

## Transition to Software as a Service (SaaS) (Case study in Egyptian environment)

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### Abstract

Given the potential cost advantages and relative ease of implementation of software as a service (SaaS), more companies are considering SaaS, ERP, CRM, and enterprise software solutions.

SaaS (Software as a service) is all about providing services to customers. Traditionally, software vendors are accustomed to building products and selling it for a license fee (either perpetual or on annual subscription mode with maintenance added). Currently, customers value and embrace the concept of 'services' more than investing on a product. They pay only for what they use and only for that period. This change in customer behavior requires a different approach from software providers; this also enables them to get instant access to a wider market base due to affordability.

Software as a Service (SaaS), or "Cloud" technology, is a method of delivering applications over the Internet. Over the past decade, SaaS has become a leading deployment model for enterprise software used by the largest software companies in the world including Oracle, SAP and Microsoft and their clients. SaaS frees organizations from having to manage the installation and maintenance of their software in-house as well as invest in costly IT hardware and resources.

The benefits the SaaS approach to software deployment are numerous and compelling, especially for small to mid sized organizations. The ability to have access to powerful technologies, with a minimal financial commitment has opened new vistas of productivity and competition to SMBs.

Small businesses in particular often find SaaS software to be viable options for their manufacturing software, CRM, supply chain management, HR and financial management software solutions.

### Keywords:

Software as a service (SaaS), Small Business (SMBs), criteria, Egypt.

### 1. Introduction

Software as a Service (SaaS), commonly referred to as the Application Service Provider (ASP) model, is heralded by many as the new wave in application software distribution. Following the maxim that "the Internet changes everything," many believe that traditional packaged desktop and enterprise applications

Will soon be swept away by the tide of Web-based, outsource products and services that remove the responsibility for installation, maintenance and upgrades from over-burdened MIS staff. Some analysts and

Industry members believe that packaged software, as a separate entity will cease to exist. While such drastic predictions have not yet happened, due to technical and business issues, the spirit of this change the delivery, management and payment of software as a service rather than a product is affecting all participants in the software industry [1].

SaaS business model requires complete change in the culture – it is no more a "product" which is being sold; it is all about "services". Process your payroll, claim your insurance, manage procurement, recruit people online, manage pipeline, manage customer complaints, etc. It requires a different approach and attitude and essentially touches every aspect of the business – in the way customers are acquired, served and billed. Every department will have to change in the way they work. [2].

### 2. Defining Software as a Service

The software as a service model is capable of causing a sea change in the software industry [3].

However, Software as a Service still must overcome several significant obstacles to widespread adoption. The first among such obstacles may be the lack of clarity in the definition of software services themselves. The market is hindered by disagreement over the intrinsic characteristics of services and even the terminology used to describe application services. The definitions are constantly shifting, buffeted by the creation of new business models and technologies that companies employ to deliver their vision of software as a service. The marketplace is inundated with acronyms each representing a slightly different approach - application service provider (ASP), application infrastructure providers (AIPs) Internet business service (IBS), business service provider (BSP), solutions service provider (SSP) and more [3].

In the software as a service model, the application, or service, is deployed from a centralized data center across a network - Internet, Intranet, LAN, or VPN - providing access and use on a recurring fee basis. Users

"rent," "subscribe to," "are assigned", or "are granted access to" the applications from a central provider.

Business models vary according to the level to which the software is streamlined, to lower price and increase efficiency, or value-added through customization to further improve digitized business processes.

The core value of software as a service is providing access to, and management of, a commercially available application. The potential benefits of the model are

significant for both the vendor and the customer. This service is different from business process outsourcing (BPO), for instance, where the outsourcing contract encompasses management of entire business processes such as HR or finance. It is also different from hosting services, where the focus of the service is management of the network and servers, but virtually no applications management.

### 3. Application Delivery Technologies

SaaS services require a variety of enablers, supporting technologies, network providers and hardware providers. Vendors offering application delivery products to readily transform products to services. There are four main ways that the application delivery vendors approach the delivery of applications as a service. These include [4]:

**3.1 Server-based computing** (also known as thin-client) In the server-based computing model, an application is run on a server, but the user interface is presented through a thin client to the end user. Users can access the output of the user interface via a special client program or within a browser.

### 3.2 Hosted Client Computing (HCC)

HCC allows an application to run on the user's desktop, but it is served, or "streamed," from a server.

When the user is finished using the application, it is removed without ever having been physically committed to the user's machine. The most efficient HCC technologies segment the application so that only those portions of the application and the data needed to run the application are sent over the network to the user's machine.

### 3.3 Web-based Applications

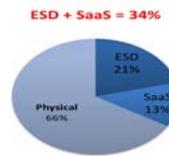
These include the deployment of applications via html. By simplifying user interface logic and separating application data and user data, a web application is developed to be maintained on a server and viewed through a browser.

### 3.4 Java Applications

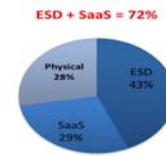
Java allows applications to include a rich mix of interactive features and functions that simple Web or html based applications cannot offer.

## 5. The Shift Of Applications To SaaS & Online [5]

2010 Applications Market



2014 Applications Market



Applications Market, \$133B

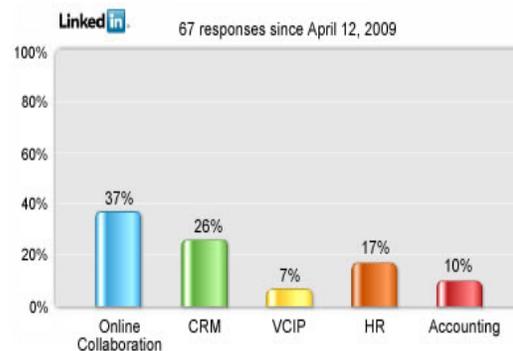
Applications Market, \$167B

Graph [1] Source: IDC WW Electronic Software Distribution, 2010-2014 Forecast, IDC WW SaaS 2010-2014 Forecast and 2010 Vendor Shares, 2010, Advantage Analysis [555]

From the graph [1] we found that the Enterprise Services Directorate (ESD) and Software as a Service (SaaS) occupied 34% from the market with cost 133 billion dollar at year 2010 but it occupied 72% from the market with cost 167 billion dollar at year 2014.

## 4- Benefits of SaaS

The software-as-a-service approach brings very



LinkedIn Poll on SaaS Adoption Areas

compelling benefits to SMBs [5], which is why it resonates so well with this segment. Under the SaaS approach, the software solution resides at the vendor's remote servers, rather than the customer's own servers, and is accessed

### Graph [2] LinkedIn poll on SaaS Adoption Areas.

via an internet connection as a "service". Software configuration, upgrades, maintenance, and support are all responsibilities of the vendor; customers adopt a "pay-as-you-go" pricing structure, with month fees based upon actual use. Since they're now "renting" the software rather than "buying" it, SMBs have access to otherwise prohibitively expensive enterprise class technologies.

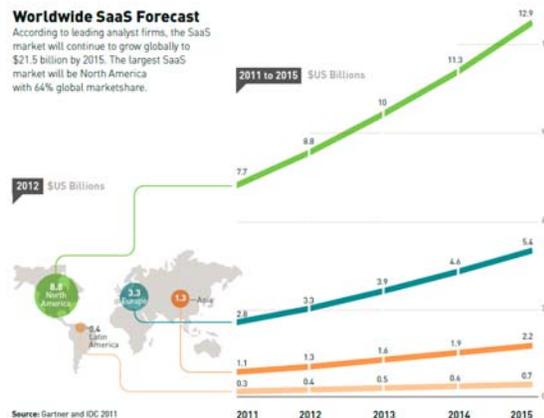
## 5- Comparing between SaaS to the legacy, on-premise model:

The table below compares SaaS to the legacy, on-premise model [5]:

*On Premise vs. SaaS Software*

	On Premise	SaaS
<b>Hardware</b>	Software and hardware reside at the location of the customer	Software and hardware reside at the premises of the vendor
<b>In-House Staff</b>	Typically complex software implementation and maintenance requirements necessitate hiring of in-house IT experts	End user oriented. Non-experts can implement and manage the solution with the assistance of the vendor
<b>Ongoing Maintenance</b>	Customer's responsibility	Vendor's responsibility
<b>Implementation Time</b>	Possibly months	Days
<b>Costs</b>	High upfront capital costs	Pay as you go fee structure. Per user, per month fees
<b>Upgrades</b>	Paid & sporadic	Free & ongoing
<b>Customizable</b>	Highly customizable	Point-to-click customization for SMBs
<b>Remote Access</b>	Works best inside company network	Accessible via the internet on all browsers
<b>Mobile Access</b>	Not typically	Accessible via mobile browsers

**6- Worldwide SaaS Forecast .**



**Figure [3] Worldwide SaaS Forecast.(Granter and IDC 2011)**

From the figure 3 [6], the SaaS market will continue to grow globally to 21.5\$ billion by 2015. The largest SaaS market will be North America with 64% global market share.

**8- Most Common Places to Use SaaS**

Though the SaaS approach is gradually making inroads in all application areas, it is ideally suited for some particular areas. It is not suited for applications which are highly specialized like sensitive financial applications or those which involve huge data transfers, like business intelligence. SMBs however do not need applications which are so highly specialized, but applications which help improve productivity, and efficient management of information within and without the organization. SaaS is therefore, ideally suited for the kind of applications SMBs need, and they also allow the amount of customization needed in these scenarios.

The following are the areas in which the SaaS approach is ideally suited:

**9- CRM and HR Applications – CRM and HR applications** are the areas in which SaaS initially gained ground, and it is expected that this trend shall continue. Vendors like Salesforce.com helped popularize SaaS because of the sheer benefits they provided over on premise software, and their widespread success over the years. HR applications are suitable for the SaaS approach because of the social nature of SaaS applications. Freshbook is a company which has seen massive adoption in the SaaS HR application domain.

**10-The advantages of true SaaS solutions.**

True SaaS solutions offer users the ultimate in flexibility and low cost. True SaaS replaces rigid, complex, expensive and difficult-to-modify applications with solutions that increase productivity. True SaaS solutions also replace limited out-of-the-box functionality with close alignment to key business processes and priorities, and easy adaptability as priorities change [7].

The advantages of true SaaS solutions enable companies of every size and type to be more efficient, provide better IT service, and enjoy truly integrated and customized solutions at an affordable price. True SaaS also enables businesses to do business as dictated by specific processes and goals, and not constrained by technological or vendor limitations. And simplified subscription licensing, combined with zero maintenance costs and predictable operating costs, means that users not only enjoy ROI, but return before investment.

These benefits have helped decision-makers alter culture and business mindsets at their companies. Or as IDC put it in the announcement of its recent SaaS study, "the harsh economic climate will actually accelerate the growth prospects for the software-as-a-service (SaaS) model as vendors position offerings as right-sized, zero-CAPEX alternatives to on-premise applications. Buyers will opt for easy-to-use subscription services which meter current use, not future capacity, and vendors and partners will look for new products and recurring revenue streams."\*

Businesses should focus their software modernization efforts on true SaaS solutions. ASP and other SaaS impostors do not benefit the customer. Meanwhile, SaaS vendors are challenged to demonstrate sustainability and scalability of their technologies and their business models.

Service-now.com, for example, was born on the Internet and lives on the Internet. Its founder and CEO, Fred Luddy, spent decades in the legacy enterprise software market and intimately knows the difficulty old technologies cause for end users. He started

Service-now.com from scratch to build a better IT service management application based on Web 2.0 technologies and delivered via SaaS. Since the first Service-now.com customer in July 2005, there are now hundreds of global enterprise IT organizations getting the benefit of pure SaaS in IT.

Service-now.com and other customers of true SaaS are asking, "remember when?"

### 11- Benefits Moving to SaaS

Of course, just because you can add SaaS to your IT infrastructure is not by itself a reason to do it; there has to be a viable business reason, too. SaaS offers substantial opportunities for organizations of all sizes to shift the risks of software acquisition, and to move IT from a reactive cost center to being a proactive, value-producing part of the enterprise [8].

### 1- Managing the Risks of Software Acquisition

Traditionally, deploying large-scale business-critical software systems, such as ERP and CRM application suites, has been a major undertaking. Deploying these systems across a large enterprise can cost hundreds of thousands of dollars in upfront licensing cost, and usually requires an army of IT personnel and consultants to customize and integrate it with the organization's other systems and data. The time, staff, and budget requirements of a deployment of this magnitude represent a significant risk for an organization of any size, and often puts such software out of the reach of smaller organizations that would otherwise be able to derive from it a great deal of utility.

The on-demand delivery model changes some of this. SaaS applications don't require the deployment of a large infrastructure at the client's location, which eliminates or drastically reduces the upfront commitment of resources. With no significant initial investment to amortize, an enterprise that deploys a SaaS application that turns out to produce disappointing results can walk away and pursue a different direction, without having to abandon an expensive on-premise infrastructure.

Additionally, if custom integration is not required, SaaS applications can be planned and executed with minimal effort and roll-out activities, creating one of the shortest time-to-value intervals possible for a major IT investment. This has also made it possible for a number of SaaS vendors to offer risk-free (and often literally free) "test drives" of their software for a limited period, such as 30 days. Giving prospective customers a chance to try the software before they buy it helps eliminate much of the risk surrounding software purchase.

For more information about the business benefits of SaaS, see Architecture Strategies for Catching the Long Tail in the MDSN Library.

## 2- Managing IT Focus

With SaaS, the job of deploying an application and keeping it running from day to day—testing and installing patches, managing upgrades, monitoring performance, ensuring high availability, and so forth—is handled by the provider. By transferring the responsibility for these "overhead" activities to a third party, the IT department can focus more on high-value activities that align with and support the business goals of the enterprise. Instead of being primarily reactive and operations-focused, the chief information officer (CIO) and IT staff can more effectively function as technology strategists to the rest of the company, working with business units to understand their business needs and advise them on how best to use technology to accomplish their objectives. Far from being made obsolete by SaaS, the IT department has an opportunity to contribute to the success of the enterprise more directly than ever before.

## 3- The SaaS Continua

In the "pure" form of SaaS, a provider hosts an application centrally and delivers access to multiple customers over the Internet in exchange for a fee. In practice, however, the defining characteristics between an on-premise application and a SaaS application are not binary, but are graduated along three different dimensions: how software is licensed, where it is located, and how it is managed. Each of these traits can be visualized as a continuum, with traditional on-premise software on one end and pure SaaS at the other. In between are additional options that combine aspects of both.



Figure 1. SaaS applications are distinguished by their conceptual locations on three different continua.

**Licensing:** On-premise applications typically are licensed in perpetuity, with a single up-front cost for each user or site, or (in the case of custom-built applications) owned outright. SaaS applications often are licensed with a usage-based transaction model, in which the customer is only billed for the number of service transactions used. In between is the familiar time-based subscription model, in which the customer pays a flat fee per seat for a particular time period—such as a month or a quarter—and is allowed unlimited use of the service during that period.

**Location:** SaaS applications are installed at the SaaS hoster's location, while on-premise applications are, of course, installed within your own IT environment. In between is the appliance model, in which the vendor supplies a hardware/software component as a "black box" that is installed at your location, instead of the vendor's. An example of an appliance in this sense would be a device that includes a logistics application with a cached and periodically updated database. A shipping company might provide such a device to its large customers, so they can query the device for shipping information instead of hitting the shipping company's servers with thousands of individual queries a day.

**Management:** Traditionally, the IT department is responsible for providing IT service to users, which means being familiar with network, server, and application platforms; providing support and troubleshooting; and resolving IT security, reliability, performance, and availability problems. This is a big job, and some IT departments subcontract some of these management responsibilities to third-party service providers that specialize in IT management. At the other end of the spectrum, SaaS applications are completely managed by the vendor or SaaS hoster; in fact, the implementation of management tasks and responsibilities is opaque to the consumer. Service-level agreements (SLAs) govern the quality, availability, and support commitments that the provider makes to the subscriber.

## 12- Considerations for Embracing SaaS

Some of these considerations include the following [9]:

- **Political considerations.** Sometimes, the decision can be short-circuited by resistance from within an organization, if important people insist that certain functionality remain internal, under the control of IT; other considerations therefore become unimportant. Test-drive deployments (see the previous subsection titled "Managing the Risks of Software Acquisition") might sometimes help convince risk-averse managers to approve pilot projects.

- **Technical considerations.** SaaS applications typically provide some flexibility for customer configuration, but this approach has its limitations. If an important application requires specialized technical knowledge to operate and support, or requires customization that a SaaS vendor cannot offer, it might not be possible to pursue a SaaS solution for the application.

Another factor to consider is the type and amount of data that will be transmitted to and from the application on a regular basis. Internet bandwidth pales in comparison to the gigabit Ethernet links commonly found in enterprise LANs, and data transmissions that take a few minutes to transfer between servers in your server room might take hours to transmit to and from a SaaS

application located across the country. Because of this, it might make sense to consider a solution that takes network latency into consideration. An appliance-based solution, for example, might cache or batch.

- **Financial considerations.** Consider the total cost of ownership (TCO) of a SaaS application, compared to that of an equivalent on-premise application. Although the initial cost of acquiring software capabilities through SaaS is normally lower than that of on-premise applications, the long-term cost structure is less certain. Factors that can affect the TCO of a SaaS application include the number of licensed users; the amount of custom configuration you will have to perform to integrate the SaaS application with your infrastructure; and whether your existing data centers already provide economy of scale, thereby reducing the potential cost savings of SaaS.

Additionally, you might decide to delay implementing a SaaS replacement for an expensive or recently implemented application until it produces a satisfactory return on investment (ROI).

- **Legal considerations.** Some industries are subject to regulatory law in different parts of the world, which imposes various reporting and recordkeeping requirements that your potential SaaS solution candidates cannot satisfy. Consider the regulatory environments in all the different jurisdictions in which your organization operates and how they affect your application needs.

Sometimes, technical and financial considerations also can have legal ramifications, such as whether candidate SaaS providers will be able to meet your internal standards for data security and privacy in order to avoid legal exposure. Consider any legal obligations you have toward customers or other parties, and whether SaaS will allow you to continue to meet them.

## 13- When SaaS Makes Sense

SaaS solutions are broadly applicable across multiple business functions in many types and sizes of companies. One area experiencing growing levels of user and vendor attention is IT operations, particularly IT service management. Corporate decision-makers now more than ever need the IT organization for IT service strategy and process execution, not just for infrastructure and application management. Why not leave the dirty work to the application experts?

While almost every legacy vendor of IT infrastructure and service management solutions has jumped on the SaaS bandwagon through crafty messaging and PowerPoint presentations, few, if any, are offering true SaaS. Some are merely serving up the same old client / server applications via an ASP delivery model and calling it SaaS. A Web interface on a client / server application is not SaaS.

Traditional software vendors have numerous barriers to entry to the SaaS market. Old technology cannot morph into SaaS. A SaaS application needs to be built from scratch using modern Web technologies. Legacy vendors also have to deal with organizational challenges that include converting to a subscription license model, retraining sales and fulfilling a new compensation, disruptions to revenue streams and stock valuations, and converting customers who are using the old technology.

Users must exercise caution and diligence when considering SaaS. The following recommendations and conclusions can help in the process of discovering true SaaS

#### **14- Steps to ensure that our SaaS transition or implementing Software as a Service in Egypt is successful .**

##### **1. Ensure that you understand exactly why you are implementing SaaS**

Whenever a business implements a new technology, whether this is a hardware based technology or in this case a software service based technology, there is always a reason (or number of reasons) exactly why a business is implementing this new technology. There are a number of reasons why businesses would want to implement SaaS. Some business might want to improve the efficiency of their business related process by being able to concentrate more on business related processes rather than on software management processes, while other businesses may want to improve the collaboration of a number of different business sites of theirs, which are geographically separated.

No matter what reason a business has for wanting to implement SaaS, they should be clear about exactly what this reason is. A business should also have a very good understanding about how their existing processes and infrastructure work. This information is required so that SaaS software services can be integrated into their existing infrastructure at a later stage but with an absolute minimum of problems.

##### **2. Note down exactly what you need in order to help you achieve the reason why you are implementing SaaS in the first place**

This directly follows on from the first consideration. Once a business knows why they are implementing SaaS, they can then go about finding exactly what they need in order to accomplish this. There are a number of questions that a business should be able to answer, which will help them find out exactly what they need in order to accomplish what they initially set out to achieve. Firstly a business should be able to answer exactly what their SaaS software services need to be able to do. Secondly, a business should be able to answer exactly what kind of features these software services will need

to have, in order to meet the answer to their previous question.

For example if a business wanted to improve data collaboration between various different business sites, then they would want a SaaS software solution that could be accessed by many users. However, if a business wanted a highly efficient software solution, similar in performance to traditional on-premises software solutions, then they would probably want a SaaS software service that could only be accessed by a few users at a time (making it more efficient than software solutions which are offered by many different users at the same time).

No matter what a business requires, by answering the two questions which were detailed in the first paragraph, things should be made a lot clearer for them. This means that a business should now have the knowledge to choose a SaaS service that is suitable for them.

##### **3. Request a Service Level Agreement before signing any contracts**

The Service Level Agreement is an important agreement document because it clearly defines what a SaaS service provider is offering and also what consequences they will face if they fail to deliver these services, to the agreed standard. To avoid problems at a later time and to ensure that they are getting exactly what they paid for, a business should request a Service Level Agreement before actually signing any contracts. Only when a business is happy with the terms in their Service Level Agreement, should they continue with the implementation process of SaaS.

##### **4. Make sure that agreement clauses meet your needs and not just the software vendors needs**

Because of the fact that SaaS software vendors can be located anywhere in the world, their customs and agreements may be differ from what a business (located elsewhere) actually thinks that these terms mean. For example, if a business was located in the US and their SaaS service provider was located in the UK (or any other part of the world other than the US), then there will be a time difference (among other differences) between the two organizations.

This has a number of consequences when dealing with availability agreements or any other types of agreement clauses for that matter. For example a SaaS service provider may have a clause stating that they guarantee the availability of software services during business hours. However, a business should be clear about what exactly is meant by phrase 'business hours'. For example, does it mean that these software services will be available during the SaaS service provider's business hours or does it mean that these software services will be available during their client's business hours, which will differ from theirs due to geographical differences?

Also, still using the same example above, a SaaS service provider may have a different interpretation of what the term 'business hours' means, when compared to what their client actually needs. For example a SaaS service provider may define the term business hours meaning nine till five. However if a business operated 24/7, then obviously this clause is no good for them.

If a SaaS service provider has any vaguely written agreement clauses, then a business should clarify exactly what these clauses mean and if they are not happy with these clauses, then they should negotiate their own agreement clauses or select another service provider that better matches their needs.

### **5. Consider IT support requirements**

Businesses should consider what level of IT professionals they will need, as well as what the expectations of their SaaS service provider actually are. For example will a business be able to continue operating with their existing workforce, once SaaS has been implemented or will they need to bring in additional IT professionals? Will a businesses SaaS service provider expect a business to have technical geniuses on hand or will anyone with a basic knowledge of IT be able to use their software services?

The level of support that a business will have to provide for SaaS software services themselves, all depends on what level of support their SaaS software vendor can provide them with. If a SaaS software vendor just delivers their software services but with very little support or documentation, then a business will need to employ a solid IT support workforce. However, if a SaaS software vendor provides clear instructions and documentation in clear English (with very little technical jargon) then a business should be able to continue operating without needing to bring in additional IT support professionals.

### **6. Find out if anything has to be done if your service provider fails to deliver the standard of services that they promised**

A business should have already negotiated the consequences that a SaaS service provider will face if they fail to deliver the standard of software services that they promised. However, what a lot of businesses don't realize is that some SaaS service providers do not automate this process. This means that a business will have slightly more work to do in the form of writing a letter, writing an email or putting in a requests, to receive the 'credits' that they should be entitled to.

Businesses should be clear about whether the above process is an automated one or if it is not. If it is not an automated process, then a business should be clear about exactly what action they have to take, in order to receive what they are entitled to, when their SaaS service provider fails to deliver their services up to the

standard that was guaranteed by them in their Service Level Agreement contract.

### **7. Make sure that employees are properly trained**

Due to the fact that implementing SaaS is such a relatively straightforward procedure, businesses can easily forget to do other things, which would otherwise be obvious. One of these things is training their staff. To avoid problems once SaaS software services have been implemented, a business should train their staff on how to access these new software services, as well as on how to use these new software services, during their initial setup stage. Once SaaS has been implemented, training on how to use these software services should be given, just as training would be given to employees on how to use any other new software service.

### **8. Consider what exit strategies you have**

One thing that businesses should not overlook once they have implemented SaaS is what back out strategies they have. For example are they able to leave their SaaS service provider at any time. Will they easily be able to migrate to another SaaS service provider or will they easily be able to return back to an on-premises Also a business should consider what is going to happen to any of their data that was stored on their SaaS service provider's data centers. For example will a business be able to easily restore this data back on to their data centers and will some of their data remain on their SaaS service provider's data centers. Some SaaS service providers may choose to keep certain amounts of a clients data on their own data centers (for a limited period of time), to make things easier for their clients in case they return back to them in the future. If a business is not happy with this policy, then they should request that all of their data is erased from their SaaS service provider's data centers, themselves.

### **9. Decrease the number of existing machines within your internal infrastructure**

The great thing about SaaS is that the hosting of software applications is taken out of the hands of businesses. This means that a business no longer requires as many physical servers as they did before or they no longer require as many software licenses for their on-premises software applications or operating systems, as they did before.

By decreasing the number of physical servers that a business has running within its internal infrastructure and by decreasing the number of licensed software operating systems or licensed software applications that a business has running within its internal infrastructure, a business can save money in the long run. For example not only will they save money on buying new hardware for their servers or paying for additional software licenses but they will also save money on the administration of these machines, they will save money

in terms of power consumption and they will save money on cooling requirements, as well as with many other aspects.

**10. Know exactly what you will be paying**

With traditional software applications, businesses pay a single upfront cost for these software applications and for any licenses that they require, depending on how many instances of that particular software application, they need to run. With SaaS software services, when it comes to payment, things are not as straightforward as they are for traditional software applications.

For example businesses may pay a monthly fee to use their SaaS service provider's software services or they may only pay for what they use, by using a pay-as-you-go payment model. Businesses may also have to deal with licensing related issues if multiple users are going to access a single instance of a software application and they may also have to pay for storage space within their software vendor's data centers, in order to store their business related data.

In order to save money a business should clearly know beforehand, how frequently they will be using these data services, what their data storage requirements are and what payment method would be the best for them (i.e. a monthly fixed rate or a pay-as-you-go payment model). Finally, businesses should not forget about other costs, including costs that relate to staffing requirements, training, backing up requirements and any other process that are not in their software vendors hands.

Table 2 Summarises the benefits of SaaS and the difficulties that one expects to find in implementing SaaS anywhere [10].

Benefits	Difficulties
Efficiency in operations	Security
Lowerrisks	What happens if SaaS provider disappears?
Higher financial returns on operations Faster innovation	Aligningcontracts and incentives

The SaaS provider hosts the MIS software (that it has either bought or in some limited instances built it)either using its own facilities or at a 3rd party hosting facility, and offers access to this service via the Internet to the MFI. Since the hosting is done on the Internet, there is no need for the SaaS provider to be physically present with its own technicians in every regional zone(Fortune & Aldrich, 2003).

The SaaS provider would technically help the MFI to connect to the MIS software via the Internet since the MFI personnel may not be competent to do this.

Thereafter, the SaaS provider depending on whether it owns the MIS software would either provide all requisite levels of support, or offers the first and second level of support for the MIS software indicated in table 1, and would turn to the software vendor for third level support to address bug fixes, and new enhancements.

Level	Description	Examples
Level 1	Daily services to help MFI run the application	Providing access to a Service Desk during the MFI's business hours 24*7 Monitoring of all production components (i.e. servers, firewalls, database, etc) Responding to MFI User queries and needs Running Daily / Monthly End-of-Day processes Performing daily backups of all server environments Daily Report generation Running Daily Start-of-Day processes
Level 2	Periodic services to initiate and maintain the existing application	Performing regular system maintenance & optimization tasks Regular interaction and follow-ups with the software vendor Testing bug fixes to Application, Database, Middleware, OS and other system related components Testing of new application and OS software releases Providing access to a Training environment on a time-share basis Providing access to a Reporting Server (optional)
Level 3	Improving the application	Bug fixes New enhancements

**Table 1: Software Services required by the user**

**15- Conclusion & Summary**

This paper has clarified the reasons for and challenges of transitioning to a SaaS model, developing a software product or web-based application is relatively easy. Making it a viable, profitable, and sustainable business is more challenging. The SaaS model presents itself as an ASP successor emending its inefficiencies and exploiting the outstanding opportunities of the Internet as a platform, with the goal of delivering services massively to innumerable users in any part of the world. But every software business model has its flaws, and SaaS is no exception. Considered an outsourcing solution and using the Internet as its only channel, SaaS model faces many challenges that traditional delivery models do not.

SaaS evolved and branched, many organizations approach SaaS from different ways: delivering service platforms; or the traditional single service providing such as CRM or E-commerce services. Predictions have

foreseen a more explosive adoption and SaaS growing, but in reality, there are still only a few cases of enormous revenue making success, and now some skeptics began to announce the end of SaaS model.

All SaaS products have their own unique characteristics, small variants that deeply influence in SaaS' adoption. This project aims to understand which are the minimum requirements for companies to achieve success in this business, compensating for its model deficiencies and catapulting its advantages.

Software Industry evolves faster than ever, and it is possible that new delivery models emerge, possibly SaaS successors, that be far more robust and that emend SaaS' flaws for which no solutions came out yet. Until then, Software as a Service has the chance to grow and there is still much to explore.

As this works conclusion, it is probable that given the current technological advances and financial crisis, traditional software vendors will have to adapt to the new technological and business reality. The SaaS and ASP family of models propose alternative approaches to solve many traditional issues. For that reason, these models are feasible choices for both software vendors and customers to overcome their problems. On an optimistic note, this work's author suggests the SaaS model has an especially favorable outlook for the near future.

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