Managing the Intangible: Software as a Service – New Approach for Sourcing Application Software

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Abstract: The traditional model of software distribution in which software is purchased and then installed on computers requires more complex management and technical resources. This approach of software distribution is demanding on financial resources, especially for start-up companies due to increased costs on IT infrastructure deployment. Some companies in order to decrease these costs use illegal software, which may lead to legal prosecutions, and some companies use other alternatives such open source software. Cloud computing has brought new possibilities in software distribution and outsourcing of IT services. The new distribution model – Software as a Service brought more flexibility and, more importantly, costly effective solutions without legal obligations regarding software copyrights. In the new model, the applications are hosted by a service provider and made available to customers over the Internet. The study compares two approaches to software distribution by using Total Cost of Ownership analysis.

Keywords: software as a service, SaaS, cloud computing, TCO, computer piracy, IT infrastructure, In-House, illegal software, software distribution, software license, software,

Cloud Computing brought new possibilities of how we obtain and use software. New web - based technologies allow organizations and individuals to reduce IT costs while obtaining more flexibility in managing their IT infrastructures. One of the Cloud Computing models is called *Software as a Service* (SaaS). Software as a Service is a delivery model that is obtained remotely from an application service provider. The provider delivers software on a pay for use basis or as a subscription based on use metrics (3). Subscribing to SaaS allows organizations to save their investments that are associated with IT infrastructure as software, hardware, networking and human resources. Other benefits of SaaS are compatibility, scalability and flexibility. Such programs typically run as web-based applications which ensure compatibility with different operating systems, including Mac OS, Windows, Linux, as well as OS for mobile devices. SaaS applications are usually compatible with multiple web browsers.

In order to demonstrate the financial benefits of SaaS, one commonly recognized cost analysis technique is "Total Cost of Ownership" – TCO. Total Cost of Ownership is more than analysis of initial capital investments and includes other costs that are associated with ownership such as maintenance, technical support, training, and other. (7) Analysis based on TCO gives us estimates about "annual costs per user for each potential infrastructure choice" (7).

To illustrate how TCO can be applied, we decided to analyze two approaches of software usage. In our calculations, we considered a small organization of 6 users with very basic IT infrastructure and software needs. The first software is Microsoft Office 2013 Professional and the second cloud alternative is Microsoft Office 365. Both software packages are from the same company, but the delivery model of each is different. Microsoft Office 2013 Professional is delivered on premise (In-House), while Microsoft Office 365 is delivered as a service (SaaS).

In our analysis, we did not include costs of hardware, implementation and training, development, network components, Internet and personnel costs as it varies and depends on many circumstances. The analysis focuses on software costs and maintenance. For better accuracy of TCO analysis, the above mentioned costs would need to be included as well.

Input data for the TCO analysis:

SaaS Infrastructure:

- Number of users: 6
- Microsoft Office 365 Professional: 154 EUR/ year (4)
- Maintenance (Number of computers: 6, Number of Servers: 0)¹ 252 EUR/month (Sanding)

In-House Infrastructure:

- Number of users: 6
- Microsoft Office 2013 Professional: 539 EUR/license (5)
- Maintenance (Number of computers: 6, Number of Servers: 1) 336 EUR/month (Sanding)

			SaaS					In-House	l	
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5
Users										
Number of users	6	6	6	6	6	6	6	6	6	6
Microsoft Office 365 – subscription/user	€ 154	€ 154	€ 154	€ 154	€ 154					
Microsoft Office 2013 Licence						€ 539				
Hardware										
Computers										
Server										
Network components										
Software										
Microsoft Office 365	€ 924	€ 924	€ 924	€ 924	€ 924					
Microsoft Office 2013						€ 3,234				
Development and Implementation										
Implementation and Integration										
User training										
Maitanance										
System Administrator (outsourced)	€ 3,024	€ 3,024	€ 3,024	€ 3,024	€ 3,024	€ 4,032	€ 4,032	€ 4,032	€ 4,032	€ 4,032
Other										
Development and Implementation										
Total	€ 3,948	€ 3,948	€ 3,948	€ 3,948	€ 3,948	€ 7,266	€ 4,032	€ 4,032	€ 4,032	€ 4,032

When comparing these two scenarios, the second option (In-House) seems to be less favorable as there are higher initial costs in the first year as the software license needs to be paid up-front. Also the maintenance costs of the second option are higher due to more complex IT infrastructure which requires a file server for collaborative computing.

 $^{^{1}}$ A file server is not necessary in this scenario as the IT infrastructure is partially hosted on the cloud. This also means lower maintenance costs.



Favorability of either infrastructure is dependent on various conditions, but overall, the SaaS approach is more flexible and easier to manage in terms of technical maintenance, updates, licensing and so on. In terms of licensing, SaaS is provided as a subscription – based model per month licensing contracted over a set license period. The traditional software model is provided as a product, where the license fee is paid up front and it is sold for perpetual use (6).

Another advantage of SaaS is that it may reduce computer piracy in the first place and secondly, companies using software subscription – based models do not risk legal prosecution of using unlicensed and pirated software.

Computer piracy is a global problem. According to BSA Global Privacy Study 2011, the global piracy rate for PC software is 42% with the commercial value of the software of 63.4 billion USD (2). The following table and chart shows the Piracy Rates in various countries around the world.

PC Software Piracy Rates					
	2007	2008	2009	2010	2011
Austria	25%	24%	25%	24%	23%
Germany	27%	27%	28%	27%	26%
Sweeden	25%	25%	25%	25%	24%
Czech Republic	39%	38%	37%	36%	35%
Hungary	42%	42%	41%	41%	41%
Slovakia	45%	43%	43%	42%	40%
Ukraine	83%	84%	85%	86%	84%

Poland	57%	56%	54%	54%	53%
Japan	23%	21%	21%	20%	21%
China	82%	80%	79%	78%	77%
Bangladesh	92%	92%	91%	90%	90%
USA	20%	20%	20%	20%	19%
Nigeria	82%	83%	83%	82%	82%
TOTAL WORLD	38%	41%	43%	42%	42%

Source: (Business Software Alliance, 2012)



PC Software Piracy Rates

In Slovakia, the piracy rate has declining trend. The latest statistics show 40% rate in 2011.

The following table shows the pirated value of software, which in some countries is actually higher than legal sales of software.

Pirated PC Software, 2011						
Country	Pirated Value (\$M)	Legal Sales (\$M)	Piracy Rate			
US	9773	41664	19%			
China	8902	2659	77%			
Russia	3227	1895	63%			
India	2930	1721	63%			
Brazil	2848	2526	53%			
France	2754	4689	37%			
Germany	2265	6447	26%			
Italy	1945	2107	48%			
UK	1943	5530	26%			
Japan	1875	7054	21%			
Indonesia	1467	239	86%			
Mexico	1249	942	57%			
Spain	1216	1548	44%			
Canada	1141	3085	27%			
Thailand	852	331	72%			
South Korea	815	1223	40%			
Australia	763	2554	23%			
Venezuela	668	91	88%			
Malaysia	657	538	55%			
Argentina	657	295	69%			

Source: (Business Software Alliance, 2012)

The worldwide figures of pirated value of software indicate a positive potential for the growth of SaaS in the foreseeable future. By shifting the traditional model of software distribution to software as a service, software publishers and providers may increase the penetration and sales of legal software.

Cloud's subscription models as SaaS might reduce, or eliminate software piracy as the providers are able to track account usage and logins. Cloud computing applications offer real-time analytics so for software providers and publishers it is possible to gain control over their applications immediately (1). Additionally, financial and managerial benefits are convenient, especially for startup companies due to lowering initial startup costs and reducing complexity of managing IT infrastructure.

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