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Analysis of Three Sourcing Strategies on the Way to Personalized Ad-Hoc Enterprises

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Abstract

This position paper reveals the importance of emerging cloud services penetration into the business of a modern enterprise, discusses challenges and practices related to cloud services adoption into business processes and defines criteria of a borderline between in-house and outdoor services leading to creation of personalized ad-hoc enterprises.

Keywords: strategic alignment model, business flexibility, project management, business process, cloud computing, business process outsourcing.

Introduction

The digital revolution is rapidly transforming the fundamental nature of many companies in a wide range of industries. Recently, technological developments of cloud computing gave an enormous potential for building modular, market adaptable business models tailored from web-services stored in a cloud based repository for a given business domain. The new market entrants have a big potential to overtake incumbents with a key disruptive innovation (like blockchain) having the rest of expertise or infrastructure sourced from service providers on demand. Although this entrepreneurship potential is constrained with local legal barriers, access to resources, information security or even business mentality, it could trigger a new generation of agile SMBs able to create the new cloud-based dynamic business environment.

Methodology

This position paper is based on the Design science methodology (Hevner, 2004). This concept sees the Information Systems (IS) scrutinizing as a science artifact aimed to solve organizational problems of the company. The service oriented Enterprise Engineering principles are inherited by defining a company by means of various services aligned with business goals that use services as structuring and governing paradigm (Nurcan & Schmidt, 2009). In terms of information support, Service - Oriented Architecture pattern and cloud computing resources are adopted. Also, the research method of Shankar (2008) on cloud adoption is followed and the level of cloud technology penetration in enterprise processes and how it affects the Strategic Alignment (SA) is observed.

Discussion

Since Henderson and Venkatraman's (1993) introduced the popular model of Strategic alignment (SA) to explain the interrelationships between business and information technology (IT) domains of an enterprise, the role of IT domain in business and society has evolved significantly. Carr (2008) compares current technical and business environments with Edison's era, and concludes that the functionalities of Information Systems will be provided as standardized and less expensive (cloud) services. These

technologies driven by economic benefits, simplification and convenience of IT delivery blurred the boundaries between information systems and business functions in many organizational contexts (Leonard, 2008), (Erdogmus, 2009). The emergence of cloud computing – the concept of IT sourcing which frees organizations from having to own their IT – creates several challenges for classical business models. Companies must react on the emerging requirements of agility, time-to-market, time-to-capability and flexibility (Shankar, 2011). The constant growth of such services creates a new networked economic structure - cloud computing environments that contain – Service Vendor (SV) - business model type, distinguished from any other enterprise having "a series of business flow for subscribers" (Li et al., 2011). The major Service Vendors today include Microsoft, Salesforce, Skytap, HP, IBM, Amazon and Google who provide Infrastructure (IaaS), Platform (PaaS), Software (SaaS) and Process (PRaaS) services. They trigger several businesses examining how, when and what to migrate to the cloud and seeking best practices in running hybrid environments.

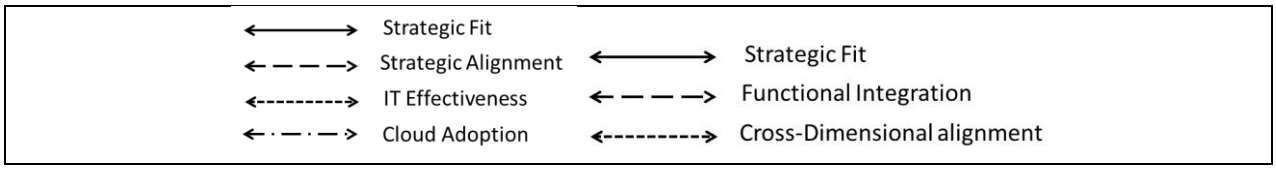
Cloud services shrink time for an enterprise setting up an outsourcing project, since it eliminated multiple interactions with customers to 'discover' their IT environment and to identify the resources to be managed (Head et al. 2009). Consequently, customers demand more flexible and efficient service delivery from their providers and cloud sourcing starts disrupting the traditional IT sourcing (Böhm et al. 2010). That apparently affected SA: e.g. Shankar (2008) proved that cloud adoption (CA) has a very strong positive influence on Cross-Dimensional alignment, i.e. on IT effectiveness: the impact of IT services on the value-added chain.

Among the list of current service vendors no one can satisfy the complete functional information requirements of an enterprise what results in an inability of single vendor contracting: different vendors need to be combined to create own intra-IS (Li et al. 2011), (Gromoff et al. 2012). Li et al. (2011) described the concept of B2B collaboration points (CP) - interfaces between business processes with service providers on the organizations borderline. Today it is possible to outsource also process parts that create multiplicity of B2B interactions within a single BP. To attain competitive advantage companies should find the spots of optimal business process performance interconnected with a combination of cloud services.

A general integration becomes a key issue here not to develop an integration bridge every time a new cloud is used (Li et al. 2011). That's why the primary necessity is to find a proper combination of services distributed on different clouds that meet the demand Mell & Grance (2009) mention community clouds (e.g. shared by some organizations) where SV as a supplier only offers standard and universal services. Gromoff et al. (2012) described an example of such model - virtual service-oriented torrent, which aggregates a common pool of services and makes available with a subscription.

Cloud Adoption serves as a link on the operational level between Enterprise and third party service provider and defines Technical and Functional compliance requirements to integrate service in a proper way. SV Strategy contains a corporate plan of IT service adoption, based on cloud services suitability and availability. A single operation or sub-process therefore is performed by third parties from the vendor's services pools while Cloud Application Layer provides the interface to the end-user (e.g. in form of a webpage). Users often pay certain fees to get access to such portals (Youseff et al. 2008). APIs of SVs are stored in the APIs library in the platform and then are encapsulated into Web services for further service orchestration.

Both Figure 1 and Table 1 provides the overview of enterprise architectures after adoption of cloud solutions. Firstly, we show the changes on the classical Strategic alignment model, and later depict how different sourcing strategies affect EAs.



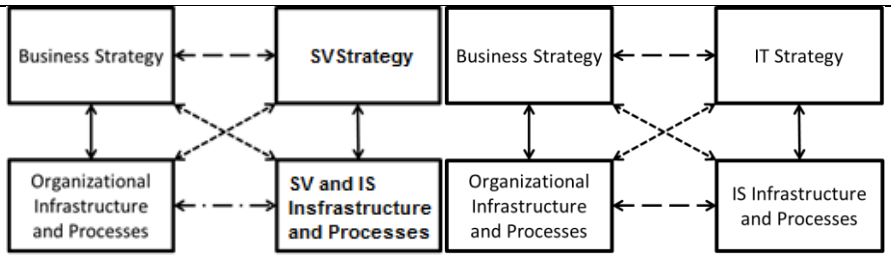


Fig.1 Cloud adoption depicted in strategic alignment model (Henderson and Venkatraman, 1993).

Type of sourcing strategy	**Result in the business domain**	**Result in the IT domain**	**Amount of service vendors**	**Strategic alignment**	**Enterprise architecture type**	**Competitive advantage**
Make	In-house business processes and services	In-house IT processes and services	0	Robust processes coupling with IS	Patchwork automation or leading solution	based on enterprise resources
Make-vs-Buy	Partially outsourced business processes	outdoor IT solutions applied to fill in the gaps	5-10	Business processes coupling based on standardized interfaces	Patchwork automation or "Best of breed"	based on market position
Buy	Up to ad-hoc enterprise via cloud services coupling	Service Vendors Environment	>10	Ad-hoc models coupling based on open interfaces	Service oriented enterprise engineering	based on service personalization and business agility

Table 1. The impact of make-or-buy sourcing decisions on the model

The most visible change in the Strategic alignment model relates to enterprise IT planning. The available cloud resources transform it to an IT strategy towards Software Vendors (SV strategy).

Table 1 describes the changes in Enterprise architecture type and Competitive advantage caused by different sourcing strategies. For most conservative companies, (who select insourcing strategy), it implies higher costs on running their own IS infrastructure and vulnerability to more adaptable market entrants. Most likely this choice would be made due to the industry specifics, e.g. for governmental and military organizations, intelligent agencies, etc.

The "Make-vs-Buy" sourcing strategy is aimed on the balance between insourced enterprise intellectual assets and the outsourced ones. It looks rational so far, though it does not allow quick replacement of business strategy or switch to an alternative industry due to larger resources captured in capital assets.

The "Buy" strategy refers to the quick execution of business model soon after the appearance of business idea. These companies are called *ad-hoc enterprises* since their existence is planned for a limited time for a personal customer demand. Their *personalized customer services* are assembled from a set of outsourced business blocks (processes) using open integration interfaces. For this type of model competitive advantage comes from its ability to adapt to personalized customer demand, being quicker than the incumbents who operate on averaged target customer groups. The model does not require high capital investments, though the diverse service vendor environment is a must. This is a future of enterprise engineering and the whole economics, which will have less transaction costs, more customer value and a high service level.

Research limitations

Firstly, having information assets with very low actionability and certifiability in a cloud computing environment would undermine other business-alignment efforts, and greatly reduce the overall value of the organization's information assets. Secondly, Cloud computing implies new risks concerning security and information privacy. Single services might not be compatible with each other, even on purpose.

Future research directions

Possible next research question could be about processes that are most appropriate to be substituted with already existing cloud services and in which industries ad-hoc enterprises are most likely to appear.

References

von Alan, R. Hevner, et al. (2004) Design science in information systems research. MIS quarterly 28.1 pp. 75-105.

Carr, N.G., (2008). The big switch: rewiring the world, from Edison to Google. New York: W. W. Norton

Chan Y. E and Reich B. H. (2007) "IT alignment: what have we learned?" Journal of Information Technology, 22(4) 297-315

Erdogmus, H. (2009). Cloud computing: Does Nirvana hide behind the Nebula. IEEE Software, 26(11), 4-6. Retrieved from IEEE database.

Demirkan, H.; Bess, C.; Spohrer, J; Rayes, A.; Allen, D.; and Moghaddam, Y. (2015) "Innovations with Smart Service Systems: Analytics, Big Data, Cognitive Assistance, and the Internet of Everything," Communications of the Association for Information Systems: Vol. 37, Article 35.

Gromoff A., Kazantsev, N., Kozhevnikov, D., Ponfilenok, M. and Stavenko, Y. (2012). Newer Approach to Create Flexible Business Architecture of Modern Enterprise. Global Journal of Flexible Systems Management. 13(4), Springer-Verlag, 207-215

Gromoff, A., Kazantsev, N., Schumsky, L., Konovalov, N. (2014). Business Transformation based on Cloud Services. In Services Computing (SCC), 844-845, retrieved from IEEE database.

Head, M. et al., (2009). Taking IT Management Services to a Cloud. In IEEE International Conference on Cloud Computing, 2009. CLOUD '09. 175-182.

Henderson J. C., Venkatraman N. (1993), Strategic alignment: leveraging information technology for transforming organizations, IBM Systems Journal, 32(1), 4-16

Li, Q., Wang, C., Wu, J., Li, J., and Wang, Z. Y. (2011). Towards the business–information technology alignment in cloud computing environment: an approach based on collaboration points and agents. International Journal of Computer Integrated Manufacturing, 24(11), 1038-1057.

Mell, P. & Grance, T., (2009). Draft NIST Working Definition of Cloud Computing. National Institute of Standards and Technology. Information Technology Laboratory.

Nurcan, S., & Schmidt, R., (2009). Service Oriented Enterprise-Architecture for enterprise engineering introduction. In Enterprise Distributed Object Computing Conference Workshops, 2009. EDOCW 2009. 13th (pp. 247-253). IEEE