

# Software Business

Software has penetrated as the backbone support systems in all industries and governments. Huge data is handled by software systems and has helped improve the process an organization works. Software business has taken a huge leap over the past decade and accounted for an annual revenue of \$500 billion in 1998 (Nambisan, S. 2001).

Nabisan in his paper differentiates the software business into two industry sectors- Product and Service (Nambisan, S. 2001). Both the business involve software development and are global, knowledge intensive and highly dynamic but they differ in several aspects including the economics and how the business creates value (Nambisan, S. 2001). A steep comparison between the product and services industry is made on key issues like – Intellectual property rights, Product complementarity, Returns from scale, Abstracting knowledge and integration technologies and connection with users. Cloud software model has emerged as another sector of the software business over the past few years– where in the software, infrastructure and database are provided as a service (Pasi Tyrväinen, 2014). It is a hybrid model where in there is no in-premise infrastructure like the servers and cooling system present but all the customer requirements are met through providing as a service. This is a disruptive change in the software technology (Pasi Tyrväinen, 2014).

Considering the key issues mentioned by Nabisan in his paper and extending to the cloud software model:

Intellectual property right is very important in the cloud software model as the database and infrastructure are provided as a service, the customer data will be stored in an external premise. The cloud service provider will store the data outside the enterprise and is vulnerable to attack by the competitors (Neville Cordell, 2013). Although there is a trust agreement signed by the service provider, critical information like health records should be stored within the organisation (Nambisan, S. 2001). Some companies get a private cloud installed for the internal working which is more secure than the public cloud (Pasi Tyrväinen, 2014). The intellectual property rights are likely to be owned by the cloud service provider but the information related to a specific customer the data is kept confidential. Google drive cloud storage does not have definitive boundary that keeps Google from using what it likes from what you upload to its service (Neville Cordell, 2013).

Oracle cloud provides PaaS (Platform as a Service), which provide software developers to develop and customise the licenced software according to their need. Facebook cloud also provides many API's that can be used over any public cloud to use the social media plugins for the customers benefit. By leveraging these services to compliment the products vendors can gain large market size (Nambisan, S. 2001).

The reuse of scale is both beneficial for the customers and the cloud service providers. For the customers, there will be fixed cost structure on the services they subscribe for. The initial investment will be less as they need not install the infrastructure or the software necessary at their site. A customer using a storage cloud service can restrict the storage capacity according to his need and pay for the subscribed storage (Jinesh Varia, Sajee Mathew 2014). The service is scalable at any point of time, when the customer feels that he needs more storage. The cloud service provider will have a variable cost structure based on the usage of their services by the customers. Amazon web service offer a wide range of cloud services that are highly scalable (Jinesh Varia, Sajee Mathew 2014).

The service provided by the cloud software model are available as public API's for the customers to use and develop on, however the actual technology is abstracted from the customer. Further to enable seamless integration with various standard, the technology developed will be abstracted at the architectural level (Jinesh Varia, Sajee Mathew 2014). Also there will be lot of developers to develop on top of the public API's available and use it to meet their functionality requirement. There will be standard detail documents available to use the web services and other services that are provided to tailor to the needs of the customer. The best example would be the Facebook like API, which can be easily embedded into any website seamlessly (Jinesh Varia, Sajee Mathew 2014). GITHUB is a cloud based version control software and the users of GitHub need not know about the technology and architecture to use the system.

The cloud software architecture is similar to the product approach in the connection with user issue (Nambisan, S. 2001). The customers are in long term relationship with the cloud based service provider. The user are technologically unsophisticated but should have technical knowledge to use the services that are offered by the Cloud service providers. The migration from one cloud provider to another is tedious and hence the initial decision should be made keeping long term gains into picture (Jinesh Varia, Sajee Mathew 2014).

In conclusion, cloud software model has taken the best aspects of the Product and Service models and emerging as a disruptive technology.

## References

Sommerville. I. (2011) Software Engineering, 9th edition, U.S.A: Pearson Education, Inc.

Lassenius, C. (2014), T-76.3601 Introduction to Software Engineering, Lecture 12: Software Process Improvement Software Business, Aalto University Department of Computer Science and Engineering.

Nambisan, S. (2001) Why Service Businesses Are Not Product Businesses. MIT Sloan Management Review. Summer. pp. 72-80.

Podcast: Software Business - A discussion about software business with Prof. Pasi Tyrväinen from the University of Jyväskylä.

Neville Cordell. (2013). " Intellectual property in the cloud"

Jinesh Varia, Sajee Mathew (2014), Overview of Amazon Web Services