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Software as a Service (SaaS): Fad or Trend

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The Gartner Group, a respected IT research firm, finds that organizations usually spend up to four times upfront costs to manage their software after purchase. Some spend as much as 75 percent and more of their total IT budget on maintaining and operating existing IT systems and infrastructure. In such an environment, several innovative pricing models are being offered by vendors. One of the most recent is Software-as-a-Service (SaaS). It may offer some interesting choices for healthcare organizations.

In real-life use today, SaaS allows users to access a huge range of software applications across the Internet, implemented and managed on hardware hosted by the vendor.

Software as a Utility

SaaS provides software services like any utility, on the basis of a user contract, and is offered on the basis of a 'pay-as-you-go' subscription pricing.

Nevertheless, some SaaS firms also charge a one-time fee for set up and installation (including the training of key staff) as well as basic customization and integration services for legacy applications and databases.

(Strictly speaking, SaaS covers IT solutions not only software but hardware and middleware and hosting).

SaaS, ASP and Web-Enabled Services

The key difference between SaaS and application service providers or ASP, the predecessor model which it is still sometimes confused with, include fundamental differences in architecture.

SaaS is based on a multi-tenant application architecture, designed from the outset to be scalable and replicable, with an inherent capability of supporting several hundreds (or even thousands) of simultaneous users at different locations - a direct result of the increase in bandwidth availability. SaaS also offers major security and performance improvements, as well as easier integration and/or customization with other systems.

On the other hand, both SaaS and ASP do not have any resident software on a user's PC. Access is wholly through a Web browser.

Another relatively new model, the Web-enabled one, allows users the option to access the system either via a Web browser or Citrix. However, Web-enabled software, unlike SaaS, allocates responsibility for maintenance to a user's IT department, an external consultant, or a third-party maintenance contractor.

Healthcare and SaaS

For a relatively newer high IT spending sector such as healthcare, SaaS offers a host of promises.

Firstly, users avoid the need to choose, buy, install and maintain expensive hardware or software, and then track, assess and chase upgrades. Given the pace of new solutions on offer, the issue of making a good choice – devoid of heavy pressure from existing vendor relationships is hard enough. So too is selling the concept to management.

Its proponents argue that SaaS not only enables healthcare facilities to save money on software applications, but frees up IT specialists to focus on building the business. Their argument is especially compelling for some hospital CEOs who see their core business as healthcare delivery, not IT.

Growth Drivers

Overall, the growth of SaaS is being driven by the following factors:

Technical

- Ó Simplicity and speed of deployment.
- Ó Scalability (incremental growth rather than the quantum leap in systems required for new needs). As one SaaS vendor explained, “it is hard to buy 37% of a new server”.
- Ó Flexibility, in terms of on-demand features and functionalities. For instance, SaaS allows for customizing on-line software through new scripts, or even new code, in far less time than an in-house team or dedicated third-party vendor ever could.

Financial and Managerial

- Ó Transparent pricing.
- Ó Quicker payback on investments, with reduced costs (compared to licensed solutions whose costs are rising in many IT application environments).
- Ó In monthly payment arrangements, some SaaS vendors allow for adding or reducing costs based on a growth or fall in the number of users or additional services.
- Ó 24 x 7 support.
- Ó In cases where application users (occasionally) cross physical or contractual/legal boundaries (e.g a project team on a clinical information system which requires resorting on an ad-hoc basis to an external consultant, who may not be covered by the licence).
- Ó Global growth pathways via hosting centers outside one country.

SaaS and the Real World: The Pluses

Crucially, SaaS also addresses a world of limited IT human resources. It does away with the need to estimate numbers and downtime allocations for existing IT staff, as well as having to train them in the deployment of new applications.

This is especially pertinent given the diminishing pool of specialists having skills which span both the growing number of new IT solutions as well as old workhorse legacy systems. As any hospital CIO knows, integrating old and new, and keeping options open for even-newer systems, while overcoming user resistance and managing the huge task of change management, is not only very demanding but sometimes a thankless task too.

SaaS is of specific relevance for clinics and hospitals which face budgetary pressures, or have low margins. Another major advantage is the efficient and timely implementation of new healthcare IT solutions.

SaaS and the Real World: The Minuses

On the other hand, it is important to also account for occasions where SaaS is not appropriate. These include the following:

Excessive Heterogeneity in the IT Environment:

SaaS systems are typically designed to address the needs of a wide variety of requirements from a centralized application. The flip side of this is a reduction in capability for complex customization. Although some SaaS vendors have sought to address this limitation, the immense complexity of the existing IT environment in most healthcare facilities makes this a crucial factor to take into account.

Pricing Models:

Though the pay-as-you-go subscription pricing model lowers upfront costs, fees add up over time, especially since successful applications entail a steady growth in the number of uses and users.

Over a period of time, SaaS fees can converge with those paid upfront for a perpetual license – especially in both offer equivalence in technical and operational efficiency.

Vendor Concentration:

SaaS is marked by a limitation in the vendor pool, especially in terms of those offering high reliability and comprehensive features. As of now, most vendors tending to offer IT as a utility service are traditional ASP providers.

Lack of High-Speed/Broadband:

This would be especially pertinent in eastern and central Europe, although there are many black spots in northern and western Europe too, as far as comprehensiveness of coverage is concerned. SaaS requires high-speed and dependable bandwidth.

Advantages for Vendors

Like any emerging business paradigm, SaaS also promises to offer vendors a swathe of advantages, not least economies of scale, and an alternative to onsite deployment.

However, the presence of SaaS vendors is still small, and their credibility remains to be established – on both the technological and business sides.

One major issue concerns business culture. This consists of the challenges entailed in moving from a traditional business model (by virtue of which software is sold by a vendor's sales department to customers - with who they have a sometimes-longstanding relationship - with billing by the finance department in the form of an up-front fee, and support and maintenance provided by technical staff on the basis of an annual contract for maintenance and support negotiated by the legal department, to the SaaS model, where revenues trickle in on a monthly basis and can vary unpredictably from one month to the next.

Reliability, Security and Design

Like the wider IT industry, SaaS solutions have to still prove reliability and security, as well as an ability to be integrated with an existing IT environment. All these are challenging enough for any business sector; for healthcare, it is critical. This is where the design element comes in to play. Firstly, new SaaS offerings almost universally incorporate emerging SOA architectures.

Secondly, they (promise to) offer much higher levels of security, which too is not a core business of a hospital; indeed, security outsourcing firms focus purely on physical security (rather than the technical). New SaaS vendors offer both. At their hosting sites, they offer both physical security (layered, electronically-controlled with biometric support and access logs) as well as state-of-the-art industry-standard encryption and other technologies to protect against unauthorized IT system intrusion or attacks.

A Look at the Future

Overall, the growth of SaaS in the future can be considered a given. According to a 2006-2007 survey by Computer Economics, 57% of vendors indicate that economic benefits exceeded the cost of the investment, while 34% report a breakeven ROI. Only 9% of respondents indicated a negative ROI for software as a service.

Though SaaS in the healthcare area has been earliest to pick up in the US (including implementations at prestigious hospitals like that of the University of California at Los Angeles), many IT departments remain wary of it – both in the

US and Europe, in healthcare and other sectors.

The reason is that many fear that SaaS will remove the *raison d'être* for their existence. However, to the more far sighted, SaaS offers the choice of an alignment of IT with business rather than the commonplace reality of becoming trapped in the quicksand of commodity IT applications and management.

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