Chapter 1 : News, Tips, and Advice for Technology Professionals - TechRepublic

Cloud computing is a process that entails accessing of services, including, storage, applications and servers through the Internet, making use of another company's remote services for a fee.

Join For Free Discover a centralized approach to monitor your virtual infrastructure, on-premise IT environment, and cloud infrastructure â€" all on a single platform. This enables a company to store and access data or programs virtually, i. Cloud computing has its roots as far back in s when mainframe computers came into existence. At that time, several users accessed the central computer via dummy terminals. The only task these dummy terminals could perform was to enable users access the mainframe computer. The prohibitive costs of this mainframe devices did not make them economically feasible for organizations to buy them. That was the time when the idea of provision of shared access to a single computer occurred to the companies to save costs. This allowed for simultaneous operation of more than one OS. Guest Operating Systems could be run on every VM, with their own memory and other infrastructure, making it possible to share these resources. This caused the concept of virtualization in computing to gain popularity. The s witnessed telecom operators begin offering virtualized private network connections, whose quality of service was as good as those of point-to-point dedicated services at a lesser cost. The other catalysts were grid computing, which allowed major issues to be addressed via parallel computing; utility computing facilitated computing resources to be offered as a metered service and SaaS allowed subscriptions, which were network-based, to applications. Cloud computing, therefore, owes its emergence to all these factors. The three prominent types of cloud computing for businesses are Software-as-a-Service SaaS , which requires a company to subscribe to it and access services over the Internet; Infrastructure-as-a-Service IaaS is a solution where large cloud computing companies deliver virtual infrastructure; and Platform-as-a-Service PaaS gives the company the freedom to make its own custom applications that will be used by all its entire workforce. Clouds are of four types: Through public cloud, a provider can offer services, including storage and application, to anybody via the Internet. They can be provided freely or charged on a pay-per-usage method. Public cloud services are easier to install and less expensive, as costs for application, hardware and bandwidth are borne by the provider. They are scalable, and the users avail only those services that they use. A private cloud is referred to as also internal cloud or corporate cloud, and it called so as it offers a proprietary computing architecture through which hosted services can be provided to a restricted number of users protected by a firewall. A private cloud is used by businesses that want to wield more control over their data. As far as the community cloud is concerned, it is a resource shared by more than one organization whose cloud needs are similar. A combination of two or more clouds is a hybrid cloud. Here, the clouds used are a combination of private, public, or community. Cloud computing is now being adopted by mobile phone users too, although there are limitations, such as storage capacity, life of battery and restricted processing power. Cloud services have made it possible for small and medium businesses SMBs to be on par with large companies. Mobile cloud computing is being harnessed by bringing into existence a new infrastructure, which is made possible by getting together mobile devices and cloud computing. This infrastructure allows the cloud to execute massive tasks and store huge data, as processing of data and its storage do not take place within mobile devices, but only beyond them. The emergence of 4G, Worldwide Interoperability for Microwave Access Wimax , among others, is also scaling up the connectivity of mobile devices. The main benefits of using cloud computing by companies are that they need not buy any infrastructure, thus lowering their maintenance costs. They can do away with the services used when their business demands have been met. It also gives firms comfort that they have huge resources at beck and call if they suddenly acquire a major project. On the other hand, transferring their data to cloud makes businesses share their data security responsibility with the provider of cloud services. This means that the consumer of cloud services reposes lot of trust on the provider of those services. Cloud consumers control on the services used is lesser than on on-premise IT resources.

Chapter 2 : The Evolution Of Cloud Computing Markets

Share The evolution of cloud computing share tweet Linkedin Reddit Pocket Flipboard Email Martin Fink, CTO and director of HP Labs shows a Machine system on a board at HP's Discover conference.

What to Expect in Feb 14, We have seen it, heard it, and done it. But, do we know what it is? We have been using cloud computing unknowingly through Gmail and Google docs, yet we never thought that these were cloud computing services. The telecommunication companies offered Virtual Private Network with good quality at affordable prices. The symbol of the cloud represented the demarcation point which was the sole responsibility of the provider. Cloud computing manages the servers and network infrastructure management. It has essentially evolved from various computing technologies like grid computing, utility computing, parallel computing, and virtualization. The most recent development of cloud computing has evolved from the Web2. Examples of Web 2. The evolution of cloud computing can be bifurcated into three basic phases: The Idea Phase- This phase incepted in the early s with the emergence of utility and grid computing and lasted till pre-internet bubble era. Joseph Carl Robnett Licklider was the founder of cloud computing. The Pre-cloud Phase- The pre-cloud phase originated in the and extended to In this phase internet as the mechanism to provide Application as Service. What is Cloud Computing technology? Cloud computing is a technology that puts your entire computing infrastructure in both hardware and software applications online. Gmail, Yahoo mail, Facebook, Hotmail, Orkut, etc are all the most basic and widely used examples of cloud computing. Typically, cloud services charges its customers on a usage basis. Hence it is also called Software as a Service SaaS. It aims to provide infrastructure and resources online in order to serve its clients; Dynamism, Abstraction and Resource Sharing. Varieties of Cloud Computing Cloud Computing is classified under various heads. The customer has no visibility over the location of the cloud computing infrastructure. It is based on the standard cloud computing model. As the name suggests, the private cloud is dedicated to the customer itself. These are more secured as compared to public clouds. It uses the technology of virtualization. Example of private cloud technology is Eucalyptus and VMware. Companies use their own infrastructure for normal usage and hire the cloud at events of heavy network traffic or high data load. IT executives and entrepreneurs are turning more of their attention on how they use technology to achieve their business goals for Below is the list of a few trends in cloud computing that business should prepare for in the coming year: Cloud Storage Capacity As cloud services progressively turn into an essential part of doing business, we anticipate data storage to develop exponentially in the coming time. To achieve this, organizations will arrange more data centers online with bigger capacity storage equipment. As indicated by the Cisco analysis , the aggregate amount of data stored in the data centers would be EB, while worldwide storage capacity would reach These numbers are set to develop in to an expected aggregate storage limit of 1. While the owners of data centers are going to increase the available storage, forward-thinking organizations will have the capacity to use that space to fulfill their requirements. For instance, organizations that work with big data will utilize this expanded space to store large data indexes or sets and perform analytics on them, and reap valuable insights into areas, for example, client behavior, human frameworks, and strategic financial investment. For small private companies, expanded storage capacity implies that will give custom or bespoke storage alternatives at far lower costs than were accessible in Better Internet Quality and the Rise of 5G Similarly as the measure of data produced and stored around the globe is expected to grow enormously in , purchasers will also expect better and quicker connections from network providers. Keen entrepreneurs will move rapidly to reexamine and overhaul their SaaS, PaaS, and websites to be more responsive. The IOE and IOT will additionally take advantage of the faster network by allowing companies in this space to receive and deliver data efficiently in the real time. Role of Cloud Computing in the Internet of Things 3. While industry experts expect that IoT will see its own development, nonstop innovations in the real-time data analytics and the developing technology cloud computing are set to push the IOE to fore in IoE depends on the machine to machine interaction, process, and data and how people speak with everything in their condition. Cloud computing will play a major role as the IoE forms into complex frameworks aimed at simplifying all

interactions. For people, this implies we will have the capacity to interact cleverly with each gadget in a networkâ€"simply like IoT. People will have the capacity to interact effectively in human-to-human communications. IoE will also furnish organizations with more insight into how shoppers relate to their services or products, customer care units, and each other. This information would then be used in numerous ways, including simplifying client experience through automation and the utilization of savvy robots. Japanese hospitality robots, which can welcome guests, chat in real time, and give certain services, give a sneak look into what IoE could achieve in the future. Security challenges and the cloud Because cyber-attacks are turning out to be more complex, security examiners in government, private and public areas will also need to become more refined and auspicious in their techniques for recognizing and preventing attacks. Organizations will recognize the need of investing in tools like security data, event management and malware detection frameworks as crucial defense mechanisms for digital security. Wrapping up Finding and adopting latest trends of cloud computing is crucial for organizations at all levels. From a technology that was initially used for cost savings and efficiency, the cloud has turned into an innovation powerhouse. While the future of cloud computing can be difficult to predict, it is sure that the technology will continue having a significant effect on the business process.

Chapter 3 : Evolution of Cloud Computing

This is an attempt to communicate Holo in simple, clear language (with a bit of playfulness to keep it entertaining). Holo is launching a peer-to-peer app hosting marketplace. Today, application.

It is currently evolving in multiple directions. Edge Computing will reduce the need of data centres whenever network latency or availability become critical. Big Servers will eventually replace smaller servers as the standard fabric the data centre. But it actually much more: Cloud Computing is to IT what mechanisation has been to agriculture or robots to mechanical industries. What matters is full automation of the complete life cycle of an IT service. And the core value in Cloud Computing is the software that is used to produce Cloud Computing, not the hardware infrastructure. Each time SlapOS plays the same role: Anyone willing to create its own cloud operator can achieve this goal in a couple of hours or days thanks to SlapOS. This fact is now well known by CIOs of large companies who failed creating their own cloud platform. Open Hardware not only at Facebook A second evolution of Cloud Computing is the growing adoption of hardware self-designed by big platforms, some of which was released under open hardware licenses. Supermicro was actually the No1 choice of most cloud companies because it provided excellent features at very competitive price. Under the leadership of Facebook, a community of hardware designers has created a new way to deploy servers and data centres in a cost efficient way: Thanks to Linuxboot, the boot process of the server can be controlled more precisely. Linuxboot is now adopted by Google, which incidentally joined OCP after designing its own hardware. Edge Computing for low latency and resiliency Edge computing - also known as Fog Computing - is the third evolution of Cloud Computing. It is a kind of Cloud without data centre. Nexedi is one of the inventors of Edge computing with SlapOS about 10 years ago. The first commercial deployment of SlapOS was made with a French telecommunication company. Edge Computing servers can be located in different locations: For most applications, 10 ms is enough. Regional core network seems the most efficient place to deploy ab edge architecture. A country such as Germany could be covered with 4 locations per telecom operator. In China, this would be about locations per telecom operator. Applications such as content delivery, buffering or resilient routing could be implemented by a small gateway. More complex applications such as hard real time control of actuators may require bigger on premise servers. And for applications that require no latency at all, direct deployment into the sensor seems to be the only way. This type of architecture is equivalent to the regional core network approach but with more sites. It is thus possible to implement complex applications that run entirely offline or which dynamic code is entirely executed in the Web Browser. Service Workers are a form of implementation of Edge Computing Case 4 "at the sensor or at the client". This should be compared to Google Drive of Microsoft Office Online which both require huge data centres and cloud infrastructures to operate, because in their case, code is executed mostly on the server side. Service Workers should thus be considered as the fourth evolution of cloud computing. They will eventually kill many server based business models and replace them with client Web Browser based approaches. They will let small companies such as Nexedi compete against big Cloud players without having to depend on costly infrastructure. Server based infrastructure at the data centre or at the edge regional, premise will thus likely look like increasingly similar to OCP hardware used by Facebook for its own big data infrastructure. This is the reason why Rapid. Here is a tentative list use cases that will remain on the Cloud: We could also add some cases where networking is the blocking factor: After graduating in mathematics and computer science at ENS Paris , he started his career as a civil servant at the French Ministry of Economy. In parallel, he led with Hartmut Pilch FFII the successful campaign to protect software innovation against the dangers of software patents. The campaign eventually succeeeded by rallying more than The Proposed directive on the patentability of computer-implemented inventions was rejected on 6 July by the European Parliament by an overwhelming majority of to 14 votes, showing how small companies can together in Europe defeat the powerful lobbying of large corporations. Since then, he has helped Nexedi to grow either organically or by investing in new ventures led by bright entrepreneurs.

Chapter 4 : The Evolution of the Cloud Computing Market - Thomas Bittman

The evolution of cloud computing can be bifurcated into three basic phases: 1. The Idea Phase - This phase incepted in the early s with the emergence of utility and grid computing and lasted till pre-internet bubble era.

It acted as a primitive Cloud with two or three people accessing it. What could such an unrealistic, impossible-to-pay-for, fantasy of the future look like? The Intergalactic Computer Network, otherwise known as the Internet, is necessary for access to the Cloud. The meaning of Virtualization began shifting in the s, and now describes the creation of a virtual machine, that acts like a real computer, with a fully functional operating system. The use of virtual computers became popular in the s, leading to the development of the modern Cloud Computing infrastructure. The Late s In its early stages, the Cloud was used to express the empty space between the end user and the provider. The Cloud gained popularity as companies gained a better understanding of its services and usefulness. In , Salesforce became a popular example of using Cloud Computing successfully. They used it to pioneer the idea of using the Internet to deliver software programs to the end users. The program or application could be accessed and downloaded by anyone with Internet access. Businesses could purchase the software in an on-demand, cost-effective manner, without leaving the office. The Early s In , Amazon introduced its web-based retail services. Soon after, other large organizations followed their example. In , Amazon launched Amazon Web Services , which offers online services to other websites, or clients. In the same year, Google launched the Google Docs services. Google Docs was originally based on two separate products, Google Spreadsheets and Writely. Google purchased Writely, which offers renters the ability to save documents, edit documents, and transfer them into blogging systems. These documents are compatible with Microsoft Word. Google Spreadsheets acquired from 2Web Technologies, in is an Internet-based program allowing users to develop, update, and edit spreadsheets, and to share the data online. The spreadsheets can be saved in an HTML format. In , IBM, Google, and several universities joined forces to develop a server farm for research projects needing both fast processors and huge data sets. The universities immediately realized computer experiments can be done faster and for less money, if IBM and Google were supporting their research. Since much of the research was focused on problems IBM and Google had interests in, they also benefitted from the arrangement. Many of its most innovative features focused on the needs of major businesses. Then, Apple launched the ICloud , which focuses on storing more personal information photos, music, videos, etc. Also, during this year, Microsoft began advertising the Cloud on television, making the general public aware of its ability to store photos, or video, with easy access. What to Expect A customer using a Public Cloud service can have three basic expectations. First, customers rent the services, instead of purchasing hardware and software to accomplish the same goal. Second, the vendor is responsible for all the administration, maintenance, capacity planning, backups, and troubleshooting. And finally, for many business projects, it is simply faster and easier to use the Cloud. It comes with huge amounts of storage, the ability to handle multiple projects, and more availability to a variety of users, simultaneously. There are essentially two kinds of Public Clouds. One serves individuals for personal use, and one serves businesses. Cloud Computing storage for personal use allows easy access and file sharing. Data stored on the Cloud, such as photographs and music, can be shared with friends using a smart phone or a friends laptop, while protecting personal data from loss and damage. The services offered by the business Cloud are quite different, and fall into three basic categories of service: IaaS Infrastructure-as-a-Service deals with raw computing capacity. IaaS is the most basic service, and provides a server, or servers, in the cloud, along with storage. IaaS customers are often tech companies that typically have a great deal of IT expertise. The goal is to have access to computing power, without the responsibilities of installation or maintenance. PaaS Platform-as-a-Service supports writing software for computer systems that need it. This Cloud-based service lets businesses write software for integrating existing applications, or develop custom applications. PaaS environments are equipped with software development technologies, such as. When the code is finished, the service provider will host it, making it available to other internet users. Currently, PaaS is the smallest part of the Cloud Computing market, and has been used by businesses wanting to outsource part of their

infrastructure. This part of the Cloud is the largest and most developed. Security By , Cloud Computing had developed its basic features, and security had become the primary focus. Cloud security has become a fast-growing service, because of its importance to customers. Cloud security has advanced significantly in the last two years, and now provides protection comparable to traditional IT security systems. This includes the protection of critical information from accidental deletion, theft, and data leakage. Having said that, security is, and may always be, the primary concern of most Cloud users. Private Clouds Currently, businesses can develop a Private Cloud system, designed for their particular needs. These Private Clouds store, and can share, sensitive data. Much of the modern business consumer market relies on Cloud services. Private Cloud Computing is currently used for email, to log-in on online gaming platforms, and for Facebook. These Private Clouds are basically data centers, using many of the basic Cloud technologies. Private Clouds offer all the advantages of a Public Cloud, but have the advantage of controlling security and privacy concerns. The situation, however, leads to a bit of a dilemma. Over time, Public Cloud Computing companies, who are intensely competitive, will expand their scalability and lower prices. Many Private Cloud owners will probably not be able to keep up, after having invested a small fortune in their own system. It must also be understood a Private Cloud could suffer the same kind of problem, quite possibly with a longer outage.

Chapter 5 : A history of cloud computing

Bob O'Donnell is the president and chief analyst of TECHnalysis Research, LLC a technology consulting and market research firm that provides strategic consulting and market research services to the technology industry and professional financial community.

Enjoy this article as well as all of our content, including E-Guides, news, tips and more. Step 2 of 2: You forgot to provide an Email Address. This email address is already registered. You have exceeded the maximum character limit. Please provide a Corporate E-mail Address. Please check the box if you want to proceed. I agree to my information being processed by TechTarget and its Partners to contact me via phone, email, or other means regarding information relevant to my professional interests. I may unsubscribe at any time. For CIOs, it is no longer a question about whether or not cloud is something they should be doing, but how quickly they can get there and how much of their IT estate could and should be shifted off-premise. Here, we take a look over some of the major milestones in the history of cloud computing and its impact on the enterprise IT and supplier landscape over the years. Who invented cloud computing? His vision was for everyone on the globe to be interconnected and accessing programs and data at any site, from anywhere, says Susan Bowen, vice-president and general manager at managed service provider Cogeco Peer 1. Another big milestone in SaaS came in , as Web 2. Microsoft has also emerged as a force to be reckoned with here, as the firm has looked to retain its hold on the business applications market by going head-to-head with G Suite over the years with its own cloud-based Office offering. As enterprises have become increasingly accustomed to the pay-as-you-go cloud billing model, treating IT purchases as more of a day-to-day expense has become the norm, and â€" where SaaS is concerned â€" there is still a lot of room for market growth. Then, in , Amazon launched its Elastic Compute Cloud EC2 as a commercial web service that allows small companies and individuals to rent computers on which to run their own computer applications. Today, the firm is the undisputed leader of the infrastructure as a service IaaS market, the company continues to add thousands of new services and features to its cloud services portfolio each year , and is a bone fide multibillion dollar enterprise. The runners and riders Amazon, in particular, initially started out pitching its wares to startups , hailing the public cloud as way to get their businesses up and running without having to shell out tens of thousands of pounds to acquire on-premise servers, storage and networking equipment. Unburdened by the capacity, cost and maintenance constraints that come from having to rely on traditional, legacy, on-premise hardware, this eased the path from startup to scaleup for many of these early cloud-adopting companies. The Google Cloud Platform, which is the coverall term used for its IaaS offerings , has also followed a similar path, by starting out focusing on winning over startups, before ramping up the enterprise-readiness of its services to boost their appeal to a wider range of users. And it is here that Microsoft, with its Azure public cloud proposition and its sizeable enterprise install base, has found itself with something of an advantage over its startup-focused competitors. While Amazon and Google have both sought to increase the enterprise-readiness of their offerings, as they have set their sights on conquering the world of corporate IT, Microsoft has years of experience in knowing what CIOs look for in a prospective IT provider. Microsoft is leveraging its tremendous sales reach and ability to bundle Azure with other Microsoft products and services to drive adoption. HPE, Dell and VMware , for example, initially set out to go head-to-head with Amazon, Google and Microsoft before calling time on their public cloud initiatives at various points over the past five or so years, citing competitive pressures. In the case of Rackspace, it ended up ceding its initial early lead in the IaaS market to AWS, and since or thereabouts has moved to help enterprises manage their Amazon, Microsoft and Google cloud deployments. This pivot has paid off for the firm, with its AWS managed service offering regularly flagged by the firm as being one of the fastest-growing parts of its overall business. Where next for cloud? This was last published in April Read more on Cloud computing services.

Chapter 6 : Evolution of Cloud Computing - TD Web Services

It was a gradual evolution that started in the s with mainframe computing. Multiple users were capable of accessing a central computer through dumb terminals, whose only function was to provide access to the mainframe.

Archive Share this post: One of the first questions asked with the introduction of a new technology is: When we think of cloud computing, we think of situations, products and ideas that started in the 21st century. This is not exactly the whole truth. Cloud concepts have existed for many years. Here, I will take you back to that time. It was a gradual evolution that started in the s with mainframe computing. Multiple users were capable of accessing a central computer through dumb terminals, whose only function was to provide access to the mainframe. Because of the costs to buy and maintain mainframe computers, it was not practical for an organization to buy and maintain one for every employee. Nor did the typical user need the large at the time storage capacity and processing power that a mainframe provided. Providing shared access to a single resource was the solution that made economical sense for this sophisticated piece of technology. After some time, around , the concept of virtual machines VMs was created. Using virtualization software like VMware, it became possible to execute one or more operating systems simultaneously in an isolated environment. Complete computers virtual could be executed inside one physical hardware which in turn can run a completely different operating system. Virtualization came to drive the technology, and was an important catalyst in the communication and information evolution. In the s, telecommunications companies started offering virtualized private network connections. Historically, telecommunications companies only offered single dedicated pointâ€"to-point data connections. The newly offered virtualized private network connections had the same service quality as their dedicated services at a reduced cost. Instead of building out physical infrastructure to allow for more users to have their own connections, telecommunications companies were now able to provide users with shared access to the same physical infrastructure. The following list briefly explains the evolution of cloud computing: SoftLayer is one of the largest global providers of cloud computing infrastructure. IBM already has platforms in its portfolio that include private, public and hybrid cloud solutions. The purchase of SoftLayer guarantees an even more comprehensive infrastructure as a service IaaS solution. While many companies look to maintain some applications in data centers, many others are moving to public clouds. Even now, the purchase of bare metal can be modeled in commercial cloud for example, billing by usage or put another way, physical server billing by the hour. The result of this is that a bare metal server request with all the resources needed, and nothing more, can be delivered with a matter of hours. In the end, the story is not finished here. The evolution of cloud computing has only begun. What do you think the future holds for cloud computing? Comment below, or connect with me on Twitter maxdneto. Learn more about cloud basics in our series:

Chapter 7 : The Evolution of Cloud Computing: How to plan for change [Book]

Cloud computing starts with data centers. While we can dream of a world in which anyone is allowed to sell their excess computing capacity as virtualized resources to anyone else, in a fully.

We can however appreciate the growth of cloud computing from its conception to its current state by looking at how far the system has come. Initially, computers were unable to interact with one another except through the internet but today we have so many ways to access data from any computer in any location across the globe. This is one of the advantages of cloud computing, in that the limitations to access have been reduced to passwords and user ids thus allowing you access a cloud from anywhere at any time. The evolution of cloud computing can be broken down to its first phase namely grid computing, then utility computing and finally the current cloud computing in which SaaS is the way to go. These were mostly used by universities that needed real time collaboration when seeking solutions to a single scientific problem. The emphasis here was on the individual computing process as much as the end service unlike cloud computing which unifies the computing process to deliver the service. Utility Computing After the grid computing, cloud computing evolved as a system in which the numerous computers are connected to a central workload that contains servers, storage, applications, networks and processes that are tailored to suit the needs of the users or tenants. This means that cloud computing has grown in such a way that it can actually support one or more grids. The expansion took place within the concept of virtualization with the creation of storage and networks as well as applications that were not based on any specific infrastructures. This was then known as utility computing, and it allowed for cluster computing on virtual platforms over networks. Cloud Computing With the increase in demand for the virtualization of computing, the expansion became so rampant that it reached a point of abstraction. Virtual servers became the way to go as more organizations came to appreciate the significance of the interconnectedness in computing. Other than the networks, storage and processes as well as the applications, a new addition was the ability of software providers to actually tone down the value of their products to meet the budget of the small and medium enterprises. With grid and utility computing, only the large businesses could afford most software applications but with cloud computing companies are able to get the software that they need based on its value to them. This is because other than the initial advantages that the system had, when it became cloud computing it was more of a system aimed at helping organizations to run more effectively. SaaS continues to be the most impressive aspect of cloud computing and is expected to take organizations to a new level with new and more advanced innovations in the future. SaaS SaaS means Software as a Service and it is a way for software makers to avail their products to organizations at a lower fee depending on the usage. Large organizational applications like ERP are for example more affordable today when they are availed over the cloud to be accessed when the organization in question is willing and able to pay for it. This means that rather than selling the software as a product it is being offered as a service, and paid for per usage. This is one of the most impressive aspects in the evolution of cloud computing as more organizations gain access to critical software and they can thus enjoy technology at their budget. More companies will appreciate this feature thus making it a central aspect of any future growth in cloud computing.

Chapter 8 : Evolution of Cloud Computing - NpehoScale

Evolution of cloud computing Cloud computing means different to different people, its benefits are different to different people. To IT managers, it means to minimize cap-ex by outsourcing most of the hardware and software resources.

Career Evolution of cloud computing Cloud computing means different to different people, its benefits are different to different people. To IT managers, it means to minimize cap-ex by outsourcing most of the hardware and software resources. To end users, it means to access an application from anywhere using any device. In this blog, I write about the evolution of cloud computing, why and how we got to cloud computing. The following diagram illustrates a high level overview. Cloud Computing applications In the beginning of the computing era, the relationship between the user and the machine was one-to-one. One user used to access the applications that s he needs to use on one machine. Then came the Internet era. In the Internet era, the relationship between the user and the machine was many-to-one. Many users could access applications running on one machine. In cloud computing, the relationship between the user and machine are many-to-many. Many users can access an application that is served from many machines. Now, what was the reason of this evolution? What were the driving factors behind this? The reason for the evolution from PC-based application to Internet-based application was obvious. This happened because of the need of multiple users trying to access an application from their own machines. The only way that it was possible was to have the application hosted on a central server and having separate client applications communicate to it. The evolution from internet-based applications to cloud computing, I think, is a bit more complex. There are several industry trends and user behaviors affecting this shift in the technology. We will get more into those in my next blog. Here, I touch upon what I believe is the biggest driving factor behind cloud computing. I believe that the most important driving factor behind the rise of cloud computing is â€" DATA. We are all aware of that we are living in the age of information of overload. The data that we need to consume increases exponentially every moment. More is the data, higher is the need to process it, more complex becomes the business processes, and it leads to the need of higher processing power. The ever increasing demand for processing power cannot be addressed using the traditional server and data center technology. Therefore, we now have cloud computing.

Chapter 9 : The Evolution of Cloud Computing | CloudEXPO Journal

The evolution of cloud computing can be broken down to its first phase namely grid computing, then utility computing and finally the current cloud computing in which SaaS is the way to go. Grid Computing.