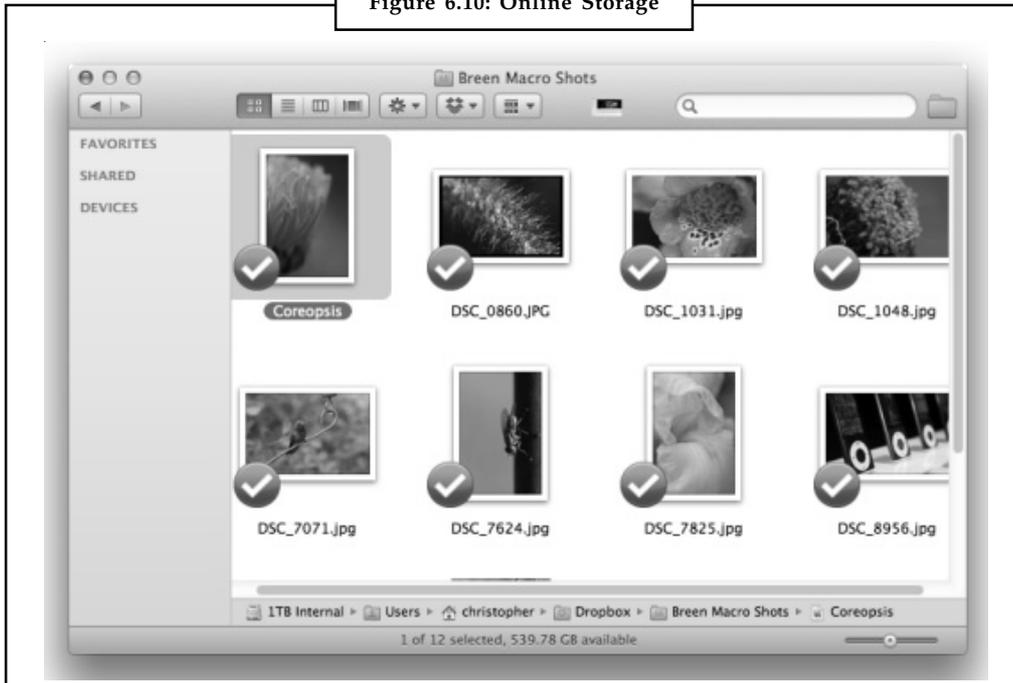
The shortcoming of the digital hub is that you're stuck with whatever you've brought along with you. If you've forgotten a file or traipsed off on an outing with just your iPad in hand without syncing an important file to that device, you're largely out of luck.

**iCloud:** If you're running Mac OS X Mountain Lion on your Mac and iOS 6 on your iPad, you likely have an iCloud account. With iCloud's document sharing it's difficult to not share certain kinds of files to Apple's cloud service as applications such as Pages, Numbers, Keynote, and TextEdit choose iCloud as their default location for saving files. As long as you have an internet connection, any files you've created in these applications and saved to iCloud will be available to your laptop and iPad provided that you have copies of the host applications on these devices.

The problem with iCloud storage is that it's limited to a few Apple applications. If you have files of other types, iCloud is of no help to you.

**Online storage:** For the greatest cloud flexibility you'll look to services such as Dropbox, Google Drive, or **Error! Hyperlink reference not valid..** With a Dropbox account you get 2GB of free storage plus 500MB of additional storage for everyone you refer to the service. Google Drive and SugarSync each offer 5GB of free storage. All three services allow you to purchase additional storage. They also all offer iOS apps for accessing your stored files.

Figure 6.10: Online Storage



Source: <http://www.macworld.com/article/2013341/having-it-all-accessing-files-from-the-road.html>

### Use Dropbox to Access Files Stored in the Cloud

While you can use those apps to get to your files stored in the ether, there is a \$5 GoodReader app also available to you. GoodReader can download and open many files stored on these services. And when it can't, its handy open in command lets you open files in an app that can deal with them.



*Example:* You can open EPUB files in iBooks or move many kinds of image files to the Photos app. GoodReader is a must-have on all my iOS devices.

**Back to your Mac:** Fat lot of good an online storage service does you if you've neglected to upload the files you need to that service before you've taken off for the gentle slopes of Lower Slovenia.

Apple offers its Back to My Mac service that lets you view and control a remote Mac. In such a scenario you could then add the files you want to Dropbox, Google Drive, or SugarSync, or play it old-school and simply email the files you need to yourself. When Back To My Mac works it can be wonderful—particularly since it can use the Wake on Demand feature supported by Latish-model Airport Base Stations and Time Capsules running firmware 7.4.2 or later. Without going into great detail about Wake on Demand, this means that even if your Mac is asleep (but, on a laptop, with the lid open) you can wake it remotely and access your files.



**Caution** One difficulty is that Back to My Mac works best with one of Apple routers and if you don't have one, you could be in the soup. In addition, you can't use Back to My Mac from an iOS device.

**Notes**

Fortunately there are other ways to access your Mac. You can use it to access a remote Mac from an iOS device as well as a computer. It works this way:

Register an account with LogMeIn and download the Mac server client to your home or office Mac. When you're planning to be away, fire up that server and leave your Mac running. You won't be able to access it if the Mac is asleep.

When you want to access your remote Mac from your laptop, point your web browser at the LogMeIn website, log in, and, using the LogMeIn plug-in, log into your Mac.

**Figure 6.11: Apple Mac**



Source: <http://www.macworld.com/article/2013341/having-it-all-accessing-files-from-the-road.html>

**Log into Your Remote Mac from an iPad with**

If you're using an iOS device, download the free LogMeIn app. Launch the app, enter the email address and password associated with your LogMeIn account, and in a short time you should see your Mac's screen. Use the recommended gestures to navigate around your Mac, locate your files, and place them somewhere you can retrieve them.

As you can see, there are many ways to attack this problem, it would be better to use a combination of these techniques. By doing so your files would be completely safe and accessible whenever you need them.

**Self Assessment**

Fill in the blanks:

- 21. A web conference may be expensive overkill, but it's a very effective way to get live ..... on what you're presenting.
- 22. The problem with ..... storage is that it's limited to a few Apple applications.



Case Study

## Virtualization for Cloud Computing

### Challenges

- Improve efficiency and reduce TCO of increasingly diverse and complex virtualization infrastructure.
- Currently, two-way servers have reached a bottleneck in terms of increasing virtualization efficiencies.

### Solutions Notes

- Four-way servers fitted with the Intel® Xeon® processor 7500 series.

### Impact

- The Intel Xeon processor 7500 series delivers high performance and excellent scalability in both virtualization and non-virtualization configurations.
- Facilitates the overall optimization of increasingly diverse and complex corporate IT infrastructure along with more efficient use of server resources and lower TCO.

### Going Beyond the Limits of Silo-style Virtualization

CTC conducted trials using the Intel Xeon processor 7500 series before the processor was even released. Discussing the objectives of these trials, Tomoyuki Higashi, General Manager of the Infrastructure Solutions Marketing Department in the IT Business Marketing Division of CTC, said that "we need to strengthen the solutions and services we offer for IT infrastructure and we have adopted virtualization technology based on the latest hardware to give impetus to our cloud computing business. In particular, we found recently that we have reached the limit in the cost savings possible using silo-style virtualization and server integration on their own. Instead we are looking at trailing the potential for further reductions in TCO achieved by sharing an even larger server resource in the form of company-wide cloud computing."

### Delivering High Performance Virtualization and Scalability

In conducting trials of a four-way server fitted with the Intel Xeon processor 7500 series, CTC's two specific objectives were to verify its performance and its scalability in a virtualization environment. The performance testing considered the performance of integer processing, floating point operations, a C compiler, and system calls. The virtualization scalability testing that measured the number of virtual machines possible when running a J2EE application (Java Pet Store\*).

### Questions:

1. Discuss the optimization of IT infrastructure with cloud computing by intel in a group of four students and prepare a group report.
2. What is the impact of trials conducted by CTC?

Source: <http://www.intel.in/content/dam/www/public/us/en/documents/case-studies/xeon-7500-itochu-techno-solutions-corporation-virtualization-cloud-computing-study.pdf>

## 6.12 Summary

- Web-based scheduling programs let you schedule both in-person meetings and teleconferences with attendees from multiple locations. You are not limited to just those people located in your office; you can work with the schedules of people around the country and even in different firms.
- What the traditional contact managers actually show is the relative little change it made in the process from analog to digital. In a lot of ways, a contact manager can incorporate new, innovative services to not only help users take a smarter approach to meeting new people but also transmit readily available information from social media profiles directly into that contact profile.
- Hello can be passed to a new acquaintance or filled in by the user and all contacts are encouraged to leave behind photos. Hello also collects location and time data to create an “encounter,” meaning that users can log repeat meetings of the same person.
- Smartr adds so much to the contact list experience, and that alone makes it an attractive feature to have in any productivity arsenal. But type-A personalities beware: clean is not an option.
- Tacts does all the organizing you could ever want, but it won’t offer you much more than that. If you’re trying to get away from traditional contact managers, then this is not for you.
- Project management applications include additional functions valuable in the management of group projects.
- Collaborating on a Web-based document is surprisingly easy. Most projects start with the team leader creating a new document online and giving it a bit of form, some sort of content and style template.
- The budgets for collaborative activities will vary greatly depending on the scope of the proposed problem or project and on the number of people involved.

## 6.13 Keywords

*Presentation Engine:* It is an advanced presentation program with an eye toward snazzy graphics and transition effects.

*PreZentit:* It is a slick-looking application that offers features not found with competing programs.

*SlideRocket:* It is one of the newest web-based presentation applications.

*Thumbstacks:* It is a bare-bones online presentation program and its interface is easy enough to use.

*Web-conferences:* Hosted applications that let you stage live meetings and presentations over the internet called web conferences.

## 6.14 Review Questions

1. What are web-based scheduling programs?
2. Briefly describe Contacts app.
3. What is plaxo? Also explain its pros and cons.

- |   |                     |
|---|---------------------|
| <ol style="list-style-type: none"> <li>4. What do you understand by Evernote Hello approach to the contact management?</li> <li>5. Write a short note on smartr.</li> <li>6. How does Social used for creating contacts list?</li> <li>7. Explain project management clouds and how can they impact project management?</li> <li>8. Describe collaborating on reports and marketing materials.</li> <li>9. What are the models of budgetary collaboration?</li> <li>10. Briefly explain collaborating on presentations with suitable examples.</li> </ol> | <p><b>Notes</b></p> |
|---|---------------------|

**Answers: Self Assessment**

- |                               |                     |
|-------------------------------|---------------------|
| 1. Master                     | 2. Slave            |
| 3. in-person, Teleconferences | 4. Web-based        |
| 5. Contacts                   | 6. Innovative       |
| 7. Plaxo                      | 8. Encounter        |
| 9. Lean, digitize             | 10. Group           |
| 11. Web-based                 | 12. Office-suites   |
| 13. Catalogue                 | 14. Word-processing |
| 15. Expense                   | 16. Budgets         |
| 17. Internet                  | 18. Snazzy          |
| 19. HTML                      | 20. Static, motion  |
| 21. Feedback                  | 22. iCloud          |

**6.15 Further Readings**



*Books*

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E. Y. Sarna. David, 2011, "Implementing and Developing Cloud Computing Applications". Auerbach Publications.

Escalante. Armando, 2010, "Handbook of Cloud Computing Computer science". Springer.

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*Online links*

<http://thenextweb.com/apps/2012/09/02/5-contact-apps-boost-your-network/>

<http://www.macworld.com/article/2013341/having-it-all-accessing-files-from-the-road.html>

<http://www.scoop.it/t/comunicacion-marketing-y-redes-sociales>

<http://www.vmug.bc.ca/MACtalkPDFs/12MACtalkDecember.pdf>

## Unit 7: Cloud Services Uses

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## Objectives

After studying this unit, you will be able to:

- Debate on fundamental collaborating on calendars schedules and task management
- Explain the exploring online scheduling applications
- Debate on exploring online planning and task management

## Introduction

To understand cloud platforms, it is useful to start by looking at cloud services in general. Services in the cloud can be grouped into three broad categories. Those categories are:

**Software as a service (SaaS):** A SaaS application, also referred to as “on-demand software” supplied by ISVs or “Application-Service-Providers” (ASPs), is a software delivery model in which software and associated data are centrally hosted on the cloud. SaaS is typically accessed by users using a thin client via a web browser. SaaS has become a common delivery model for many business applications, including Office & Messaging software, DBMS software, Management software, CAD software.

**Attached services:** Every on-premises application provides useful functions on its own. To enable an event subscription to respond to events from your Enterprise Content Management server, you need to create an attached service that can be used to invoke a Content UCA.

**Cloud platform:** It is a system where software applications may be run in an environment composed of utility cloud services in a logically abstract environment. Platform as a Service is a Cloud Platform offered by a service provider as a hosted service which facilitates the deployment of software applications without the cost and complexity of acquiring and managing the underlying hardware and software layers.



*Example:* Google AppEngine and Force.com.

## 7.1 Collaborating on Calendars Schedules and Task Management

As anyone in a large office knows, scheduling a meeting can be a frustrating experience. Not only do you have to clear time from all the attendees’ individual schedules, you also have to make sure that the right-sized meeting room is available at the designated time.

An online scheduling application is a solution to all your scheduling and task management problems. This web-based application takes care of scheduling your meetings, for both large and small groups. The typical application requires all users to enter their individual calendars beforehand. When you schedule a meeting, this application checks attendees’ schedules for the first available free time for all. The app then generates automated email messages to inform attendees of the meeting request and the designated time, followed by automatic confirmation emails when attendees accept the invitation.

**Notes**

*Whether you're working* on your own projects or collaborating with a team, you have to manage your productivity. With online task-management applications, you can organize tasks, collaborate in real-time, access your lists across multiple computers or mobile devices, and much more. Thus, web-based scheduling and task management applications help you to organize your schedules and manage your tasks efficiently.

### 7.1.1 Exploring Online Calendars Applications

Many of us prefer to manage our appointments, social events, and to-do lists with online calendars. Most of us our switching to the Web-based calendars today. A Web-based calendar service stores your calendars on the Internet, where they can be accessed from any computer that has an Internet connection. Web-based calendars are also extremely easy to access and share with other users across the globe, which makes them a great option for collaborative projects and tasks. Let us now discuss about a few online calendars that let you remain better organized at work, at your home or anyplace that has an internet connection.

#### Google Calendar

Google Calendar is a free time-management web application offered by Google. It is the most popular Web-based calendar today, which undoubtedly is due to its association with the web's most-used search engine. With *Google's* free online *calendar*, it's easy to keep track of life's important events all in one place. Google Calendar is free, full featured, and easy to use.



*Did u know?* In June 2000, Google became the world's largest search engine.

Google Calendar lets you schedule and share events with a flexible free online calendar accessed through the web, mobile devices and many desktop application such as Outlook and iCal. While Google Calendar includes a to-do list, its features are a tad limited.

Google Calendar lets you create multiple, colour-coded calendars. You can set up colour-coded calendars and share them as well as invite people to events flexibly using Google calendar.

Each calendar can be shared with other Google Calendar users using flexible permissions such as admin, make changes, view only and so on. With this facility you can invite anybody with an email address to your events. These invitees can also make the necessary changes to your event list as and when the need arises.

Google Calendar is an easy way for teachers, administrators and students to share time-related info like team schedules, assignment deadlines and school holidays. Anyone who needs to view a calendar can use it from any Internet-connected computer and access it on existing school web pages or within their own Google Calendar account. Changes made by a calendar organizer are automatically seen by anyone who checks, which makes outdated versions a thing of the past.

Sports teams, clubs and other groups can use Google Calendar to keep students, teachers and parents current with their group schedule. Groups with more than one leader (for example, a coach and two captains) can easily designate multiple "owners" to keep the calendar updated.

Google Calendar includes daily, weekly, monthly and custom views as well as an agenda. Each view can be printed. Flexible scheduling repeats events automatically. Flexible reminders notify you via email, SMS or desktop alert.

Google Calendar also includes some keyboard shortcuts, and events can be created using natural language as well as mouse dragging. The Gmail Tasks to-do list is available from Google Calendar, and you can create calendar events from Gmail, too. Google Calendar can be accessed

using the web, mobile devices, Outlook and CalDAV (iCal and Mozilla Sunbird). It can also be accessed on the web even offline and with many programs and devices.

Notes



*Did u know?* According to its website, Google's mission is to organize the world's information and "make it universally accessible and useful."

In Google Calendar, you can pick a time with the mouse to add an appointment or use the slick "Quick Add" field that understands some "natural" language for example "dinner at Ravi's house tomorrow at 7pm". Repetition options are flexible. If you use Gmail, you can turn emails into events easily.



*Notes* In January 2003, the American Dialect Society voted the word "Google" as the "most useful" Word of the Year for 2002.



*Caution* If you just want to get your Outlook calendar into Gmail and then stop using Outlook, Google recommends using Google Apps Migration for Microsoft Outlook tool instead.

### Yahoo! Calendar

Yahoo! Calendar is a Web-based calendar service from Yahoo!. It can read calendar feeds and events collected from sites that make use of the published Yahoo! calendar programming interfaces. While users are not required to have a Yahoo! Mail account, they are required to have a Yahoo! ID in order to use the software.

One of Google Calendar's primary competitors is Yahoo! Calendar. Hosted by its search competitor Yahoo! This Web-based calendar free for anyone to use.

**Yahoo! Calendar** allows you to edit and access events on your calendar from anywhere with a browser and Internet access. It offers public and private event scheduling, to-do lists, weather, and integration with Microsoft Outlook and Palm devices.

Yahoo! Calendar also has the following features:

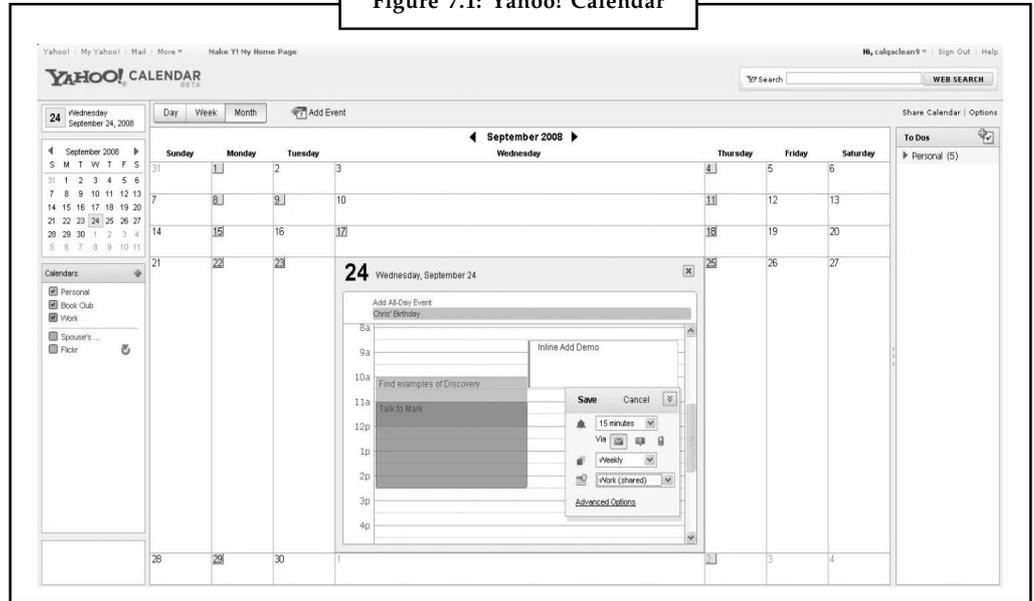
- It is a 100 year calendar
- It has various alarm features which allow you to send messages to numerous sources including:
  - ❖ email
  - ❖ mobile devices
  - ❖ Yahoo! Messenger
- It allows sharing of schedules between users. The mechanism allows several different methods of sharing including publicly sharing your calendar, sharing your calendar with a specific Yahoo! Group, and sharing your calendar with a particular Yahoo! user.

With Yahoo! Calendar events are stored online, so in the case of a user's hard drive failure, no data is lost. Calendar sharing is also available. Yahoo! Calendar has an Add Task button. This reflects Yahoo! Calendar's offering of tasks in addition to events. You can still add items to your

Notes

daily schedule, along with long-term tasks and have their due dates show up on your calendar. Just click the Sharing link to share your calendar with friends or others who can then edit the calendar.

Figure 7.1: Yahoo! Calendar



Source: [http://i.i.com.com/cnwk.1d/i/bto/20081007/Yahoo\\_Calendar\\_zoom.JPG](http://i.i.com.com/cnwk.1d/i/bto/20081007/Yahoo_Calendar_zoom.JPG)

You can create a single calendar with Yahoo! Calendar. Unlike Google, in Yahoo! You have to work on a single calendar as you cannot create different calendars for different functions.



*Task* Using Google calendar application and Yahoo! Calendar application make two online events lists.

### 7.1.2 Windows Live Calendar

Windows Live Calendar also known as Windows Live Hotmail Calendar or Hotmail Calendar is a time-management web application by Microsoft as part of its Outlook.com service. Calendar supports iCalendar files for users to import calendar entries into their calendars.

It features daily, weekly, monthly and agenda view modes. It also features a to-do list function for users to keep track of their tasks to be completed.

Windows Live Calendar looks a lot like both of its primary competitors Yahoo! Calendar and Google Calendar. It offers tasks, like Yahoo! Calendar, and also lets you schedule meetings with other calendar and Hotmail users.

With Windows Live Calendar events are stored online and can be viewed from any location. Multiple calendars can be created and shared, allowing different levels of permissions for each user.



*Task* Prepare a list of the events using Windows Live Calendar.

### 7.1.3 Apple's iCloud Application

Notes

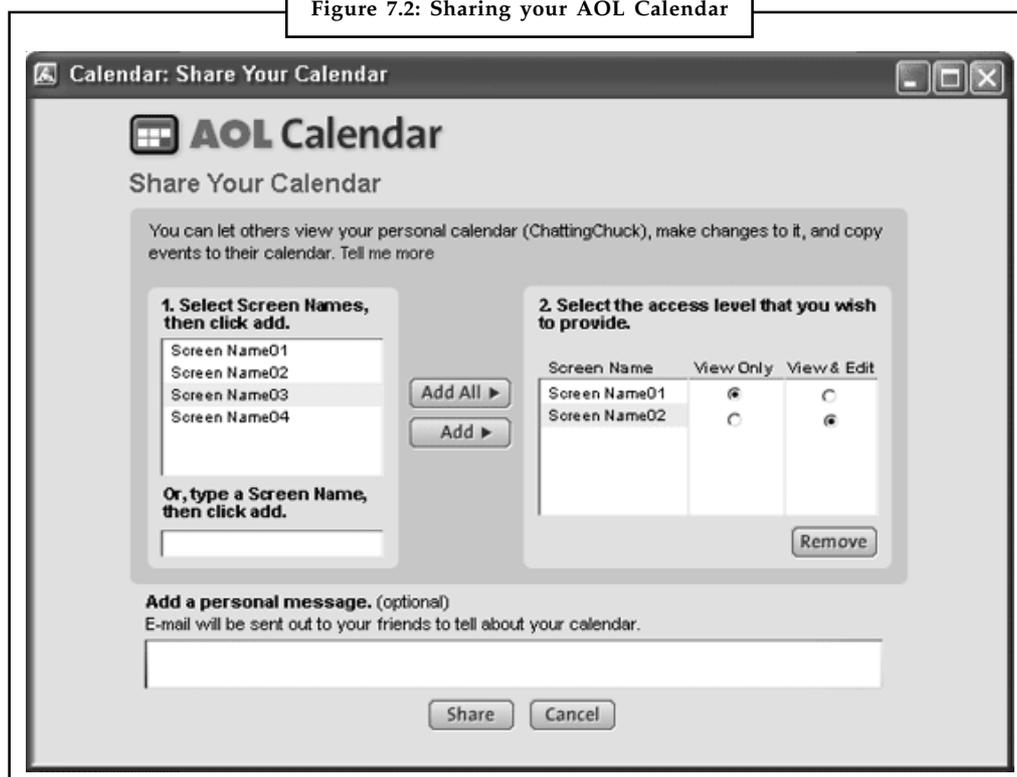
iCloud does more than store your content — it lets you access your photos, calendars, contacts, documents and more, from whatever device you're on. And it's built into every new iOS device and every new Mac.

You can create amazing documents and presentations on your Mac, iPhone, iPad and iPod touch. And with iCloud, you can keep that work up to date across your Mac and all your iOS devices. You don't have to manage your documents in a complicated file system or remember to save them to a special folder. Your documents — with all the latest edits — are stored in your apps, so they automatically appear everywhere. iCloud is already built into apps like Keynote, Pages and Numbers. It also works with other iCloud-enabled apps. So you can do things like create a to-do list on your Mac and make edits to it on your iPhone. Start sketching on your iPod touch and add the finishing touches on your iPad. Or start a game on your iPad and pick it up at the same level on your iPod touch.

### 7.1.4 AOL Calendar

AOL Calendar feature is easy to use and faster to manage. The calendar feature helps you to create events and to do's. You can share your calendar with others and also subscribe to any calendar that uses the iCal format.

Figure 7.2: Sharing your AOL Calendar



Source: [http://hoossoartstudio.com/soojin/images/aol\\_calendar\\_2.png](http://hoossoartstudio.com/soojin/images/aol_calendar_2.png)

You can view the same calendar with all your events and to-do's on AOL Instant Messenger (AIM) service for both instant messaging and email. Any registered user can access AOL Calendar. Your calendars can be either private or public.

Notes

Some of the enhanced features in the AOL Calendar are as follows:

- Creating and managing your calendar
- Sharing and publishing your calendar
- Creating events
- Creating to do's
- Subscribing to another calendar

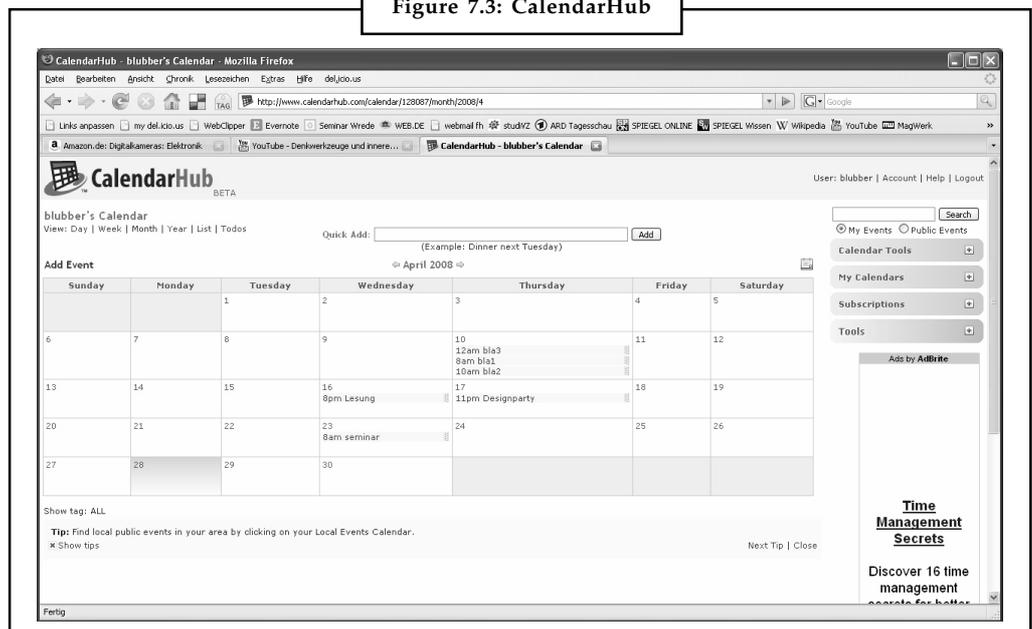
7.1.5 CalendarHub

Beyond Google, Yahoo!, Apple and others, many independent sites offer full-featured Web-based calendars. The most notable of these is CalendarHub (www.calendarhub.com).

With calendarhub you can create multiple personal or group calendars. You can also find local events and add them to your calendar, it sends reminders to you of a particular event by email or on your phone. You can also invite others to your events using this application. With calendarhub you can also subscribe to public calendars (e.g. iCal). Users can also subscribe to RSS feeds for any calendar view.

In addition, CalendarHub lets you publish calendars on your blog or website, which makes it great for creating sites for community groups, sports teams, and the like. This application is free to use.

Figure 7.3: CalendarHub



Source: <http://campusphere.de/personalim/files/2008/04/calendarhub.jpg>

7.1.6 Hunt Calendars

Huntcal is ranked 200,664 in the United States. 'Hunt Calendars is a Spontaneous web calendar service for companies/organizations. Huntcal is an easy-to-use online calendar service featuring email reminders, group access control, event search and custom event categories.

The Hunt Calendars service supports numerous features that make it a powerful and flexible communication tool.

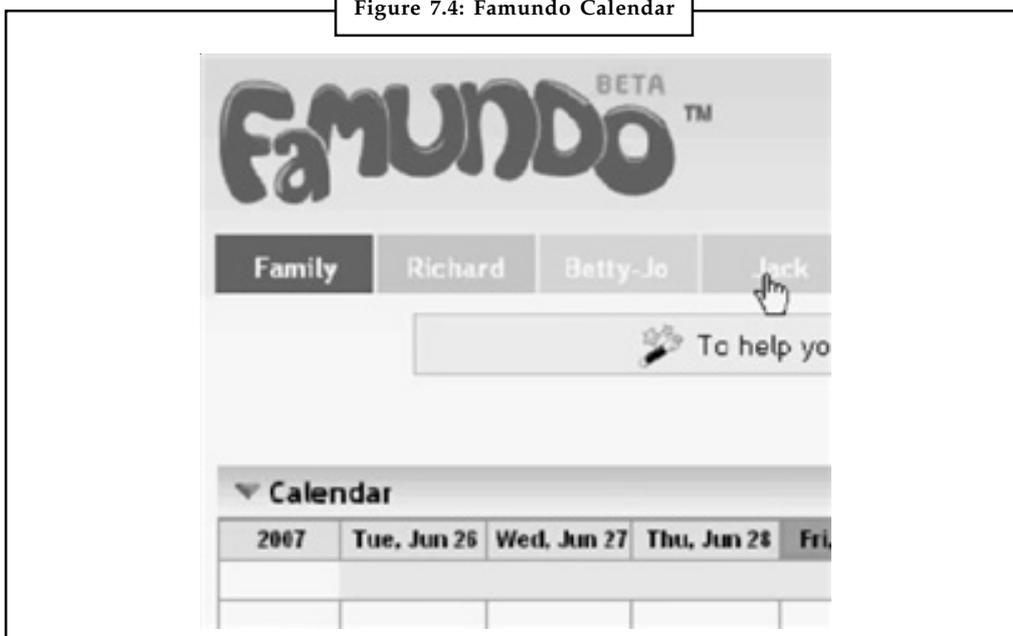
Certain features that make it stand out are:

- **Intuitive interface:** These calendars are designed to be easy-to-use. So no training is needed to use such calendars. They can be easily used by your non-technical staff also.
- **Low Cost:** Cost is based solely on the number of calendars you create.
- **Calendar customization:** Custom event categories and colours allow you to colour-code events. Custom header and footer. Use your logo. Add up to 5 custom fields for your events. Specify your requirements and such an application provides you with additional customization.
- **Powerful Features:** Email reminders, event conflict notification, read-only views, recurring events, copy events to other calendars, event addition/update notification are the other facilities it provides.
- **Advanced Viewing Options:** Search events within a date range by keyword or by category. Use URL parameters to alter the display of your calendar.
- **Easily establish calendar permissions:** Specify who can view your calendars. Specify who can add, change and delete events.
- **No software to install and maintain:** Link to your calendar or embed it in your website. All you need is a web browser.

Other useful features include email reminders, notification of event conflicts, notification of new and updated events. It is secure due to the daily backups. It additionally has a responsive customer support to help you set up and manage your calendars.

### 7.1.7 Famundo

Figure 7.4: Famundo Calendar



Source: <http://help.famundo.com/storage/famundocalendar.jpg>

**Notes**

Famundo is a Web-based application that allows families and community organizations to share and manage calendars and documents free of charge. With it you and your family members can collaboratively schedule everything from soccer practice to family fun night or build to-do lists and shopping lists from the comfort of your browser.

It's your family hub, with an online family calendar to make your family's schedule manageable, giving control over your daily life. It is also a free online calendar and offers other tools for schools, churches and clubs so that all events can be easily shared with members. This online calendar lets you create events for your family and friends. Create shopping lists, blogs, upload documents and photos. You can also additionally share events, photos, recipes and stories with your family and friends.

Famundo is the central hub for your organization's scheduling and document storage also where members can get an easy to read, holistic view of everything that is going on within your organization.

**Figure 7.5: Address Book in Famundo Calendar**



Source: [http://b.vimeocdn.com/ts/862/807/86280737\\_640.jpg](http://b.vimeocdn.com/ts/862/807/86280737_640.jpg)

**7.1.8 eStudio Calendar**

Manage your company's schedules online with eStudio's calendar software. With this online calendar, you and your employees can keep track of tasks, appointments, events, and meetings with ease and efficiency. Users also receive notifications and reminders via email. Managers can also create supervisor reports to easily check staff availability.

You can schedule appointments, online meetings, events, etc. This integrates with eStudio TaskTracker (project management) to easily access tasks. You could additionally check a box to filter calendar views between group and personal events, get accurate reports for your team and check staff availability with eStudio's calendar.

This eStudio's calendar also automatically sends email alerts, reminders and RSVPs. It also schedules eStudio live chats and web cam conferences. It enables you to see your group calendar from your mobile phone.

### 7.1.9 30 Boxes

30 Boxes is user friendly calendar web application. The application is simple, but offers a great deal of flexibility that permits the user to plan their schedule however they like. The user is given access to a calendar, which consists of a box for each day just like a traditional wall calendar. The user can add a new event, which can be anything from a party to an appointment or birthday. The calendar can be shared on a blog, using tags or by RSS feeds, Yahoo or Google. The user can share their calendar with a specific buddy or buddies if they prefer. Each day on the calendar can be clicked on to view the list of items for that day up close. A drop down menu allows the user to switch between months. Users can also create a to do list that can be emailed or printed and is stored along with their calendar.

At first glance, 30 Boxes looks like a watered down calendar application. However as the user begins to explore 30 Boxes, they find that the application has many uses and a great deal of flexibility. It contains to do lists along with basic calendar features, so the user can keep a schedule and manage individual tasks related to a larger project, event or undertaking. The ability to share calendars is great for groups who are planning something together.



**Caution** While using a Web-based calendar remember to use a good anti-virus software to prevent computer from Viruses and other attacks. Also be aware of Phising and other social engineering tricks.

### 7.1.10 Trumba

Trumba offers web-hosted event calendar software for publishing online, interactive calendars of events. It is an advanced, powerful, brand-flexible toolset available for managing and promoting events and other online content.

Trumba's web-hosted event calendar helps to:

**Publish interactive online calendars** as highly-customizable, easy-to-navigate calendars can be published anywhere on your website.

**Sell out your events and get paid:** Online event registration lets attendees sign up for paid or free events with customizable forms integrated with your website calendars.

**Connect with your audience:** Trumba offers a full set of two-way communication and promotion tools, including email, text messaging, RSS feeds, event submission forms, alerts and more to help you connect with your audience.

**Social media spreads the word:** With Facebook, Twitter and LinkedIn integration, attendees help promote your events and increase your sales.

**Go beyond events with Custom Objects:** Publish searchable directories of venues, performers, instructors or any content. With Custom Objects, Trumba powers more than just your calendar.

**Promote your events on mobile devices:** Trumba's mobile calendar views and data feeds that integrate with mobile apps help you reach your audience anytime and anywhere.

### 7.1.11 Calendars Net

Calendars Net is a free interactive web calendar hosting service, where you and anyone you choose can post events visible and printable by whomever you choose, or everyone. You can post events that last for more than one day with text flowing across days or even weeks. You can copy the calendar data to your own computer and edit your calendar offline.

Calendars Net is designed for webmasters who want to mix interactive calendars with their websites. These calendars can be squeezed into your frames and can be shrunk to print on virtually any size paper.

#### Self Assessment

State whether the following statements are true or false:

1. A SaaS application runs entirely in the cloud.
2. Calendars Net is a paid interactive web calendar hosting service.
3. eStudio's calendar also automatically sends email alerts, reminders and RSVPs.
4. With iCloud one can create documents and presentations on their Mac, iPhone, iPad and iPod touch.
5. Windows Live Hotmail Calendar is a time-management web application by Microsoft as part of its Outlook.com service.

### 7.2 Exploring Online Scheduling Applications

Organising meetings is tough. But if there's one thing worse than meetings, it's playing email tag to schedule them. Is your company still sending out mass emails to ask for preferred meeting times? Switch to Web-based Scheduling application.

A few online applications are attempting to eliminate the headache of scheduling meetings. And, unlike their proprietary older brothers, these new entrants into the scheduling market are completely web-based.

Web applications let you pick a range of dates on a calendar and then notify your colleagues so they can pick the times and dates that work for them. You then view the responses and you're done.

#### 7.2.1 Jiffle

Jiffle is a web based service which aims to accelerate the process of scheduling meetings. It makes scheduling appointments and meetings quick and simple.

Jiffle's patent-pending technology allows users to selectively share their Outlook calendar with their contacts and eliminate the time-consuming process required to set up meetings.

Users mark their available times in their Outlook calendar and share them with selected and invited contacts. Contacts view the invitation, login to Jiffle and then choose their preferred time slots from the ones that are assigned to them. An automated email is generated to inform the subscriber of the meeting request, and the subscriber's acceptance is followed by an automatic confirmation email to both participants.

Jiffle is free for up to 10 meeting confirmations per month.

Figure 7.6: Jiffle Calendar

**What is Jiffle?**  
Jiffle is a web-based service that enables selective and secure sharing of your calendar to streamline the often-onerous process of scheduling meetings.

**How should I request an appointment or meeting?**  
Select the desired time from the available timeslots and enter the requested meeting information.

**What happens when I request a meeting?**  
George Williams is notified of your meeting request upon your time selection. George Williams will review your request and send you a confirmation.

**How can I share my calendar with my contacts?**  
Jiffle is a free service and you can subscribe by [clicking here](#).

EST	Oct 26 Mon	Oct 27 Tue	Oct 28 Wed	Oct 29 Thu	Oct 30 Fri	Oct 31 Sat	Nov 1 Sun
8am							
9am							
10am							
11am							
12pm							
1pm	Available		Available				
2pm	Available		Available				
3pm	Available				Available		
4pm	Available				Available		
5pm					Available		

Source: [http://chronicle.com/img/photos/biz/blogPost/profhacker/2009/10/media\\_1256321118172.png](http://chronicle.com/img/photos/biz/blogPost/profhacker/2009/10/media_1256321118172.png)

### 7.2.2 Presdo

Imagine walking into a conference and knowing every attendee's professional background. With Presdo Match's LinkedIn API integration, Presdo Match users can easily discover other event attendees with similar professional interests. After discovery, users can seamlessly connect with each other using Presdo Match's simple interface.

Presdo is a deceptively simple online scheduler that lets people use natural language inputs to set up meetings with friends and colleagues. Venues can be selected via a Google map mashup. And both time and place remain flexible until everyone agrees on them. Presdo Match, a service that dramatically simplifies event social networking and scheduling, provides relevant member profile information for its event attendees by leveraging the LinkedIn API. Presdo was created and coded by Eric Ly, the founding chief technology officer of LinkedIn.

### 7.2.3 Diarised

Diarised ([www.diarised.com](http://www.diarised.com)) is, like Presdo, a Web-based meeting maker that users across different companies can use. If you need to schedule a meeting and want to skip the hassle of emailing and playing phone tag to establish what time works best for everyone invited, a web-based schedule optimizer like Diarised will save you a headache or two. Visit Diarised and

Notes

plug in information about the meeting, a description, the email addresses of the meeting attendees, and a list of potential meeting times. Diarised notifies attendees via email and they select the best meeting time. Diarised sends you an email summary of the optimal times.

7.2.4 Schedulebook

Whether you are part of a business, educational institution or non-profit organization, you can share resources that are available to dozens, hundreds, even thousands of users using Schedulebook (www.schedulebook.com). Schedulebook offers several different types of Web-based scheduling services. It gives you an easy-to-use, comprehensive solution that's available all the time on the Web. It's on duty 24 hours a day, 7 days a week, 365 a year to help your users schedule resources or just see what's available.

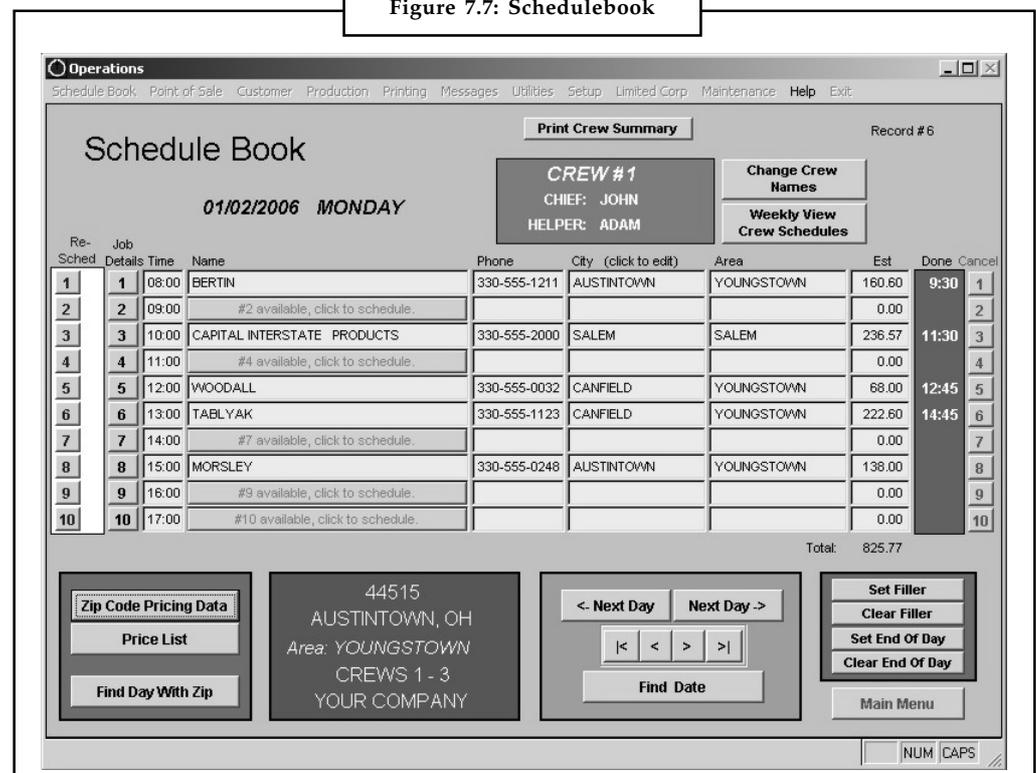
Its access-management tools enable public viewing of assets and resources, while providing a variety of ways to limit the number of users who are authorized to manipulate the schedule.

There's no end to the applications for Schedulebook Office. It's even great for shared facilities like vacation homes, making it easy for multiple friends and families to schedule their travel plans while keeping communications to an effective minimum.

Schedulebook Office can cut administrative costs while it increases the efficient use of your organization's shared resources and assets.

Schedulebook is a much faster, smarter, easier choice in online resource and asset scheduling. It is the most flexible solution available and is most affordable.

Figure 7.7: Schedulebook



Source: <http://www.pcom-software.com/screen%20shots/ScheduleBook-2.jpg>

## 7.2.5 Acuity Scheduling

Notes

One of the major factors in client management is the setting up of meetings, whenever required. Now you don't have to spend a lot of time managing this as an online scheduling system, Acuity Scheduling can make your work easier.

Acuity Scheduling is online appointment scheduling software. This plugin allows users with paid accounts on Acuity Scheduling to embed scheduling directly into their site. Use the [scheduling] short tag on any page with the options described in the documentation to embed your scheduling site.

With Acuity Scheduling you can create the types of appointments offered, build custom forms, and set your time zone. You can now save time by offering appointment booking online. With Acuity Scheduling you can focus on growing your business and have clients schedule their own appointments, complete custom intake forms and pay in advance, online 24/7.

## 7.2.6 AppointmentQuest

Like Acuity Scheduling, AppointmentQuest ([www.appointmentquest.com](http://www.appointmentquest.com)) is designed to solve the scheduling problems of busy professionals.

Online Appointment Scheduler, AppointmentQuest is an online scheduling software for online reservations, appointments, and event registrations. Since 2001, AppointmentQuest has made it easy to manage your appointment scheduling online. AppointmentQuest empowers its customers to accept, make and manage appointment reservations online 24 hours a day, 7 days a week, 365 days a year.

## 7.3 Exploring Online Planning and Task Management

Planning and task management applications let you manage everything from simple to-do lists to complex group tasks, all over the Internet. You can additionally collaborate with other users to accomplish your tasks.

### 7.3.1 iPrioritize

iPrioritize is an iPad and iPhone application which delivers a simple but elegant productivity tool to help busy business-people to spend their time more efficiently. It enables you to create goals and steps within them, then by answering some quick and simple questions you can rapidly and automatically prioritise items. iPrioritize generates a crystal clear traffic-light system to display the order of steps, so that you know what to do next. iPrioritize is not helps accomplish tasks on an urgency basis but is also affordable.

With this you can make a list to organize your tasks. Drag tasks up and down as your priorities change. Mark items complete when you finish. You can also access your lists anytime, anyplace, anywhere. It is perfect for personal or business be it at home to organize your work, homework, chores, or shopping lists or at work where you can use it to assign and organize your employees tasks more efficiently.

### 7.3.2 Bla-Bla List

Bla-Bla List ([www.blablalist.com](http://www.blablalist.com)) is another simple to-do list manager. Bla-Bla list makes it easy to make a list of things to think about later when you're not so busy, to share your lists with others even if they don't have an account, to publish your lists with RSS so that others get instant

**Notes**

updates. It also helps you to privately share your lists with anyone and work on them together, and it allows you to email yourself a copy of your list.

It is web based, of course, so you can access your lists from any location at any time. You can even publish your lists via RSS so that family and coworkers can get instant updates.

### **7.3.3 Remember the Milk**

Remember the Milk ([www.rememberthemilk.com](http://www.rememberthemilk.com)) is a Web-based to-do list manager. Remember the Milk (RTM) is apt for task and time management. It allows users to manage tasks from a computer or smartphone, both online and offline. Created in 2004 by a two-person Australian company, it now has international contributors.

### **7.3.4 Ta-da List**

Here is another Web-based to-do list manager. **Ta-da List** is a minimalist, traditional tool to make lists of tasks you need to do. It's **perfect for people who like to keep things simple**.

Ta-da List takes a very traditional approach to to-do tools - create a list of things you need to do and mark off each item as you complete it. You can re-order, edit and delete lists, and once every item has been ticked, the list will disappear from your dashboard. Signing up and using Ta-da List are very simple.

### **7.3.5 Tudu List**

Tudu List ([www.tudulist.com](http://www.tudulist.com)) is a free Web application for managing to do lists. With Tudu Lists, to do lists can be easily accessed, edited, and shared on the Web. It is a simple but effective project management tool.

### **7.3.6 TaskThis**

Task This is an advanced task management application for iPhone and iPod Touch. You can manage your tasks in a simple way, Task This proposes to organize with projects and categories, but also to create shopping lists for you so that you can manage your items. Task This supports message push notification and is integrated with iPhone/iPod Touch applications.

### **7.3.7 Vitalist**

*Vitalist* GTD online is a task manager designed for the Getting Things Done (GTD) productivity system by David Allen.

*"Getting Things Done"*, or *GTD*, is a personal organization and productivity system created by the acclaimed productivity guru David Allen. **Vitalist is Online Getting Things Done software** that is all about categorizing what you need to get done into specific lists or buckets. The idea is to get everything out of your head and into your Getting Things Done system so that you will not have to worry about specifically remembering anything. Once you have total trust of your system you will have reached what David Allen likes to call the "Mind Like Water" state. *Vitalist* helps you with all of this by bringing your GTD software system online and making it accessible from anywhere.

Anyone can sign-up for a free *Vitalist* account and start their online *"Getting Things Done"* experience.

### 7.3.8 TracksLife

Notes

Do you have a hard time remembering to keep track of the progress in your diet, your budget, your exercise program? Now with TracksLife you need not worry.

Trackslife ([www.trackslife.com](http://www.trackslife.com)) is a database-oriented task manager.

TracksLife helps you to:

- Keep track of almost anything with Tracks — databases that combine columns of money, numbers, words, paragraphs and yes/no's.
- If you ever forget to update you can have the Friendly Trackslife Remindbot send a link through email or RSS politely reminding you.
- And if you want you can share your progress with friends, family, co-workers, bloggers you can conveniently do that.

### 7.3.9 Voo2do

Voo2do is a free and simple online to-do and task management application. Voo2do is great for those who are looking for a medium sized online solution that does a bit more than simply list and tick to-dos. The estimating feature is nice and the interface is clean and fairly intuitive. This facility is free of cost.

It provides a few more features than what you'd get with Ta-Da lists. Unlike ta-da list, voo2do tracks priority, due date, and time estimates for each task. There is no notion of "lists" in voo2do— tasks can be grouped by project, but you can view and edit a bunch of projects together. Voo2do does not yet support sharing your tasks with other people.

### 7.3.10 HiTask

HiTask, released in March 2007, originated as a friendly and easy-to-use task management system that anyone can start using right away.

With HiTask you can Switch between tabs to group your tasks in different ways: by Date to see what's coming today, this week or later, by Project to see tasks organized into projects and by Team member to see who is working on what. Tasks are added to your calendar and colour tagged for easy viewing. The task manager and scheduler both utilize drag and drop editing, and you can share and assign tasks and projects to a group of people via the web. With this facility you can always see all your tasks on one screen. You can also access help with one click, right from the app to get answers and explore other features of this.

### 7.3.11 Zoho Planner

Zoho web-based applications facilitate collaboration, are available from anywhere online connectivity is available, and do not need to be downloaded.

A Zoho Planner is an online planner with a calendar, to-do lists, pages, and email reminders for collaboration with other users.

Zoho Planner is a free online organizing tool. It is a space where you can write to-do lists, set reminders, make and keep notes, and upload documents and images. All of this information can be shared with friends, colleagues, family, or even the general public. Zoho Planner shares some of the same features of other online calendar applications such as Google Calendar or 30 Boxes, where activities can be written on an online calendar. This calendar competes

**Notes**

with Microsoft Outlook, and more directly, Google Calendar, though it is criticized as it is not currently providing SMS reminders that Google Calendar and 30 Boxes are currently providing. However what makes Zoho Planner different is that it emphasizes the tasks and activities that you need to complete, rather than simply being an online version of an agenda.



*Notes* With Zoho, you focus on your business while the rest is taken care about with apps that help you get more sales, get paid, support your customers and make your business more productive.

**Self Assessment**

Fill in the blanks:

6. .... is a free online organizing tool. It is an online planner with a calendar, to-do lists, pages, and email reminders for collaboration with other users.
7. .... was released in March 2007 as a friendly and easy-to-use task management system that anybody could use instantly.
8. .... tracks priority, due date, and time estimates for each task.
9. Acuity Scheduling, AppointmentQuest is designed to solve the ..... of busy professionals.
10. .... online is a task manager designed for the Getting Things Done (GTD) productivity system by David Allen.



*Case Study*      **Green's Cleaning Google Calendar**

**Why Move to Google Calendar?**

Steve Green, the owner of Greens Cleaning Services, was used to carrying a heavy A4 paper diary around to book his appointments. But this was getting cumbersome especially as bookings had to be communicated to cleaners out on the road.

Appointment details were written in the paper diary and photocopied. The cleaners had to call into the depot to pick up the copies or they had to be phoned to them. Lots of work and duplication and of course room for errors to creep in.

Also Steve was using a collection of email addresses. Which meant that client queries were often being replied through Steve's personal email address. This was confusing for his customers and filling his personal emails with business matters.

**Creating an email Address for Your Business**

If you have a website you probably have at least one email address. Sometimes businesses own the web domain name but don't have the email accounts setup correctly. Emails from customers are forwarded to a personal email account for convenience.

Google email accounts can be easily created and attached to your web domain. My Quickstep IT email addresses are run this way. That means you get a service provided

*Contd....*

## Notes

by one of the internet giants with all its support and reliability but with an email address personalised to your company.

**And Google Mail accounts cost nothing to create.**

I showed Steve how he could in one simple step have a set of email addresses and a central Green's Cleaning Google Calendar. The email addresses and calendar could be added to his iPhone and iPad giving him a simple mobile office. The cleaning staff could be given read-only access to the Google Calendar on their phones too.

By splitting the main calendar into sections each van crew has their own appointment list. Now soon as Steve enters an appointment he can give the job to a particular team. That appointment can be viewed by the cleaning crew in that van. Great for those last minute and emergency appointments. Steve can enter as much detail as needed and not worry about a cleaner not writing down the instructions correctly.

Steve Green says:

Tony worked conscientiously toward turning my ideas into reality and created a system which achieved greater autonomy within my workforce thus saving me many hours work each week.

By using a free Google account we managed to:

1. Give instant access to new appointments to Green's Cleaning staff out on the road
2. Improve the image of Green's Cleaning with a consistent email address for customer communications
3. Split Steve's personal and business emails so he is not carrying the office around 24 hours a day.

Many businesses can benefit from using simple solutions like this. If you own one of them why not contact us today to discuss how Quickstep IT could help you.

**Questions:**

1. How can you create a Google account?
2. How is a Google account useful?

Source: <http://www.quickstepit.net/greens-cleaning-google-calendar/>

## 7.4 Summary

- Cloud services with application that help to get organized—calendars, schedulers, planner, and task management tool whether you want to keep a simple group calendar or to-do list or need something more powerful to schedule appointments and meetings, you're sure to find some Web-based application.
- An online scheduling application is a solution to all your scheduling and task management problems. This web-based application takes care of scheduling your meetings, for both large and small groups.
- Google Calendar is a free time-management web application offered by Google. It is the most popular Web-based calendar today, which undoubtedly is due to its association with the web's most-used search engine.
- Yahoo! Calendar is a Web-based calendar service from Yahoo!. It can read calendar feeds and events collected from sites that make use of the published Yahoo! calendar programming interfaces.

Notes

- Windows Live Calendar also known as Windows Live Hotmail Calendar or Hotmail Calendar is a time-management web application by Microsoft as part of its Outlook.com service.
- iCloud does more than store your content — it lets you access your photos, calendars, contacts, documents and more, from whatever device you're on. And it's built into every new iOS device and every new Mac.
- Huntcal is ranked 200,664 in the United States. 'Hunt Calendars is a Spontaneous web calendar service for companies/organizations. Huntcal is an easy-to-use online calendar service featuring email reminders, group access control, event search and custom event categories.
- Famundo is a Web-based application that allows families and community organizations to share and manage calendars and documents free of charge. With it you and your family members can collaboratively schedule everything from soccer practice to family fun night or build to-do lists and shopping lists from the comfort of your browser.
- Manage your company's schedules online with eStudio's calendar software. With this online calendar, you and your employees can keep track of tasks, appointments, events, and meetings with ease and efficiency. Users also receive notifications and reminders via email. Managers can also create supervisor reports to easily check staff availability.
- A few online applications are attempting to eliminate the headache of scheduling meetings. And, unlike their proprietary older brothers, these new entrants into the scheduling market are completely web-based.
- Jiffle is a web based service which aims to accelerate the process of scheduling meetings. It makes scheduling appointments and meetings quick and simple.
- Presdo is a deceptively simple online scheduler that lets people use natural language inputs to set up meetings with friends and colleagues. Venues can be selected via a Google map mashup. And both time and place remain flexible until everyone agrees on them.
- Online Appointment Scheduler, AppointmentQuest is an online scheduling software for online reservations, appointments, and event registrations. Since 2001, AppointmentQuest has made it easy to manage your appointment scheduling online.
- Planning and task applications let you manage everything from simple to-do lists to complex group tasks, all over the Internet. You can additionally collaborate with other users to accomplish your tasks. iPrioritize, Bla-Bla List, Remember the Milk, Ta-da List are a few examples of such applications.
- Voo2do is a free and simple online to-do and task management application. Voo2do is great for those who are looking for a "medium sized" online solution that does a bit more than simply list and tick to-dos.
- Zoho web-based applications facilitate collaboration, are available from anywhere online connectivity is available, and do not need to be downloaded. Zoho Planner is an online planner with a calendar, to-do lists, pages, and email reminders for collaboration with other users.

## 7.5 Keywords

Notes

**Friends calendars:** It is application that you import from their Google Calendar web pages.

**Google Calendar:** It is a popular online calendar that you can access with your Google account. You can create private or public calendars, merge calendars, and create reminders. If you are using Gmail as your email account, you can open Google Calendar from the link above your Gmail inbox. It is quite convenient to use.

**Holiday calendars:** It is application which adds national holidays to a basic calendar.

**iCal:** It is a web-based calendar software program which can be accessed from any web browser such as Internet Explorer. iCal allows you to view your calendar as well as other calendars in your group. You can add events to your calendar and have email reminders for those events.

**iCloud:** It is a cloud storage and cloud computing service from Apple Inc. launched on October 12, 2011. It stores your music, photos, apps, calendars, documents, and more.

**Public calendars:** It is public web which others can access via the web.

**Schedulebook office:** It schedules the use of any shared resource, such as company meeting rooms or even vacation homes.

**Yahoo! Calendar:** It is a Web-based calendar service from Yahoo!. It can read calendar feeds and events collected from sites that make use of the published Yahoo! calendar programming interfaces.

## 7.6 Review Questions

1. What are the Google Calendars? How are they helpful?
2. Define AOL Calendar. State the features of AOL Calendars.
3. What is a Trumba calendar? How is it useful?
4. What are Yahoo! Calendars? How are they different from Google Calendars?
5. Write about the eStudio Calendar.
6. What is the meaning of exploring online scheduling applications?
7. Define Windows Live Calendar.
8. Elaborate on Apple's iCloud Application.
9. Explain the features of Huntcalendar in detail.
10. What is the means of Jiffle? Also explain about the Presdo.
11. What are the schedulebook and acuity scheduling?

### **Answers: Self Assessment**

- |                        |                  |
|------------------------|------------------|
| 1. True                | 2. False         |
| 3. True                | 4. True          |
| 5. True                | 6. Zoho Planner  |
| 7. HiTask              | 8. voo2do        |
| 9. scheduling problems | 10. Vitalist GTD |

Notes

**7.7 Further Readings**



Books

Bill Williams, 2012, *The Economics of Cloud Computing*, Cisco Systems, Inc.

Borko Furht & Armando Escalante, 2010, *Handbook of Cloud Computing*, Springer.

Kevin Jackson, 2012, *OpenStack Cloud Computing Cookbook*, Packt Publishing.

Rajkumar Buyya, James Broberg & Andrzej Goscinski, 2011, *Cloud Computing: Principles and Paradigms*, John Wiley & Sons.

Sarna, David E. Y., 2010, *Implementing and Developing Cloud Computing Applications*, Taylor & Francis.

Williams, Mark I., 2010, *A Quick Start Guide to Cloud Computing: Moving Your Business into the Cloud*, Kogan Page Ltd.



Online links

<http://mashable.com/2007/10/08/online-calendar-toolbox/>

<http://www3.imperial.ac.uk/ict/services/security/helpandadvice/cloud>

## Unit 8: Collaborating on Event and Contact Management

Notes

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### Objectives

After studying this unit, you will be able to:

- Discuss the event management applications
- Describe the exploring event management applications
- Understand the events in cloud
- Discuss the contact management and CRM

Notes

- Describe about the exploring contact management and CRM applications
- Understand the CRM more than just software

## Introduction

Collaborative event management is a term used to describe the management of activities conducted between two closely, co-operating trading partners in order to maximise the efficiency of a trading process. An example could be the activities associated with an in-store promotion, or new product launch, where the customer and supplier collaborate to plan and fulfil the promotion to the maximum benefit of both trading partners. Collaborative working, and management of events that result, is being seen as increasingly important to supply chain efficiency. It is dependent upon an agreed joint process, the rapid flow of information between trading partners, and a sharing of both data and decisions via standard Internet screens and workflow accordingly e-business is fundamental to its success.

## 8.1 Understanding Event Management Applications

Event software is starting to play a key role in the organisation and management of events. Comprehensive event management software includes features such as:

**Website integration:** Event software should seamlessly integrate with your existing website without the need to re-design or re-brand.

**Online Registration:** Event management software should allow event managers to create a fully customisable online booking form capturing the most relevant information from your delegates.

**Event Communication:** Clear and targeted communication to your delegate audience is crucial, the event system should include integrated event communication tools such as email marketing, invitation and surveys.

**Event Badges:** Event software enables personalized badges to be created pre or during the event simply and quickly.



*Did u know?* One of the most time consuming jobs for an event manager is production of delegate badges.

**Event Resource Management:** Simply manage and allocate all resources through a comprehensive calendar feature, providing total control of all aspects of the event management process.

**Event Financials:** Technology enables event managers to offer a variety of options for delegates to securely pay online with confidence, providing ease of use via automation.

**Event Reporting:** Determining the true ROI from events can be determined and managed through a powerful reporting and analysis suite.

**Event Scheduler:** Manage and schedule multi-faceted one to one meetings for your delegates and suppliers simply and efficiently.

**Venue Management Software:** Flexible venue planning and scheduling tools that manages the event facility no matter what type of events are being hosted.

**Document Management:** An easy way to publish and manage speaker abstracts and biographies.

Event software can help event managers create more effective, successful events. Research has shown that during the current economic downfall, many event companies have begun to take

advantage of the benefits of automation and event technology to help stay afloat. Increasing efficiency and reducing the cost of hosting events is helping to increase the return on investment provided to both the event company and to the delegates attending.

A cloud based event management solution offers the opportunity for event managers to manage event teams and service delegate and booker requests, from any location at any time. At the same time, event promotions, bookings, cancellations and updates can also be undertaken using the internet as the key delivery vehicle.

From the event managers point of view, event management software on the cloud will take care of high volumes of outbound transaction (email newsletters, invitations, etc.) and inbound transactions (event bookings, modifications, cancellations, etc.), saving time and money, whilst giving delegates a smoother and improved experience.

From a management point of view, a cloud based event management solution provides the mechanism to be in real time control of all of events activities – event managers are able to get an accurate view of the state of active events, what stage particular event marketing campaigns are at and the feedback being received on your on-going events program. Third party partners – trainers, speakers, sponsors, caterers, venue managers, etc. – can also be granted easy access in a secure fashion, to the event related details that they need access to and can respond to any event changes that affect them, again on a real time basis.

Having a cloud based event management solution in place opens up significant opportunities for integrating the solution with complimentary applications and solutions both internally and externally.



*Example:*

#### ***Internally***

- Finance applications
- Customer and contact management solutions

#### ***Externally***

- Partner websites
- Third party online payment providers
- Social networking environments

With a cloud based event management solution, the management of events becomes wholly a business issue with the IT issues being handled by the cloud application provider. The availability of the events management solution, the backing up and securing of data, as well as the scalability of the solution in times of peak activities are all handled, transparently, by the cloud application provider.

## **Self Assessment**

Fill in the blanks:

1. Event software should seamlessly ..... with your existing website without the need to re-design or re-brand.
2. Event management software should allow event managers to create a fully customizable online booking form capturing the most relevant information from your .....

- Notes
3. Event software enables personalized ..... to be created pre or during the event simply and quickly.
  4. .... enables event managers to offer a variety of options for delegates.
  5. Flexible venue planning and scheduling ..... that manages the event facility no matter what type of events are being hosted.

## **8.2 Exploring Event Management Applications**

In this section, we will discuss some applications of different companies.

### **8.2.1 123 Signup**

123 Signup is the premier online event registration and membership management service today. With over 50 years' staff experience in managing events and member- and subscriber-based organizations, they have designed services for:

- Online event management
- Online membership management
- Online training and seminar management
- Online subscription management

123 Signup has invested over \$10M to create the best online event registration and membership management service available today. 24 hours a day, seven days a week, 123 Signup's online services handle member registrations, subscriber access, event postings, event registrations, collections, and reconciliations. Since inception, they have conducted roughly one million transactions, and support a member database of roughly half a million active users their across customer base. Their solutions are used by hundreds of organizations, large and small, including:

- Trade- Individual- and Family membership based associations
- Alumni clubs and associations
- User Groups
- Colleges and Universities
- Training organizations
- Corporations

123 Signup's solutions are transforming the way events and member organizations are managed. Organizations using their system report success doing more events with less staff, collecting faster, providing better member services, and increasing subscribers.

### **8.2.2 Acteva**

Acteva Inc. provides cloud based software solutions to manage and promote events, class and training registrations, and online payments for organizations, small businesses, local user groups, regional training companies, and Fortune 500 organizations. It offers Event Management Software, which assists organizations with online registration, payment collection, and attendee management for events, meetings, and conferences; Class Management Software, which enables training organizations and departments to produce registration catalogues, online registration, instructor biographies, payment collection, training evaluations, and student information

management for educational courses, certification training, continuing education, and online learning; Private Community Management solutions, which facilitates the creation of an online community for organizations and enables their members, donors, employees, and partners to interact in an environment; and Payment Management Solutions for offline and online payment processing options.

The company also offers strategy, implementation, training, and strategic partner services. It serves alumni industry, art and entertainment industry, associations, corporations, education sector, enterprise edition industry, event planners, government, healthcare industry, high tech industry, media and publishing industry, non-profits, political segment, training segment, and wine industry. The company was formerly known as TixToGo Inc. Acteva, Inc. was founded in 1998 and is based in San Francisco, California. As of July 16, 2001, Acteva Inc. operates as a subsidiary of zDegree.

### 8.2.3 Cvent

Cvent is one of the leaders in **corporate event planning software**, and is also an innovative force in the meetings industry, offering their clients an unparalleled suite of tools and services. Their online event planning software, utilized by a variety of clients, including corporations, associations and third party planners, gives users the ability manage events quickly and affordably. The interface is streamlined to make building an event with speed and precision easy, and for complex events, the necessary features are never more than a click or two away. They have **customers in more than 100 countries** now use Cvent software to plan events, find venues, manage membership data, create mobile apps, send surveys and develop strategic meetings management programs.

### 8.2.4 Event Wax

#### Catering Your Outdoor Event

Summertime is a great time for outdoor events. Outdoor catering arrangements largely depend on your venue, type of event, and the time of year.

Consider these quick tips for catering your fabulous outdoor event.

**Your menu:** Before you choose your menu, consider the weather conditions you are likely to encounter. Food dishes that are on the light side or served cold may be preferable over something hot and heavy.

**Your food:** Food that requires plates and flatware will require extra cost and seating. Finger foods make it easier for guest to eat while socializing.

**Watch for spoilage:** Make sure your caterer keeps the food at the right temperature. Hot dishes need to stay hot while cold salads need to stay chilled.

**The venue:** When choosing an outdoor site, pick one that will be comfortable for your guests. If the site does not include a shelter, consider renting a tent in case of rain or for shade purposes. Consider if the site has rest rooms available or if you'll have to bring in portable toilets.

**Entertainment:** Check with your catering company or a separate amusement rental company for entertainment options including a DJ, outdoor inflatables, games etc....

**Costs:** Opting for the outdoors for your event can cost less than renting indoors, however, be mindful of other expenses that can drive up the total cost of your event. For example, consider the cost of event insurance or additional costs for setup and clean up.

### 8.2.5 Eventsbot

Today, event planners are no longer afraid to use Internet technology to organize their events and shows. They find event planning online more easy than any other traditional way of planning events. Traditional ways of planning are no more attracting planners because they are not affordable and also they involve a lot of manual work and spread sheets. Also, manual ways of planning shows have become outdated as they have caused a great dip in the attendance.

To fight all these issues in a better way, it is sensible to think event planning online. When you are choosing a professional event management company like eventsbot, you no longer have to worry about registrations or pulling more attendees to your event. You will get good opportunity to promote your events by creating your event page that will match with your existing website. You will enjoy logging in with the help of secured username and password. You can allow your registrants to get all the information they want by using your event page. You can share every information about your event including the venue, date, pricing of tickets and many other details of your events with your attendees. You can choose good online event management software such as eventsbot if you want to give a good experience to your attendees.

### 8.2.6 RegOnline

RegOnline is an event management software with solutions for events, meetings and conferences. The registration software allows event planners to easily setup online event home pages and registration forms. Its service is similar to Eventbrite and Cvent.

RegOnline handles all payment processing, data tracking and online registration confirmation. They track crucial event data like attendee info in reports that can be viewed, emailed, downloaded or exported from their site. Event planners can also create custom reports to track specific event data.

### 8.2.7 Setdot

Setdot is an event planning tool that's currently in private beta - Mashable was granted one of the first invites.

The user interface for Setdot is very attractive, and appeals to a young professional demographic. Choose from their preset themes for your event, whether it be a small gathering to an all-out party. The guest lists are easy to manage, and are automatically saved in your Setdot account once you've entered a guest's email address. The rest of the tools Setdot provides are somewhat impressive.



*Notes* When choosing a location for your event, Setdot can help by aiding in your search, and populating your invite with the location name, address, and phone number.

Privacy settings for guests and their information shown regarding an invite can be set to variable modes.

Speed, ease and attractiveness are by far Setdot's most superior features. While the tone of the site may remind you a bit of Evite, Setdot may need to do a bit more if they hope to get people to switch to their service. There are no collaboration features, such as those that can be found on Renkooor Planypus. Setdot is an interesting entrant, even if the market it enters is somewhat crowded.

**Self Assessment**

Notes

Fill in the blanks:

6. 123 Signup is the premier online event ..... and ..... management service today.
7. 123 Signup provides online ..... and seminar management.
8. Colleges and Universities also use the systems of .....

**8.3 Events in the Cloud**

Cloud computing lets you take event management from the office to the event site. The attendee database isn't landlocked on your company's computers; it's located on the web, where it's accessible from any web browser. So fire up a series of computer terminals in the event registration room, or just take your notebook PC with you. Everything you or your attendees entered prior to the event is there for your onsite access—which is great not just for onsite registration, but also for solving those niggling problems that always tend to spring up the day of the event.

Even a small event has beaucoup number of separate pieces and parts, all of which can benefit from behind-the-scenes computing horsepower.



*Caution* It is unusual cost effective, however, to purchase the hardware and software to cope these events; you might use the same software applications to manage a 25 person seminar as you do to manage a 1,000 person trade show, even though the 25 person seminar brings in less revenue.

Although both events have the similar management needs, the smaller event maybe cannot afford the traditional type of event management software that the larger event has the budget for.

This is where cloud computing comes to the rescue. By tapping into the similar server cloud as the larger event the smaller event can now afford the same level of event management. The similar applications are used but with less server horsepower.

**Self Assessment**

Fill in the blanks:

9. Cloud computing lets you take event management from the office to the ..... site.
10. Even a small event has ..... number of separate pieces and parts.

**8.4 Understanding Contact Management and CRM**

Customer Relationship Management (CRM) focuses on your enterprise's number one priority creating a satisfactory customer experience that will delight your current clients and help you acquire new ones more quickly.

CRM systems for marketing track and measure campaigns over multiple channels, such as email, search, social media, telephone and direct mail. These systems track clicks, responses, leads and deals.

**Notes**

CRMs can be used to create, assign and manage requests made by customers, such as call center software which help direct customers to agents. CRM software can also be used to identify and reward loyal customers over a period of time.

Appointment CRMs automatically provide suitable appointment times to customers via email or the web, which are then synchronized with the representative or agent’s calendar.

For small businesses a CRM system may simply consist of a contact manager system which integrates emails, documents, jobs, faxes, and scheduling for individual accounts. CRM systems available for specific markets (legal, finance) frequently focus on event management and relationship tracking as opposed to financial return on investment (ROI).

CRM often makes use of social media to build up customer relationship. Some CRM systems integrate social media sites like Twitter, LinkedIn, Facebook and Google Plus to track and communicate with customers sharing opinions and experiences with a company, products and services. Trends identified through social media allow businesses to make more accurate decisions on which products to supply.



*Task* Explore the types of media used by CRM for building up customer relationship.

**Self Assessment**

Fill in the blanks:

11. CRM systems for marketing track and measure campaigns over ..... channels.
12. CRM software can also be used to identify and reward ..... customers over a period of time.
13. CRM often makes use of ..... media to build up customer relationship.

**8.5 Exploring Contact Management and CRM Applications**

Salesforce India’s game changing technology and Customer Relationship Management cloud software addresses all your customer interface concerns, from sales and marketing to customer service, streamlining your enterprise and saving invaluable time and resources.

Salesforce delivers state of the art CRM Software-as-a-Service virtually, bestowing your business with all the 21st century speed and efficiency of the cloud computing revolution in India.

CRM custom software from Salesforce instantly updates your business processes, combining them with people and technology to reveal more about your customers and their behaviour with deeper analysis and insight into critical sales and customer metrics.

**8.5.1 Salesforce.com**

Their customer relationship management software is in the cloud, so it frees up your team from cumbersome admin, data entry, and security updates, allowing them to focus on lead generation, closing deals and gaining expertise. A greater overview of Salesforce’s CRM software streamlines and automates your business processes, providing deep analysis and insight into important sales and client data, ensuring greater client satisfaction.

With Salesforce CRM, you can collect customer support requests from different channels, assign cases to the appropriate team or agent, easily recall the best solutions to customer problems,

escalate support cases when necessary, direct customers towards web-based solutions, conform to service-level agreements, and identify areas where service can be improved.

As cloud computing providers, Salesforce India gives your business all the virtual power of 21st century virtual technology: partner/channel management, web communities, award-winning interfaces, point-and-click customisation, and seamless CRM integration.

### 8.5.2 BigContacts

BigContacts is a software company that develops simple and affordable web based CRM (Customer Relationship Management) software for small business.

BigContacts was designed for businesses that have outgrown basic solutions like Excel, Outlook or ACT, but don't want the cost and complexity of solutions like Salesforce.

Their software has proven to be an invaluable tool for small businesses. Today, they have the privilege of helping several thousand small businesses around the world. This software is making a real difference in the businesses that they serve.

### 8.5.3 bConnections

The application includes a web-based calendar that sales management can use to manage the activities of all their reps. It also tracks leads and sales opportunities, to help you better prepare sales forecasts. All activities are summarized in the application's Executive Summary dashboard.

### 8.5.4 Apple MobileMe Contacts

Software Advice published a guide on Mac-based CRM software that includes SOHO Organizer as a CRM solution. SOHO Notes currently syncs notes between multiple computers using Apple's Sync Services technology and MobileMe as the "go-between". Interestingly, iCloud doesn't work with Apple's Sync Services technology. Instead, iCloud introduces two new syncing technologies: (1) document syncing; and (2) database syncing.

### 8.5.5 MailBrowser

Webyog's MailBrowser is another CRM app that works with Gmail to provide additional data about your contacts, and can automatically keep contact information up-to-date by pulling data from emails. However, it doesn't provide easy access to social network profiles or updates. Unlike some of the other services here, MailBrowser is a locally installed app, so it may be a better choice for users with privacy concerns. MailBrowser is free, and is available as an IE plugin, Firefox add-on and Chrome extension.

In these days of below-the-line marketing, everyone should have a personal social-media CRM independently to whatever CRM they have in their office. This reflects the blurring of the work and play areas of life which is one of the recognised aspects of Generations Y and Z, as well as a very natural result of the interactive technology.

### 8.5.6 Plaxo

Plaxo ([www.plaxo.com](http://www.plaxo.com)) is an address book synchronising and backup tool which has a number of interesting features such as the ability to access your contacts from the net, to import and export as CSV files, to send greetings cards to check duplicates and synchronise in a limited way with google applications, facebook and other social media.

**Notes**

The interface seems to offer a lot of benefits and certainly the ability to send greetings cards is a useful one. There are, however a whole series of issues and bugs and incomplete aspects to Plaxo which means that it can easily be superseded as the personal CRM of choice by any app maker able to sort out these issues more efficiently.

1. There's no official Plaxo app on Android phones and so the synchronization goes via Google Apps and is clunky. Whenever code word security runs out, it seems to stop synchronizing. Also the synchronizing doesn't seem to work well all the time and in my case telephone numbers have been moved from one person to another, which is very troublesome.
2. There are not really enough greetings cards and they are in too few languages.
3. Intelligent updating from the web seems not to be working half the time. Occasionally the robot makes a half-hearted attempt to find and update people, but nowhere near what you'd expect for the annual fee.
4. Above about 3000 contacts and the site works slowly. It is unable to offer you a print out of the whole database at that size.
5. It often loses the pictures it has imported from facebook and doesn't seem to be able to import any at all from Linked In. It cannot update calendars directly to Android, again only via Google apps.
6. It doesn't deal properly with any scripts beyond basic Latin script, so it mangles names written even with Polish or Czech letters, leave alone Cyrillics or Chinese names.
7. The folders are a clunky interface, but even when you have done the work of putting contacts into the appropriate folders, they don't carry through to the greetings cards area, so you cannot, for instance, make a folder of people who would receive, let's say, and Eidh card or a more/less traditional Hannukah card and then easily access that folder from the greetings card area. Also send outs of more than about 200 cards per time tend to fail and need all that work to be done again.

**Self Assessment**

Fill in the blanks:

14. CRM custom software from ..... instantly updates your business processes.
15. .... includes a web-based calendar that sales management can use to manage the activities of all their representatives.
16. .... is an address book synchronising and backup tool which has a number of interesting features.

**8.6 CRM More Than Just Software**

It can sometimes seem as though there really are not enough hours in each day to get everything done. What can make matters worse is using poor and ineffective software programs to deal with CRM (customer relationship management) as this can dramatically reduce the profits of the business.

Good CRM so important when you are running a business, you need to ensure that not a single sale slip through your fingers. To do this properly you need to make sure you have sound CRM software to help you with the day-to-day running of your business. Smart business owners use CRM to run their business through.

Why put up with running several different software applications at any one time on each and every computer within your business when you could use one and get the job done quicker?

Believe it or not there are still business owners out there who do not recognize and realize the massive benefits that using one single CRM solution can bring to their business. Imagine how much easier it would be to log in to one software application every morning and do everything through it from accounting and invoicing to customer and employee management. You can even create and schedule meetings, marketing campaigns, manage projects and tasks, create shared documents, write emails and blogs and so much more. In fact anyone who wants to develop their business and move forward and develop really needs to get on board and use a good CRM solution.

This is what we set out to build when developing WORK etc. *A single, whole of business management solution.*

Businesses are only as good as the information that they are able to handle process and attempting to do this using multiple software applications is a step in the wrong direction. Not only does it waste countless hours every year, it is also very costly to run so many types of software each year.

Switching and using one type of CRM software means that the cost of running software for the business and for different users is vastly reduced. To put this into perspective if a company has 10 employees and each of those 10 employees have to use five different software applications each costing \$150 each year, it will cost the business \$7500 every year just to maintain software licenses.

When one single CRM solution is used a business can expect to pay around \$1500 each year instead, a total saving of around \$6000 a year, which is only part of it: a single CRM solution would include customer service software among other extra beneficial features. Now how many small-business owners can say that they would not benefit from an extra \$6000 a year in the business bank account?

Running a small business can be a very time consuming and difficult task, but by using a good CRM software solution with help desk software, some of the pressure can be eased. Any small business owner who is running several software programs yet still manages to miss out on targets relating to customer relationship management should look towards using a CRM solution and begin reaping the benefits almost immediately.

### Self Assessment

Fill in the blanks:

17. Good ..... is very important when you are running a business.
18. .... business owners use CRM to run their business through.

Notes



Case Study

## TEDxAveiro Develops Event Management System in 2 Weeks using the Free Agile Platform Community Edition

**T**EDx was created in the spirit of TED's mission, "ideas worth spreading." The program is designed to give communities, organizations and individuals the opportunity to stimulate dialogue through TED-like global experiences at the local level.

At TEDx events, unique talks given by live speakers combine with TEDTalks videos to spark deep conversation and connections. TEDx events are fully planned and coordinated independently, on a community-by-community basis.

TEDxAveiro, a non-profit organization, needed a system to manage and control the events it hosted. The solution they envisioned covered the full cycle of event registration, payment control, ticket generation, name badge printing and access control at the event venue.

However, being a non-profit organization and having no internal IT department, TEDxAveiro faced the challenge of how to build such a system in a timely and cost-efficient manner.

### **The Solution**

Contisystems, an OutSystems Partner, was selected to develop an online centralized ticketing management system using the free OutSystems Agile Platform Community Edition. Being a multi-disciplinary project, where hardware and software engineering, marketing and organisational procedures had to be joined, the OutSystems Agile Platform was the development platform of choice to enable the agile methodology that was used throughout the entire process for building the online management system, from scratch to the go-live.

Another decisive criterion for choosing the Agile Platform was its "built-to-change" approach, allowing for new requirements and usability suggestions from users to be quickly reflected in the requirements system and put in production. Finally, the Agile Platform enabled the system to be fully integrated with the existing public site and the tickets and accreditation printing systems. The system's main features are as follows:

- Public registration Website, where attendees can register themselves for the event;
- Automatic operations module manages and sends emails for payment procedures, validation and interfaces with the name badge printing system;
- Operations back-office and reporting dashboard to manage the event's logistics, providing information to support management decision-making based on the registration process data and payment status.
- Online centralized management system for all the event's staff, with different user Notes profiles and security access;
- Modular design, allowing the system to be re-used for other types of events;
- Integration with other components, namely PDA software for ticket validation and dedicated hardware inside turnstiles.

*Contd....*

## Notes

**Results:** TEDxAveiro's ticketing system was delivered on time and within the small budget available, thanks to OutSystems' free Agile Platform Community Edition. At the time of the event, TEDxAveiro had a fully integrated system including a public website for registration, a complete back office for management and a PDA application for real-time check-in.

The major results TEDxAveiro derived from using the system were:

- Short time-to-market, with the entire project taking only 2 weeks from design to deployment in two agile sprints of 1 week each with only one developer for all modules;
- Easy integrations with external systems, thanks to the OutSystems Agile Platform. A new version is now being planned to integrate with a third-party paying service;
- Rapid adoption of the system by the entire staff, thanks to the quick change cycles enabled by the Agile Platform that allowed for the delivery of a system with the changes that were proposed by the users during each sprint;
- Automated management of the event's logistics allowing the managers to focus on value-added activities and requiring less people to handle organizing and executing such an event;
- Real-time reporting system, providing information regarding entrances and exits as well as the number of people inside the event venue during the event;
- More effective marketing campaigns, based on the registration data and payment status reported by the system.

**Questions:**

1. Explain the different decisive criterion for choosing the Agile Platform.
2. Explain the pros and cons of TEDxAveiro's ticketing system.

*Source:* <http://www.outsystems.com/case-studies/tedx-aveiro/event-management-system/>

**8.7 Summary**

- Collaborative event management is a term used to describe the management of activities conducted between two closely, co-operating trading partners in order to maximise the efficiency of a trading process. Event software is starting to play a key role in the organisation and management of events.
- Event management software should allow event managers to create a fully customizable online booking form capturing the most relevant information from your delegates.
- Determining the true ROI from events can be determined and managed through a powerful reporting and analysis suite.
- A cloud based event management solution offers the opportunity for event managers to manage event teams and service delegate and booker requests, from any location at any time.
- From a management point of view, a cloud based event management solution provides the mechanism to be in real time control of all of events activities - event managers are able to get an accurate view of the state of active events, what stage particular event marketing campaigns are at and the feedback being received on your on-going events program.

**Notes**

- With a cloud based event management solution, the management of events becomes wholly a business issue with the IT issues being handled by the cloud application provider.
- Today, event planners are no longer afraid to use Internet technology to organize their events and shows. They find event planning online more easy than any other traditional way of planning events.
- Good CRM so important when you are running a business, you need to ensure that not a single sale slip through your fingers. To do this properly you need to make sure you have sound CRM software to help you with the day-to-day running of your business. Smart business owners use CRM to run their business through.

### **8.8 Keywords**

**123 Signup:** 123 Signup is the premier online event registration and membership management service.

**Document Management:** It is an easy way to publish and manage speaker abstracts and biographies.

**Event Reporting:** It refers to determining the true ROI from events can be determined and managed through a powerful reporting and analysis suite.

**Event Scheduler:** It manages and schedules multi-faceted one to one meetings for your delegates and suppliers simply and efficiently.

**RegOnline:** RegOnline is an event management software with solutions for events, meetings and conferences.

**Venue Management Software:** It provides flexible venue planning and scheduling tools that manages the event facility no matter what type of events are being hosted.

### **8.9 Review Questions**

1. Define collaborative event management.
2. Explain various event management applications.
3. What is 123 signup?
4. What do you understand by events in the cloud?
5. What is contact management?
6. Describe bConnections application.
7. Discuss the role of software programs in dealing with CRM.
8. What do you understand by plaxo?

### **Answers: Self Assessment**

- |              |                             |
|--------------|-----------------------------|
| 1. Integrate | 2. Delegates                |
| 3. Badges    | 4. Technology               |
| 5. Tools     | 6. Registration, membership |
| 7. Training  | 8. 123 Signup               |

9. Event	10. Beaucoup	Notes
11. Multiple	12. Loyal	
13. Social	14. Salesforce	
15. bConnections	16. Plaxo	
17. CRM	18. Smart	

## 8.10 Further Readings



### Books

Broberg.James, 2011, "Cloud Computing: Principles and Paradigms". John Wiley & Sons, Inc.

E. Y. Sarna. David, 2011, "Implementing and Developing Cloud Computing Applications". Auerbach Publications.

Escalante. Armando, 2010, "Handbook of Cloud Computing Computer Science". Springer.

Rhoton. John, 2009, "Cloud Computing Explained: Implementation Handbook for Enterprises". Recursive Press.



### Online links

<http://www.evocos.co.uk/Resources/Blog/post/part-2-event-management-the-cloud---event-management-software.aspx>

[http://www.worketc.com/CRM\\_101/Part\\_6\\_CRM\\_2\\_0\\_more\\_than\\_just\\_CRM](http://www.worketc.com/CRM_101/Part_6_CRM_2_0_more_than_just_CRM)

<http://www.eventindustrynews.co.uk/2011/11/23/event-management-and-the-cloud/>

<http://www.symphonyem.co.uk/blog/post/blog/2011/12/13/How-Event-Management-Services-Can-Utilise-the-Cloud>

## Unit 9: Collaborating on Project Management

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## **Objectives**

Notes

After studying this unit, you will be able to:

- Describe project management titles
- Explain how to make projects successful
- Understand the triple constraint
- Describe the critical project manager skills
- Discuss the project management applications
- Describe the advantages of managing projects online

## **Introduction**

Projects act as catalysts that play a vital role in building “a better tomorrow.” But without a sophisticated project management platform, it’s difficult to be successful. A project management platform includes policies, procedures, standards, guidelines, integrated project management processes, tools, techniques, templates, project assets library, best practices, learning assets, lessons learned or next practices.

Many micro and small organizations, governments or those in emerging economies frequently don’t have the enough money to invest on sophisticated information technology in building and maintaining a project management platform of their own.

This major divide in the profession could be reduced through cloud computing — providing businesses, governments and individuals with access to a reliable project management platform over internet at an affordable price as per usage (on rental basis). This is called Project Management Cloud (PM Cloud).

### **9.1 Project Management Titles Role**

In this section, we will study about project management titles project manager, project sponsor and so on:

#### **9.1.1 Project Manager**

The person responsible for developing a definition of the project in conjunction with the project sponsor. The Project Manager then ensures that the project is delivered on time, to budget and to the required quality standard (within agreed specifications). He/she ensures the project is effectively resourced and manages relationships with a wide range of groups (including all project contributors).

The Project Manager is also responsible for managing the work of consultants, allocating and utilizing resources in an efficient manner and maintaining a co-operative, motivated and successful team.

#### **Responsibilities**

Following are the responsibilities of a project manager:

- Managing and leading the project team.
- Recruiting project staff and consultants.

**Notes**

- Managing coordination of the partners and working groups engaged in project work.
- Detailed project planning and control including:
  - ❖ Developing and maintaining a detailed project plan.
  - ❖ Managing project deliverables in line with the project plan.
  - ❖ Recording and managing project issues and escalating where necessary.
  - ❖ Resolving cross-functional issues at project level.
  - ❖ Managing project scope and change control and escalating issues where necessary.
  - ❖ Providing status reports to the project sponsor.
  - ❖ Managing project training within the defined budget.
  - ❖ Liaising with, and updating progress to project board/senior management.
  - ❖ Managing project evaluation and dissemination activities.
  - ❖ Managing consultancy input within the defined budget.
  - ❖ Giving final approval of the design specification.
  - ❖ Working closely with users to ensure the project meets business needs.
  - ❖ Defining and managing the User Acceptance Testing program.
  - ❖ Identifying user training needs and devising and managing user training programs.
  - ❖ Providing regular status reports to the IPSC Program Board.

### 9.1.2 Project Sponsor

The person who commissions others to deliver the project and champions the cause throughout the project. They will normally be a senior member of staff with a relevant area of responsibility that will be affected by the outcome of the project. They are involved from the start of the project, including defining the project in conjunction with the project manager. Once the project has been launched they should ensure that it is actively reviewed.



*Did u know?* The Project Sponsor is the one who has to negotiate a path through the tricky diplomatic areas of the project although the project manager will most likely be involved in such areas from time to time too.

#### Responsibilities

Following are the responsibilities of a project sponsor:

- Acts as champion of the project.
- Is accountable for the delivery of planned benefits associated with the project.
- Ensures resolution of issues escalated by the Project Manager or the Project Board.
- Sponsors the communications program; communicates the program's goals to the organization as a whole.
- Makes key organisation/commercial decisions for the project.

- Assures availability of essential project resources.
- Approves the budget and decides tolerances.
- Leads the Project Board.
- Ultimate authority and responsibility for the project.

### 9.1.3 Project Board

This group, normally containing management grade personnel, is responsible for overseeing the progress of the project and reacting to any strategic problems. The group is optional, as the sponsor-manager relationship may be seen as the best means of control, but is usually required in large projects that cross-functional boundaries.

#### Responsibilities

Following are the responsibilities of a project board:

- Championing the project and raising awareness at senior level.
- Approving strategies, implementation plan, project scope and milestones.
- Resolving strategic and policy issues.
- Driving and managing change through the organisation.
- Prioritizing project goals with other on-going projects.
- Communicating with other key organizational representatives.



*Task* Prepare a presentation on important titles in project management.

### 9.1.4 Project Manager

The person responsible for managing supplier-side input to the project:

#### Responsibilities

- Ensures that mandatory supplier requirements are met.
- Manages the production and approval of the supplier side of the budget.
- Makes effective use of supplier resources within the approved budget.
- Tracks performance of consultants and takes appropriate action.
- Proactively develops a collaborative relationship with the organisation to Project Steering Board level.
- Ensures that there are clear communication paths within the project team and the organisation and supplier.
- Acts as main point of contact between the supplier and the organisation.
- Produces and monitors financial reports including entry and maintenance of all actual time and expense against the master plan.

**Notes**

- Day to day management of supplier staff assigned to the project.
- Quality Assures the work of supplier staff assigned to the project.
- Encourages the transfer of product knowledge and skills to the appropriate staff within the organisation.

### 9.1.5 Project Team Members

The staff who actively work on the project, at some stage, during the lifetime of the project. Some may have a specific role – for example, the Team might include a Project Administrator:

#### Responsibilities

Team member roles will vary depending on the type of project. Typically they might be to:

- Provide functional expertise in an administrative process
- Work with users to ensure the project meets business needs
- Documentation and analysis of current and future processes/systems
- Identification and mapping of information needs
- Defining requirements for reporting and interfacing
- User training
- Title Role

### 9.1.6 Project Administrator or Coordinator

Responsible for maintenance of the project plan, maintenance and updating of a project website (if appropriate). Provides administrative support to the Project Manager.



*Notes* The role of a project administrator or coordinator is most likely to be required in larger cross-functional projects.

#### Responsibilities

- Sets up and manages support functions covering planning, tracking, reporting, quality management and internal communication.
- Produces consolidated reporting to the Project Board, including milestone summary, key issues, risks, benefits, summary of costs incurred.
- Establishes standards, tools and procedures for use on the project, including Issue, Risk, Change and Information Management.
- Manages the Project Library.
- Reviews project activities for compliance with procedures and standards.
- Manages the support and provision of project tools and equipment.
- Manages data security, software and license control.

- Assists with the production of user documentation.
- Assists with testing.
- Title Role

### **9.1.7 Systems Developer**

To work with the project manager on defining and executing development requirements

#### **Responsibilities**

- Working with the Project Manager on definition of development requirements and priorities.
- Data Migration.
- Interfaces with other systems.
- Reporting configuration and deployment.
- Set up and maintenance of security rights and access permissions.
- Contributing to technical strategy, policy and procedure.
- Development and operation of technical testing programs.
- Production of technical documentation to agreed quality standards.
- Reporting on progress/issues to management and users.
- Title Role

### **9.1.8 System Administrator**

Management and support of the IT system environments:

#### **Responsibilities**

- Management and support of the various environments.
- Network operating systems management and support.
- Database management and support.
- Backup and disaster recovery measures.
- Contributing to technical strategy, policy and procedure.
- Development and operation of technical testing programs.
- Production of technical documentation to agreed quality standards.

### **9.1.9 Program Manager**

This role is relevant if there are several related projects.

#### **Responsibilities**

- Overall management and co-ordination of the program of projects.

Notes

- Contributing to strategy, policy and procedure.
- Management of supplier/contractual relationships.
- Budgetary control of the program of projects.
- Monitoring of, and responding to, issues at the program level.
- Providing regular status reports to the IPSC Program Board

**Self Assessment**

Fill in the blanks:

1. Project sponsor is accountable for the delivery of planned ..... associated with the project.
2. The sponsor-manager relationship may be seen as the best means of .....
3. Project manager acts as main point of ..... between the supplier and the organisation.

**9.2 What Makes Projects Successful?**

Following factors helps to make projects successful:

**9.2.1 Close Relationships**

The successful short-listed projects all had exceptionally close links between the business leadership and the project team. The business customer/IT supplier approach was all but absent and the judges saw the development of integrated teams, based around common goals, with each individual or group contributing something of value to the project.

There was genuine collaboration, with the programs adding something significant to the business. In many cases, initiatives were led by a senior business executive and IT projects were tracked at board meetings.



Caselet

**Considerations When Moving to a Web-based Project Management Tool**

**I**f you're moving to a web-based project management tool from MS Project, which one of the many available do you choose? Here are some considerations to take into account:

- **Microsoft project compatibility:** The first thing is to ensure that you choose a web tool that is compatible with Microsoft Project so that you can use your existing project data.
- **Multiple views into project data:** In my experience, the Gantt chart can seem intimidating to some team members. As such, I recommend looking for a web-based project management tool that has a wide selection of views into project status (like calendar-, task- and timeline-based views), besides the venerable Gantt chart.
- **Flexible subscriptions:** One of the limitations of Microsoft Project can be the expense of the licenses. Many web-based project management tools like LiquidPlanner and

Contd....

## Notes

Zoho Projects work on a subscription model, which offer a level of flexibility you just can't find with traditional desktop software licensing. Project teams can scale up and scale down their subscription as members join and leave the team. If you rely on contractors and freelancers, you can set them up with a subscription and close it out when their project work is complete.

- **Social media component:** With social media becoming a growing element of project team communications, it should be an integral feature in web-based project management tools. I recommend looking for a web-based tool that has social media components to augment team communication about project status and scheduling matters. Developing an internal dialog about project scheduling and status is one of the best ways to keep the project on track.
- **Online document storage and collaboration:** Today's projects generate a lot of project artifacts and documents. While it can be easy to let your project team stash documents in their email inboxes and local hard drives, choosing a web-based project management tool with its own document storage and collaboration features means that project artifacts can be accessed easily and won't get lost.
- **Mobile client/accessibility:** Considering a web-based project management tool that has mobile accessibility or even its own mobile client means you and your team can stay in touch with the project at all times.

Source: <http://gigaom.com/2009/11/30/6-considerations-when-moving-to-a-web-based-project-management-tool/>

## 9.2.2 Good Project Management

IT projects generally have a poor reputation for delivery. However, all the short-listed schemes were founded on sound organizational structures, with project boards, technical steering groups and high levels of communication between the involved parties.

Some of the entries set themselves aggressive targets, with the understanding that the detailed planning would probably result in longer timescales. In cases where projects ran into unexpected changes or difficulties, the project was either halted, or the project manager felt that they had the power to halt the program.

## 9.2.3 Risk Management

All the projects carried a risk register, but the judges noted that the status of risks was being constantly monitored by the project team. In most cases, formal risk reviews were carried out at frequent intervals – as short as a few days in some cases. As a result, there seemed to be few surprises and the projects performed in a very predictable fashion.

## 9.2.4 Measurement as a Way of Life

The capture and measuring of metrics was carried out extensively by all the short-listed candidates. A theme emerged which showed that the project managers were analysing “in-flight” data to understand their performance.

Measurement extended to all areas, not just standard project control parameters. A considerable amount of effort was put into understanding benefit metrics.

**Notes**

All the short-listed projects had strong, quantifiable benefit cases, but some of the entries went further and looked deeply into the intangible benefit areas and attempted to measure them. Intangibles are by nature difficult to measure.



*Example:* If turnover is increased, it is difficult to prove that a particular IT system and its processes were responsible. The measurement of intangible benefits was not perfect, but where it was done, it did provide the leadership with a perception of probability.

### 9.2.5 Technological Changes

Many of the entries used the same general principles when buying technology.

Industry leading packages were chosen, and a number of entrants outlined how they had rigorously checked the roadmaps for the projects they had selected, so they could be confident that the deliverable would continue to function for its planned life.

Second, bespoke development was only a minor part of the project, and in the strongest projects was strictly confined to areas which could generate genuine competitive advantage, such as forecasting.

### 9.2.6 Conclusion

There is nothing new in all the common themes to emerge from the short-list. The difference is that in these projects the principles of project management, stakeholder management and risk management were executed both effectively and ruthlessly.

### Self Assessment

Fill in the blanks:

4. In many cases, initiatives were led by a senior business executive and IT projects were tracked at ..... meetings.
5. IT projects generally have a poor reputation for .....
6. The capture and measuring of ..... was carried out extensively by all the short-listed candidates.

## 9.3 The Triple Constraint

The project management triangle is used by managers to analyze or understand the difficulties that may arise due to implementing and executing a project. All projects irrespective of their size will have many constraints.

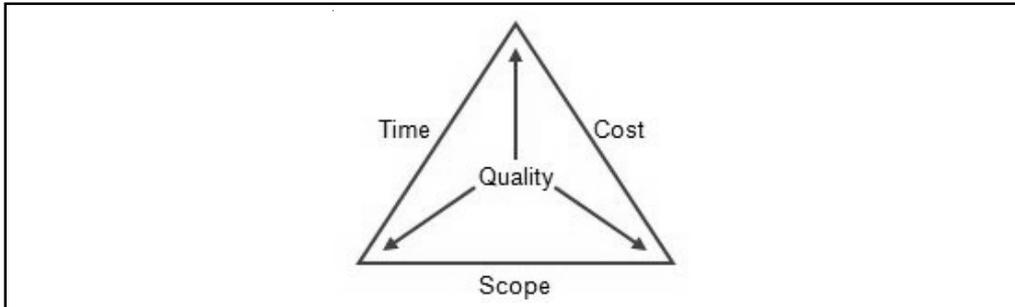
Although there are many such project constraints, these should not be barriers for successful project execution and for the effective decision making.

There are main three interdependent constraints for every project; time, cost, and scope. This is also known as Project Management Triangle.

Let's try to understand each of the element of project triangle and then how to face challenges related to each.

### 9.3.1 The Three Constraints

The three constraints in a project management triangle are time, cost and scope.



1. **Time:** A project's activities can either take shorter or longer amount of time to complete. Completion of tasks depends on a number of factors such as the number of people working on the project, experience, skills etc.

Time is a crucial factor which is uncontrollable. On the other hand, failure to meet the deadlines in a project can create adverse effects. Most often, the main reason for organizations to fail in terms of time is due to lack of resources.

2. **Cost:** It's imperative for both the project manager and the organization to have an estimated cost when undertaking a project. Budgets will ensure that project is developed or implemented below a certain cost.

Sometimes, project managers have to allocate additional resources in order to meet the deadlines with a penalty of additional project costs.

3. **Scope:** Scope looks at the outcome of the project undertaken. This consists of a list of deliverables which need to be addressed by the project team.

A successful project manager will know to manage both the scope of the project and any change in scope which impacts time and cost.



### 9.3.2 Quality

Quality is not a part of the project management triangle, but it is the ultimate objective of every delivery. Hence, the project management triangle represents implies quality.

Many project managers are under the notion that 'high quality comes with high cost', which to some extent is true. By using low quality resources to accomplish project deadlines does not ensure success of the overall project.

Like with the scope, quality will also be an important deliverable for the project.

### 9.3.3 Six Stages of Project Management

A project undergoes six stages during its life cycles and they are noted below.

- **Project Definition:** This refers to defining the objectives and the factors to be considered to make the project successful.
- **Project Initiation:** This refers to the resources as well as the planning before the project starts.
- **Project Planning:** Outlines the plan as to how the project should be executed. This is where project management triangle is essential. It looks at the time, cost and scope of the project.
- **Project Execution:** Undertaking work to deliver the outcome of the project.
- **Project Monitoring & Control:** Taking necessary measures, so that the operation of the project runs smoothly.
- **Project Closure:** Acceptance of the deliverables and discontinuing resources that were required to run the project.

### 9.3.4 Overcoming Challenges to Project Constraints

It is always a requirement to overcome the challenges related to the project triangle during the project execution period. Project managers need to understand that the three constraints outlined in the project management triangle can be adjusted.

The important aspect is to deal with it. The project manager needs to strike a balance between the three constraints so that quality of the project will not be compromised. To overcome the constraints, the project managers have a several methods to keep the project going. Some of these will be based on preventing stakeholders from changing the scope and maintaining limits on both financial and human resources.

A project manager's role is evolved around responsibility. A project manager needs to supervise and control the project from the beginning to the closure.

The following factors will outline a project manager's role.

- The project manager needs to define the project and split the tasks amongst team members. The project manager also needs to obtain key resources and build teamwork.
- The project manager needs to set the objectives required for the project and work towards meeting these objectives.
- The most important activity of a project manager is to keep stakeholders informed on the progress of the project.
- The project manager needs to assess and carefully monitor risks of the project.

### 9.3.5 Conclusion

Project management is very often represented on a triangle. A successful project manager needs to keep a balance between the triple constraints so that the quality of the project or outcome is not compromised.

There are many tools and techniques that are available in order to face the challenges related to the three constraints. A good project manager will use appropriate tools in order to execute the project successfully.

## 9.4 Critical Project Manager Skills

Notes

In order to overcome the challenges related to project triangle and meet the project objectives, the project manager needs to have a range of skills which includes:

- Leadership
- Managing people
- Negotiation
- Time management
- Effective communication
- Planning
- Controlling
- Conflict resolution
- Problem solving

### **Self Assessment**

Fill in the blanks:

7. All projects irrespective of their size will have many .....
8. Failure to meet the ..... in a project can create adverse effects.
9. .... looks at the outcome of the project undertaken.
10. The project manager needs to have a skill of effective .....

## 9.5 Exploring Project Management Applications

### **9.5.1 Explorers and Pioneers**

It's not unlike the difference between the pioneers and settlers. Pioneers are the first to tread into unfamiliar turf. They find the paths that work, and suffer through those that don't. Some don't make it to safe ground. Pioneers are the first in their country or organization to set down the rules and name the terms. "We will call this state 'Nevada'." Or in the project management sense, "When we say 'risk plan,' this is what we mean." 25 years ago, the terms were still being defined. Now, the maps have been drawn and we're working toward common definitions, terms and routes. That's not to say there's not still plenty of exploration, but the major paths for the uninitiated have been carved out, tramped down and paved.

Those coming through now still have a chance to do some exploration. Not necessarily in terms of setting down the terms and terminology but, instead, the more classic definition of "explore" found in *Chambers*: to scare animals from their hiding places. Project managers get to raise the alarm. They get to warn alarm and alert. They get to flush out the last vestiges of antiquated practice and move project management toward a recognizable, consistent profession. As they do so, there are explorers' tools, just as there have always been—but now they take on a different look and feel.

### 9.5.2 Explorers' Tools

The tools we use to “frighten” the last vestiges of aging practices away are not the same tools (Gantt, network diagram, responsibility matrix, etc.) used to implement project management. If we want to make project management “habitable” and inviting, the tools to deploy are those that ensure best practice takes hold. Three examples:

- **ISO 10006:** The basic guidance on project management from the International Organization for Standards provides a benchmark as to what protocols to follow. It doesn't spell out the specific paths or methodologies, but tells what signs are out there to indicate best practice project management.
- **The Software Engineering Institute's Taxonomy-Based Risk Identification:** This monstrous list of risk questions on the SEI website is a classic example of taking advantage of the insights others have gained blazing a trail. And because the list of questions highlights past experience, there's evidence of potential gain from its use.
- **The Guide to the Project Management Body of Knowledge:** PMI's landmark work spells out terms, definition and guidance as it has developed over the past few decade. As with the other tools, it is highly regarded not because of its specificity, but because of its widespread acceptance from organization to organization and industry to industry.

What makes these tools work? They work because we can point to them outside our organization, and say that it is time for change. We can use them to highlight that there are others who are blazing the same trails in different cultures, organizations and industries. We can use them to show there is a path ahead worth treading, and if we don't “frighten” existing *ad hoc* practices away, we will be left behind by the settlers who are willing to trace the paths that pioneers and explorers established.

#### Self Assessment

Fill in the blanks:

11. .... are the first to tread into unfamiliar turf.
12. Project managers get to flush out the last ..... of antiquated practice and move project management toward a recognizable, consistent profession.
13. The basic guidance on project management from the International Organization for Standards provides a ..... as to what protocols to follow.
14. If we want to make project management ..... and inviting, the tools to deploy are those that ensure best practice takes hold.

### 9.6 The Advantages of Managing Projects Online

Following are the various advantages of managing projects online:

1. **Better Efficiency in Delivering Services:** Project management provides a “roadmap” that is easily followed and leads to project completion. Once you know where to avoid the bumps and pots holes it stands to reason that you're going to be working smarter and not harder and longer.
2. **Improved/Increased/Enhanced Customer Satisfaction:** Whenever you get a project done on time and under budget, the client walks away happy. And a happy client is one you'll see again. Smart project management provides the tools that enable this client/manager relationship to continue.

3. **Enhanced Effectiveness in Delivering Services:** The same strategies that allowed you to successfully complete one project will serve you many times over.
4. **Improved Growth and Development within your Team:** Positive results not only command respect but more often than not inspire your team to continue to look for ways to perform more efficiently.
5. **Greater Standing and Competitive Edge:** This is not only a good benefit of project management within the workplace but outside of it as well; word travels fast and there is nothing like superior performance to secure your place in the marketplace.
6. **Opportunities to expand your Services:** A by-product of greater standing. Great performance leads to more opportunities to succeed.
7. **Better Flexibility:** Perhaps one of the greatest benefits of project management is that it allows for flexibility. Sure project management allows you to map out the strategy you want to take see your project completed. But the beauty of such organization is that if you discover a smarter direction to take, you can take it. For many small-to-midsize companies, this alone is worth the price of admission.
8. **Increased Risk Assessment:** When all the players are lined up and your strategy is in place potential risks will jump out and slap you in the face. And that's the way it should be.



*Caution* Project management provides a red flag at the right time: before you start working on project completion.

9. **Increase in Quality:** Goes hand-in-hand with enhanced effectiveness
10. **Increase in Quantity:** I saved the best for last> and increase in quality is often the result of better efficiency, a simple reminder regarding the benefits of project management.

### Self Assessment

Fill in the blanks:

15. Project management provides a ..... that is easily followed and leads to project completion.
16. Great performance leads to more ..... to succeed.



Case Study

### Project and Resource Management Cloud Computing

Cloud computing is one of the latest buzzwords that our industry is so famous for generating. Gartner broadly defines cloud computing as a style of computing where IT-related capabilities are provided 'as a service,' allowing users to access technology-enabled services from the Internet ("in the cloud") without knowledge of, expertise with, or control over the technology infrastructure that supports them. Cloud computing goes beyond using the Internet as a means of communication, but allows IT vendors to provide services to consumers and businesses through hosted and virtualized systems.

Contd....

Notes

Everyone knows that Salesforce.com is a major player providing a CRM solution in a multi-tenant environment. Google Apps is often brought up as the main example of cloud solutions for the consumer and small business. The main theme in cloud computing is the reliance on the Internet as the vehicle for delivery. As data storage professionals, you are quite familiar with outsourced hardware, software and connectivity providers such as Level 3 Communications.

One of the main issues with shared, multi-tenancy, is that the customer's ability to truly customize the solution is still limited. For example, Microsoft also offers a hosted CRM solution 'in the cloud,' however, one's ability to completely customize or modify the system is limited due to the shared database or multi-tenant environment.

However, a hybrid model is beginning to appear. While Salesforce.com offers a multi-tenant environment, or multiple customers on a shared server, and many hardware storage providers offer dedicated systems, a new hybrid model is combining the outsourced hardware and software with the business application or consumer service. The new hybrid allows customers to 'lease' dedicated servers and hosting services from one single provider.

The first example is from imc2, a large advertising agency providing strategic marketing vision and interactive solutions for its clients, Procter & Gamble, Pizza Hut, GlaxoSmithKline, and Diet Coke. The agency needed a web-based, collaborative solution to manage its projects and allocate its resources. The CIO evaluated 10 solutions and providers and chose a mid-market, web based project management solution.

Because its information technology department was in such high demand, the CIO decided to launch the software with a hosted provider, with the ability to migrate to an installed system.

Another main objective was to integrate the chosen solution with their accounting system, MS Dynamics Great Plains, and their home grown expense tracking system. At first, the CIO thought the need for integration would require an installed or on premise solution, adding complexity and timeline of their launch. Instead they were able to find not only a project management application provider, but also a vendor that could host a dedicated server for them. The hosted, dedicated server option allowed the team to 'dial into' the box and perform the integrations themselves, using Web Service APIs and the Software Development Kit.

The hybrid offering of both a project management system and a complete data storage and hardware environment, allowed the team to get their collaborative, project management solution up and running rapidly, without having to wait in the IT demand queue. At the same time it offered them the flexibility of customizing and integrating the solution as if it were their own hardware and software. Even more compelling is that the project system 'in the cloud' is integrated with software systems behind imc2's firewall.

Another example comes from J. D. Power & Associates. Similar to mc2, their IT team was overloaded and the research team wanted a project management solution in a short timeframe. What's more, their IT security standards would not allow them to put a project management solution both behind their firewall, yet still accessible to their research consultants while at client sites. So, they searched for hosted service providers for their project needs. Starting with a small pilot team, they initially rolled it out to the first dozen team members. Once successful, they proceeded with a gentle worldwide roll out.

Because the company is market research-focused, all client engagements are projects, making their project and collaboration solution a mission critical software application. As such, they needed a fully redundant project management system. Because team members

*Contd....*

reside in North America, the United Kingdom, and Asia, the system needed to be available 24/7. They opted for a hosted, dedicated server for their 900 team members, with a complete fail over server, so that if one server fails the other one takes over.

Again, J. D. Power & Associates was able to find a single vendor to provide not only the data storage, back up services, hardware and software in a hosted data center, but the same vendor was able to provide the business software solution as well.

#### Conclusion

The new hybrid model of investing in software as a service, 'in the cloud,' and having more customizability and integration abilities is already under way. Instead of having to contract with multiple vendors for these services, more and more business-to-business 'cloud computing' providers will be offering more data storage, hardware and systems services options.

#### Question:

Discuss the hybrid outcome of effective project management practices by different organizations in the above case.

*Source:* [http://www.projectinsight.net/community/blogs/project\\_insight\\_news/archive/2008/11/22/case-study-project-and-resource-management-cloud-computing-with-project-insight.aspx](http://www.projectinsight.net/community/blogs/project_insight_news/archive/2008/11/22/case-study-project-and-resource-management-cloud-computing-with-project-insight.aspx)

## 9.7 Summary

- A project management platform includes policies, procedures, standards, guidelines, integrated project management processes, tools, techniques, templates, project assets library, best practices, learning assets, lessons learned or next practices.
- The Project Manager is responsible for managing the work of consultants, allocating and utilizing resources in an efficient manner and maintaining a co-operative, motivated and successful team.
- The business customer/IT supplier approach was all but absent and the judges saw the development of integrated teams, based around common goals, with each individual or group contributing something of value to the project.
- IT projects generally have a poor reputation for delivery. However, all the short-listed schemes were founded on sound organizational structures.
- Bespoke development was only a minor part of the project, and in the strongest projects was strictly confined to areas which could generate genuine competitive advantage, such as forecasting.
- The difference is that in these projects the principles of project management, stakeholder management and risk management were executed both effectively and ruthlessly.
- There are many such project constraints, these should not be barriers for successful project execution and for the effective decision making.
- A successful project manager will know to manage both the scope of the project and any change in scope which impacts time and cost.
- The project manager needs to strike a balance between the three constraints so that quality of the project will not be compromised.
- Whenever you get a project done on time and under budget, the client walks away happy. And a happy client is one you'll see again.

## 9.8 Keywords

**Pioneers:** Pioneers are the first in their country or organization to set down the rules and name the terms.

**Project Board:** It refers to a group of management grade personnel who are responsible for overseeing the progress of the project and reacting to any strategic problems.

**Project Closure:** It refers to the acceptance of the deliverables and discontinuing resources that were required to run the project.

**Project Definition:** This refers to defining the objectives and the factors to be considered to make the project successful.

**Project Initiation:** This refers to the resources as well as the planning before the project starts.

**Project Manager:** The person responsible for developing a definition of the project in conjunction with the project sponsor.

**Project Monitoring & Control:** It includes taking necessary measures, so that the operation of the project runs smoothly.

**Project Sponsor:** The person who commissions others to deliver the project and champions the cause throughout the project.

## 9.9 Review Questions

1. Discuss the responsibilities of a project manager.
2. Explain all important tiles in project management.
3. Who is a project coordinator? Also explain his responsibilities.
4. Discuss the factors which facilitate the success of a project.
5. What are the three constraints in project management? Explain with the help of a suitable example and project management triangle.
6. Explain the stages of project management.
7. Discuss the factors which affect the role of a project manager.
8. What are the skills required by a project manager in order to overcome the challenges and meet the objectives of a project?
9. What keeps client/manager relationship continued?
10. Discuss the significant advantages of managing the projects online.

### **Answers: Self Assessment**

- |                |                   |
|----------------|-------------------|
| 1. Benefits    | 2. Control        |
| 3. Contact     | 4. Board          |
| 5. Delivery    | 6. Metrics        |
| 7. Constraints | 8. Deadlines      |
| 9. Scope       | 10. Communication |
| 11. Pioneers   | 12. Vestiges      |

- |               |                   |       |
|---------------|-------------------|-------|
| 13. Benchmark | 14. Habitable     | Notes |
| 15. Roadmap   | 16. Opportunities |       |

### 9.10 Further Readings



*Books*

Broberg, James (2011). "Cloud Computing: Principles and Paradigms". John Wiley & Sons, Inc.

E. Y. Sarna, David (2011) "Implementing and Developing Cloud Computing Applications". Auerbach Publications.

Escalante, Armando (2010). "Handbook of Cloud Computing Computer science". Springer.

Rhoton, John (2009). "Cloud Computing Explained: Implementation Handbook for Enterprises". Recursive Press.



*Online links*

[http://www.gla.ac.uk/media/media\\_26397\\_en.pdf](http://www.gla.ac.uk/media/media_26397_en.pdf)

[http://blogs.pmi.org/blog/voices\\_on\\_project\\_management/2011/11/](http://blogs.pmi.org/blog/voices_on_project_management/2011/11/)

[http://www.tutorialspoint.com/management\\_concepts/project\\_management\\_triangle.htm](http://www.tutorialspoint.com/management_concepts/project_management_triangle.htm)

## Unit 10: Collaborating on Word Processing

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### Objectives

After studying this unit, you will be able to:

- Describe Web-based word processing
- Explain the Web-based word processor

### Introduction

A word processor is a software program capable of creating, storing, and printing documents. Unlike the standard typewriter, users using word processors have the ability of creating a document and making any changes anywhere in the document. This document can also be saved for modification at a later time or to be opened on any other computer using the same word processor. Today, the word processor is one of the most frequently used programs or online services used on a computer.

## 10.1 Web-based Word Processing

Preparation of textual documents on computer. A word-processing system typically consists simply of a personal computer linked to a computer printer, but it may instead employ a terminal linked to a mainframe computer.



*Caution* Word processing differs from typewriter typing in numerous ways.

Electronic text can be moved around at will; misspelled terms can be corrected throughout the document by means of a single command; spelling and grammar checkers can automatically alert the user to apparent errors of spelling, punctuation, and syntax; and the document's format, layout, and type fonts and sizes can be changed repeatedly until a satisfactory design is achieved. Since all editing ideally occurs on-screen, word processing can result in decreased paper usage and simplified editing. When the final draft is ready, the document can be printed out (in multiple copies if necessary), sent as an email attachment, shared on a computer network, or simply stored as an electronic file.

### 10.1.1 Features of Standard Word Processors

- **File management:** Many word processors contain file management capabilities that allow you to create, delete, move, and search for files.
- **Font specifications:** Allows you to change fonts within a document. For example, you can specify bold, italics, and underlining. Most word processors also let you change the font size and even the typeface.
- **Footnotes and cross-references:** Automates the numbering and placement of footnotes and enables you to easily cross-reference other sections of the document.
- **Graphics:** Allows you to embed illustrations and graphs into a document. Some word processors let you create the illustrations within the word processor; others let you insert an illustration produced by a different program.
- **Headers, footers and page numbering:** Allows you to specify customized headers and footers that the word processor will put at the top and bottom of every page.



*Notes* The word processor automatically keeps track of page numbers so that the correct number appears on each page.

- **Layout:** Allows you to specify different margins within a single document and to specify various methods for indenting paragraphs.
- **Macros:** A macro is a character or word that represents a series of keystrokes. The keystrokes can represent text or commands. The ability to define macros allows you to save yourself a lot of time by replacing common combinations of keystrokes.
- **Merges:** Allows you to merge text from one file into another file. This is particularly useful for generating many files that have the same format but different data. Generating mailing labels is the classic example of using merges.

**Notes**

- **Spell checker:** A utility that allows you to check the spelling of words. It will highlight any words that it does not recognize.
- **Tables of contents and indexes:** Allows you to automatically create a table of contents and index based on special codes that you insert in the document.
- **Thesaurus:** A built-in thesaurus that allows you to search for synonyms without leaving the word processor.
- **Windows:** Allows you to edit two or more documents at the same time. Each document appears in a separate window. This is particularly valuable when working on a large project that consists of several different files.
- **WYSIWYG (what you see is what you get):** With WYSIWYG, a document appears on the display screen exactly as it will look when printed.

**Self Assessment**

Fill in the blanks:

1. A word processor is a ..... program capable of creating, storing, and printing documents.
2. Today, the word processor is one of the most ..... used programs or online services used on a computer.
3. A word-processing system typically consists of a personal computer linked to a computer .....
4. When the final ..... is ready, the document can be printed out.
5. Many word processors contain file ..... capabilities that allow you to create, delete, move and search for files.
6. Spell checker allows you to check the spelling of words and it will ..... any words that it does not recognize.
7. .... allows you to specify different margins within a single document and to specify various methods for indenting paragraphs.

**10.2 Exploring Web-based Word Processors**

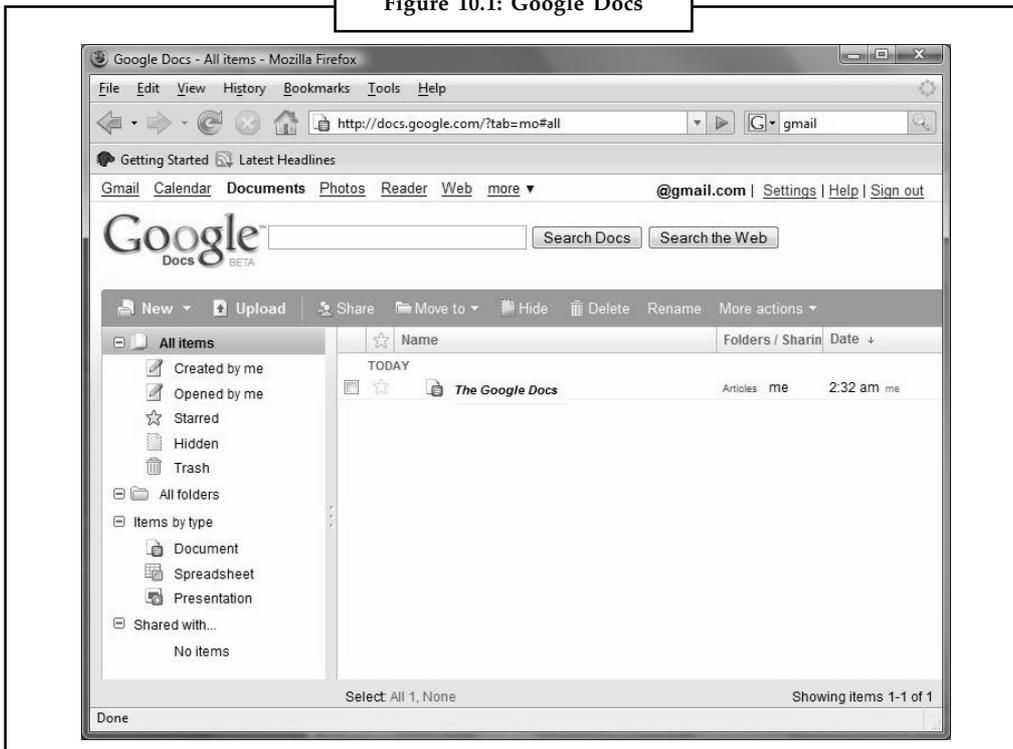
**10.2.1 Google Docs**

Like all things, Google’s interface is clean — maybe too clean — and it generally just works. Basic formatting is easy, storage space is generous (though documents are limited in size), and sharing and version control are easy. Because the underlying code is plain HTML, though, some things are awkward, like multiple indenting. Still, people create dozens of documents on Google Docs, and have no real complaints.



*Did u know?* Google Docs was the first online word processor used by people to any significant degree.

Figure 10.1: Google Docs

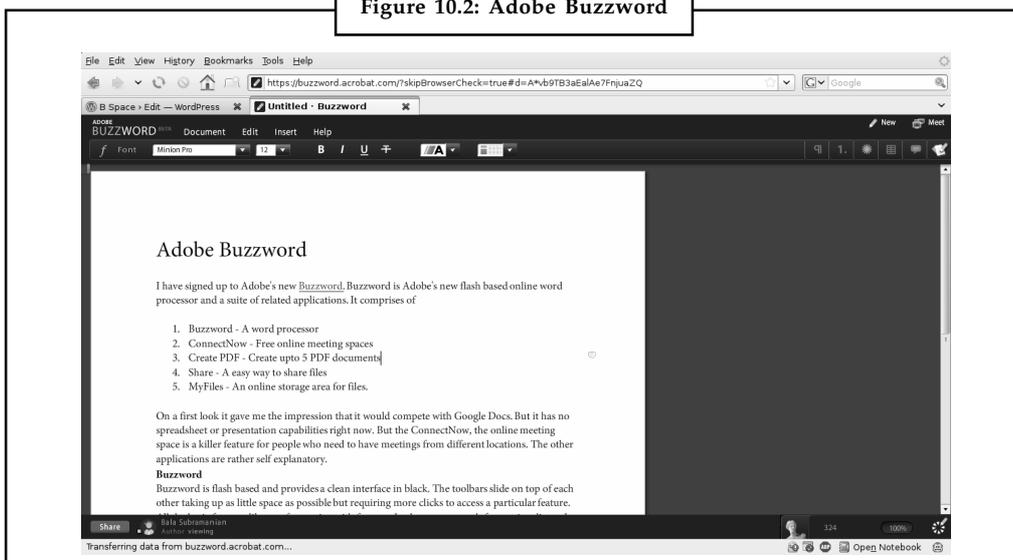


Source: <http://www.hyperlinksmedia.com/learning-center/wp-content/uploads/2013/05/google-docs.jpg>

### 10.2.2 Adobe Buzzword

It is the newly-launched Buzzword, recently acquired by Adobe. Buzzword runs in Flash and it uses Flash incredibly well, providing a usable word processor that's stunningly gorgeous.

Figure 10.2: Adobe Buzzword



Source: <http://pbs01.files.wordpress.com/2008/06/screenshot-untitled-c2b7-buzzword-mozilla-firefox-3-beta-5-1.png>

**Notes**

Buzzword allows for full formatting, headers and footers, page numbering, endnotes, tables and images, keyboard shortcuts, and commenting all the basic word processing functions most people tend to use. It also offers a running word count, in-line spell-checking, and revision history great for writers. The menu takes some getting used to; the paragraph, list, image, and table settings slide into place when you click their icons on the right side of the toolbar.

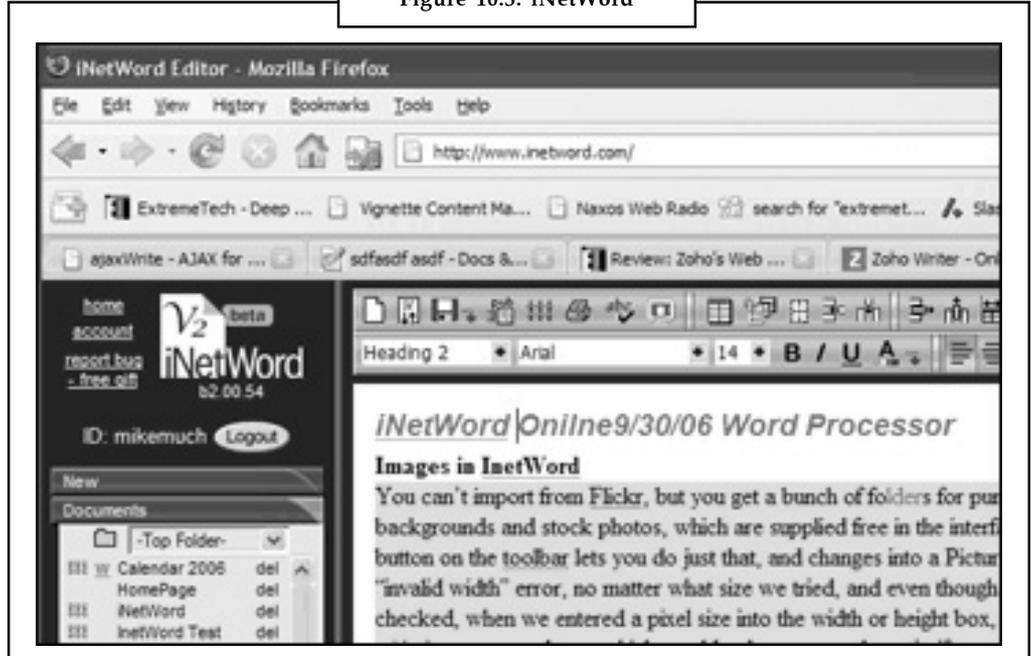


*Task* Create a digital essay on the most recent version of a word processor with suitable text and images.

**10.2.3 iNetWord**

This is a full-featured, complete word processor, with support for backgrounds, borders, page-numbering, tables, images and the works. It comes with several built-in templates for both web tasks like page design and blog posting, and business tasks like faxes and letters and is incredibly responsive. Its tabbed interface is a nice touch, allowing you to open and work on several documents at the same time. And it's still in beta.

**Figure 10.3: iNetWord**



Source: <http://vig.extremetech.com/media/images/151390.gif?thumb=y>

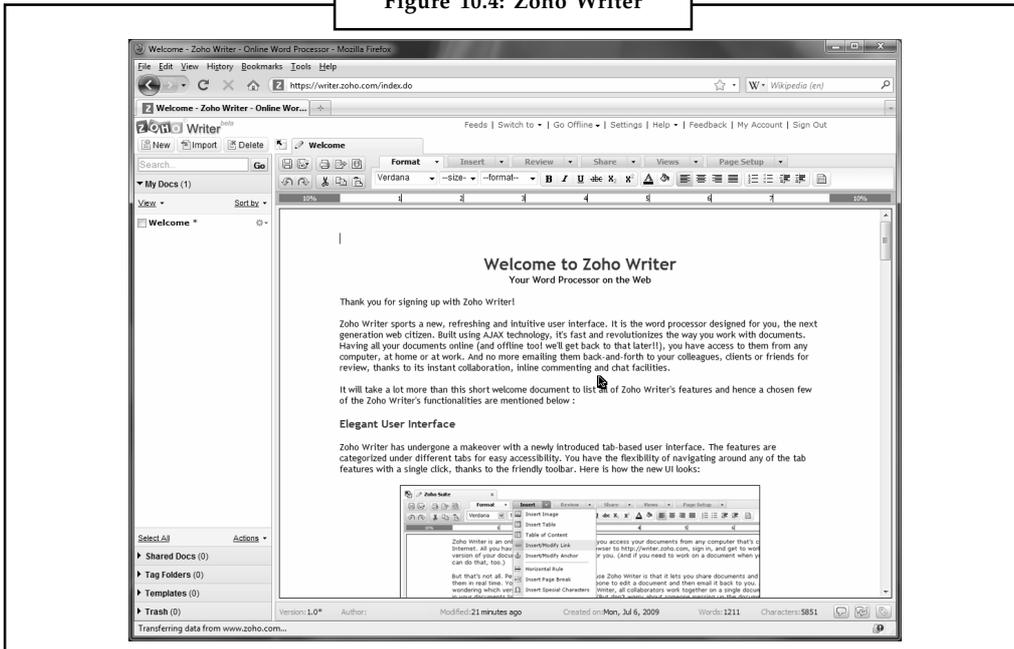
**10.2.4 Zoho Writer**

Zoho offers a great interface, and almost every feature a writer could ask for page numbering, footnotes, templates, sharing, publishing to web, export as pdf. They are also integrating with Box.net, which means it will be able to open, edit, and save documents from and to Box.net account.



*Example:* Zoho is used for big documents and Google Docs for quickies.

Figure 10.4: Zoho Writer



Source: [http://upload.wikimedia.org/wikipedia/en/8/88/Zoho\\_Writer.png](http://upload.wikimedia.org/wikipedia/en/8/88/Zoho_Writer.png)

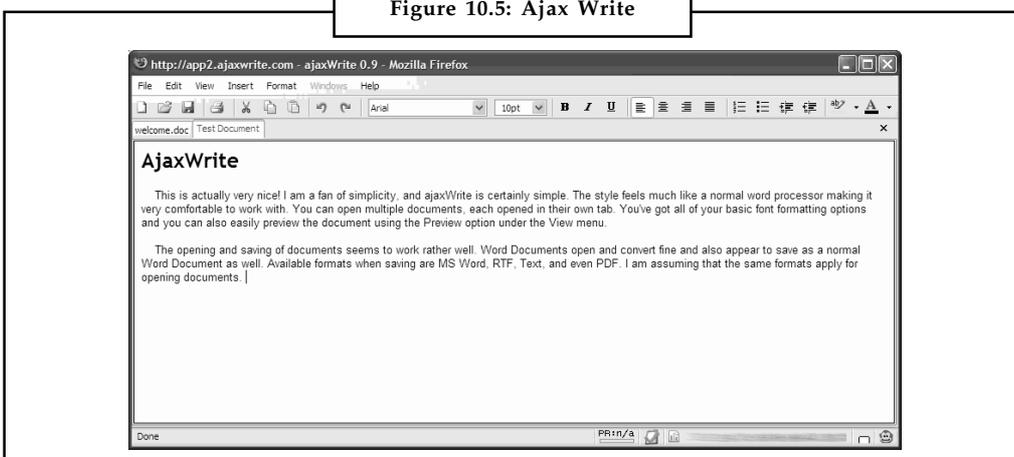
## 10.2.5 ThinkFree

Java-based Think Free is a great editor — once it starts running. The “quick edit” function, with a limited toolset, is pretty snappy; the “power edit” function (pictured above) can take a minute or longer to load. Once loaded, though, it’s essentially Word 2003, with autocorrect, tables, styles, word count, insert fields, export to pdf — everything but headers and footers. It picks up the fonts from the PC its running on.

## 10.2.6 Ajax Write

With its simple interface and clean workspace, Ajax Write would be ideal for quick writing without distractions.

Figure 10.5: Ajax Write



Source: [http://www.solutionwatch.com/images/AjaxWrite\\_editor\\_full.gif](http://www.solutionwatch.com/images/AjaxWrite_editor_full.gif)

### 10.2.7 Docly

As a word processor, docly is passable — similar in functionality to KB Docs and GreenDoc, below. What sets docly apart, though, is its focus on copyright management, with the ability to assign a work a Creative Commons license or a traditional “All Rights Reserved” license. Documents can be shared and published, as in most of the other online services covered here, or they can be offered for sale and accessed through their search engine.

Figure 10.6: Docly

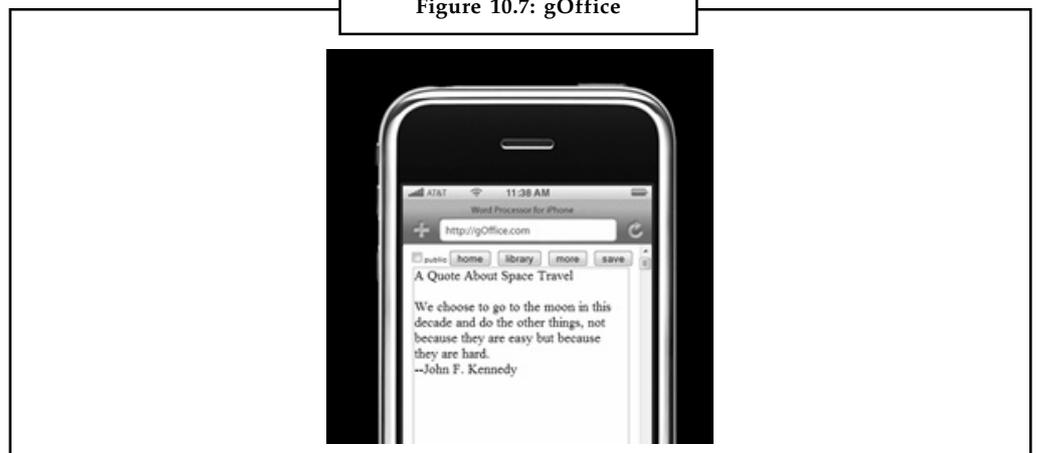


Source: <http://www.cloudsurfing.com/site/1983-Docly/>

### 10.2.8 gOffice

Although gOffice’s main product is a paid suite, and thus excluded from this round-up, for now at least their iPhone-compatible word processor is available free. Not the most useful application, as it adds an ad for gOffice when you save, but a unique test-of-concept, and as assumed one will lead to more useful iPhone applications in the future.

Figure 10.7: gOffice



Source: <http://www.lifehack.org/wpcontent/files/2007/12/windowslivewriterwriteherewrittenowwriteanywhere15webbased-cb70goffice-4.png>

### 10.2.9 KB Docs

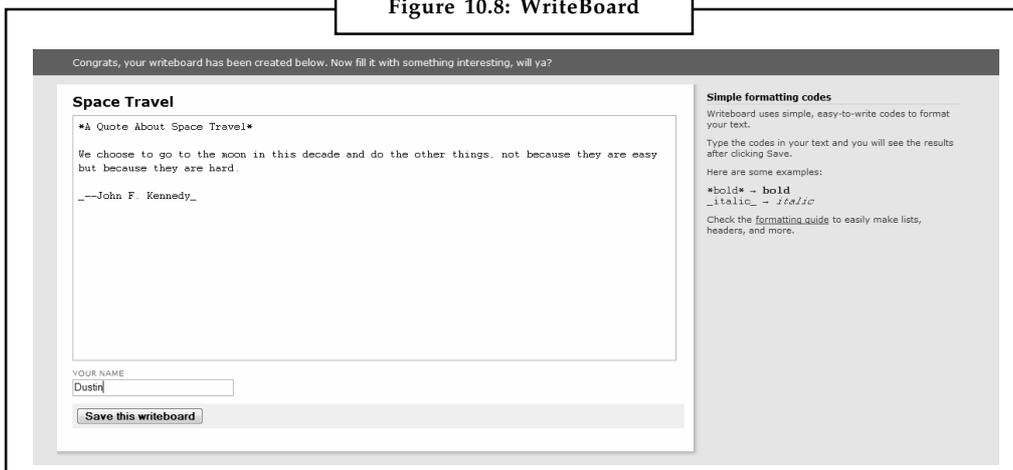
Notes

Another no-frills editor, even more basic than GreenDocs. Distinguished by its easy sign-up — just pick a username and password, hit enter, and you're editing.

### 10.2.10 WriteBoard

Created by the good folks at 37Signals, WriteBoard is a bare-bones, wiki-style editor intended more for collaboration than authoring.

Figure 10.8: WriteBoard

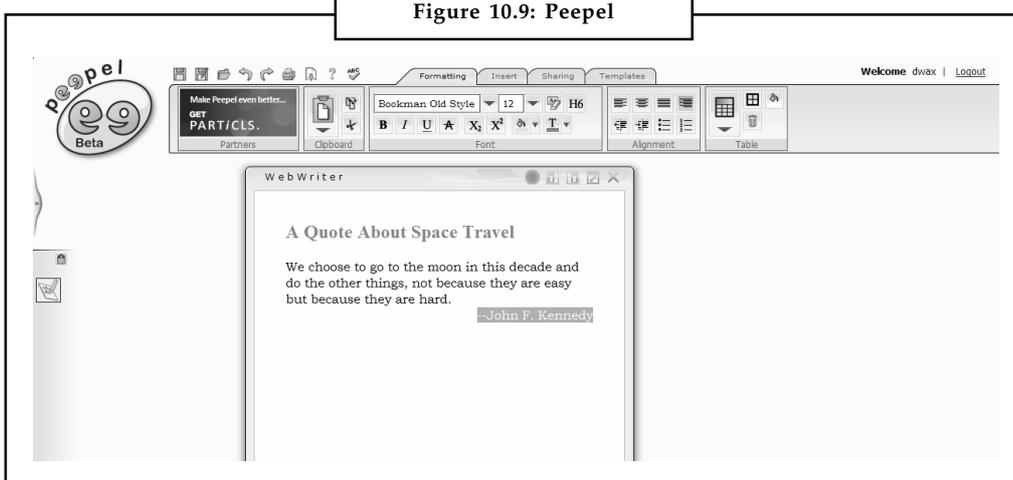


Source: <http://www.lifehack.org/wpcontent/files/2007/12/windowslivewriterwriteherewrittenowwriteanywhere15webbased-cb70writeboard-2.png>

### 10.2.11 Peepel WebWriter

Part of a full-fledged webtop system, Peepel's word processor has a pretty good set of basic options, with some nice templates. The user interface is weird — maybe "quirky" is a better word.

Figure 10.9: Peepel



Source: <http://www.lifehack.org/wpcontent/files/2007/12/windowslivewriterwriteherewrittenowwriteanywhere15webbased-cb70peepel-2.png>

Notes

**Self Assessment**

Fill in the blanks:

- 8. People create dozens of documents on Google Docs and have no real .....
- 9. Buzzword runs in .....
- 10. Buzzword allows for full .....
- 11. .... offers a great interface and almost every feature a writer could ask for.
- 12. Java-based Think Free is a great .....
- 13. Ajax Write would be ideal for quick writing without .....
- 14. What sets docly apart is its focus on ..... management.
- 15. .... another no-frills editor.



Case Study

**Optimized Resource Utilization in Upstream Oil and Gas Logistics**

**Client Challenge**

The members of the consortium, used to operate independently without an efficient means of communication and sharing of resources. The consortium felt the need for a system that would enable the efficient coordination and sharing of helicopter services. They also needed a system that would provide them transactional as well as reporting functionality to manage logistic services and apportion costs among consortium members.

**IBS Solution**

IBS developed a comprehensive logistics solution, which functionally fulfilled all the requirements of the client. This solution is designed to aid the operational and tactical business processes that support movement of passengers and cargo from and to oil rigs/platforms by helicopter.

With it, the consortium has been able to successfully streamline the coordination of helicopter services as well as optimize resource utilization. The system not only supports transaction processing, but also management reporting for efficient management of shared logistic services.

The application is available over the Internet backed by 24/7 support and robust security systems. The solution currently handles data on more than 1,000 production platforms and rigs, handling over 200 helicopters, and 50,000 passengers, with over 20,000 passenger moves per month. When fully deployed, the system can handle up to 500 user interactions in an hour and up to 6,000 in a day. The client has made the solution available to all helicopter service providers and users operating in its area of operation.

**Approach**

Functionally, IBS built the application as a suite of modules, instead of a single monolithic application, with each module addressing a unique business function. This facilitates easy addition of new functionality, as the product evolves in response to changing business needs. The application employs a component-based design and uses state-of-the-art technology.

*Contd....*

## Notes

The IBS approach provided the client with a high degree of transparency in both involvement and visibility during the development process. IBS was geared to adopt a 'productized' approach, where it was assumed that the client was desirous of receiving the application product as a final deliverable, based on a given set of specifications and requirements, within an agreed timeframe.

**Business Benefits**

The common platform for shared resources that the solution creates provides operators with greater visibility into available transportation options and other resources that could be shared, thereby optimizing resource utilization and streamlining the coordination process.

The application provides the following business benefits:

- Reduces as much as 60% of the time spent in reservation and dispatch activities
- Reduces cost of operations by eliminating non-value-added work
- Provides accurate and up-to-date dispatch information
- Enables better co-ordination of helicopter services
- Aids in better utilization of equipment by providing resource utilization details
- Verifies personnel training with the requirements of the job
- Monitors personnel who are restricted from the facility for security purposes
- Enables the command/control center to view the Personnel on Board count at every location
- Coordinates mobilization and demobilization operations
- Enables sharing of resources for optimum utilization
- Provides Key Performance Indicators to Management.

**Questions:**

1. Explain the functionality of application developed by IBS.
2. What is the common platform for shared resources discussed in the above case?

Source: <http://www.ibsplc.com/services/case-studies>

**10.3 Summary**

- A word processor is a software program capable of creating, storing, and printing documents. Today, the word processor is one of the most frequently used programs or online services used on a computer.
- Like all things, Google's interface is clean — maybe too clean — and it generally just works. Basic formatting is easy in Google Docs, storage space is generous (though documents are limited in size), and sharing and version control are easy.
- It is the newly-launched Buzzword, recently acquired by Adobe. Buzzword runs in Flash and it uses Flash incredibly well, providing a usable word processor that's stunningly gorgeous.
- This is a full-featured, complete word processor, with support for backgrounds, borders, page-numbering, tables, images and the works.

**Notes**

- Zoho offers a great interface, and almost every feature a writer could ask for — page numbering, footnotes, templates, sharing, publishing to web, export as pdf.
- Java-based Think Free is a great editor — once it starts running. The “quick edit” function, with a limited toolset, is pretty snappy; the “power edit” function (pictured above) can take a minute or longer to load.
- With its simple interface and clean workspace, Ajax Write would be ideal for quick writing without distractions.
- As a word processor, docly is passable — similar in functionality to KB Docs and GreenDoc, below. What sets docly apart, though, is its focus on copyright management, with the ability to assign a work a Creative Commons license or a traditional “All Rights Reserved” license.
- Although gOffice’s main product is a paid suite, and thus excluded from this round-up, for now at least their iPhone-compatible word processor is available free.
- Another no-frills editor, even more basic than GreenDocs. Distinguished by its easy sign-up — just pick a username and password, hit enter, and you’re editing.

### **10.4 Keywords**

*Ajax Write:* It is a word processor with its simple interface and clean workspace, Ajax Write would be ideal for quick writing without distractions.

*Docly:* As a word processor, docly is passable – similar in functionality to KB Docs and GreenDoc.

*Footnote:* A note placed at the bottom of a page of a book or manuscript that comments on or cites a reference for a designated part of the text.

*gOffice:* Although gOffice's main product is a paid suite, and thus excluded from this round-up, for now at least their iPhone-compatible word processor is available free.

*Peepel Web Writer:* Peepel's word processor has a pretty good set of basic options, with some nice templates. The user interface is weird – maybe “quirky” is a better word.

*Word Processor:* A word processor is a software program capable of creating, storing, and printing documents.

*Write Board:* Write Board is a bare-bones, wiki-style editor intended more for collaboration than authoring.

*Zoho Writer:* It offers a great interface, and almost every feature a writer could ask for – page numbering, footnotes, templates, sharing, publishing to web, export as pdf.

### **10.5 Review Questions**

1. What do you understand by word processing systems?
2. Explain the features of Standard Word Processors.
3. Explain the working of Google docs.
4. What is the new buzzword launched by adobe?
5. What is iNetWord?
6. Discuss the offerings of Zoho Writer.

7. What is the use of Ajax Write?
8. Explain Docly as a word processor and the license associated with it.
9. Describe the Peepel's word processor.
10. What is Write Board?

Notes

### Answers: Self Assessment

- |                  |                |
|------------------|----------------|
| 1. Software      | 2. Frequently  |
| 3. Printer       | 4. Draft       |
| 5. Management    | 6. Highlight   |
| 7. Layout        | 8. Complaints  |
| 9. Flash         | 10. Formatting |
| 11. Zoho         | 12. Editor     |
| 13. Distractions | 14. Copyright  |
| 15. KB Docs      |                |

### 10.6 Further Readings



Books

Broberg James, 2011, *"Cloud Computing: Principles and Paradigms"*, John Wiley & Sons, Inc.

E. Y. Sarna David, 2011, *"Implementing and Developing Cloud Computing Applications"*. Auerbach Publications.

Escalante Armando, 2010, *"Handbook of Cloud Computing Computer science"*. Springer.

Rhoton John, 2009, *"Cloud Computing Explained: Implementation Handbook for Enterprises"*, Recursive Press.



Online links

<http://encyclopedia2.thefreedictionary.com/word+processing>

[http://universalium.academic.ru/233857/word\\_processing](http://universalium.academic.ru/233857/word_processing)

<http://www.gov.ns.ca/agri/4h/manuals/computers/unit3.pdf>

<http://www.lifehack.org/articles/technology/write-here-write-now-write-anywhere-13-web-based-word-processors.html>

## Unit 11: Collaborating on Database Storage and Sharing Files

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## **Objectives**

Notes

After studying this unit, you will be able to:

- Discuss Web-based database management
- Explain Web-based databases
- Describe the cloud storage
- Explain online file-storage and sharing services
- Describe online bookmarking services

## **Introduction**

A collection of information organized in such a way that a computer program can quickly select desired pieces of data.

Traditional databases are organized by fields, records, and files. A field is a single piece of information; a record is one complete set of fields; and a file is a collection of records. For example, a telephone book is analogous to a file. It contains a list of records, each of which consists of three fields: name, address, and telephone number.

An alternative concept in database design is known as Hypertext. In a Hypertext database, any object, whether it be a piece of text, a picture, or a film, can be linked to any other object. Hypertext databases are particularly useful for organizing large amounts of disparate information, but they are not designed for numerical analysis.

To access information from a database, you need a Database Management System (DBMS). This is a collection of programs that enables you to enter, organize, and select data in a database.

### **11.1 Understanding Database Management**

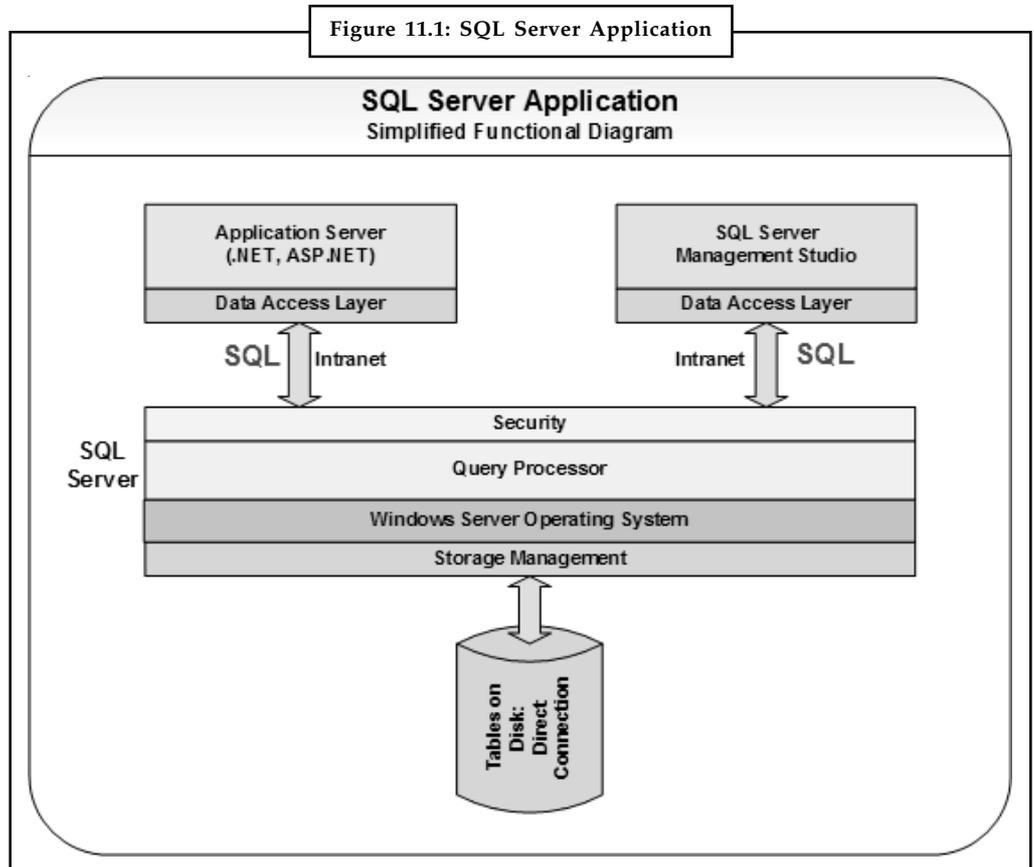
A database accessible to clients from the cloud and delivered to users on demand via the Internet from a cloud database provider's servers. Also referred to as Database-as-a-Service (DBaaS), cloud databases can use cloud computing to achieve optimized scaling, high availability, multi-tenancy and effective resource allocation.

#### **11.1.1 How Databases Work?**

- Data and applications are stored on a hard drive or a series of hard drives and other media.
- All of this storage is managed by the operating system.
- The operating system, Windows in this case, handles all of the low level tasks associated with running applications as well as managing storage.
- SQL Server runs on top of Windows. SQL Server is actually dozens of modules (separate pieces of software). Each module is called when needed. The process is so seamless we are seldom aware of it.
- The diagram has been simplified to show only the query processor and security. The query processor translates SQL into a form of code the other server modules can use.

Notes

- All communications with the server go through the security layer. Good security for a server is too complex a subject for now. The security layer is a blending of operating system functions and functions specific to SQL Server.
- Jump below the picture to continue with a discussion of SQL and the layers above it.



Source: [http://www.databasezone.com/techdocs/sql\\_server.html](http://www.databasezone.com/techdocs/sql_server.html)

- SQL is the communications protocol between the SQL Server and the outside world. Most communications with SQL Server are in Standard Query Language (SQL).
- Look to the top-right at SQL Server Management Studio. Management Studio is a development environment that is installed on the developer’s machine. It comes with SQL Server, but doesn’t need to be on the same machine. A free version of SQL Server and Management Studio is available on the Microsoft website. You are probably safe downloading the third option “Database with Management Tools”. If you have 64-bit Vista or 64-bit Windows 7 you can download and install the 64-bit version. The 32-bit version will work on either 32-bit or 64-bit Windows.
- SQL Server Management Studio gives us a single location to manage our SQL Servers and develop and test our databases and SQL code.



**Caution** Before we can manage servers or run SQL code we must set up a connection to each server we want to work with. The servers can be anywhere. The only requirements are a network connection and security clearance.

- Look to the top-left at the Application Server. An application server runs an application. In this case, a Microsoft .NET application.
- The Application Server could be a dedicated Web server supplying a Web interface to a database, or a client application on someone's personal computer.
- The application could be bought "off the shelf".
- The database, development environment, and server application could all be running on a single computer. More commonly, with SQL server projects, this is only done on developer's machine to provide easy access to everything for the developer. In production, it would be normal for the database and application to be on separate machines. Sometimes the web server and application server are also separated.

### 11.1.2 How Online Databases Work?

The working of online databases is explained below:

#### Online Database Software

Online database software is an easy way to take advantage of software as a service (SaaS). Online database software allows you to store business critical information in web database software, where it's easily accessible by all team members. This increases team collaboration and improves team efficiency and communication. QuickBase combines the power of a web database program with customizable database application solutions designed to meet your most pressing business needs.

#### Moving Your Database Online

Successful businesses have long understood that managing critical data and transforming that data into useful information is key to sustaining a competitive advantage. Today, these organizations are relying on non-web database software to house their data, and are growing increasingly frustrated with the lack of flexibility, scalability, and security—as well as the administrative headaches and costs—they encounter in supporting database software that is not web based. Increasingly, companies are beginning to research an online data base to collect, manage and share data online. That's why more than 50 of the Fortune 100 companies have turned to QuickBase, the #1 online database software, to host their web database applications and programs.

#### Self Assessment

Fill in the blanks:

1. Data and applications are stored on a ..... or a series of hard drives and other media.
2. SQL Server runs on top of .....
3. All communications with the server go through the ..... layer.
4. Online database software is an easy way to take advantage of software as a .....

### 11.2 Exploring Web-based Database

Web-DBMS (or Web-based Database Management System) is a general term for applications which provide a web-based interface to one or more databases. Web-DBMS allows the user to

**Notes**

administrate his/her database from home, office, at campus, or on the road. It can be accessed from any platform, including PC, Unix, and Macintosh systems. HTML-based graphical interface of the Web-DBMS applications is easy to use for both developers and users, and it allows to manage databases in a standardized fashion. The network access in Web-DBMS is transparent to the user - the user does not have to spend time or money for setting up expensive and complex network software. In short, the main advantages of Web-DBMS are: accessibility, platform independence, easy-to-use, standardized graphical user interface, and transparent network access.

### 11.2.1 Lightspoke

Web Based Database Service - benefits of web based database service for business web applications.

Web applications have become the standard in database driven business applications. The reasons for web based databases' popularity in the enterprise are:

1. *Ease of use:* point and click simplicity
2. *Accessibility:* securely accessible from anywhere
3. *Lower total cost of ownership:* to secure, scale, deploy and maintain.

Despite these advantages, database driven web applications tend to be expensive to create often accompanied by a long development cycle and plenty of bugs in its initial use. Furthermore, in today's fast paced business world, new database and application requirements emerge faster than programmers can implement, leaving the business constantly waiting for the upgrade. Finally, the complexities involved in deployment of the database application often causes a setback or two before the web application begins to truly benefit the business users.

A web based database service can speed web application development and deployment and reduce the cost of ownership associated with maintaining the application. Lightspoke is a web based database service that enables you to create edit publish and share databases securely on the Internet. Moreover, you can make sophisticated web applications from your databases through easy to use dashboard, workflow, forms capabilities.

Creating a database and developing a web application to go along with it generally require a professional programmer - a costly proposition for small businesses/professionals and resource constrained departments with shrinking IT budgets. As a web-based database service, Lightspoke provides necessary facilities to create, manage and host a database driven web application on-line. Lightspoke offers tools to build customized navigation tools to retrieve information, customized workflow and dashboard facilities to glue your database application together. Better yet, you can instantly share these database applications securely with team members.

Lightspoke offers pre-built web application templates that can get your database started immediately. These database driven web applications are ready to use and can be customized further to better suite your needs. The templates offer various web based database applications "to go":

1. *CRM Database:* Sales Force Automation/Customer Relationship Management
2. *Expenses Database:* Expense Reporting and Automation
3. *HR Database:* HR Tracker
4. *Software Lifecycle Database:* Software Requirements and Bug Management

Lightspoke helps an ordinary business user without programming skills to create and distribute web based databases on the fly. Web based database services lower the barriers to having and maintaining a database driven web application. Web based databases are more robust to fast

changing requirements - easier to build and also easier to change. Almost any collaborative activity between groups of users or teams can benefit from web based database applications. Since programming is not required to build a database driven web application on Lightspoke, business users are now empowered to create, maintain and manage their own databases.

Best of all, Lightspoke is free for non-commercial use. If you want to use this for your business or at work you will find Lightspoke inexpensively priced at [www.lightspoke.com](http://www.lightspoke.com).

### 11.2.2 Software Creations

Software Creations has been in the business of developing databases for the past 20 years. They started developing the first online databases over 15 years ago for "Bulletin Board Services" (Remember the "BBS"?), and migrated to developing web-based databases in the early 90's. They have extensive experience designing, developing and implementing online applications and databases. "Interactive". "Dynamic". "Value-Added". These are all words you have no doubt heard associated with the development of a successful website. Keep in mind that a website is basically a collection of "pages" (right now, mostly HTML to be replaced in the near future with XML). These pages can be arranged to deliver a lot of cool and important information to your site's visitors. But if you want your site to really stand up and deliver, you've got to add a degree of "interactivity"; that is, the ability to interact with your users beyond just going to the next page. For this, your site needs database access: the ability for it to accept queries, process input and display results over the web.

It is one thing to be a popular website. Quite another thing to be a profitable website. Even if yours is a non-profit organization, you still need to be focused on exploiting the customer service potential of your website. In all cases, they want to enrich the experience of their visitors; and in today's world, that takes a certain level of interactivity. This is accomplished on today's website through programming and data access.

You don't develop a long term business relationship with an end-user (i.e., someone who returns to your site on a regular basis) with eye-popping graphics. You get people to return by giving them something worth returning for. This is either an on-going, enhancing experience, or access to information they need when they need it.

They do web-based database development. It can add to your site the interactive, dynamic, value-added processes it requires to deliver the services you want to deliver to your end-users. They can go on and on about it, but this, basically, is the bottom line: They do web-based database development. MS SQL, Access, Oracle, DB2 or any ODBC compliant database management system.

### 11.2.3 Zoho Creator

Zoho Creator platform sports easy and intuitive interface to create databases on your own quickly. Just drag and drop fields/data types to create forms/tables. You can also add business rules through drag and drop. Zoho Creator supports 20 field types such as Text Field – Single Line, Multiline, Checkboxes, Radio Button and more. You can also add Images, Notes and also Upload files to the form/table. Zoho Creator helps you slice and dice the collected information into meaningful reports and perform business intelligence analytics efficiently.

- **Pivot Table:** See the collected information summarized in a grid
- **Pivot Chart:** Interactive graphical representation of the summarized information

Simple and powerful data mining tools like Search, Sort, Filter. Zoho Creator supports grouping of data based on specific columns. Records with same value for the selected column(s) will be

**Notes** grouped together. You can also set criteria based on which the views will be created. Like Status > Equals > Open will show only the records that matches this criteria.

### 11.2.4 QuickBase

Designed with the business user in mind, Intuit's QuickBase is the fastest, easiest and most flexible way to help teams work together.

QuickBase provides one platform from which workgroups can easily create unlimited applications to automate business processes and improve communication and collaboration online. QuickBase applications solve critical business problems and help improve productivity and efficiency because they are tailored by the user to match the exact workflow and unique needs of their team - something complex point solutions or generic spreadsheets simply can't match.

Used by more than half of the Fortune 100, QuickBase is the only proven team collaboration platform that's perfect for business users – regardless of size, location or industry – while delivering the visibility and control IT executives need to manage enterprise-wide deployments in large companies.

### 11.2.5 Terrabase

They design for you a web-based database system using the latest AJAX techniques to create a responsive, intuitive and highly usable user-interface. The system featured here is Quickfuel which allows Woldmarsh (the country's largest agricultural buying group) to monitor all its members' farm fuel tank levels and organise fulfillment at the touch of a button. If you need a massively scaleably system to display and manage all your data then they help you with the same.

### 11.2.6 Hyper-Office

Hyper-Office aims at bringing messaging and collaboration technologies traditionally available to large enterprises, to growing organizations through the SaaS, on-demand model. Hyper-Office 'out of the box' solutions allow customers to do what they do best, and reap the benefits of robust functionality without any technical knowhow and high upfront costs. Moreover, they can get started almost immediately with just an internet connection, without having to go through long implementation cycles, invest in expensive IT infrastructure, or hire expert staff for on-going maintenance. Our integrated suite of online tools covers the entire range of productivity needs that exist in every organization – business email, contact management, calendaring, document management, intranet and extranet workspaces, forums, online databases, web forms and much more.

### Self Assessment

Fill in the blanks:

5. Web-DBMS allows the user to ..... his/her database from home, office, at campus, or on the road.
6. New database and ..... requirements emerge faster than programmers can implement, leaving the business constantly waiting for the upgrade.
7. A web based database service can speed web application ..... and .....

- Zoho Creator platform sports easy and intuitive ..... to create databases on your own quickly.

Notes

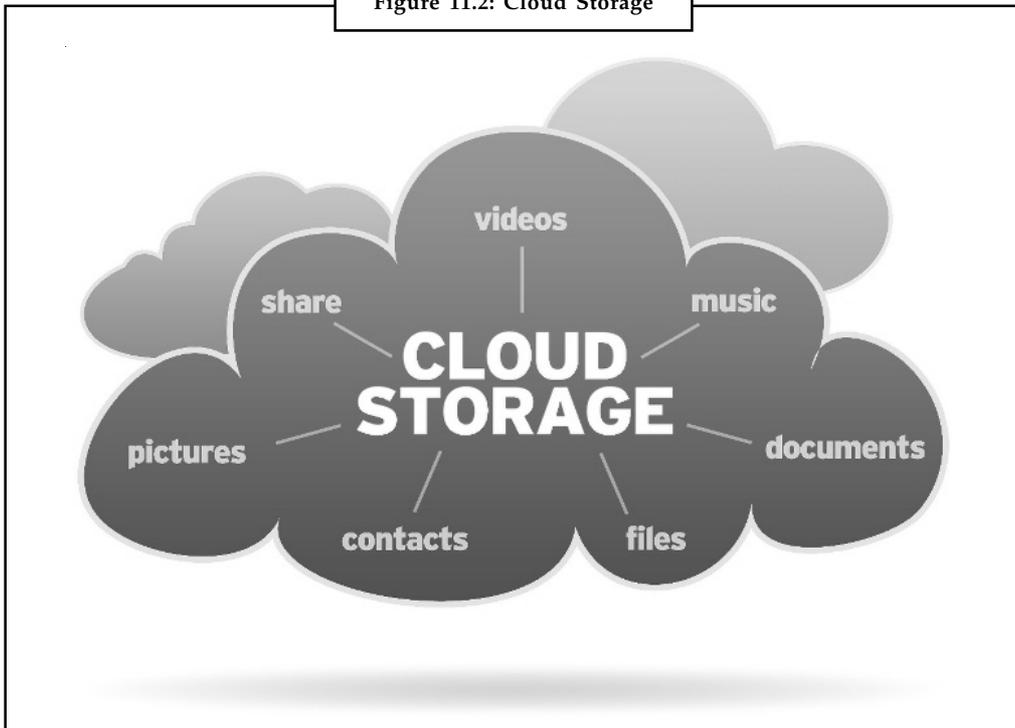
### 11.3 Understanding Cloud Storage

Cloud storage is defined as a model of networked enterprise storage where data is stored not only in the user’s computer, but in virtualized pools of storage which are generally hosted by third parties, too. Companies which are hosting operate large data centres, and people who require their data to be hosted buy or lease storage capacity from them. The data center operators, in the background, virtualize the resources according to the requirements of the customer and expose them as storage pools, which the customers can themselves use to store files or data objects. Physically, the resource may span across multiple servers. The safety of the files depends upon the hosting websites.

#### 11.3.1 Why Use Cloud Storage?

- The number of people with access to the data who could be compromised (i.e. bribed, or coerced) increases dramatically. A single company might have a small team of administrators, network engineers and technicians, but a cloud storage company will have many customers and thousands of servers and therefore a much larger team of technical staff with physical and electronic access to almost all of the data at the entire facility or perhaps the entire company. Encryption keys that are kept by the service user, as opposed to the service provider limit the access to data by service provider employees.

Figure 11.2: Cloud Storage



Source: <http://www.cloudstoragebest.com/cloud-storage-risks-vs-cloud-storage-benefits/>

- When data is distributed it is stored at more locations increasing the risk of unauthorised physical access to the data.

Notes



*Example:* In cloud based architecture, data is replicated and moved frequently so the risk of unauthorised data recovery increases dramatically. Like, disposal of old equipment, reuse of drives, reallocation of storage space. The manner that data is replicated depends on the service level a customer chooses and on the service provided.

Different cloud vendors offer different service levels. Risk of unauthorized access to data can be mitigated through the use of encryption, which can be applied to data as part of the storage service or by on-premises equipment that encrypts data prior to uploading it to the cloud.

3. By sharing storage and networks with many other users/customers it is possible for other customers to access your data. Sometimes because of human error, faulty equipment, a bug and sometimes because of criminal intent. This risk applies to all types of storage and not only cloud storage. The risk of having data read during transmission can be mitigated through encryption technology. Encryption in transit protects data as it is being transmitted to and from the cloud service. Encryption at rest protects data that is stored at the service provider. Encrypting data in an on-premises cloud service on-ramp system can provide both kinds of encryption protection.
4. It increases the number of networks over which the data travels. Instead of just a Local Area Network (LAN) or Storage Area Network (SAN), data stored on a cloud requires a WAN (wide area network) to connect them both.

### 11.3.2 Risks of Storing Data in the Clouds

For all the potential of the cloud storage model, there are still a few disadvantages. By utilizing cloud storage, users relinquish direct control over their data. Although a cloud storage provider is far less likely to have its data lost or compromised than most individuals or organizations, people are still more comfortable knowing precisely where their critical data is located and who is personally responsible for it. Access to data stored on a distributed network is also constrained by the access to the Internet. Lower Internet bandwidth will result in decreased performance and an Internet service outage will completely sever an organization's access to its information.

### Self Assessment

Fill in the blanks:

9. Cloud storage is defined as a model of ..... enterprise storage.
10. The safety of the files depends upon the ..... websites.

### 11.4 Evaluating Online File-storage and Sharing Services

Online storage provides users with the peace of mind that the data will remain intact in any event, including local hardware malfunctions, accidental deletions, thefts, and disasters. Online storage is the perfect solution for anyone who needs to access their data from multiple locations or share it with others within an instant. Online storage services typically allow subscribers to purchase and access extra storage space within a number of minutes. Since, the data is stored in the same virtual location as other files, searching for files is much easier than searching for files that are spread out amongst multiple storage devices.

### 11.4.1 Amazon S3

Amazon S3 is storage for the internet. It is designed to make web-scale computing easier for developers.

Amazon S3 provides a simple web services interface that can be used to store and retrieve any amount of data, at any time, from anywhere on the web. It gives any developer access to the same highly scalable, reliable, secure, fast, inexpensive infrastructure that Amazon uses to run its own global network of websites. The service aims to maximize benefits of scale and to pass those benefits on to developers.

### 11.4.2 Egnyte

Egnyte Cloud File Server brings unprecedented file sharing, large file transfer, collaboration and backup capabilities. With the addition of breakthrough Local Cloud technology, Egnyte enables fast local file access and offline access.

Egnyte's customers come from a wide variety of industries which include information technology, information services, semiconductors, financial institutions, education, entertainment, music, furniture, health, food and beverage, clothiers, law firms, financial services, marketing, web design, accounting, real estate and mortgage, medical, pharmaceutical, start-ups, non-profit organizations and more. Egnyte supports customers across USA, Canada, Europe and Asia, with data centres on the east and west coasts of the United States, and in Western Europe.

### 11.4.3 ElephantDrive

ElephantDrive makes use of infrastructure-on-demand as part of its architecture.



*Did u know?* ElephantDrive is one of the first and most popular examples of the applications built on Amazon's S3 (Simple Storage Service).

ElephantDrive initially utilized Amazon S3 as a tool for a datacenter migration, but quickly moved it into the production infrastructure. ElephantDrive is a service which allows users to perform scheduled and real-time data backup from the QNAP Turbo NAS to ElephantDrive cloud storage. Users can manage the backup tasks and restore the data to the NAS via the web-based management interface (<http://www.elephantdrive.com/qnap/>).

#### *Key Features*

1. Back up an unlimited number of desktops or servers
2. Access your data from any computer with Internet access
3. Protect your data with AES 256-bit military grade encryption
4. Share your files with friends, family, coworkers or clients
5. Rest assured your data is safely stored in multiple geographic locations
6. Schedule your backups to occur weekly daily, hourly or continuously.

Notes

### 11.4.4 MyDataBus

MyDataBus is a simple way to store, transfer, and share your files online. E-mail photos, videos, & music, use group collaboration tools, or post files for MySpace, eBay, LiveJournal, and Craigslist. MyDataBus also integrates with your Facebook account. A free account receives 5GB of free storage, including a file-size limit of 250MB.

### 11.4.5 Nirvanix

Nirvanix provides a choice of public, hybrid, and private cloud storage service options. The underlying technology includes:

- Cloud File System, a virtual file system specifically designed to handle millions of users and billions of files in a single global namespace with data consistency.
- Cloud Storage Network which consists of nine globally dispersed carrier-class data centers. Customers can locate data close to users and to choose redundancy levels by replicating data to two, three, or more data centers.
- Cloud NAS Gateway software which installs on Windows or Linux servers and provides access to the Nirvanix cloud storage services.

### Self Assessment

Fill in the blanks:

11. Online storage services typically allow ..... to purchase and access extra storage space within a number of minutes.
12. .... is a service which allows users to perform scheduled and real-time data backup.

## 11.5 Exploring Online Bookmarking Services

Social bookmarking means storing your bookmarks online, tagging them to remember why you wanted to save them and what you might want them for in the future. You can also share them with others who might value your web surfing experiences. And don't worry — you can always choose to keep some or even all of your bookmarks private if, for some reason, you don't want to share.

Social bookmarking sites are in many ways the ultimate folksonomies, categorising web content by an open process of tagging. The result is a road map of the web, based on the recommendations of people who have travelled it extensively.

In many ways, the information gathered by social bookmarking services is like the wild, young sibling of the web directories. But now, every web surfer is a potential editor, licensed to categorize and recommend all kinds of websites.

### 11.5.1 BlinkList

BlinkList is a powerful productivity tool that makes it easier for anyone to share and save their web-links to use them later on. They give you a browser button to save web pages you like in one click. With BlinkList you can save a local copy of any web page on your computer. That way, even if the web page disappears, you will always have a local copy that you can get back to later. They provide you a website so that you can easily access all of the links that you saved from any computer.



*Notes* BlinkList has a lightning fast search engine that will help you find the links that you are looking for in the fraction of a second.

Notes

You can search through your links faster than you can search through Google. With BlinkList, you can save your favorite articles and web pages and get back to them later even while you are offline.

### 11.5.2 Del.icio.us

Del.icio.us is by far the most popular social bookmarking tool out there. It is not the most powerful, though. I have kept my bookmarks on del.icio.us for some time now and the reason I stay on is the community. The tools for sharing are not very powerful — you can add people to your network and share links with them, and that's about it. The effect of sharing can be great, though, because of the size of the community.

On del.icio.us you can view your bookmarks as a tag list or a tag cloud. Tags can be sorted alphabetically or by frequency.

Behind the Help link you find tips for advanced searching and navigation and some unofficial tools that can make del.icio.us work for more demanding users. Among the advanced features are network badges, link rolls, and tag rolls that help bloggers and webmasters to display their del.icio.us activities on their own blogs and sites.

There are no very powerful tools for sorting or editing bookmarks. Paradoxically, this might be a reason for del.icio.us' popularity. It offers just what the average web surfer needs.

### 11.5.3 Ma.gnolia

Ma.gnolia has the sleekest design of all the social bookmarking services. And even though beauty is generally considered to be skin deep, high quality web design with lots of white space and easy navigation makes me happy. Never underestimate the value of beautiful design.

At Ma.gnolia there are tutorials, a FAQ and even a wiki for support, and if you send a mail to the support team, you get an answer quickly, even at weekends.

With contacts, groups and discussions, there are plenty of ways to share bookmarks both within and outside of Ma.gnolia.

You can search your bookmarks (or the bookmarks of all Ma.gnolia members) or browse them as a tag list or a tag cloud. You can rate your bookmarks, which is convenient, and it is easy to edit single bookmarks or all the bookmarks with a certain tag.

Furl and Ma.gnolia are the only bookmarking services that save a copy of the web pages you bookmark. There is also a widget that lets you quickly add a link roll of your saved Ma.gnolia bookmarks to your blog or web page.

But if you have many bookmarks with the same tag, it can be difficult to scroll through them in Ma.gnolia. What it miss upon is a list view where each bookmark takes up no more than a couple of lines and you can choose to view, say, 25, 50 or 75 bookmarks at a time.

### 11.5.4 Bluedot

Bluedot is the bookmarking tool for the MySpace crowd. The main focus is inviting friends and sharing dots (your annotated bookmarks). You can import contacts from your AOL, Gmail,

**Notes**

MSN or Yahoo! account and then invite them to your Bluedot network. You edit your profile with information about your location and interests and add a photo or an avatar if you like. Of these top 5 bookmarking tools only Ma.gnolia has a similar profile option.

You can choose to view your dots as a list (which is not very useful once you have more than 25 bookmarks) or as a list of tags. Each tag is displayed as a stack, showing the name of the tag and the number of dots in it. There are no other sorting options, but there are plenty of options for sharing: You can comment on your own dots or those of others or you can share dots by email, and each dot has a permalink that displays name, rating, comments and more.

### 11.5.5 Furl

LookSmart's Furl is one of the seniors of social bookmarking and definitely among the most advanced. If you are serious about your online research, this is the tool for you.

Navigating among all of Furl's features is easy — everything is stored behind four tabs. The tab My Archive displays all of your bookmarks. All the essential tools are kept in a neat little box. It lets you search your own bookmarks, all of Furl or the entire web. Drop-down menus let you sort your bookmarks by tag, by date or both.

The bookmark list has lots of tools that make it easy to move, delete or email bookmarks, and clicking on the Edit tool lets you store and edit all kinds of information. If you are a blogger or a webmaster, code is available that will display your recent Furl entries on your website.

Furl is among the few services that store a copy of the whole web page when you bookmark it. This can be a very useful tool. Unfortunately, no copies are generated for the imported bookmarks. One can be encountered with a problem when importing bookmarks from del.icio.us: Bookmarks with more than one tag had their tags melted into one, e.g. a single tag called "google,searchengine\_news" instead of the two tags "google" and "search engine\_news".



*Task* Create bookmarks using various social bookmarking tools and prepare a presentation by showing the screenshots of bookmarks.

### 11.5.6 Netvouz

Netvouz is a powerful tool for social bookmarking. You can view and sort your bookmarks in many ways — all bookmarks or new bookmarks, tag list or tag cloud, like many other bookmarking services. You can also sort bookmarks by rating, date or name.

Netvouz is the only bookmarking service that lets you place groups of tags in folders that are displayed high up on the page. You may also add "Hotpicks" — your most frequently used bookmarks — that always are available on the very top. These features are of great help for those of us who are storing hundreds of bookmarks online.

Netvouz also has an automatic link checker that regularly verifies that all your bookmarks are valid and alerts you in case they are not.

The only downside is the community part. Nervouz has no support for recommendations, friends or groups like many other social bookmarking services. All that is on offer is "New public links" and "Popular tags" on the front page.

**Self Assessment**

Notes

Fill in the blanks:

13. .... bookmarking means storing your bookmarks online.
14. .... is a powerful productivity tool that makes it easier for anyone to share and save their web-links to use them later on.
15. .... is the only bookmarking service that lets you place groups of tags in folders that are displayed high up on the page.



Case Study

**Management Information Systems (MIS)**

**M**anagement Information Systems (MIS) consists of a collection of interrelated data and information structure that organized in such a way that it corresponds to the needs and structure of an organization and can be used by more than one person for more than one application. A (MIS) is a formal, computer-based system, intended to retrieve, extract, and integrate data from various sources in order to provide timely information for routine, structured, and anticipated types of decisions. In addition, it has been successful in acquiring and storing large quantities of detailed data concerning transaction processing. MIS has the following characteristics:

1. It supports recording keeping and data processing functions.
2. Same databases can be shared for all functions of the organization.
3. Every manager, from the different levels of the organization can reach easily to the data.
4. All data and information can be used only by authorized personnel. Thus, system's security is provided.

Organizations require MIS because of some specific causes. These causes are:

1. Complexity of data transfer and communication problems because of this complexity.
2. Work and force repetitions, creation of same data, and storing them in many different places.
3. Applying many kinds of operations and information flows when obtaining same data.
4. Impossibility of working with data. It is hard to get useful and necessary information because their form and positions are not proper.
5. Insufficient data source.
6. Limited information support.

**Database Approach**

Misplacing information is a problem. Having the right information is not enough; we also have it logically and physically organized so that you can easily access it and make the sense of it. Having the right information and being able to get it quickly will increase productivity. Once getting the information; it must be stored so that people can get it

*Contd....*

**Notes**

easily and make changes as needed. There are two views of information: physical and logical. The physical view deals with how information is stored on storage devices, while the logical view deals with how you arrange information while you're working with it.

Everyone has his or her own files of information. And the software that each person uses to maintain the information in the file is called a file management system. There are some basic problems with using files and file management systems. Firstly, the same information may be stored in many different places. This problem is known as data redundancy. For example, a course book's chapter names appear in two different places. Secondly, because the same information exists in several places, there is the issue of data integrity. Data integrity deals with the correctness of the information. Although the author's title is correct in the chapters file, it is not correct in the addresses file; this is the loss of data integrity.

Because of these problems, all the organization's information stored in one place and a software is provided that anyone can use to access any of the information. These concepts are called database and Database Management System (DBMS). A database is a group of related files, and a DBMS is the software designed to create, store, and manipulate a database.

One facet of a database management system is processing inserts, updates, and deletes. This all has to do with putting information into the database. Changes in data representation will often be needed as a result of changes in query, update, and report traffic and natural growth in the types of stored information. A relational database is a big spreadsheet that several people can update simultaneously.

The relationships between the many individual records stored in a database can be expressed by several logical structures. DBMS are designed to use these structures to execute their functions. One of these structures is relational. Relational database allows the user to think in the form of two-dimensional tables, which is the way many people see data reports. This structure is most popular for DSS databases.

The database approach offers a number of important and practical advantages to an organization. Reducing redundancy improves the consistency of data while reducing the waste in storage space. Sharing data often permits new data processing applications to be developed without having to create new data files. In general, less redundancy and greater sharing leads to less confusion between organizational units and less time spent resolving errors and inconsistencies reports. The database approach also permits centralized control over data standards, security restrictions, and integrity controls. This facilitates the natural evolution and change of information systems and organizations. Databases are very commonly used in everyday life. The relational model of databases provides a very simple way of looking at data structured.

**Questions:**

1. Discuss the importance of organization of information in database management in a group of five students.
2. Do a SWOT analysis of database approach?

Source: <http://www.tojet.net/articles/v3i1/313.pdf>

**11.6 Summary**

- A database accessible to clients from the cloud and delivered to users on demand via the Internet from a cloud database provider's servers.

- Data and applications are stored on a hard drive or a series of hard drives and other media. All of this storage is managed by the operating system.
- Online database software allows you to store business critical information in web database software, where it's easily accessible by all team members.
- Successful businesses have long understood that managing critical data and transforming that data into useful information is key to sustaining a competitive advantage.
- The network access in Web-DBMS is transparent to the user – the user does not have to spend time or money for setting up expensive and complex network software.
- A web based database service can speed web application development and deployment and reduce the cost of ownership associated with maintaining the application.
- Almost any collaborative activity between groups of users or teams can benefit from web based database applications. Since programming is not required to build a database driven web application on Lightspoke, business users are now empowered to create, maintain and manage their own databases.
- QuickBase provides one platform from which workgroups can easily create unlimited applications to automate business processes and improve communication and collaboration online.
- Cloud storage is defined as a model of networked enterprise storage where data is stored not only in the user's computer, but in virtualized pools of storage which are generally hosted by third parties, too.
- Social bookmarking means storing your bookmarks online, tagging them to remember why you wanted to save them and what you might want them for in the future. You can also share them with others who might value your web surfing experiences.
- Netvouz is the only bookmarking service that lets you place groups of tags in folders that are displayed high up on the page.

## 11.7 Keywords

**Database Management:** Database management is the maintenance of information stored in a computer system.

**Database:** A collection of information organized in such a way that a computer program can quickly select desired pieces of data.

**Field:** A field refers to a single piece of information.

**File:** A file is a collection of records.

**Hypertext:** It is a computer-based text retrieval system that enables a user to access particular locations in webpages or other electronic documents by clicking on links within specific webpages or documents.

**Record:** A record is one complete set of fields.

**SQL Server:** The term generally refers to either of two database management products from Sybase and Microsoft. Both companies offer client-server DBMS products called SQL Server.

**Web-based Database Management System (Web-DBMS):** It is a general term for applications which provide a web-based interface to one or more databases.

Notes

### 11.8 Review Questions

1. Explain Database-as-a-Service (DBaaS).
2. Explain the basic functionality of a database and how do they work online?
3. Briefly describe Egnyte and Amazon S3.
4. What are the key features of ElephantDrive?
5. Write a short note on Nirvanix.
6. What do you understand by social bookmarking?
7. Briefly explain bookmarking services of Ma.gnolia.
8. Explain the features of Furl.

### **Answers: Self Assessment**

- |                            |                   |
|----------------------------|-------------------|
| 1. Hard-drive              | 2. Windows        |
| 3. Security                | 4. Service        |
| 5. Administrate            | 6. Application    |
| 7. Development, deployment | 8. Interface      |
| 9. Networked               | 10. Hosting       |
| 11. Subscribers            | 12. ElephantDrive |
| 13. Social                 | 14. BlinkList     |
| 15. Netvouz                |                   |

### 11.9 Further Readings



*Books*

Broberg James, 2011, "*Cloud Computing: Principles and Paradigms*", John Wiley & Sons, Inc.

E. Y. Sarna David, 2011, "*Implementing and Developing Cloud Computing Applications*", Auerbach Publications.

Escalante Armando, 2010, "*Handbook of Cloud Computing Computer Science*", Springer.

Rhoton John, 2009, "*Cloud Computing Explained: Implementation Handbook for Enterprises*", Recursive Press.



*Online links*

<http://eshabansal88.blogspot.in/2010/09/tools-and-techniques.html>

<http://investor.shareholder.com/looksmart/mediacoveragedetail.cfm?ReleaseID=220491>

[http://www.databasezone.com/techdocs/sql\\_server.html](http://www.databasezone.com/techdocs/sql_server.html)

[http://www.webopedia.com/TERM/C/cloud\\_database.html](http://www.webopedia.com/TERM/C/cloud_database.html)

## Unit 12: Collaborating via Web-based Communication Tools

Notes

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### Objectives

After studying this unit, you will be able to:

- Explain Web mail services
- Describe Web conferencing tools
- Explain What Do Online Conferencing Tools Do?

### Introduction

Online collaboration tools constitute a central web-based platform which enables business persons to work together, cooperate and collaborate with one another from anywhere across the globe via the Internet. Using collaboration tools you can communicate thoughts, share ideas

**Notes**

and seamlessly interact with anyone from anywhere based on demand. The term online collaboration tool can be used to refer to any Internet application that facilitates on-demand collaboration of a geographically dispersed team. These tools are a windfall for businesses which have to communicate/share/transfer business related information in real-time. By enabling instant online collaboration, the collaboration tools help you save time and costs, which is otherwise spent on traveling. Also, the tools enable you to involve more relevant persons into decision-making process to chalk time-driven business strategies.

## **12.1 Evaluating Web Mail Services**

There is a better way to manage your email—in the form of web based email services, also known as web mail or HTTP email. Unlike traditional POP email, web mail can be accessed from any PC using any web browser, and all your messages are stored on the web, not locally. It's just like a cloud service; no special software required. This lets you retrieve and manage your email when you're out of the office or on the road.

### **12.1.1 Gmail**

Gmail offers a few unique features that set it apart from the web-based email crowd. First, Gmail doesn't use folders. That's right, with Gmail you can't organize your mail into folders, as you can with the other services.

Instead, Gmail pushes the search paradigm as the way to find the messages you want—not a surprise, given Google's search-centric business model. Gmail does, however, let you "tag" each message with one or more labels. This has the effect of creating virtual folders, as you can search and sort your messages by any of their labels. Gmail groups together related email messages in what Google calls conversations. A conversation might be an initial message and all the replies (and replies to replies) to that message; a conversation might also be all the daily emails from a single source that have a common subject, such as messages from subscribed-to mailing lists.

### **12.1.2 Yahoo! Mail**

Yahoo! Mail is a free email service offered by the American search engine company Yahoo! It was launched in 1997, and, according to comScore, Yahoo! Mail is the third-largest web-based email service with 281 million users as of December 2012. Some of the new or improved features included in the new Yahoo! Mail were:

- Yahoo! Calendar integration
- Yahoo! Messenger integration
- Windows Live Messenger integration
- SMS Messaging in certain countries
- Keyboard shortcuts
- Unlimited storage
- Improved search facilities
- Applications (Piknic, Flickr, Wordpress and more)

### 12.1.3 Windows Live Hotmail

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Windows Live Hotmail can be browsed free of charge from anyplace in this world and that too from any of the web browsers available. Gmail or Yahoo! Mail provides you storage of 6GB whereas Microsoft provides a storage of 5GB which is less than those provided by the formers. Windows Live Hotmail is the first and the largest web based service that provides the facility of email. Previously, it was known as Hotmail but after it has been transferred to Windows Live Suite that provides online services it is now known as Windows Live Hotmail.

### 12.1.4 Apple MobileMe Mail

MobileMe Mail has a unique feature that it's not limited to just computer users; you can also send and receive emails from your Apple iPhone or iPod touch, via Wi-Fi internet or cellular network.

It is a web based service and anyone can browse it using his prevailing ID's on outlook, outlook express, Mac, Windows Mail or any other email program that is web based. iPhone and iPod touch contains its inherent interface.

### 12.1.5 Other Webmail Services

While you are looking for a web mail service and don't want to go with one of the big three, here's a short list of some of the other major providers to check out:

- AOL Mail ([mail.aol.com](mailto:mail.aol.com))
- BigString ([www.bigstring.com](http://www.bigstring.com))
- Excite Mail ([mail.excite.com](mailto:mail.excite.com))
- FlashMail ([www.flashmail.com](http://www.flashmail.com))
- GMX Mail ([www.gmx.com](http://www.gmx.com))
- Inbox.com ([www.inbox.com](http://www.inbox.com))
- Lycos Mail ([mail.lycos.com](mailto:mail.lycos.com))
- Mail.com ([www.mail.com](http://www.mail.com))
- Zoho Mail ([zoho.mail.com](mailto:zoho.mail.com))

### Evaluating Instant Messaging Services

Instant messaging, however, doesn't use servers at all. When you send an instant message to another user, that message goes directly to that user's PC; it's not filtered by or stored on any servers. The technical name for this type of connection is peer-to-peer (P2P), because the two computers involved are peers to each other. Instant messaging needs to work on a piece of client software (one for each computer involved, of course) and the IP addresses of each computer. The messages go directly from one IP address to another, with no servers in the middle to slow things down.

Today, big players in the instant messaging market, including America Online (with both AOL Instant Messenger and ICQ), Google (Google Talk), Microsoft (Windows Live Messenger), and Yahoo! (Yahoo! Messenger).

### 12.1.6 AOL Instant Messenger

The most-used instant messaging program is AOL Instant Messenger ([www.aim.com](http://www.aim.com)), also known as AIM. AOL claims more than 60 million users, which makes it the number-two IM service today, second only to Yahoo! Messenger. For whatever reason, AIM is especially popular among the teen and preteen crowd, although people of all ages can and do use it.

### 12.1.7 Google Talk

You can access Google Talk from a web-based Google Talk gadget, a stand-alone Google Talk client program (similar to what's offered by both AIM and Yahoo! Messenger), or from your Gmail and iGoogle web pages. As with competing IM systems, Google Talk lets you send and receive both text-based instant messages and Voice over IP (VoIP) Internet phone calls. Most people will use Google Talk via the web-based Google Talk "gadget." You launch the Google Talk gadget by going to [talk.google.com](http://talk.google.com) and clicking the Launch Google Talk button. With the gadget, there's no software to download.

### Self Assessment

Fill in the blanks:

1. Unlike traditional ..... email, web mail can be accessed from any PC using any web browser.
2. Gmail doesn't use .....
3. Gmail groups related email messages in what Google calls .....
4. Microsoft gives you ..... of storage.
5. The most-used instant messaging program is ..... Instant Messenger.
6. Microsoft has moved it into its Windows Live suite of online services and now calls it Windows Live .....

## 12.2 Evaluating Web Conferencing Tools

Web Conferencing is designed to facilitate synchronous communication and collaboration for geographically distributed participants. It operates on standard desktop computers communicating on the public internet; no special-purpose hardware (beyond web cam or microphone) is required. Typically, the software runs in a web browser. With the advance of technology into education and the ease of accessibility to internet services, a new form of instruction based on web conferencing technologies has emerged.



*Did u know?* Web conferencing was initially introduced into the world of business allowing conferencing events to be shared with remote locations but is now widely embraced in education.

### 12.2.1 WebEx

WebEx is Cisco's solution for web conferencing outside of their traditional and expensive hardware-based corporate conferencing options. Users can share screens, files, schedule video conferences in Outlook just like regular meetings, and easily pass the "presenter" title from

person to person so each participant can focus the meeting onto their shared documents or computer screen as the need arises. WebEx supports multiple video streams so you can view up to six people in the meeting, not just the person presenting. WebEx also supports mobile devices so even participants away from their computers can participate in the conference through their smartphones or mobile devices like iPads.

### 12.2.2 Tynchat

Not everyone needs document sharing, screen sharing, or other fancy conferencing tools. Sometimes your needs are as simple as getting some people together, for free, and talking via computer as close to face-to-face interaction as possible. Tynchat is a simple service that allows you to stream up to 12 webcams simultaneously while participating in audio and text-based chat. You can have hundreds of chat-based users, mind you, but only up to 12 video cameras going at one time. You can make a Tynchat room in a single click, share the link, and all your friends or coworkers will be video chatting in a matter of minutes—no fees or fussing with signups requires. Its bare bones compared to the feature-laden and high-price options in the Hive, but if all you need is video and chat, it's a solid pick.



*Task* Create a Tynchat account and use its web conferencing feature and try to perform desktop sharing.

### 12.2.3 GoToMeeting

GoToMeeting has a strong focus on desktop and document sharing, but skips video support altogether. When you're presenting, you do all your communicating via voice and using the built-in screen and document sharing tools combined with the on-screen drawing tools to highlight components of your presentation. GoToMeeting has multiple ways to interact with the presentation; the presenter can.



*Example:* Pass control of the keyboard and mouse to another person who wants to demonstrate something without transferring the full Presenter status to them. GoToMeeting supports recording to archive meetings, attendance reporting, and scheduling for future meetings.

### 12.2.4 Dimdim

Dimdim offers a variety of packages ranging from basic and free accounts to enterprise level accounts with tiered pricing. The free account gives you full audio between all parties, public and private text chat, document sharing of PDF and Power-point files, web page sharing, a shared whiteboard, and scheduling functionality. Unfortunately the free version only has one way video. The person hosting the meeting is the star of the show. Upgrading to Pro for \$25/month expands the video so that an additional presenter can connect in allowing for two distance conference rooms, for example, to be linked via video.

### 12.2.5 Adobe Connect Now

Adobe Connect Now is a web-based conferencing tool with a strong emphasis on document sharing and collaboration. You can share your screen, share documents, easily convert documents to PDFs, and create workspaces to share and edit documents in. Connect-Now supports private and public chat, shared whiteboard space, remote control of other desktops for interactive screen-sharing, and video/audio conferencing.

Notes

**Self Assessment**

Fill in the blanks:

7. WebEx supports multiple ..... streams.
8. Tinychat is a simple service that allows you to stream up to 12 ..... simultaneously.
9. GoToMeeting has a strong focus on ..... and ..... sharing.
10. .... offers a variety of packages ranging from basic and free accounts to enterprise level accounts with tiered pricing.

**12.3 What Do Online Conferencing Tools Do?**

The basic function of online conferencing tools is to provide an online “meeting room”. Typically, a moderator creates the “room,” and participants enter via a particular Web address.



*Caution* An important thing to consider is that some tools require participants to download a small application if it is being used for the first time and if many different people of different technical skill levels will be participating.

Following are the several functions of online conferencing tools:

- **Desktop Sharing:** This basic feature lets participants see exactly what’s on the presenter’s screen. Presenters can share anything from simple documents to PowerPoint presentations and software demonstrations.



*Notes* A number of conferencing tools can only show the desktop of Windows computers, or only those using internet explorer browsers if you’ll need to show desktops for Mac, Linux or Firefox users, look for a tool that supports that.

- **Desktop remote control:** A step beyond desktop sharing, some applications let you grant control of your desktop to someone else, allowing them to open and work with the applications on your computer for example, to provide you with technical support via your machine.
- **Website co-browsing:** This specialized functionality lets your actions in an internet browser control your participants’ browsers as well. If your conferencing needs are limited to showing or sharing a Website, this method is likely to create a better view for the participants, and require less bandwidth, than desktop sharing.
- **Text chat:** Another basic feature, this lets participants and presenters “talk” to each other via typed text chat during presentations. Some tools let all participants see such messages, while others allow for private one-on-one messaging. Some more advanced tools even provide for “breakout rooms” where multiple participants can chat privately.
- **Share slides or other documents:** While desktop sharing lets you show slides or documents from your computer, you still need to toggle between your desktop and the meeting room. Some tools let you upload documents into the online conference to avoid this hassle.

- **Promote attendees to presenters:** If you have multiple presenters, some allow you to shift meeting control temporarily to a participant. They can then show their own desktop, advance slides or demo another application.
- **Emoticons and polls:** Remote meetings have their challenges with participants in different locations, how do you keep a seminar lively, or even know how content is being received? Allowing participants to display “emoticons” for themselves little pictures that represent common phrases or sentiments, such “slow down,” “speak louder,” or “laughter” can be useful. Similarly, the ability to do quick polls to gauge participants’ options or situations can help keep them engaged.
- **Video conferencing:** Some more advanced tools let presenters broadcast video of themselves talking. In some cases, even participants can broadcast themselves, if they have Web cams or appropriate hardware capabilities.

## Self Assessment

Fill in the blanks:

11. A ..... creates the “room,” and participants enter via a particular Web address.
12. Presenters can share anything from simple documents to PowerPoint presentations and software .....
13. Some tools let you upload documents into the ..... conference to avoid this hassle.
14. .... meetings have their challenges with participants in different locations.
15. Some tools let all participants see such messages, while others allow for private ..... messaging.



Case Study

### Mouko Cloud Computing

The below case study is intended as an historical document, describing the challenges posed to Mouko by one of its clients, The Ecology Center, and the steps taken to overcome those challenges. This is meant to serve as an example of the quality of the results and overall experience a client can expect when working with Mouko. The solutions described below may not fit your particular scenario. Please contact Mouko if you have questions, or to arrange a custom solution that fits your needs exactly.

#### The Challenge

The Ecology Center, an Ann Arbor not-for-profit was ready to release the next generation of its HealthyToys.org website. A year before, when the first generation site had gone live, the response had vastly exceeded expectations. The press went wild - the site received coverage from CNN, Fox News, and countless other media outlets. Seeing the coverage, droves of concerned parents had rushed to the site, everyone trying to download data from the same source at exactly the same time. The site ground to a halt during the first few days.

For a variety of reasons, such as budget, time, and others, the Ecology Center had opted to use a single dedicated server to run their new website, along with several others of their

Contd....

Notes

websites, for the first generation of HealthyToys.org. When the "flash crowd" hit HealthyToys.org, the Ecology Center looked for assistance from their web hosting company, but received nothing but shrugs and empty promises. But by the time anyone would respond to remedy the problem, media coverage had moved on to other topics, and the moment had passed.

Not wishing to repeat the previous year's hosting issues, yet uncertain how the second generation of their website would be received, the Ecology Center was reluctant to invest in an expensive multi-server, load-balanced system up-front. They needed a system that could scale up or down easily and affordably, according to need.

**The Solution**

Cloud computing was the perfect solution for the Ecology Center's situation. The word has received a lot of press recently, but what is cloud computing?

Large web service companies, such as Amazon, Google, eBay, and so on, require gargantuan compute and network resources to make their Web-based services widely available at a usable speed. Their operations are so large, so many computers and internet connections required, the "economy of scale" enables them to purchase vast amounts computer hardware, data center space, and network access at very low rates. They can then pass on these savings and re-sell unused compute time and network bandwidth to third parties who then have dedicated access to, for example, Amazon's hardware and network. Amazon refers to their cloud computing service as the "Elastic Compute Cloud," or EC2.

Several features make cloud computing attractive; affordability (it is very competitive with dedicated hosting for small sites, and much cheaper for large installations); pro-rated, i.e. compute services are usually charged on a per-hour basis, which makes companies that require month-or-longer hosting contracts obsolete; scalability – once a system is set up, it is easy to add or remove servers from your "array" at any time. However, without a significant time investment, setting up a site to work in a cloud can take quite a while; the Ecology Center had limited time and budget to spend on systems administration.

Mouko worked with RightScale Inc. to implement the perfect solution for the Ecology Center's problem. Using RightScale's pre-configured operating systems, web servers, and database servers, and sophisticated auto-scaling system, we were able to create a loadbalanced system where we could specify threshold values for which a web server array should grow or shrink using server load as the criterion. In anticipation of the site's launch day, we could pre-allocate compute services (e.g. load would be shared between ten web servers for the day the site would be announced by the press) or shrink it significantly once traffic died down.

With a few code changes to support multiple database servers, and just a few hours invested in learning the RightScale Web-based management interface, the Ecology Center would have not only a new design for their website, a HealthyToys widget, and updated information, but also an infrastructure that would scale automatically and that would be backed up continuously to Amazon's Simple Storage Service (also known as S3).

**The Result**

The second-generation of HealthyToys.org was a great success and continues to receive millions of page views. It neither suffered nor suffers from any of the performance issues of the first generation. The Ecology Center continues to use the Amazon Elastic Compute Cloud and RightScale for all their sites and Mouko for their web development. This is likely to continue well into the future.

*Contd....*

**Questions:**

1. How can you say that cloud computing was the perfect solution for the Ecology Center's situation?
2. Browse through the internet and study the present situation of HealthyToys.org and prepare a report in context of the above case.

Source: <http://www.mouko.com/what-we-do/case-studies/healthytoysorg-cloud>

**12.4 Summary**

- There is a better way to manage your email—in the form of web based email services, also known as web mail or HTTP email.
- Unlike traditional POP email, web mail can be accessed from any PC using any web browser, and all your messages are stored on the web, not locally.
- Gmail groups together related email messages in what Google calls conversations. A conversation might be an initial message and all the replies (and replies to replies) to that message; a conversation might also be all the daily emails from a single source that have a common subject, such as messages from subscribed-to mailing lists.
- The most-used instant messaging program is AOL Instant Messenger. AIM is especially popular among the teen and preteen crowd, although people of all ages can and do use it.
- WebEx supports multiple video streams so you can view up to six people in the meeting, not just the person presenting. WebEx also supports mobile devices so even participants away from their computers can participate in the conference through their smartphones or mobile devices like iPads.
- GoToMeeting has multiple ways to interact with the presentation; the presenter can. GoToMeeting has a strong focus on desktop and document sharing, but skips video support altogether.
- Some tools require participants to download a small application the first time they're used.
- If your conferencing needs are limited to showing or sharing a Website, this method is likely to create a better view for the participants, and require less bandwidth, than desktop sharing.

**12.5 Keywords**

**Adobe Connect Now:** It is a web-based conferencing tool with a strong emphasis on document sharing and collaboration.

**Desktop Sharing:** Desktop sharing is a common name for technologies and products that allow remote access and remote collaboration on a person's computer desktop.

**Video Conferencing:** It is a technology that allows users in different locations to hold face-to-face meetings without having to move to a single location.

**Web Conferencing:** It is a video-conferencing session via the Internet. In order to interact with other participants, attendees use either a Web application or an application downloaded into their client machines.

**WebEx:** It is Cisco's solution for web conferencing outside of their traditional and expensive hardware-based corporate conferencing options.

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### 12.6 Review Questions

1. What are online conferencing tools?
2. Evaluate Gmail and Windows Live Hotmail services.
3. How will you evaluate Instant Messaging Services?
4. Briefly explain how to evaluate Web Conferencing Tools.
5. What are the challenges of remote meetings?

### **Answers: Self Assessment**

- |                      |                    |
|----------------------|--------------------|
| 1. POP               | 2. Folders         |
| 3. Conversations     | 4. 5GB             |
| 5. AOL               | 6. Hotmail         |
| 7. Video             | 8. Webcams         |
| 9. Desktop, document | 10. Dimdim         |
| 11. Moderator        | 12. Demonstrations |
| 13. Online           | 14. Remote         |
| 15. One-on-one       |                    |

### 12.7 Further Readings



*Books*

Broberg James, 2011, "Cloud Computing: Principles and Paradigms", John Wiley & Sons, Inc.

E. Y. Sarna David, 2011, "Implementing and Developing Cloud Computing Applications", Auerbach Publications.

Escalante Armando, 2010, "Handbook of Cloud Computing Computer Science" Springer.

Rhoton. John (2009). "Cloud Computing Explained: Implementation Handbook for Enterprises". Recursive Press.



*Online links*

<http://chettinadtech.ac.in/storage/11-12-30/11-12-30-10-50-17-1373-mahendra.pdf>

<http://programming4.us/enterprise/4112.aspx>

<http://www.lifehacker.com.au/2010/06/five-best-web-based-conferencing-tools/>

## Unit 13: Collaborating via Social Networks and Groupware

Notes

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### Objectives

After studying this unit, you will be able to:

- Discuss how to create groups on social networks
- Explain how to evaluate online groupware

### Introduction

Groupware has a long history. All systems belonging to this class of applications are trying to help workers to organise their work and get it done. A lot of research and developments has been made for professional scenarios. Social Network Sites which rise since 1997, evolve from leisure or non-professional use cases within groups of friends or people with same interest. These systems do not try to represent business workflows or support organisational tasks. These systems try to keep leisure cooperation simple, e.g. arrange an evening with friends, or share pictures from a party.

Nowadays these systems are also used in professional environments. Not for marketing purpose only, but also for organisational communication and setting project meetings for example.

Big companies such as Cisco copy social network concepts of systems like Facebook and many others. Business applications like Cisco's Quad and Jive evolved trying to bring social systems into a professional environment.

## **13.1 Creating Groups on Social Networks**

If you have a medium- to large-sized online network, you might have noticed some of your contacts have been developing their own groups in the form of private groups, forums or social networks that are a mixture of free or paid memberships.

### **13.1.1 The Advantages of Creating a Group**

So with all of the existing groups out there, what's the benefit of creating your own group?

*Driving Traffic to Your Site:* Let's say that you start a forum on your own domain. If you're successful in creating a popular group, you'll be driving a lot of traffic to your website. The traffic, in turn, will lead to the next benefit.

*Increasing Your Income:* There are several ways to monetize a group. The direct approach is to actually charge your group membership fees for entry into the group or advanced privileges, such as the ability to promote themselves more within the group and premium content.

If your group is tied into a business, having the additional traffic to your site is bound to lead to converting group members to clients, or getting clients to join the group so you can later upsell them with additional products or services.

Then, of course, there are the indirect forms of monetization, such as capitalizing on the additional traffic to your website and offering advertisers banner space.

*Becoming an Authority:* If you become a successful group leader, you could become an authority in your industry as the administrator of a thriving group.

### **13.1.2 The Disadvantages of Creating a Group**

As with just about anything, there are usually cons that need to be thought through before jumping into starting up your own group. Here are some of the big ones.

*Startup Costs:* Generally, to maintain a group on your own site, you'll have to invest in the development or customization of group software, such as a forum program or social networking plugin.

*Administration Time:* The next major factor in maintaining your own group is administration. This involves everything from managing the software platform to moderating the activity among members to be sure that there isn't any abuse of group rules or harassment of other group members. Without this kind of administration, the group will quickly fall.

*Sticky Members:* It's not just about getting people to sign up, but getting them to keep coming back to your group and participate as much as possible. Unfortunately, what some people forget is that there are sometimes too many groups out there, and not enough time to devote to all of them.



*Notes* If your group is not at the top of its game and requires too much involvement, members might start dropping off in activity.

### **13.1.3 What You Must Do to Have a Successful Group?**

So what does it take to create a successful, thriving group to which members are happy to come back regularly?

**Start With Research:** Before you jump into creating your own group, start by seeing what's out there in a related niche, join those groups, and then observe the activity.



**Caution** Note what you like and dislike about the way the group operates, from the platform to the members and the leaders. Note which groups keep you coming back for more and how they do it.

**Provide Unique Value:** Notice that it's not value, but *unique* value. Think about the groups you researched, and then try to figure out that one thing that no one else is offering that you can. One example would be creating a group that's more specifically focused by doing a little brainstorming.

Instead of just blogging, narrow down to business blogging, then narrow down again to B2B business blogging, and then further down to B2B business blogging in the service industry. While it's super-specific and might not allow for a huge following, it is something unique which will intrigue your members.

**Address Your Members' Concerns:** This one may get tough, depending on how many members you have in your group, but it's always important to acknowledge any concerns that your members have in terms of site functionality, rules or other members. This lets them know that there's someone actively in charge and always willing to cater to the members' needs when possible.

### 13.1.4 Platforms for Your On-site Group

If you've weighed the pros and cons of creating your own group on your website and have decided to go for it, here are some platforms to get you started in creating your group.

Figure 13.1: Webdeveloper.com: An Example of vBulletin Platform

The screenshot shows the WebDeveloper.com forum interface. At the top, there is a navigation bar with links for Home, FAQ, Members List, Calendar, and Today's Posts. Below this is a forum category list for 'Client-Side Development', which includes sub-forums for HTML, XML, CSS, Graphics, JavaScript, Multimedia, and Web Video. Each sub-forum has a list of threads with columns for thread title, author, last post, threads, and posts.

Forum	Last Post	Threads	Posts
<b>HTML</b> (79 Viewing) Discussion and technical support for building, using and deploying HTML sites.	<b>Add padding to which css...</b> By <a href="#">Blaesed</a> Today 08:18 AM	22,374	115,527
<b>XML</b> (16 Viewing) Discussion and technical support for using and deploying XML applications and websites.	<b>Good afternoon, an XML reader...</b> By <a href="#">alumn</a> Today 09:04 AM	3,052	8,784
<b>CSS</b> (88 Viewing) Discussion and technical support relating to Cascading Style Sheets.	<b>[RESOLVED] CSS position</b> By <a href="#">Indicat</a> Today 12:04 PM	17,313	93,677
<b>Graphics</b> (12 Viewing) Discussion and technical support for creating and editing graphics for the web.	<b>Is it possible to get it...</b> By <a href="#">areduff</a> Today 02:49 AM	2,793	14,133
<b>JavaScript</b> (417 Viewing) JavaScript (not Java) Discussion and technical support, including AJAX and frameworks (jQuery, MooTools, Prototype...)	<b>Change Image with Dropdown...</b> By <a href="#">thefincomat</a> Today 12:00 PM	94,503	426,320
<b>Multimedia</b> (12 Viewing) For discussion of all manner of media (audio, video, flash) techniques, as they relate to the web.	<b>MP3 file uploading very slowly</b> By <a href="#">Michiken</a> Yesterday 06:03 PM	2,758	8,540
<b>Web Video</b> (10 Viewing) This forum is for the discussion of Editing and Encoding, Distributing, Filming and Marketing web video!	<b>How do I put videos on my...</b> By <a href="#">tedscoffer</a> 01-14-2011 04:41 AM	485	1,083
<b>Multimedia</b> (12 Viewing) For discussion of all manner of media (audio, video, flash) techniques, as they relate to the web.	<b>MP3 file uploading very slowly</b> By <a href="#">Michiken</a> Yesterday 06:03 PM	2,758	8,540
<b>Web Video</b> (10 Viewing) This forum is for the discussion of Editing and Encoding, Distributing, Filming and Marketing web video!	<b>How do I put videos on my...</b> By <a href="#">tedscoffer</a> 01-14-2011 04:41 AM	485	1,883

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**Forums:** If you've chosen to create a forum, the most popular platform is vBulletin, which starts at \$195 per site/forum. While it's pricey, it has the most robust set of features and is most widely used. Google *vbulletin* and your keyword to see what other groups are using this platform in your niche – you're bound to find them.

Webdeveloper.com is an example of a forum built on the vBulletin platform.

Not ready to invest in forum software? A popular open-source alternative to vBulletin is phpBB. It has less functionality comparatively, but still provides the basic forum functions and needs.

**Social Networks:** If you wish to go beyond a forum, two popular platforms for building your own social network are Ning and BuddyPress.

Ning, once a free service, now has plans at \$2.95, \$19.95 and \$49.95 per month, depending on the number of members you want and space you'll need.

Figure 13.2: Tennisopolis: A Social Network Built on the Ning Platform



Tennisopolis is an example of a social network built on the Ning platform.



*Example:* A great example of a group built on their platform is Tennisopolis, a personal favorite of mine as I am an avid tennis fan and player. Members can connect with each other, participate in forums, create blogs, private message, share photos and video, join groups and much more.

An alternative is the free BuddyPress. The solution is meant to be integrated on top the WordPress platform. So if you're already familiar with WordPress as a blog or content management system, you should be able to learn the ins and outs of BuddyPress as well.

Figure 13.3: Hello Eco Living: A Social Network Built on the BuddyPress Platform



Hello Eco Living is an example of a social network built on the BuddyPress platform.



*Example:* A network built on their platform is the Hello Eco Living Network. Similar to Ning networks, members can make friends, write blog posts, participate in forums, privately message each other, join groups and more.

### 13.1.5 Great Alternatives to Creating Your Own Group

So what are some good alternatives to creating a group on your own website? Try some of the following options on other networks.

**Facebook Groups:** Facebook is the top social network, so creating groups within their platform is a great way to go in terms of getting people together on a platform that they're already involved in. You can add members to your group automatically, however it is better to do this only after asking them if they would be interested, as it can be really annoying to be added to a group by someone you don't know.

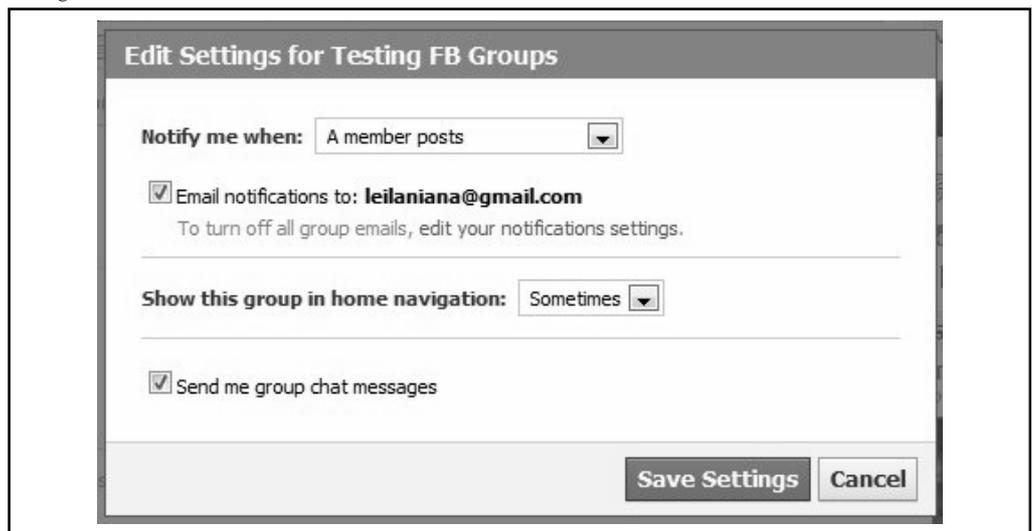
What are the perks of having a Facebook group? Groups can be public or private (invite only). Members can be notified each time there's activity in the group, or change their notifications to be received only on threads that they're actively participating in (such as ones they start or comment on).

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Tell members how to customize their group settings for the best experience.

You can also encourage members to check the settings so that your group shows in their home navigation.



Members won't forget about your group if they put it in their home navigation.

This way, members will always be reminded about your group anytime they're logged into their Facebook homepage.

**LinkedIn Groups:** LinkedIn, the top professional network, is also a great place to start your own group through LinkedIn Groups.

These can be especially powerful for a myriad of reasons, including the fact that you can email your group once a week. It's almost like building a mailing list through their service (although you shouldn't over promote yourself on things that you're selling through it).

Figure 13.4: Social Media Examiner uses a Private LinkedIn Group for Blogging Success Summit Attendees



**Task** Build your own group using the information you have learnt in this unit.

## Self Assessment

State whether the following statements are true or false:

1. There are very few ways to monetize a group.
2. Instead of just blogging, narrow down to business blogging.
3. If you've chosen to create a forum, the most popular platform is vBulletin.
4. Webdeveloper.com is an example of a forum built on the vBulletin platform.
5. If you wish to go beyond a forum, two popular platforms for building your own social network are Ning and BuddyPress.
6. Facebook is the top social network.
7. Groups can be only public on Facebook.
8. LinkedIn is a top professional network.

## 13.2 Evaluating Online Groupware

Suppose you have a business project and you get several individuals who join the project. Once you have defined what the project is at a meeting, how do you communicate to the other

**Notes**

members of the group about what progress is taking place? You use Groupware software to determine that progress.

### **13.2.1 What is Groupware?**

Take any software that permits groups to communicate with individual members better and you have groupware. There are a variety of programs that you can use for groupware. These include scheduling, email, task management, chats, newsgroups, project collaboration, shared phonebooks, and shared contacts. Even social network programs like Facebook and Twitter are examples of groupware because they inform others in the group about what is happening to the project.

Among the advantages of Groupware is the inclusion of a central repository where files or documents are stored. Groupware also includes document version management or document versioning as well as a change management system. You can also have shared calendars and task management.

#### **Start Communication**

Once you have determined what the business project is that you have in mind, you can start communication. All the participants of groupware do not have to be in the same location. Communication can be remote and long distant.

#### **Allow Communication**

Most software allows communication only to one person. It is hard to transfer a document to an entire group, for example, have it modified and changed, and send it back to the original person, where the cycle can start over again. But with Groupware, you can keep track of the changes, who made them, and how they affect the project. This is revision control, and with collaboration, which is one of the hallmarks of Groupware, it allows communication to be possible.

#### **Telecommuting**

Personal presence is not necessary. A project can be manned by individuals in distant locations and still make timely and important contributions. This can save time and cut expenses. It can guarantee that meetings or deadlines can be met, that changes can be performed in a timely manner, and that all persons can participate.

#### **No Travel Costs**

Groupware can save expenses because travel will not be an impediment to the performance of the team. Thus project costs will also be less. Team members can perform their specific functions wherever they are and are not relegated to specific locations.

#### **Solving Problems**

But perhaps the most important advantage of groupware is the constant effort made to complete the project in a timely manner. Everyone can see the progress that is made, the changes to pursue, the parts that must be finished. Problem-solving can be an ongoing feature because anyone on the team can make contributions to the project and suggest solutions, even if they are not directly involved in a specific part.

### 13.2.2 Applications of Groupware

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Here are some of the most popular online groupware applications are discussed as:

*AirSet* is a privately held web services company based in Walnut Creek, California, United States, their service allows you to manage multiple groups in one place so you can see the roll up of all group calendars, share files across groups, and communicate with the important people in your life. The service is browser based with clients for iPhone, Android, and other mobile devices.

Figure 13.5: AirSet

The screenshot displays the AirSet web application interface. At the top, there are navigation tabs for 'Public', 'All Groups', 'Personal', 'Simpsons', 'Springfield Nuclear PowerPlant', and 'Moe's Tavern'. Below these are menu options: 'Main', 'Calendar', 'View', 'Email', 'Group', 'Tools', and 'Help'. A 'Log out' button and a search box are also present. The main content area features a calendar for 'Springfield Nuclear PowerPlant' for September 2005. The calendar shows various events such as 'Homer's turn to bring the donuts', 'Smithers vacation to San Francisco', 'Lenny on vacation at Duff Gardens', and 'Nuclear Safety Training Seminar'. A sidebar on the left contains navigation icons for 'Main', 'Calendar', 'Contacts', 'Lists', 'Blog', and 'WebLinks'. Below the sidebar is a 'Send a Message' section with a group roster including Homer, Mr. Burns, Carl, Frank Grimes, Lenny, Mindy Simmons, and Smithers. At the bottom of the sidebar, there are options to 'Select All' and 'Clear All', and a 'Message' section with 'Send via:' options for 'My Email Client', 'AirSet Email', and 'Mobile Text Message'. A footer note states: 'Times are in your local time zone setting of Eastern Daylight Time unless otherwise noted'.

*ContactOffice* is a web application accessible with a web browser, developed by ContactOffice Group. It is a virtual office consisting of a set of interrelated tools (webmail, calendar, document storage, tasks, notes, bookmarks, etc.).

*Google Sites* is an online application that makes creating a team website as easy as editing a document. With Google Sites, you can quickly gather a variety of information in one place – including videos, calendars, presentations, attachments, and text – and easily share it for viewing or editing with a small group, an entire organization, or the world. Get started with Google Sites by enabling the service.

*Huddle*: The Huddle software platform provides cloud-based file sharing, file storage, content management, collaboration, task management, meeting organization, discussion boards, custom branding, security and authorization control, as well as an API. Since its first release in 2007, Huddle's software platform has been used by more than 100,000 organizations worldwide, including Disney, AKQA, Kia Motors, Diageo and the central government of the United Kingdom to manage projects, share files and collaborate with people inside and outside of their organizations. The latest version of Huddle uniquely combines content and conversations in one central view and offers users a workable preview of files without the need to download them. Huddle can be accessed online and through its native mobile applications for iPhone, iPad and BlackBerry.

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*Did u know?* Huddle is currently available in 15 languages including English, French, German, Italian, Spanish, Portuguese, Russian and Japanese.

Figure 13.6: Huddle



**Nexo:** It allows you to develop a free personalized group Website. The site can include photos, forums, message boards, polls, videos, and to-do lists. Nexo aims its services to friends, families, and community groups, though it may also operate for few less-demanding business groups.

**OpenTeams:** To become an agile, innovative, Entrepreneurial Organization, employee engagement is essential. Business leaders are frustrated with email and groupware because it doesn't break through the bureaucracy – usually it creates more. In addition to project collaboration, blogging, social networking, community building, and knowledge management, OpenTeams is an innovative initiative development solution where employees collaboratively seed and mature new ideas for additional revenue, productivity and cost-savings.

Unlike normal wikis, which suffer from user apathy and confusion, OpenTeams is intuitive for non-techies to learn and use. Its simple email-like interface makes it easy to create, organize, and navigate content while transparently tracking changes. This dramatically shrinks the learning curve and ensures adoption while ramping up productivity, payback, and employee engagement.

**ProjectSpaces:** Simple, secure and powerful online workspace and extranet to help your project teams, workgroups, committees, partners, and others connect, share and collaborate. Ability to set up different projects (or workspaces), each containing their own Documents, Tasks, Calendar Events, Announcements, Email Lists, Discussions, etc. Users can be connected to one or multiple projects, and each user is assigned a user right for each project he/she is connected to.

**TeamSpace** is a web-based collaborative workspace system for managing shared work processes and maintaining shared artifacts in a project typically spanning months or years. It covers both synchronous and asynchronous cross-company team activities and provides a seamless transition between different work modes. TeamSpace also attempts to increase team awareness and communication for distributed teams by providing ubiquitous access through the integration of wireless handheld devices. Meetings are a crucial communication and coordination activity of teams. TeamSpace supports distributed meetings as a part of a larger collaborative work process

by providing capture, integration and access capabilities for distributed meetings. Captured synchronous information is integrated with other related information in TeamSpace, enabling users to efficiently gain knowledge of both current and past team activities.

Notes

### Self Assessment

Fill in the blanks:

9. .... and ..... are examples of groupware because they inform others in the group about what is happening to the project.
10. .... also includes document version management or document versioning as well as a change management system.
11. .... can be remote and long distant.
12. .... presence is not necessary.
13. .... can perform their specific functions wherever they are and are not relegated to specific locations.
14. .... is a privately held web services company based in Walnut Creek, California, United States.
15. .... is an online application that makes creating a team website as easy as editing a document.
16. .... allows you to develop a free personalized group Website.



Case Study

### Collaborate, Innovate, Adapt! – Collaboration Taps into Social Networks to Aid Productivity

Whether or not any given software solution was first built as a collaboration tool, chances are that it now has at least some collaborative capability. Every software product from content management to search tools lets users interact with each other and work together. College students routinely use virtual workspaces for team-based academic tasks, and project management software is increasingly collaborative.

Of all the collaboration solutions that dot the landscape, social collaboration software is without question the most rapidly growing segment of the market. IDC expects the worldwide enterprise social software market to grow from \$767.4 million to \$4.5 billion in revenue by 2016. That represents a Compound Annual Growth Rate (CAGR) of 42.4 percent.

"Enterprise social software will continue to exist as stand-alone applications, but as social capabilities are embedded into existing enterprise applications, business processes inevitably become more social," says Vanessa Thompson, research manager, enterprise social networks and collaborative technologies at IDC.

#### Fostering Innovation

The National Health System (NHS) Institute for Innovation and Improvement supports the English healthcare system by identifying and sharing best practices to improve the quality of care and help contain costs. Early in 2012, the NHS asked the NHS Institute to

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develop a service for promoting high-impact innovations. A fundamental premise of the initiative was that it would be based on social networking to provide an interactive environment in which individuals could comment on case studies, exchange ideas and contribute their own material.

The NHS Institute was given a deadline of just eight weeks to put the system into place. In view of the short timeframe, the organization did not have the option of approaching a systems developer and establishing an elaborate set of requirements. "We needed to deploy a social networking solution that was ready to go to work right out of the box," says Nick Gaunt, chief information and knowledge officer at the NHS Institute, "but at the same time, we also needed a product that could be customized to allow for both internal and external networking."

The internal customer was the NHS Institute itself, and the external groups were the other organizations of the NHS. "Although the NHS may appear to be a single entity, it is actually several hundred organizations working under one umbrella," Gaunt says. "Therefore, we needed to have a mixture of private and public-facing interactions, a capability that many social enterprise networking products do not offer."

**Incremental Approach**

After narrowing the search to a half-dozen candidates, the NHS Institute selected Clearvale, an enterprise social networking platform from BroadVision. "We wanted to extend our static website with the capabilities of an interactive site that incorporated blogs, wikis, comments and other features," Gaunt explains. "and Clearvale was able to provide those components out of the box as well as to modify the basic software within our time requirements."

Since the NHS Institute had not previously deployed enterprise social networking, it took an incremental approach to introducing the new application to employees. "We had primed the site with content relevant to our users," Gaunt says, "and we have started by allowing people to comment, participate in polls and join discussion forums." The response has been very positive, with steadily growing participation.

One activity the NHS Institute used to promote engagement by employees was a challenge to put forth ideas that would help improve the patient experience. The competition resulted in 145 nominations of project ideas that could be carried out. The nominations were judged, and the NHS Institute awarded grants to the top nine to share their project ideas throughout the NHS. "There is a tremendous amount of innovation going on in healthcare," Gaunt says. "For us, one of the biggest challenges is to help others discover these innovations and to make sure the good ideas are being adopted."

**Changing the Dynamics**

Over time, the NHS Institute will broaden participation on the site so that users can take more initiative, contributing their own case studies, for example. In doing so, Gaunt anticipates a shift in the roles of the initial organizers in the NHS Institute and the community participants. "We are working on getting the right balance," Gaunt says, "facilitating management of the site centrally while encouraging members of the community to keep the conversation going in their areas of interest."

In addition to providing cross-fertilization among different organizations, online social networking enhanced the interaction of individuals in face-to-face workshops. "We ran some workshops to bring the community together in a physical setting," Gaunt says. "The previous online experiences changed the dynamics of the workshops and made them

*Contd....*

more productive, because the participants had already shared ideas and had a history of working together."

The ability of Clearvale to segment users into categories makes it versatile in handling different groups. "Like an office building with a public lobby, Clearvale has a guest area that is readily accessible, while protecting the privacy of other areas," says Erin Curtis, VP of marketing at BroadVision. Guest areas can also be set up to be anonymous, so that individuals – for example, competitors in the same business – can dialog without revealing their identities.

The use of social software for collaboration in a business environment is most successful when there is a clear business purpose. "Social networking can be transformative," Curtis says, "but it needs to be linked clearly to business objectives." Sharing best practices and accomplishing specific tasks are examples of productive applications of social software. Clearvale provides anytime, anywhere access through desktop, laptop, smart phone and tablet applications, and allows for attachments, reminders and other task-related functions.

### **Collaborative Project Management**

Ellegro Learning Solutions, a Beeline company, develops custom training applications and provides human resources consulting services. Usually, the company has about 20 to 30 projects moving ahead in parallel, which presents management and prioritization issues. Project planning and development requires considerable collaboration among programmers, subject matter experts and management. Tracking milestones and content was difficult with the manual systems the company was using.

To streamline its processes and better manage resources, Ellegro deployed LiquidPlanner, a cloud-based collaborative project management platform. LiquidPlanner allows an unlimited number of projects and clients within a single workspace, with tasks, events and milestones. Tasks can be added via email, and alerts and notifications about changes are sent via email as well as being documented in LiquidPlanner.

One of the characteristics of LiquidPlanner that Ellegro most appreciates is its flexibility. "We work in a very fast-paced environment," says Lisa Statland, project manager at Ellegro, "and we often need to be able to reallocate resources." Because LiquidPlanner operates at the portfolio level, resources can be shifted across projects. "A lot of project management software products are available, but not many let you manage at the portfolio level so that, for example, staff hours can be moved from one project to another," she adds.

Another aspect of LiquidPlanner's flexibility is evident in its ability to re-prioritize tasks. "This dynamic scheduling lets us see the impact on timelines, resources, due dates, milestones and the overall portfolio," Statland says. "When a client wants to reorder the tasks they want done, LiquidPlanner lets us move a particular task to the top of the list and then see what the impact on deadlines will be for the other tasks." If the rescheduling has an impact on staffing needs, Ellegro can then seek additional employees or subcontractors to augment its workforce.

Managers set the schedules and provide input to the system, but the projects are visible to all the staff so that they can see project status in real time. LiquidPlanner also has a portal through which files and tasks can be shared with external stakeholders. "Development of training products involves many artifacts such as documents, scripts and other components," Statland says. "These are available in the central repository so we can collaborate online with our clients."

*Contd....*

Notes

**Forecasting Needs**

For the future, Ellegro is considering using the time tracking database that provides details on hours, such as hourly rates and whether the hours are billable or not. "This is another way for us to anticipate our resource needs," Statland explains. "Also, the analytics tool is a feature we expect to use more in the future. It will let us run reports by individual, team or client. Although we are a small business, we carry out big projects, so a greater understanding of our performance will allow for better planning."

LiquidPlanner's software is designed to work the way real teams do, according to Liz Pearce, CEO of LiquidPlanner. "Collaboration tools are often underutilized," she says, "because they don't mirror actual work processes. Knowledge workers deal with a lot of uncertainty and change, especially in environments of multiple, complex projects. If the project plan cannot be readily modified, it becomes too cumbersome and people don't use the software."

Scheduling is established by setting priorities for tasks, which helps impose realism on project management. "The software won't let you put everything in as priority number one," Pearce points out. "And because of the portfolio approach, if a strategic client presents you with a deadline, it's possible to see the impact on other projects if your team moves that work up in priority."

Although LiquidPlanner can scale up for large customers, it is well suited to small and midsize businesses (SMBs) because of its simplicity and low cost of entry; more than half of LiquidPlanner customers are SMBs. The company has partnered with Box, a cloud-based solution that provides more extensive document management capabilities, such as versioning to facilitate document sharing as part of collaboration.

The social capabilities of enterprise applications will continue to be extended because of the value that collaboration brings to a wide variety of business activities. Meanwhile, enterprise social software products, which have matured considerably over the past five years, are achieving increasing acceptance by corporations. "Enterprise social software solutions are being used in 67 percent of organizations surveyed in 2012, up from 43 percent in 2011," Thompson of IDC says. "This highlights the fact that social software is becoming part of business processes in the place where work happens."

**Questions:**

1. Analyze the case and interpret it.
2. Write down the case facts.
3. Write down an effective executive summary of given case.

Source: <http://www.kmworld.com/Articles/Editorial/Features/Collaborate-innovate-adapt!--Collaboration-taps-into-social-networks-to-aid-productivity-85789.aspx?PageNum=2>

**13.3 Summary**

- If you have a medium- to large-sized online network, you might have noticed some of your contacts have been developing their own groups in the form of private groups, forums or social networks that are a mixture of free or paid memberships.
- There are several advantages of creating a group.
- Creating a group also has its own disadvantages.
- There are various requisites for a successful group.

- If you've weighed the pros and cons of creating your own group on your website and have decided to go for it, here are some platforms to get you started in creating your group.
- Some good alternatives are there for creating a group on your own website.
- You use Groupware software to determine that progress.
- Some of the most popular online groupware applications are also discussed in this unit.

### 13.4 Keywords

**AirSet:** It is a privately held web services company based in Walnut Creek, California, United States, their service allows you to manage multiple groups in one place.

**ContactOffice:** It is a web application accessible with a web browser, developed by ContactOffice Group.

**Google Sites:** It is an online application that makes creating a team website as easy as editing a document.

**Huddle:** The Huddle software platform provides cloud-based file sharing, file storage, content management, collaboration, task management, meeting organization, discussion boards, custom branding, security and authorization control, as well as an API.

**Nexo:** It allows you to develop a free personalized group Website.

**OpenTeams:** It is an innovative initiative development solution where employees collaboratively seed and mature new ideas for additional revenue, productivity, and cost-savings

**ProjectSpaces:** Simple, secure and powerful online workspace and extranet to help your project teams, workgroups, committees, partners, and others connect, share and collaborate.

**TeamSpace:** It is a web-based collaborative workspace system for managing shared work processes and maintaining shared artifacts in a project typically spanning months or years.

### 13.5 Review Questions

1. Discuss how to create groups on social networks.
2. Explain how to evaluate online groupware.
3. Enumerate the advantages of creating a group.
4. List the disadvantages of creating a group.
5. What are the steps to be taken for creating a successful group?
6. List the platforms for your on-site group.
7. Explain the great alternatives to creating your own group.
8. Describe the concept of groupware.
9. Enumerate the applications of groupware.

### **Answers: Self Assessment**

- |          |         |
|----------|---------|
| 1. False | 2. True |
| 3. True  | 4. True |
| 5. True  | 6. True |

Notes

- |                         |               |
|-------------------------|---------------|
| 7. False                | 8. True       |
| 9. Facebook and Twitter | 10. Groupware |
| 11. Communication       | 12. Personal  |
| 13. Team members        | 14. AirSet    |
| 15. Google Sites        | 16. Nexo      |

### 13.6 Further Readings



Books

- Bill Williams, 2012, *The Economics of Cloud Computing*, Cisco Systems, Inc.
- Borko Furht & Armando Escalante, 2010, *Handbook of Cloud Computing*, Springer.
- Kevin Jackson, 2012, *OpenStack Cloud Computing Cookbook*, Packt Publishing.
- Rajkumar Buyya, James Broberg & Andrzej Goscinski, 2011, *Cloud Computing: Principles and Paradigms*, John Wiley & Sons.
- Sarna, David E.Y., 2010, *Implementing and Developing Cloud Computing Applications*, Taylor & Francis.
- Williams, Mark I., 2010, *A Quick Start Guide to Cloud Computing: Moving Your Business into the Cloud*, Kogan Page Ltd.



Online links

- <http://realities.id.tue.nl/wp-content/uploads/2010/03/pendergast-hayne-1999.pdf>
- <http://www.brighthub.com/office/collaboration/articles/112859.aspx>
- <http://www.scoop.it/t/plate-formes-collaboratives/p/2599506819/collaborating-via-social-networks-and-groupware-evaluating-online-groupware>
- <http://www.tandfonline.com/doi/pdf/10.1080/14703297.2010.518428>

## Unit 14: Collaborating via Blogs and Wikis

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### Objectives

After studying this unit, you will be able to:

- Distinguish between blogs and wikis
- Evaluate blogs for collaboration
- Evaluate wikis for collaboration

### Introduction

Blogs are essentially primary sources and can provide lively insights and perspectives not documented by traditional sources. They compare in some ways to a traditional interview, with the speaker controlling the questions. Ripe for essays and debate, blogs present not only the traditional two sides of an issue, but the potentially thousands of takes. And those takes take less time to appear than documents forced through the traditional publishing or peer review process. Blogs allow scholars and experts written opportunities to loosen their ties and engage in lively conversation.

A wiki is a website, the content of which can be edited by visitors to the site, allowing users to easily create and edit pages collaboratively. This technology therefore has the potential to complement and enhance online collaboration. The simplicity, flexibility and openness of this technology provides higher education with new opportunities for developing online interaction in a way which has not been possible before. Moreover wikis can help provide an efficient, flexible, user-friendly and cost-effective interface for collaboration, knowledge creation and

**Notes**

student interaction. Wikis provide users with freedom of authoring and *in-situ* editing. In comparison with collaboration tools such as blogs and VLE (Virtual Learning Environment) forums, wikis allow the development of content specific websites while other tools tend to be chronologically structured contributions.

In this unit, we will discuss how blogs and wikis are evaluated for collaboration.

**14.1 Distinction between Blogs and Wikis**

Before addressing how to evaluate content on blogs and wikis, let’s consider how to tell them apart. At times, it can be difficult to determine if you are viewing a blog or a wiki. To determine which is which, consider the following:

- Blog content is organized around “news” postings about which readers can comment. Wiki content is organized around topic-based Web pages that are usually edited by groups.
- A blog usually features date-based postings on its main page, organized in reverse chronological order. A wiki looks like a typical website, and usually includes a link for logging in to the site for editors who wish to or are authorized to contribute.
- A blog usually allows readers to comment on its individual postings. Wikis offer comments or “talk” pages for discussion of the content on individual wiki pages.
- Blogs often focus on personal insight, anecdote, or opinion. Wiki content is usually less personal.
- A blog is typically maintained by a single individual, while wikis tend to have numerous contributors. However, this is not a hard-and-fast rule.
- Blog postings are written by the administrator(s) of the blog, and not by the general public. Wikis can be edited by anyone, or by the invitation/authorization of the wiki administrator(s).
- Visible “edit” links are often available to anyone visiting the wiki. Blogs do not allow for public editing.
- The history of wiki page edits can be viewed by visitors. Blogs do not have this feature.
- It is generally easier to identify the name of the individual maintaining a blog. On wikis, the identity of authors/editors may be more difficult to determine as nicknames may be used.

**Self Assessment**

Fill in the blanks:

1. Blog content is organized around ..... postings about which readers can comment.
2. A ..... looks like a typical website.
3. .... often focus on personal insight, anecdote, or opinion.
4. Wiki content is usually less .....
5. Visible ..... links are often available to anyone visiting the wiki.
6. The ..... of wiki page edits can be viewed by visitors.

## 14.2 Evaluating Blogs for Collaboration

Notes

**Blog** is short for weblog. A blog is an online place for public expression and comment. At its most basic, a blog is a kind of public journal, where the blog user (“blogger”) publicly records their thoughts or experiences. Today, blogs are used to record everything from political commentary to software development. Collaborative “group blogs” which have more than one blogger are also common.

### 14.2.1 Points for Assessment

A blog can be set up by anyone and is often used as a means to offer commentary and opinion.

After blogging for a while you need to assess whether or not your blog is on the right track or if adjustments need to be made. The results of your evaluation may be branding changes, setting new goals, a change in theme, or even a complete blog make-over.

“First impressions are lasting impressions”, so they say. The word “**effectiveness**” is the key word when the following points are assessed:

1. Page loading time is a ranking factor. How quickly does the site load?
  - ❖ How many widgets and gadgets are there in the sidebar?
  - ❖ How many scripts are running?
  - ❖ Is there autoplay music?
  - ❖ How much decorative “tat” (clutter) is in sidebars and/or footers?
2. Is the theme in keeping with the content? For example, does the theme in use appropriately reflect and showcase the true nature of the blog content? Or are you looking at a professional content business blog being presented in theme that would better be suited for use on a parenting or personal blog?
3. How is the color scheme for readers? Is it in keeping with the blog post content? Colors evoke emotions and can provoke readers to either move on or to linger and read.
  - ❖ Do the colors chosen evoke a calming mood that encourages to readers to relax and read content? Or do the colors evoke stimulation of emotions that may provoke readers to click out?
  - ❖ Does what’s been placed in the sidebar tend to detract from the blog design and distract readers away from reading content?
4. Does the theme quickly communicate branding and the purpose of the blog to new visitors?
  - ❖ If the theme is not unique, then has it been customized and personalized (e.g., custom header image, logo, unique graphics) to reflect individual branding?
  - ❖ How does the quality of design and the customization aimed at personalizing it compare with other blogs in the same niche?
5. Is the blog search engine optimized?



*Notes* If you are using a WordPress.com theme good SEO is a given. However, going beyond the theme what the blogger has done within that structure is worth evaluating.

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- ❖ Do the URL, Blog Title and Tagline reflect branding?
  - ❖ Is the blogger using basic SEO in posts and on images?
  - ❖ Is the blogger using Categories and Tags appropriately and effectively?
6. How readable is the content by readers of all ages including the visually impaired?
- ❖ Is the background black or dark? If so is the font color easily readable against it?
  - ❖ Is the background “busy” as in patterned and/or extremely colorful? If so then are the fonts easily readable against it?
  - ❖ Is the background distracting? Does it draw the eyes and mind away from the post content?



*Notes* Presbyopia, the loss of up-close focus that forces billions of people to wear reading prescriptions by 40 years old, is commonly considered an inevitable fact of aging. The condition affects 100% of the population by age 50.

7. Are pages being used effectively?
- ❖ Is there an About page with a blogger’s profile, blog description, contact information, and copyright notice?
  - ❖ How is the blog structured? Is it post based, or page based with custom menu?
8. Are navigational aides provided?
- ❖ Does the theme provide next page and previous page links?
  - ❖ Is there a sitemap, archives, categories and tags?
  - ❖ Can readers easily locate deeper content found in earlier posts that doesn’t appear on the front page?
  - ❖ Have links to related sites in the same niche been provided for readers?
9. Is the post content well written, properly “sourced” and are links in working order?
- ❖ Are the tiles attention grabbing and do they accurately reflect the content?
  - ❖ Is the content free of typos, spelling mistakes, grammatical errors?
  - ❖ Are the posts written in an engaging style that flows?
  - ❖ Do the post contain links to sources for verifiability, acknowledgment, examples, and context?
  - ❖ One of the most common problems that readers encounter is dead links. Do an random check for broken and dead links and see what you find.
  - ❖ Are media (images, audio, video) being used effectively?
  - ❖ Do posts contains invitations for readers to participate in discussion and/or requests for reader feedback?
  - ❖ Do posts have social networking sharing buttons?
10. Are the commenting links obvious, inviting and easy to use?
- ❖ Has a commenting policy been provided?

- ❖ Does the blog have a CAPTCHA for commenting?
  - ❖ Does the blogger reply to comments?
11. Is there a means for readers to subscribe to the RSS feed or to subscribe to receive new blog posts by email?
  12. How intrusive are the ads?
    - ❖ Is the blog content above the fold, or does advertising occupy the best real estate positioning on the blog?
    - ❖ Are there pop-ups, pop-unders, toolbars, etc.
    - ❖ Are the ads minimal in number, tasteful in appearance, and in keeping with the content in the blog?



*Task* On the above mentioned points, assess a blog of your choice.

### 14.2.2 Features of the Blog to be Evaluated

Blogs are not equal in terms of the quality of information provided and should always be evaluated carefully. The quality of information relates to the following attributes:

**Relevance:** Information is relevant if it relates to the subject under investigation.

**Accuracy:** Information is accurate if it is factually correct – or at least known not to be factually incorrect.

**Clarity:** Information is clear if it is well written in accordance with the rules for clear and simple writing.

**Brevity:** Information is brief if it is succinct and to-the-point.

**Depth/detail:** Information is detailed if sufficient information is provided to give the reader a clear understanding of the subject matter.

**Timeliness:** Information is timely if it is up-to-date.



*Caution* Some of these attributes conflict – there is a tension between brevity and depth, and it is difficult to maintain a blog's timeliness and accuracy.

### 14.2.3 Criteria for Evaluation

For the purposes of this course you should be able to evaluate blogs according to the following criteria:

**Design:** Blogs should be well designed for speed, accessibility, transparency and clarity.

**Ease of Use (usability):** Generally the same standards are applied as for website usability. However, there is some discussion as to whether this is appropriate. Both sites provide numerous useful links on usability.

**Navigation:** Navigation is one of the most important aspects of designing for any website, but the challenges associated are more sensitive for a blog or any content heavy site. Some designers take it as a mechanical task and they design the navigation accordingly.

Notes



*Notes* However, navigation is as much an art as it is a science, and designers need not limit themselves to default solutions.

**Collaborative Features:** Most blogs support a number of collaborative features, e.g.:

- Readers can **post comments**.
- Blogs may be **jointly authored**.
- There are **links** to similar blogs (blogrolls).
- Content can be **syndicated** via automated systems such as RSS.
- Blogs can comment on (or recirculate) **content from other blogs**.

**Links:** Links are a major component of blogs. They can be made to other blogs or websites and that links may occur in the main text or in a list of links.

**Quality of Information:** Information obtained from blogs must be evaluated critically in the same way as information obtained any other online source. There may be additional difficulties if a blog consists largely of quotations and links.



*Did u know?* One interesting approach is the use of the “Kapoun Criteria”: Accuracy, Authority, Currency, Objectivity and Coverage. This is shown in Table 14.1.

**Table 14.1: Kapoun Criteria**

Evaluation of Web Documents	How to Interpret the Basics
1. Accuracy of Web Documents <ul style="list-style-type: none"> <li>• Who wrote the page and can you contact him or her?</li> <li>• What is the purpose of the document and why was it produced?</li> <li>• Is this person qualified to write this document?</li> </ul>	<b>Accuracy</b> <ul style="list-style-type: none"> <li>• Make sure author provides e-mail or a contact address/phone number.</li> <li>• Know the distinction between author and Webmaster.</li> </ul>
2. Authority of Web Documents <ul style="list-style-type: none"> <li>• Who published the document and is it separate from the "Webmaster?"</li> <li>• Check the domain of the document, what institution publishes this document?</li> <li>• Does the publisher list his or her qualifications?</li> </ul>	<b>Authority</b> <ul style="list-style-type: none"> <li>• What credentials are listed for the authors?</li> <li>• Where is the document published? Check URL domain.</li> </ul>
3. Objectivity of Web Documents <ul style="list-style-type: none"> <li>• What goals/objectives does this page meet?</li> <li>• How detailed is the information?</li> <li>• What opinions (if any) are expressed by the author?</li> </ul>	<b>Objectivity</b> <ul style="list-style-type: none"> <li>• Determine if page is a mask for advertising; if so information might be biased.</li> <li>• View any Web page as you would an infommercial on television. Ask yourself: why was this written and for whom?</li> </ul>
4. Currency of Web Documents <ul style="list-style-type: none"> <li>• When was it produced?</li> <li>• When was it updated?</li> <li>• How up-to-date are the links (if any)?</li> </ul>	<b>Currency</b> <ul style="list-style-type: none"> <li>• How many dead links are on the page?</li> <li>• Are the links current or updated regularly?</li> <li>• Is the information on the page outdated?</li> </ul>

Contd....

<p>5. Coverage of the Web Documents</p> <ul style="list-style-type: none"> <li>• Are the links (if any) evaluated and do they complement the documents' themes?</li> <li>• Is it all images or a balance of text and images?</li> <li>• Is the information presented cited correctly?</li> </ul>	<p><b>Coverage</b></p> <ul style="list-style-type: none"> <li>• If page requires special software to view the information, how much are you missing if you don't have the software?</li> <li>• Is it free or is there a fee to obtain the information?</li> <li>• Is there an option for text only, or frames, or a suggested browser for better viewing?</li> </ul>
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Notes

## Self Assessment

State whether the following statements are true or false:

7. A blog is an online place for public expression and comment.
8. Blogs are equal in terms of the quality of information provided and should always be evaluated carefully.
9. Information is not brief if it is succinct and to-the-point.
10. Information is timely if it is up-to-date.
11. Blogs should be well designed for speed, accessibility, transparency and clarity.
12. Some designers take it as a mechanical task and they design the navigation accordingly.

### 14.3 Evaluating Wikis for Collaboration

A wiki is a publishing platform on which many people can contribute new content and revise existing content. The content benefits from the collective knowledge base and the dynamic nature of the contributions.



*Example:* Wikipedia, wikiHow, Wikimedia Commons.

In our view, wikis represent a technology which can potentially provide an environment that embodies social-constructivist principles since groups of learners can create, revise and insert comments in a single article in a simple manner where the result is immediately obvious (and not hidden in a thread of a forum or blog). Thus learners are actively involved in their own co-construction of knowledge. From a teaching perspective there are associated benefits: tutors can also *insert* feedback at the point required, so the wiki facilitates timely and specific in-task guidance which promotes learning. Importantly, the wiki also tracks all individual contributions and changes.

In essence, wikis help create a dynamic, collaborative learning environment where learning happens through open discussion and exchange of ideas and opinions, collaborative construction and sharing of knowledge, and active participation. This is also exactly the environment needed to promote peer and self-assessment, which Boud and Falchikov (2007) consider one of the keys to self-regulated learning and sustainable assessment.

Indeed, wikis have been used in higher education in a variety of ways.



*Example:* Online collaborative writing, a laboratory notebook, as a knowledge repository, in a project wiki, as a course evaluation tool, as a presentation tool and as a distance learning tool.

Research and evidence suggest that a wiki is an excellent tool for online collaboration in an educational context. However, although the democratisation of knowledge in a wiki affords

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many opportunities, concerns have been expressed regarding possibilities of plagiarism and vandalism (deliberate page defacement).

Whilst it is clear that there is widespread interest in the potential of wikis, we would argue that there needs to be further research into students' own views of adopting this open peer-review style of working, and a need to explore the effectiveness of wikis in promoting a social constructivist learning approach. Given the nature of a wiki, where student contributions are open to all students and staff, this is a particularly important aspect, both from a pedagogical and an affective perspective.

### 14.3.1 Characteristics of Wikis

Wikis generally share the following basic characteristics:

- Most wikis are completely unrestricted, allowing anyone to read, correct, modify, organise or even delete content. This system is self-regulating, with a number of contributors readily correcting errors and modifying content. However, in a learning context wikis can be restricted to small groups of contributors.
- Wikis allow distributed teams to write and edit documents collaboratively over the internet in a shared online workspace. Content can usually be edited from anywhere in the world through a simple web browser interface, obviating the need for additional software or a third party webmaster.
- Content is usually created using a simplified hypertext format, making it easy for nontechnical users to contribute. Some wiki technologies use a WYSIWYG interface with toolbars, completely removing the need for detailed technical knowledge.
- Changes to content are documented and stored each time a revision is made, allowing users to view or revert to earlier versions of a page. This makes it possible to track changes by multiple users over a period of time. Pages that are deliberately vandalised or deleted can be easily rolled back to a previous version.
- Pages within a wiki are usually linked with each other, allowing for organic connections between various content areas. Ideas are expressed as relationships between pages, thus creating a network of interrelated topics.
- Wikis have a spatial rather than temporal structure because changes occur not according to time, but according to the evolving spatial relationships between cross-linked content.
- Wikis provide a space where knowledge is networked and contextualised, but remains ephemeral: it changes and can be changed and mediated by the community.
- Content is posted immediately, eliminating the need for distribution with the associated risk of virus transmission.
- Modular construction means that wikis can be simple or complex to meet user needs and skill levels. To overcome complexity most wikis offer a classic full text or title search for wiki pages.

### 14.3.2 Points for Evaluation

To evaluate the content on a wiki, look for these clues:

- The sponsorship of the wiki. This may be explained on an "About" or similar page.
- The wiki, whether academic or popular, suits your needs.

- The identity of those who are able to edit or add content. If it is a select group, try to determine if they have expertise in the wiki's topic.
- Changes to the page appear reasonable.
- The material you are interested in cites sources that you can use to double-check the information.
- There are guidelines for contributors to follow.
- There is monitoring of content by those responsible for the wiki, and you can determine who these authors are (often you can't).
- The currency of the edits. Some wiki platforms offer a "History" or similar tab that allows you to view a sequential list of changes.

### Self Assessment

Fill in the blanks:

13. A ..... is a publishing platform on which many people can contribute new content and revise existing content.
14. Some wiki technologies use a ..... interface with toolbars, completely removing the need for detailed technical knowledge.
15. .... means that wikis can be simple or complex to meet user needs and skill levels.



Case Study

### Learning with Blogs and Wikis

**F**ew ideas about teachers' professional growth resonate with me more than those of Richard Elmore, professor of educational leadership at Harvard, who has gone as far as to argue that school structures make learning for adults unlikely at best and nothing short of impossible at worst. In a 2002 report for the Albert Shanker Institute, Elmore wrote, as expectations for increased student performance mount and the measurement and publication of evidence about performance becomes part of the public discourse about schools, there are few portals through which new knowledge about teaching and learning can enter schools; few structures or processes in which teachers and administrators can assimilate, adapt, and polish new ideas and practices; and few sources of assistance for those who are struggling to understand the connection between the academic performance of their students and the practices in which they engage.

So the brutal irony of our present circumstance is that schools are hostile and inhospitable places for learning. They are hostile to the learning of adults and, because of this, they are necessarily hostile to the learning of students.

To assert that schools are hostile to learning is a bold statement-but if you've worked in education for any length of time, chances are you were nodding your head as you read Elmore's thoughts. Adult learning is often pushed aside in schools as educators sprint through the day, worried about leaving no child behind.

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The few moments that we can steal for professional development are usually spent in sessions with experts pitching the latest silver bullet. Teachers rarely get to self-select learning opportunities, pursue professional passions, or engage in meaningful, ongoing conversations about instruction.

What makes professional development even more frustrating to practitioners is that most of the programs we are exposed to are drawn directly from the latest craze sweeping the business world. In the past 10 years, countless schools have read *Who Moved My Cheese?*, studied *The Seven Habits of Highly Effective People*, learned to have "Crucial Conversations," and tried to move "from Good to Great."

Although most of my colleagues recognize that business-driven reform efforts are likely to have little effect on student learning, they are largely unwilling to challenge the status quo. "Nothing's going to change," they insist. "This is how professional development has always been done. Just bring a big stack of papers to grade, and you'll keep busy." A history of poor professional development experiences has left them jaded and stagnant, groaning when given "opportunities to learn."

**Changing Times, Changing Tools**

Times have changed in two significant ways, however, since Elmore began describing the hostile learning environments that have often held schools back. First, there's a new emphasis on the importance of collaborative learning among members of close-knit teams in schools. School leaders are beginning to believe in the human capacity of their faculties and are structuring opportunities for teachers to reflect on instruction together. These joint efforts are targeted and specific, increasing educators' motivation and engagement.

Second, digital tools now help fulfill Elmore's desire for fresh "portals through which new knowledge about teaching and learning can enter schools." Specifically, thousands of accomplished educators are now writing blogs about teaching and learning, bringing transparency to both the art and the science of their practice. In every content area and grade level and in schools of varying sizes and from different geographic locations, educators are actively reflecting on instruction, challenging assumptions, questioning policies, offering advice, designing solutions, and learning together. And all this collective knowledge is readily available for free.

With the investment of a bit of time and effort, I've found a group of writers to follow who expose me to more interesting ideas in one day than I've been exposed to in the past 10 years of costly professional development. Professional growth for me starts with 20 minutes of blog browsing each morning, sifting through the thoughts of practitioners whom I might never have been able to learn from otherwise and considering how their work translates into what I do with students.

This learning has been uniquely authentic, driven by personal interests and connected to classroom realities. Blogs have introduced a measure of differentiation and challenge to my professional learning plan that had long been missing. What's more, the readers of my own blog challenge my thinking in provocative comments day after day. Mike, a reader from Texas, jumps in on conversations regarding teacher empowerment. K. Borden, a parent from the school district in which I work, pushes my thinking about holding schools accountable for improvement. Steve, a school district leader in North Carolina, lends expertise to conversations about curriculum, and Bob Heiny, a longtime education researcher, has unique perspectives on the classroom uses of technology. I've met only a few of these people in person, yet they are a vibrant part of my own professional learning and growth.

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**Reading Blogs**

Whenever I suggest that peers embrace blogs as a source of continual learning, however, their first reaction is typically, "I don't have the time to visit a dozen Websites every day to read articles-I've got plans to write, papers to grade, parents to call, and a family to raise!"

That's when I introduce them to RSS (Really Simple Syndication) feed readers. Feed readers are probably the most important digital tool for today's learner because they make it easy to sift through the amazing amount of content that is being continually added to the Internet.

Also known as aggregators, feed readers are free tools that can automatically check nearly any website for new content dozens of times each day, limiting the amount of time spent browsing and customizing learning experiences. With a feed reader, learning from edubloggers goes from a frustrating search through thousands of links to quickly browsing the thoughts and ideas of trusted writers.

Although there are dozens of different feed reading services to choose from, Pageflakes ([www.pageflakes.com](http://www.pageflakes.com)) is my favorite primarily because it has a visual layout that I find easy to read. Pageflakes has also developed a teacher version of its tool (<http://teacher.pageflakes.com>) that includes an online grade tracker, a task list, and a built-in writing tutor. What I like best is that interested Pageflakes users can actually write a blog and create a discussion forum directly in their feed reader, creating an all-in-one digital home for the reading, writing, and speaking opportunities of both teachers and students.

**Getting Started as a Reader**

To incorporate blogs into your daily efforts to grow as a professional, consider the following steps:

- Start by using a feed reader as a learning tool for a few weeks. Find several blogs that target educators in your grade level or content area and organize them with an aggregator of your choice. The search for blogs probably best begins at the SupportBlogging wiki (<http://supportblogging.com>), which includes a list of hundreds of blogs broken down into specific categories, such as education blogs, principal blogs, teacher blogs, classroom blogs, and librarian blogs. Aggregator services-such as Pageflakes, Google Reader (<http://reader.google.com>), and Bloglines ([www.bloglines.com](http://www.bloglines.com))-have extensive tutorials designed to help new users create a collection of active feeds.

If you're not sure where to begin, explore the blogs that I've organized in my professional Pageflake at [www.pageflakes.com/wferriter/16618841](http://www.pageflakes.com/wferriter/16618841). I read these blogs all the time. Some leave me challenged. Some leave me angry. Some leave me jazzed. All leave me energized and ready to learn more. School leaders may be interested in the collection of blogs at [www.pageflakes.com/wferriter/23697456](http://www.pageflakes.com/wferriter/23697456).

- Dedicate a few minutes each day to browsing the changing content in your aggregator. Notice how new posts are added automatically. Make a commitment to reading two or three entries each week. Find topics that motivate you and challenge your thinking. Leave comments for the authors and see whether they respond. Engage other readers in conversations or friendly debate.
- Tell others how much you enjoy having your thinking stretched by the blogs you read. Use your enthusiasm to generate buzz about the potential for making professional learning organic, easy, and fun.

*Contd....*

Notes

- Share your feed reader with your learning team and begin to explore together. Ask peers about the most interesting articles they're reading. Make it a point to talk with a colleague about a shared blog post at least twice each week.

Over time, you'll start to see a real change in the quality of the conversations that you're having with your peers. Instead of simply chatting about your weekend, you'll find yourself debating the merits of the new practices that you've stumbled across online. For perhaps the first time, your learning team will work from a common foundation of challenging ideas that can stretch your cooperative thinking and growth.

#### Writing Blogs and Wikis

Although reading blogs is the best way to start incorporating 21st-century tools into your plan for professional learning, writing your own blog about instruction can be equally powerful. Bloggers spend significant time pushing their own thinking-and having their thinking pushed by others. They respond to comments and link to other writers, connecting to and creating interesting ideas. Some develop curriculum and instructional materials together. Others review resources and debate the merits of the individual tools of teaching. Philosophical conversations about what works in schools are common as teachers talk about everything from homework and grading practices to school and district policies that affect teaching and learning. Blogs become a forum for public articulation-and public articulation is essential for educators interested in refining and revising their thinking about teaching and learning.

In today's digital age, free digital tools like blogs and wikis ensure that your voice can be heard without cost. All you need are a few good ideas, a bit of determination, and some basic word-processing skills.

#### Writing Blogs

If you're confident in your writing ability, consider starting your own blog. Although becoming a blogger may sound intimidating, most blog services are user-friendly. After you create an account, you'll be working in windows that look like those in any word-processing application. Familiar toolbars enable you to change fonts, add links, and center content. When you're finished writing, click on a "publish" button and your work is automatically posted to the Web.

Explore the following blog services:

- **Typepad ([www.typepad.com](http://www.typepad.com)):** Typepad is a blogging service that requires a paid subscription, but it may be worth the investment because it comes with a broad range of technical support and file storage options that free blogging services don't always provide. I've chosen Typepad for my own blog, The Tempered Radical ([http://teacherleaders.typepad.com/the\\_tempered\\_radical](http://teacherleaders.typepad.com/the_tempered_radical)).
- **Blogger ([www.blogger.com](http://www.blogger.com)):** The main advantage of Blogger is that it's a free Google product. Google users need only one username and password to sign in for all of their Google services, which makes it as close as you can get to one-stop shopping for digital tools. For an example of Blogger in action, check out The Fischbowl at <http://thefischbowl.blogspot.com>.
- **Edublogs ([www.edublogs.org](http://www.edublogs.org)):** Edublogs is one of the only free blogging services that is completely dedicated to educators. The advantage of creating your own digital home with Edublogs is that you'll be instantly connected to a community of like-minded writers who might just become your readers. For an example of Edublogs in action, check out In Practice at <http://inpractice.edublogs.org>.

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### Writing Wikis

If you've just begun to dip your toes into the digital waters, work with your peers to create a collaborative writing wiki. Wikis are editable Websites and, like blogs, they require little technical skill to master. Wiki toolbars look just like those in common word-processing programs; when you're finished saving contributions to a wiki page, your work is automatically posted online.

The difference between a wiki and a blog is that wikis are designed for collaboration among groups of users. Anyone with the shared wiki password can edit the content on a wiki at any time. Wikis also provide discussion boards for every page, enabling users to engage in ongoing conversations about their developing project. Some teams of teachers—such as the teachers creating *Digitally Speaking* (<http://digitallyspeaking.pbwiki.com>)—use wikis to reflect on the characteristics of effective instruction. Others use them to create warehouses of materials among teachers working in the same content area (<http://cesa5mathscience.wikispaces.com>) or as a source for teachers and teams creating entire classroom textbooks (<http://anatowiki.wetpaint.com/?t=anon>).

Consider finding a few peers to write about teaching and learning together. Divide your topic of interest into subtitles or sections. Teachers could be responsible for creating content for their area of expertise; they could generate key ideas, add links to external resources, upload appropriate documents, or embed interesting videos. Then allow users who are fluent with language to polish your final text. Find members who are sticklers for spelling and grammar and turn them loose.

On a wiki, the writing process is far less intimidating than on a blog because you're not responsible for an entire selection all by yourself. Instead, you'll reflect with colleagues—which in and of itself is a powerful form of professional growth.

Several wiki services are available:

- **PB Wiki (<http://pbwiki.com>):** This is quickly becoming one of the most popular wiki services for educators because it's just plain easy to use. For an example of PB Wiki in action, check out *Stay Current* at <http://staycurrent.pbwiki.com>.
- **Wikispaces ([www.wikispaces.com](http://www.wikispaces.com)):** This is one of the first wiki services that educators embraced. As a result, there are literally thousands of Wikispaces that you can look to for samples of what's possible. For an example of Wikispaces, check out *Digiteen* at <http://digiteen.wikispaces.com>.
- **Wet Paint ([www.wetpaint.com](http://www.wetpaint.com)):** This is one of the newest wiki services available to educators, but it's also one of the most intriguing. With an emphasis on tools for collaboration and professional templates, Wet Paint wikis will make you look good. For an example of Wet Paint in action, check out the *Anatowiki* at <http://anatowiki.wetpaint.com>.

### Elevating Voice, Improving Practice

Although I enjoy the opportunities for reflection and articulation that digital tools have made possible, I see even greater potential in using blogs and wikis to gain influence as a teacher leader. Early on, I realized that I had valuable experiences to share with everyone from parents to policy-makers. Now, in just over two years, my blog has attracted nearly 350 regular readers. No longer do teachers have to sit unsatisfied, wishing that we had more influence over our profession. Blogging has made it possible for all of us to be publishers and to elevate our voices to improve classroom practice.

*Contd....*

Notes

Digital tools have also changed who I am as an instructor because I've introduced these tools to my students. Together, we use feed readers to explore collections of student blogs ([www.pageflakes.com/wferriter/20982438](http://www.pageflakes.com/wferriter/20982438)) and organize resources on topics connected to our curriculum, such as biofuels and global warming ([www.pageflakes.com/wferriter/22534539](http://www.pageflakes.com/wferriter/22534539)). We write a classroom blog reflecting on current events (<http://guysread.typepad.com/theblurb>) and use wikis to collaborate around content (<http://carbonfighters.pbwiki.com>). I teach my students to challenge the thinking of digital peers with their comments-and to enjoy the challenges that others make to their own electronic thinking. At the same time, my students are learning to create, communicate, and collaborate-and to manage and evaluate information found online.

All these skills are essential for students to succeed in the most progressive workplaces today and the most common workplaces tomorrow, in which corporations open their companies and encourage digital collaboration across borders, primarily because they recognize that the human capital beyond an organization will always be greater than the human capital within. As Don Tapscott and Anthony Williams, authors of *Wikinomics* (2008), write,

“A power shift is underway and a tough new business rule is emerging: Harness the new collaboration or perish. Those who fail to grasp this will find themselves ever more isolated-cut off from the networks that are sharing, adapting, and updating knowledge to create value. (Kindle location 268-271)”

Blogs and wikis are changing who we are as learners, preparing us for a future driven by peer production and networked learning. All you need to get started is a willingness to explore and a sense of the kinds of tools that make this work easy.

**Questions:**

1. Analyze the case and interpret it.
2. Write down the case facts.
3. Write down an effective executive summary of given case.

Source: <http://www.ascd.org/publications/educational-leadership/feb09/vol66/num05/Learning-with-Blogs-and-Wikis.aspx>

### 14.4 Summary

- At times, it can be difficult to determine if you are viewing a blog or a wiki. So, this unit discusses some of the distinctions between the two.
- A blog is an online place for public expression and comment.
- After blogging for a while you need to assess whether or not your blog is on the right track or if adjustments need to be made.
- The quality of information should possess some attributes.
- You should be able to evaluate blogs according to certain criteria.
- A wiki is a publishing platform on which many people can contribute new content and revise existing content.
- Wikis generally share some basic characteristics.
- To evaluate the content on a wiki, some clues should be looked into.

## 14.5 Keywords

**Blogs:** These are essentially primary sources and can provide lively insights and perspectives not documented by traditional sources.

**Brevity:** Information is brief if it is succinct and to-the-point.

**Collaborative "Group Blogs":** These blogs have more than one blogger are also common.

**Modular Construction:** It means that wikis can be simple or complex to meet user needs and skill levels.

**Wiki:** It is a website, the content of which can be edited by visitors to the site, allowing users to easily create and edit pages collaboratively.

## 14.6 Review Questions

1. Distinguish between blogs and wikis.
2. Evaluate blogs for collaboration.
3. Enumerate the points for assessment of blogs.
4. List the features of the blog to be evaluated.
5. What is the criteria for evaluation of blogs?
6. Enumerate the characteristics of Wikis.
7. Evaluate the wikis for collaboration.

### Answers: Self Assessment

- |                          |             |
|--------------------------|-------------|
| 1. "news"                | 2. wiki     |
| 3. Blogs                 | 4. personal |
| 5. "edit"                | 6. History  |
| 7. True                  | 8. False    |
| 9. False                 | 10. True    |
| 11. True                 | 12. True    |
| 13. wiki                 | 14. WYSIWYG |
| 15. Modular construction |             |

## 14.7 Further Readings



*Books*

Bill Williams, 2012, *The Economics of Cloud Computing*, Cisco Systems, Inc.

Borko Furht & Armando Escalante, 2010, *Handbook of Cloud Computing*, Springer.

Kevin Jackson, 2012, *OpenStack Cloud Computing Cookbook*, Packt Publishing.

Rajkumar Buyya, James Broberg & Andrzej Goscinski, 2011, *Cloud Computing: Principles and Paradigms*, John Wiley & Sons.

**Notes**

Sarna, David E.Y., 2010, *Implementing and Developing Cloud Computing Applications*, Taylor & Francis.

Williams, Mark I., 2010, *A Quick Start Guide to Cloud Computing: Moving Your Business into the Cloud*, Kogan Page Ltd.



Online links

<http://office.microsoft.com/en-in/sharepoint-server-help/boosting-collaboration-with-wikis-blogs-my-sites-ratings-and-tags-HA101889364.aspx>

<http://www.ascilite.org.au/ajet/ajet26/judd.html>

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1564136/>

<http://www.tandfonline.com/doi/pdf/10.1080/14703297.2010.518428>

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