Software as a Service (SaaS)

by

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In today's world businesses use software to perform simple tasks such as word processing and email communication to complex tasks of designing new products, acquiring raw materials, planning manufacturing, tracking the shipments all over the globe and obtaining feedback from customers.

Traditional Delivery Model

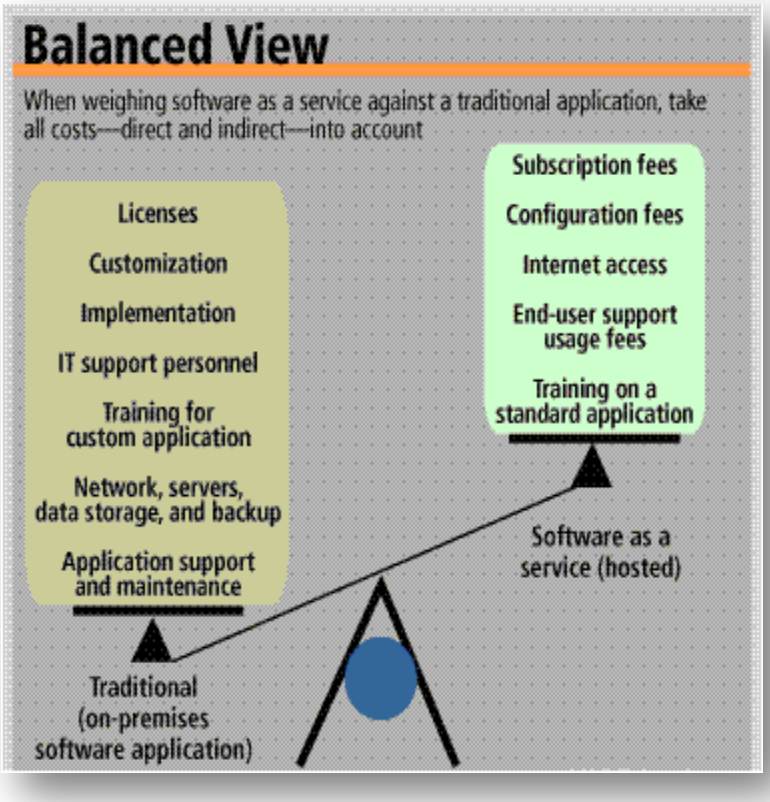
In the traditional model of software delivery, software is sold to customers, who then run it on their own hardware purchased or leased from a manufacturer such as Dell or IBM. Customers typically do not own the source code, but license the software, which entitles them to use the software and ownership of the binaries, the actual code that runs on the hardware. A typical licensing agreement limits the use to a certain number of (concurrent) users or the hardware that it is supposed to run

on. Annual renewals would entitle a customer to free upgrades, regular patches, and also technical support. The challenges with this traditional model have been as follows:

- Deployment and Provisioning: While it may not be a problem for a very small customer who has only one PC, deployment of the software and its subsequent upgrades and patches can be a very tedious and time consuming task for large enterprise customers with thousands of machines deployed across geographically dispersed locations. In case of a bad patch, software rollback in these large organizations becomes even more difficult. Additionally, the software companies have little or no control over what version of the software their customers are using. It is not uncommon for customers of these software companies to be a version or two behind and complaining about issues that may very well have already been addressed in the newer releases.
- On-Demand Access: The traditional licensing mechanism, typically restricting the user to only one machine, does not bode well for increasingly mobile customers who may need access while away from their offices and homes.
- Barriers to Entry: The cost of the software may not be affordable by many customers who would be prevented from legally purchasing the product, thus encouraging piracy among some.

The New Cloud Model

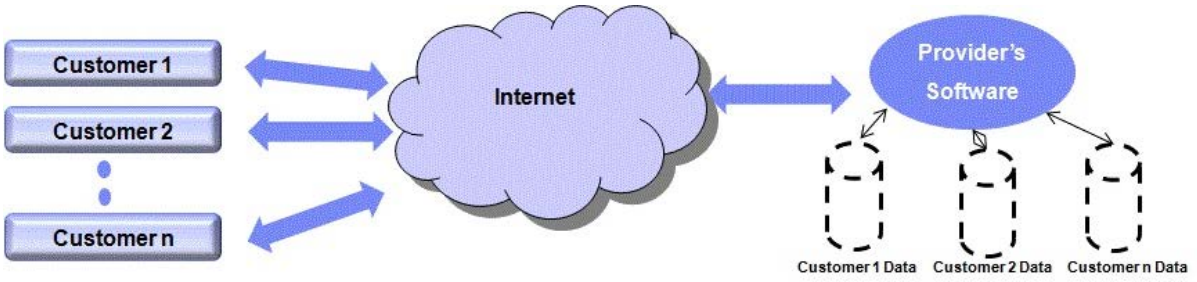
Software as a Service (or SaaS) is an emerging concept in the world of computing, and is regarded as one of the Classical Cloud Computing Models by NIST (National Institute for Standards and Technology). The idea, based on hosting centralized business applications, however, is not new. In the late 1990s during the dot com bubble, many companies started operating as ASPs (Application Service Providers), whose business model called for providing software on rent over the Internet to consumers who could not afford to purchase it. Even in the 1960's, 70's, and 80's, many large companies relied on the power of mainframe offered by IBM and EDS to access software using time-sharing concept, and continue to do so.



SaaS provides easy data and software sharing and availability by utilizing the power of cloud computing. As data and software in SaaS is hosted and available centrally via cloud, it can easily be utilized by the users of an organization through the basic web browsers. No longer does the user have to go through the tedious process of purchasing, installing and licensing. The capital expenditure is replaced by a recurring (monthly) fee based on usage (example number of users, bandwidth consumed, pay per click, etc.) or feature set demanded by the end user. Due to its efficiency and portability SaaS is fast

replacing the traditional delivery model for most systems.

In centralized SaaS business applications, the same access is granted to all users who must login using their own set of credentials that identify them and their organization to the software. The data across organizations, however, remains logically segregated. Additionally, certain users may be granted administrative privileges which can then provision other users in the system and grant them roles based on their profiles and job descriptions, and subsequently revoke privileges upon separation.



Utility or Rental Model

SaaS eliminates, for the most part, the need to purchase and manage licenses for the software. Customers simply rent the use of the software and the online system supports all the major functions that are done by the client. Moreover, since the entire system is online, the onuses of ensuring customers are using the latest software, rests entirely with the software provider.

Just like its other Cloud Computing cousins (IaaS for example), SaaS is also referred to as *pay-as-you-go* model as it eliminates the need for capital expenditure.

Lower Barriers to Entry

Because SaaS eliminates the capital expense (fixed costs) typically associated with the traditional software usage like server and software, it has been gaining wide popularity among startups and small and medium sized businesses that would otherwise not be able to afford the undertaking. Many SaaS providers bait customers by offering a basic version (feature restricted) for free. This allows the software to gain in popularity very quickly, however, many users quickly realize that they have outgrown the free version and now have to pay for additional feature set. This strategy of *try-before-you-buy* works well for both parties in most cases, especially the software provider.

Cost-Effective Software Delivery

In order to use traditional Software a customer first has to download and install the Software. This takes time and certain IT skills which not every user has. SaaS, on the other hand, is easy and eliminates all such difficult steps and complications. All you have to do is sign up and go!

Cost-Effective Software Maintenance

Maintaining traditional software involves constant downloading of new updates in bits and pieces. Despite that, it is usually not possible for the customer to acquire all the updates as sometimes it affects the efficiency of the system. There is also a chance that customer may end up downloading a

virus or malware from a site that could be masquerading as a software provider. In addition, most customers lag behind in keeping their software versions up-to-date due to laziness, lack of version awareness, or turning automatic updates off (not wanting distractions), and, as a result miss out on new features and bug fixes. Also, the risk associated with a bad software patch may be huge for all parties and rolling back may be next to impossible for hundreds and thousands of customers who may have downloaded and installed a bad patch.

In case of SaaS all such issues are eliminated completely, as the provider has full control of its software and the server(s) it runs on. The provider can make sure customers are always using the latest software and are able to rollback a bad patch, if one makes it to production accidentally.

World Wide Appeal

With SaaS, it is easier to reach to your target market. With the right content and proper SEO (Search Engine Optimization) and SEM (Search Engine Marketing) strategies, the target audience can be attracted very quickly. The provider may also encourage consumers to try its product free of charge.

Easier to Price Discriminate

In the traditional model, software providers such as Microsoft would offer a basic version of the product, in which certain features valued by customers with deeper pockets may be kept locked. These features would then be unlocked if a customer pays a higher price (example, Office Home Edition vs. Office Professional). In addition, providers also price discriminate based on customers' geography. A US customer may be charged a different price than a customer in Asia for the same product because of their different propensities to spend. A price discrimination strategy based on geography in many cases backfires on the providers and leads to gray markets where products find their way back into the US market from regions where the same product is being sold at a cheaper price.

Using SaaS, providers can also turn on and turn off features based on user and organization profiles. Additionally, providers may also price discriminate based on geographies more effectively using IP addresses of the users which give away their locations.

Additional Revenue Channels

Once the Software is popular amongst the masses then these portals can be used for marketing purposes as well. Many companies are willing to pay substantial amount to put up the banner for few seconds on a popular portal. The advertising channel may also subsidize the cost of software development and maintenance and allow the provider to keep its rental price low or even free in some cases.

Increase in Switching Costs

One of the major goals of every company is to retain its old customers and build stronger customer relationships, thus making it more difficult for them to leave for the competition. This feature is one of the most compelling reasons for software companies to offer SaaS solutions, but it is something consumers must remain wary of. SaaS providers hold their customers' data. Therefore, a customer wanting to switch, has to get its data out of the current vendor's database and then integrate into

the new vendor's database, which could be a time consuming and highly disruptive process. This in itself acts as a deterrence to switching and making the customer less likely to shop around.

Regulatory Compliance

Although SaaS won't eliminate the need for customer's environment to comply with regulations such as HIPAA, SOX, PCI, etc., it does make it much easier and affordable for customer's to achieve such compliance with government regulations, when the service provider is itself in compliance.

Customers must Make Informed Business Decisions

Despite its many benefits, a SaaS solution may not fit the need of every customer in every situation. SaaS solutions, just like its other Cloud Computing model cousins is being oversold by companies that are pushing their customers into going this route. A business customer must look at all the aspects and weigh all the pros and cons before making a decision. Some of the aspects are discussed below:

Switching Cost

As mentioned above, a SaaS product increases the switching costs, especially for business customers that have a low tolerance for any disruptions in its business operations. A mission critical operation, especially, provides quite a bit of immunity for the SaaS provider against customers switching to competitor's product.

Internet Connection Costs

A customer's internet cost may increase with SaaS as it would require more bandwidth in terms of both upload and download speeds. In addition, a mission critical operation using SaaS may also necessitate the need for a redundant internet connection.

Long-Term Contracts

Even though one of the benefits for Cloud Computing is elasticity, which is basically the ability for both scale up and down based on the need of the business (example: pay per click), certain providers may lock their customers into long-term contracts, thus preventing their ability to terminate the agreement and search for alternate solutions.

Risk associated with Data Breach

In the traditional model, it is very clear to customers that they are responsible for data security. While the security offered by reputable SaaS companies will, in most cases, be better than most small and medium sized businesses, customers must explore the risk with their vendors and where the responsibilities may lie in case if there is a breach. A lot of SaaS providers use infrastructure rented from other data centers (IaaS), which makes this question of "where the buck stops?" even more important.

What if My SaaS Provider Exits the Business?

In the traditional model a SaaS provider going out of business has had relatively minor impact on the customers. The impact has been toward not being able to get future upgrades/patches and technical support. In case of a mature product, the impact is minimal, while in the other, a customer would opt for a new product and bear the cost of transferring the data from the old product to the new one. On the other hand, a SaaS provider suddenly going out of business can have severe

implications for the survival of a customer's business, especially for mission critical applications. Many SaaS providers are startups or small businesses, and the possibility of a business failure is not so remote. Customers must ask their providers to address this issue. Certain large customers require smaller SaaS companies to put their code in escrow, which essentially guarantees that they will have access to the source code and will have to maintain it themselves, should the provider's business ever fails. However, this type of negotiation may not be possible for relatively small customers dealing with large SaaS providers. Imagine asking Microsoft to put its Office365 code in escrow for you! But then who would have imagined that a company like Enron would one day vanish from the face of the earth.

Total Cost of Ownership

The rental (utility) aspect of SaaS, just like other Cloud Computing models is supposed to make it affordable for those unable or unwilling to bear the capital expense. However, many companies, using aggressive strategies are selling very expensive solutions to their customers. These strategies include inflating the costs of traditional models by several folds in comparison charts and actually deflating the actual costs of the SaaS model, so much so that SaaS will end up costing more than the traditional model in just a first few months of use. The most commonly used model for comparison is the TOC (Total Cost of Ownership) based on certain years of use, and it happens to be the most appropriate one also. However, the cost figures that are shown in these models prepared by companies tend to favor their own view points. Customers should remain wary of such cost figures and are advised to either enter their own numbers or use a qualified consultant, disinterested in the final outcome, for a true apples-to-apples comparison.

On-Premise Computing

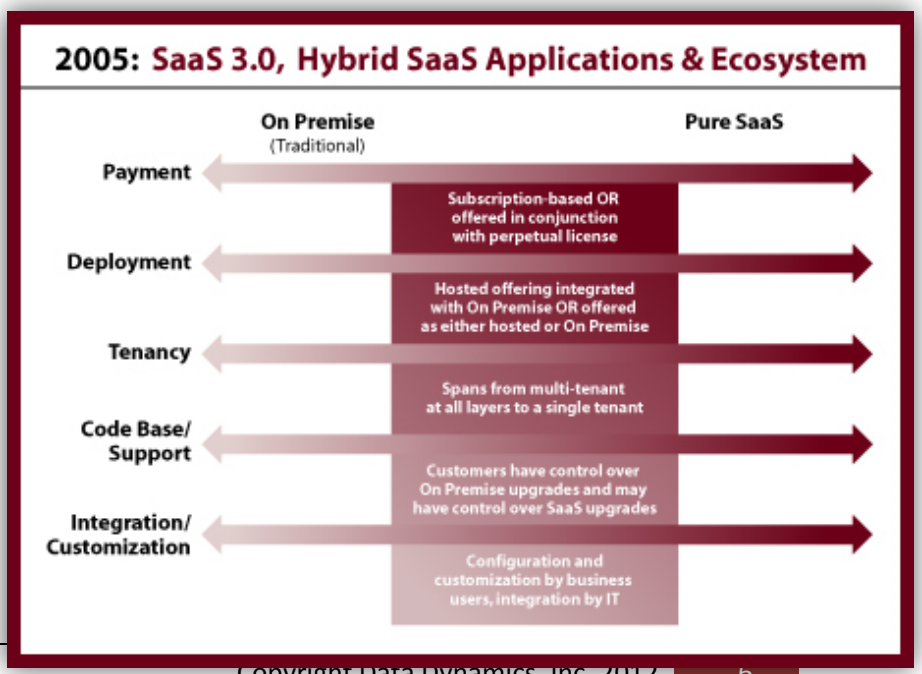
Expenses	Now	Year 1	Year 2	Year 3	Year 4	Year 5
Server Cost						
Software License						
Onsite Backup						
Cloud Backup						
Extra IT Maintenance						
Add Backs						
Section 179 Deduction						
Depreciation						
Total						
NPV (5% Cost of Capital)						

Cloud Computing

Expenses	Now	Year 1	Year 2	Year 3	Year 4	Year 5
Initial Setup Fee						
Monthly Recurring Fee						
Extra Bandwidth for Internet						
Redundant Internet Connection						
Total						
NPV (5% Cost of Capital)						

Conclusion

SaaS is here to provide an effective and efficient long term solution. However, it is a huge threat to the conventional software and Database solution provider giants like Microsoft (MSFT), Oracle (ORCL), Cognos (COGN) and Intuit (INTU). Therefore, the only long term solution and survival option for them is to opt for SaaS based solution and switch to cloud eventually. However, the larger companies may have to invest a lot as they will have



to make vital changes to their network architectures.

Once, these companies have opted for SaaS based solutions there will be another problem i.e. of cannibalization. That is, their loyal customers may opt for SaaS based solutions rather than conventional ones. This will cannibalize the market of the existing traditional solutions. Hence, the companies will have to be prepared and divide the resources accordingly. One solution to this problem is to create a hybrid where traditional and SaaS solutions can exist together. Microsoft for example, offers its Office product both in the traditional model as well as the SaaS model (Office365).

Customers must also remain vigilant and evaluate the traditional and SaaS models on a case by case basis in order to avoid wrong decisions that may increase their cost of doing business substantially.

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