International Journal of Computer Science and Network (IJCSN)
Volume 1, Issue 5, October 2012 www.ijcsn.org ISSN 2277-5420

Web Application and its Marketing as Cloud Computing

[1]Shiv Kumar
[1]Mewar University
NH - 79 Gangrar,
(Rajasthan) - 312901

Abstract

A web application uses two words "web" and "application". Where web means web browser and application means computer software. Web browser is used to search the information on the World Wide Web i.e. www or on Internet, where as application is used to solve the single or multiple tasks, depending on the type of application. In this way, we can say that a web application is computer software to perform single or multiple tasks on the computer network using web browser.
Now, the questions arise for the developer of "web application", if we develop a web application then how to sell it and how we will get the maximum profit from its marketing. Is there any way? There are many ways to market web application by using commercial advertisement, trail version, Beta Version, Promotional Launch, by a customize version such as desktop application, browser application etc. These are the old method of marketing "web application" The new and modern method of marketing a "Web application" is as a cloud computing (SaaS) because it is accessed by web browser and used to solve single or multiple task with very low cost except hosted on central server while web application may be hosted on different servers. The cost, security, maintenances and speed are the main benefit of marketing of web application as Cloud Computing application.
Keywords: *Browser, Cloud computing, Web application, SaaS, PaaS (Platform as a service), IaaS(Infrastructure as a sevice)*

1. Introduction

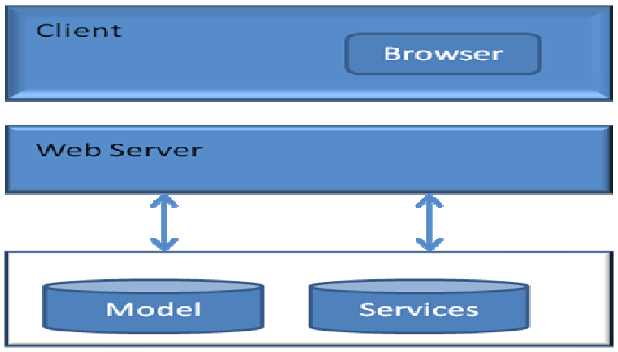
As of now, the cloud computing is not standardized and have not defined in one language, it used for the various reason and have different purposes. Cloud computing is a technique/model/Technology/ for different people. Different person and organization have different view about cloud computing. But by analyzing various sources, I can say, it is a way of marketing of web application. All these marketing theories are taken from various organizations such as Reliance/Reebok/Vimal etc., these are big retail chain in India.
A simple example of cloud computing is Yahoo email, Gmail, or Hotmail etc. You don't need software or a server to use them, but people are not calling these services as cloud computing, but it has similar process and method that are using by a "web application" as cloud computing. All a consumer who is using Yahoo email, Gmail, or Hotmail would need to connect with internet and start using its services such as email. The server and email management software is all on the cloud (internet) and is totally managed by the cloud service provider Yahoo, Google.

Now, due to increase in hardware cost, internet broadband cost, other infrastructure cost and cost of maintenance, Cloud computing is considered a priority by executive teams in 69% of the organizations as surveyed where as among large companies, the percentage is slightly higher (71%) than for medium (67%) and small companies (68%).3
However, it's actually small companies that are leading the way in terms of cloud usage. Overall, 76% of respondents said their companies were using cloud services or planned to do so within the next 24 months — with 78% of small companies already using or planning to use cloud, compared with 73% of both large and medium-size companies3
From a single user's point of view, a good cloud computing defines a service that are provide using web applications as software and/or server services as hardware where the user need not to maintain software or hardware and he/she is just pay to use the cloud space.

Web application

The technology of "Cloud-Computing" is supported by various web components such as Java servlets, JSP pages, or web service endpoints in java platform; these are dynamic extension capabilities for a web server. The interaction between a web client and a web application is done using HTTP Request and HTTP Response. The client sends an HTTP request to the web server, and a web server that consists of Java Servlet and Java Server Pages technology converts the request into an

HTTPServletRequest object. This object is delivered to a web component, which will interact with JavaBeans components or a database to generate dynamic content. The web component can then generate an HTTP Servlet response or it will pass the request to another web component. Eventually a web component generates an HTTPServletResponse object. The web server converts this object to an HTTP response and returns it to the client.



Web application

Software as a Service (SaaS)

Therefore software as a software has came in light, where the users need not to buy licenses of software he/she want to use and even need not to buy any hardware infrastructure to do their projects. By using this he can save cost of maintenances and cost of information security.

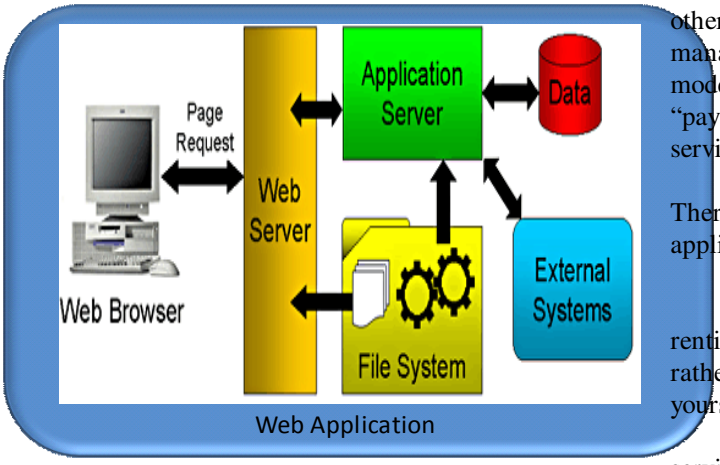
SaaS allows a customer to rent software applications provided over the Internet via a thin client/web browser (user does not own or control the infrastructure, servers, operating system, or storage); specific SaaS vendors include "Salesforce.com, Google Apps, and Oracle on Demand."31

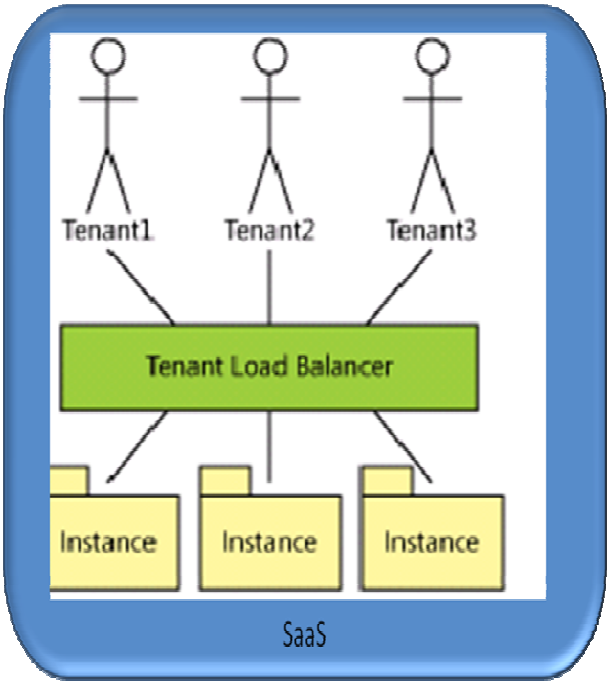
The software as a service (SaaS) sector has never looked better. Also known as on-demand hosting or subscription-based software, SaaS enables customers to pay for the use of Web-based software instead of purchasing or licensing the software outright. The software application delivery model has grown exponentially in the past few years, and it continues to attract buyers in a cash-strapped economy. Software as a Service companies are:

A. Google offerings in the SaaS space include Google Docs, Gmail, Google Calendar and Picasa.
B. IBM provides LotusLive iNotes, a web based email service that provides messaging and calendaring capabilities to business users.
C. Zoho has vast suite of online products similar to Microsoft office suite

Comparison of web application and SaaS

Web application	**SaaS**
Similarity:	
Accessed by using web browser.	Accessed by using web browser.
Used to solve single or multiple task	Accessed by using web browser. Used to solve single or multiple tasks.
Difference:	
Hosted at different server (distributed).	Hosted at centralized server.
Developers do not need depth knowledge of html".	Developers should need depth knowledge of html".
Developers do not need depth knowledge of scripting language to write browser free code.	Developers require depth knowledge of scripting language to write browser free code.
High cost.	Low cost
Fit for large number of users because SaaS costing is based on user	Fit for moderate number of user





2. Why this way of marketing

SaaS is a customer-centric delivery model. Consequently, many of the expenses associated with day-to-day application management fall within the provider realm, so SaaS reasonably can be expected to have a positive impact on buyers' where operating and management costs. Ownership costs that were once solely the responsibility of software buyers now are shared or wholly assumed by SaaS providers. This means that buyer TCO relative to IT operations and management probably will be reduced — or at least favorably re-allocated — in comparison to TCO under the traditional licensing model. Providers, on the other hand, will have heightened operations and management costs and greater risks than with a licensing model. In contrast to the traditional licensing model, the "pay-as-you-go" SaaS approach requires providers to service the sale on a continuing basis.

There are two existing methods of marketing of web application as cloud.

1) **Renting type**: SaaS is based on the concept of renting application functionality from a service provider rather than buying, installing and running software yourself.

The cloud product has been developed by various service provider could be used for different business purpose viz. software development, B2B portal development, client interaction and many more application. Hence, we can say that this type of cloud product has been available in a predefined specification and can be used for many more applications and business. We can say that the marketing of SaaS is similar to marketing of fully furnished home you just go and start living and thus you take this type of cloud and start your business.

2) **Service providing type**: PaaS is based on the concept of providing a platform in the cloud, upon which applications can be develop and executed while IaaS is based on the concept of the offering of compute power and storage space on demand.

The marketing of PaaS is based on the concept of marketing of core house which provides the platform to develop the house according to our choice; similarly PaaS provides a platform and environment on which application can be developed.

The marketing of IaaS is based on the concept of marketing of cold storage, where we stores grains, vegetables, fruits etc. Similarly IaaS provides storage space on demand

<u>But we can define another way. That is "Partnership based Model Type"</u>

3) **Partnership or Collaborative model type**: This type of cloud model still has not arrived and a very much prospective cloud model. This is similar to retail FDI where there are two or more inverters join hand and market one commodity. In this type of model where one has technical expertise and other has sufficient financial strength and together they can make a collaborative business and share revenue out of this. It is the demand of current time. Hence we can say there will be at least two partners (A & B). 'A' will provide the infrastructure with software technical supports free of cost, while 'B' will

develop the new software or product. So, owner of the developed product will be both A & B. Here marketing of developed product or software will be done by A .Revenue will be divided between partners on the basis of made agreement.

There are some other non-profit reason such as where both 'A' and 'B' can join hand such as to spread the education system around the country and can make handful resources to the educational institutions and the NGOs.

Other causes of the way of marketing are:
Minimum Investment: With SaaS applications, customers avoid the large initial investment in an IT infrastructure and the day-to-day responsibility of maintaining that infrastructure.

No Maintenance Headaches: SaaS customers all share the same provider infrastructure, which centralizes administration and updates. Plus, integration is simpler because there's no need to support several platforms and multiple versions.

No Steep Learning Curve: SaaS applications use a familiar Internet interface, so customers expect the ease of use and constant innovation of the consumer Web, helping to drive adoption.

No Outdated Solutions: SaaS applications are innovating at a rapid rate because developers are focused on what's next rather than on maintaining numerous versions of old code. SaaS vendors use the same technology architecture as the best consumer Web: companies like eBay, Google, and Yahoo!, which enables the same levels of continuous innovation.

No Vendor Lock-in: Because SaaS applications are subscription based, customers can always choose not to renew if they're dissatisfied, making providers more accountable.

2.1 Advantage of this way of marketing

Availability: SaaS applications are available from any computer or any device-anytime, anywhere. Because most people are familiar with using the Internet to find what they need, SaaS apps tend to have high adoption rates, with a lower learning curve.

Easy up gradation: Because the SaaS provider manages all updates and upgrades, there are no patches for customers to download or install. The SaaS provider also manages availability, so there's no need for customers to add hardware, software, or bandwidth as the user base grows.

Subscriber-based costing: SaaS applications are subscription based. No license fees mean lower initial costs. Having the SaaS provider manage the IT infrastructure means lower IT costs for hardware, software, and the people needed to manage it all

Easy intergradations: SaaS vendors with true multitenant architectures can scale indefinitely to meet customer demand. Many SaaS providers also offer customization capabilities to meet specific needs. Plus, many provide APIs that let you integrate with existing ERP systems or other business productivity systems

No maintenance tension: The SaaS provider also manages.

2.2 Disadvantage of this way of marketing

Security concerns for the application delivery environment in a SaaS model share many of the same concerns as other application delivery models. The following should be considered:

-Single function servers

-Firewalls zones (DMZs), and Virtual LAN segments (VLANs) as appropriate

-IDS — Intrusion detection system. A network and/or host based monitor which looks for suspicious activity against patterns of known suspicious behavior

-IPS — Intrusion protection system. An active version of IDS which interrupts communication streams when suspicious activity is detected Extensive logging of all activities from routers, firewalls, IDS, IPS, databases, Web code and application layer code to an logging server which has independent credentials from the production hardware to maintain log reliability Updated antivirus on every server

-Strong passwords - Each user must have a distinct login. There can be no sharing or pooling of logins Services do not run under the administrator account

2.3 Who is seller/provider

Cloud consists of Cloud space, Cloud application software and Cloud maintenance and security, all this require a great amount of financial and technology investment excluding marketing cost. Hence the cloud seller or providers are someone who having great hold of technology resources and have financially independent.

The number of SaaS provider is increasing day by day as cloud computing market is growing.

SaaS provider provides every business solution and IT application that required by different types of clients. SaaS provider provides solution on demand for specific business or IT application. Provider must be able to invest money in market and build up the infrastructure. Now a day the providers are the big IT business houses and build the SaaS infrastructure globally.

2.3 Who is buyer/user?

There are different kind of business from Hi-tech companies that consists of software firms, technology development firms, business to business firm and business to customer firm. All type of organization require technology to sustained in the market and require investments. Whether big or small firm, all are in favor of cloud and the acquiring cloud space for their business. It comes with no maintenance burden and with highly secured features.

But initial trends from market shows that the buyers are small and middle class organization, who does not want to invest money in infrastructure due to less number of users.

3. Conclusions

Therefore, we can say that SaaS is the way to market a web-application, in the same way where retail shop of such as Wal-Mart where different kind of products are places and customers choose their product according to his/her requirements. Customers have to pay the cost of products and they have no tension about their maintenance if the products are in warranty/ guarantee period. Similarly SaaS providers provide the service on the basis of pay-as-you go. Users haven't to install or run the application on his hardware .Users access the application using the web-browser over the internet. Users have no tension about maintenance and up gradation of application because these are handled by providers.

Thus, we can say that the "cloud computing" is one more step ahead of old web application and advance way of using web application services where users have more applications on limited or less low cost. Hence this marketing strategy as using web application as SaaS is growing very fast

Acknowledgments

Foremost, I would like to express my sincere gratitude to my advisor Dr. D.B. Ojha for the continuous support of my M.Tech study, for his patience, motivation, enthusiasm, and immense knowledge. His guidance helped me in all the time of research and writing of this thesis. I could not have imagined having a better advisor and mentor for my M.Tech study.
Besides my advisor, I would like to thank the rest of my department professors or lecturers : Prof. R.P.Ojha and Santosh Upadhyay and others, for their encouragement, insightful comments, and hard questions.
Last but not the least; I would like to thank my best friend, Archana Neog supporting me spiritually throughout my life.
.

References

[1] C.D.K.Cook, B.J. Gupta, E.M.Rix, J.Scheller, and M.Serrz, Water plants of the world, Jurh, The Hague. Court, A. B. (1957),Sundry notes on three Victori, 1974.

[2]A. Agrawal,M.N.Pandey, and G.P.Dubey, Management of mental deficiency by an indigenous drug, Brahmi (Bacopa monniera),Pharmacopsychoecologia., Vol.6(1), pp.1-5,1993.

[3] Interxion Cloud Survey http://www.interxion.com/cloud-insight/index.html

[4] Wald, "Cloud Computing for the Federal Community."

[5] Mel Beckman, "Cloud Options that IT will Love," An Interactive eBook: Cloud Computing,July5,2010,at: http://www.networkworld.com/whitepapers/nww/pdf/eGuide_cloud_5brand_final.pdf (accessed July 15, 2010).

[6] Bret Michael and George Dinolt, "Establishing Trust in Cloud Computing," Information Assurance Newsletter, Vol. 13, No. 2 (Spring 2010).

[7] Allan Carey, "Cloud Assurance Still Missing," Information Assurance Newsletter, Vol. 13, No. 1 (Winter 2010), 34.

[8] Ibid.

First Author Shiv Kumar is currently doing M.Tech in (Computer Science and Engineering) from Faculty of Engineering and Technology, Mewar University. His interest areas include cloud computing.