

IT Outsourcing - A Management-Marketing Decision

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Abstract: Survival of an organization in an environment increasingly aggressive requires a more constant study of it, followed by careful planning of its activities on the market, accordingly with the organization's mission. In this context, targets and specific modalities for achieving them are expressed by developing and implementing management-marketing strategies. Critical economic environment (recession) demands now thoughtful strategic movements, providing a satisfactory market share, constant cash-flow and customer loyalty. The evolution of the Information Technology (IT) allowed for several years the development of IT solutions based on Cloud Computing. The present paper describes how the decision of outsourcing IT using cloud solutions is bounded from benefits in terms of reduced costs for the infrastructure, removes the burden of the infrastructure and networking management for the companies, offers the chance to use multi-tenant applications that are easy to be updated by the application developers and so on.

Keywords: crisis management, cloud computing, outsourcing IT, marketing-management decisions

1 Introduction

The economical cycle seems to be one of the economy's postulates and until we learn to manage the economic resources from a manner to linearize the economic processes, the single available option is to minimize the effects, often dramatically, of the negative components: the crisis point and the crisis itself. Due to the economic crisis, the two main objectives firms have in this space are being able to appropriately value their portfolio by having adequate and reliable data, and cutting costs. The accent into a strong competitive environment comes on the competitive advantage [25] and nowadays a powerful IT department can make the difference between failure or success. On the other hand, the complex technical nature of IT requires expensive equipment and therefore capital is tied up into IT department.

The benefits generated by the dynamic of IT have led in a relatively short time to the adoption of the new technological advances at all the levels of the marketing environment, exercising therefore, direct or indirect pressure on the company's IT to be able to adapt its own activity to the dynamics of the social and economical context. All categories of general public, companies, marketing intermediaries, economical, political or social entities currently operate using computer systems of various sizes. On the other hand, all these types of organizations are interconnected at different functional or operational levels, forming a big informatics system.

It becomes therefore essential for a company to benefit from the IT support in order to allow it to function as an active part of this macro-computer network. In other words, the IT capability of an organization exceeds many concepts like strengths or competitive advantage and had become an absolute necessity. On the other hand, the acute need to cut the IT costs at many organizations spurred the interest in the potential cost-savings promised by cloud computing. The traditional solution of outsourcing IT turns in the current economic context less stable, more expensive and less effective in relation to the company's real needs.

The survival of an organization in an environment increasingly aggressive requires a more constant study of it, followed by careful planning of its activities on the market in accordance with the organization's mission. In this context, targets and specific modalities for achieving them are expressed by developing and implementing management-marketing strategies.

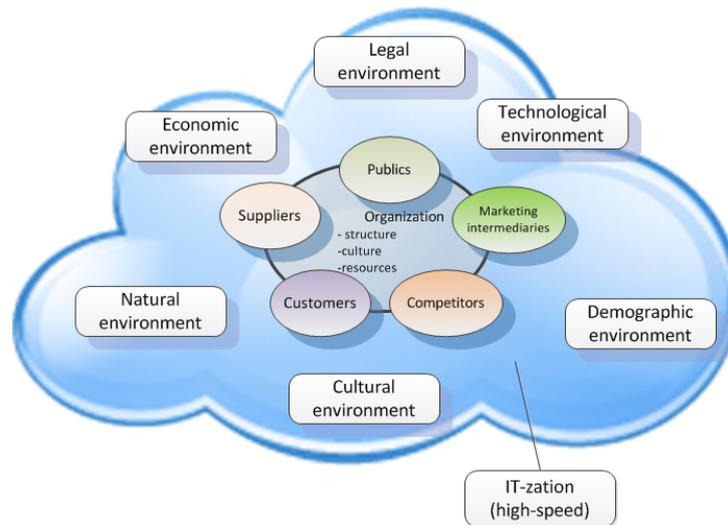


Figure 1: High speed IT-ization of whole marketing environment

Critical economic environment (recession) demands now thoughtful strategic movement providing a satisfactory market share, constant cash-flow and customer loyalty.

2 Managing outsourcing strategy

Faced with the alternatives of bankruptcy or dramatically decrease of activities, most of the companies focus on severe costs reduction, trying to pursue in the same time the lines of Corporate Social Responsibility (CSR) in terms of jobs preservation. One of the most effective solutions for costs reduction was proven to be the services outsourcing. This way, the company can have resources at costs that allow its survival. The CSR requirements in terms of responsibility towards the employees are therefore respected by the fact that globally it creates new jobs inside outsourcing companies.

These kinds of practical examples such payroll, transportation, trainings or marketing services proved to be again practical and functional. There are various levels of outsourcing (see figure 2): high/medium and low priority. Outsourcing companies should be qualified and selected according to both their demonstrated effectiveness and their ability to work collaboratively. Companies can create real sustained value routinely and use them for far more strategic ends-to gain capabilities that they don't have in-house, or to strengthen capabilities they do have [12].

Contracting third parties, specialized in areas where the firm has neither a critical strategic need, nor special capabilities [27], enables a company to focus its efforts on its core competencies. When the outsourcing is implemented for correct reasons, it could bring some benefits in terms of cost reduction and flexibility for the organizations that help them to overcome the crisis:

- * helps companies to focus on their main activities. During the financial boom period of time, some companies grow by adding supplementary activities that weren't in the initial portfolio. These supplementary activities need specialized personnel that couldn't be all the time trained inside the company and this leads to raise the company's operating expenses.

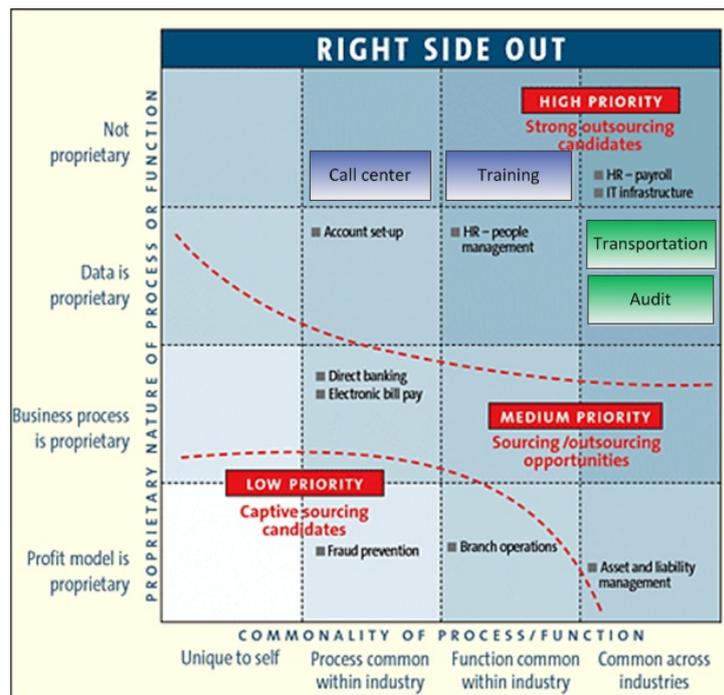


Figure 2: Strategic Outsourcing Options, adapted after [30]

Externalizing these activities, even temporary, leads to refocusing on the core company's activities and increasing the business revenues.

- * helps companies to optimize their costs by externalizing activities that are mandatory but having them inside the company is not effective (e.g. externalize the accounting activity to a specialized firm).
- * saves costs related to office space by outsourcing some less important activities to third parties or allowing teleworking for the employees.
- * helps performing a risk management policy in the periods of high turnover when the inconsistency in the employee number could increase. Outsourcing possible activities to external companies could bring a certain level of stability and saves money that otherwise will be spent with new personnel training.

The key risk is the growing dependence on an outsourcer, thus limiting company future flexibility. The breakdown of classical outsourcing solutions has pushed the companies to identify new practical solutions. Long term solutions are more complex and require more than gaining cost reduction and flexibility, outsourcing strategy must provide radical change and enterprise transformation [21].

3 Managing outsourcing IT

Early in the '90s, various organizations are looking for improving competitive advantages and obtaining better performance, IT being critical in enabling business development in various domains, IT enabled managerial innovation allowed organizations to compete more effectively and helped to quickly ramp up output to meet demand [8].

During the last years, the high management and the achieved high productivity involved the intensive use of the IT equipment. In fact, the efficient usage of the IT infrastructure was from a certain point a competitive advantage. A more advanced and sophisticated equipment has triggered, under the astonishing rate of technological evolution, the increasing of the operational costs together with the enhancing of efficiency. The attempt to keep pace with innovations would mean permanent investments, changes and trainings, involving huge costs for the companies. Meanwhile, the risk of not being compatible, if not with the latest technology, at least with the previous one, could generate losses. Outsourcing choices represent alternate ways for organizations to leverage available resources to increase the value of IT in meeting corporate objectives. [20].

However we can not see IT outsourcing only as a decisional option, but rather as a piece of managerial plans of whole business and particularly we can develop an IT strategy, where operational dimensions require such an approach.

Earl [4] suggests that outsourcing IT is the first option when operational performance of IT is low and is not a strength for the company, also in his "smart source" variant when business value of IT is not a core of organization and operational performance of IT through outsourcing is improved.

IT outsourcing benefits include enhanced efficiency and cost savings, infusion of cash, reduced capital expenditure, quicker development of applications, improved services, access to new IT knowledge and technologies, and greater flexibility in IT resource management [32]. Lacity and Wilcocks [19] categorize the desired benefits of IT outsourcing in terms of six strategic foci: *financial restructuring* (or cost efficiency), *core competence*, *technology catalyst*, *business transition*, *business innovation* and *new market*.

The factors that lead to success are more business oriented than anchored in technical domain. It is important to first understand the problem, then find the right operation that fits the problem. This is the case when outsource IT final results may place IT to business needs, improving the to management of projects change and having the appropriate balance level between the management expertise and technical know-how.

4 Cloud Computing - an attractive outsourcing opportunity

The evolution of the computer science technologies allowed for several years the developing of IT solutions based on Cloud Computing. Starting as a centralized process [14] IT seems to return at the beginnings, due to latest applications developed few years ago and tailored to the cloud technology which concentrates huge amount of IT capacity.

Into a statutory document, The National Institute of Standards and Technology [22], an agency of the U.S. Department of Commerce defines Cloud Computing as "*a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction*" [22].

Gartner defines cloud computing as a style of computing in which massively scalable IT-related capabilities are provided 'as a service' using Internet technologies to multiple external customers [10]. In a more managerial approach "*cloud computing is now an emerging technological phenomenon which aims to offer users complete infrastructure, platform and software solutions based on a pay-as-you-go financial model and also freeing them up of managing hardware, software and data by moving these tasks to the Cloud providers side*" [3].

The main benefits of moving toward the Cloud are: *increases productivity; reduces capital and ongoing maintenance costs* which are now transferred to the cloud provider; provides *access to the latest technologies* as a basic condition for increased performance. Another important

benefits are the *ubiquitous access, global distribution and availability*. Cloud applications can be distributed anywhere around the globe and have the same highly available service levels at any location; measurable/metered services making possible a pay per use schema. This leads to better costs management and reduces the risks of paying unused resources. All of these have as result a better consumer satisfaction. Also one of the most important advantage and characteristic of the Cloud is the elastic provisioning, variable capacity depending on the customer needs. The Cloud offers competitive advantage by its ease of use. [16–18]

The most important risks associated with Cloud Computing are about *security* and *privacy* of data, in terms of data storage and data transfer protection, vulnerability management and remedial, personnel and physical security, applications security, data privacy and identity management, compliance requirements (e.g. disaster recovery, security standards, logs and audit trails), reliability, legal and regulatory concerns when providing cloud services. There are also issues related to the lack of standards for ensuring interoperability or migration between cloud providers and not at last, inquiries around the provider's capacity in an very young industry, in terms of quality, company size, technology, communication [4, 17, 23, 29]

Related to the deployment of the cloud, NIST identifies four models: *private cloud, community cloud, public cloud* and *hybrid cloud* [22].

Practically, public cloud vs. private cloud discussion is, at this moment, about cost of IT department vs. cost of privacy and safety of organizational data. A convenient way to share the computation resources among many organizations is the community cloud, which, according to [6] can be vertical, shared by a business entity together with its partners, by a consortium or can be shared by an IT organization to provide services to other business units.

Examples of such community clouds are: the HR-XML Consortium is the independent, non-profit, volunteer-led organization dedicated to the development and promotion of a standard suite of XML specifications to enable e-business and the automation of human resources-related data exchanges and Mount Sinai Hospital in Toronto is building a community cloud in conjunction with the Canadian government that will give 14 areas hospitals shared access to a fetal ultrasound application and data storage for patient informations [7]. The main obstacle in this case is the huge investment of consolidating cloud applications in terms of "fit" strategy between various IT resources within cloud members. Top 10 public cloud hosting include :IBM ¹, CSC ², GoGrid ³, Joyent ⁴, 8x8 ⁵, Amazon ⁶ [31]

When comes on business sector, public clouds seems to be a delicate subject, because associated risks, despite the fact that companies can use the public cloud with dynamic on-demand computing capacity much faster and without the up-front cost. For example, the software offered following the service model is growing at a 17 percent annual rate [1]. Under before listed conditions, choosing right a cloud computing formula became a real challenge for executives.

Externalizing IT is controversial in terms of risks, and cloud computing is even a highly controversial solution for outsourcing IT. Many professionals, 47% according to a 2010 study of ISACA [14] , think that benefits are fewer than the associate risks, and only 17% consider that benefits outweigh the risks. Same conclusion reveals a McKinsey Global Survey conducted in 2010 [24]. Additional, the research revealed many barriers perceived in order to adopt the cloud technology from the interviewed IT personnel (462 respondents) and non IT (264 respondents) executives: evaluating and managing security or business continuity risks; managing regulatory

¹<http://www.ibm.com>

²<http://www.csc.com>

³<http://www.gogrid.com>

⁴<http://www.joyent.com>

⁵<http://www.8x8.com>

⁶<http://aws.amazon.com>

risks or exposure; adapting existing business processes to cloud systems; addressing issues with migration or interoperability with their company's current systems or data architecture; lack of awareness or interest in cloud systems in their company; adjusting technology governance processes for cloud systems (e.g. policies for control, monitoring) and developing the right set of skills to build, manage and support cloud systems.

Opinions are also different between IT executives and non-IT executives, first suggest that associated risks are too high, while according to the second category: the cloud increases business flexibility, increases the ability for IT to scale up (or shrink) to meet business needs, has lower unit cost of IT and offer disaster recovery and business continuity [1]. According to recent studies [24] more organizations intended to enlarge cloud computing usage within their activities (see figure 3) .

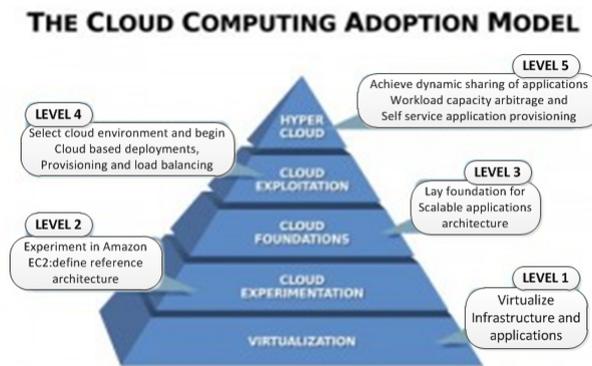


Figure 3: The Cloud Computing Adopting Model [15]

Results revealed that, from IT executives (464 respondents), more than 80% say that their companies are using or experimenting cloud technologies. Also 63% say that their companies are using cloud-based applications in some aspect of day-to-day operations, and over the next 12 to 18 months, deployment and piloting is expected to increase across all application types explored in the survey. This study confirm one of our hypotheses: as a product, the cloud enters in its second life stage: the growth. Although, for now, it seems a viable option only for the organizations that are not dealing with sensitive data or for small or medium companies but soon cloud computing will surpass infancy stage. However a compromise solution for the reticent companies to the outsourcing solution could be the gradual adoption of virtualization, cloud experimentation, cloud foundation, cloud exploitation and ending with the hyper cloud paradigm [15].

The latest technologies in terms of resources virtualization with direct consequences in the apparition of the cloud computing paradigm allows the relocation of the IT costs and various usage patterns while creating new ways for individuals to consume goods and services and for entrepreneurs and enterprises to dream up viable business models. In the same time the Cloud Computing makes possible the association and the collaboration between different organization by creating virtual enterprises that can compete through their offers with the largest players from their markets.

5 Outsourcing IT strategies based on cloud computing

Adoption of cloud technologies seems to be at the moment, according to the opinions of specialists [1, 15, 24] the best solution for companies of various sizes in order to cope the envi-

ronmental changes induced by IT evolution. The strategic options for different sizes companies, in relation to the IT outsourcing decision on cloud computing solutions, can be graphically represented by taking as analysis factors the following two attributes: *reactivity* of the company related to the benefits of the new technologies and the *ratio* between the cost of implementing and operating its own cloud - the IT competences to support new technologies (see figure 4).

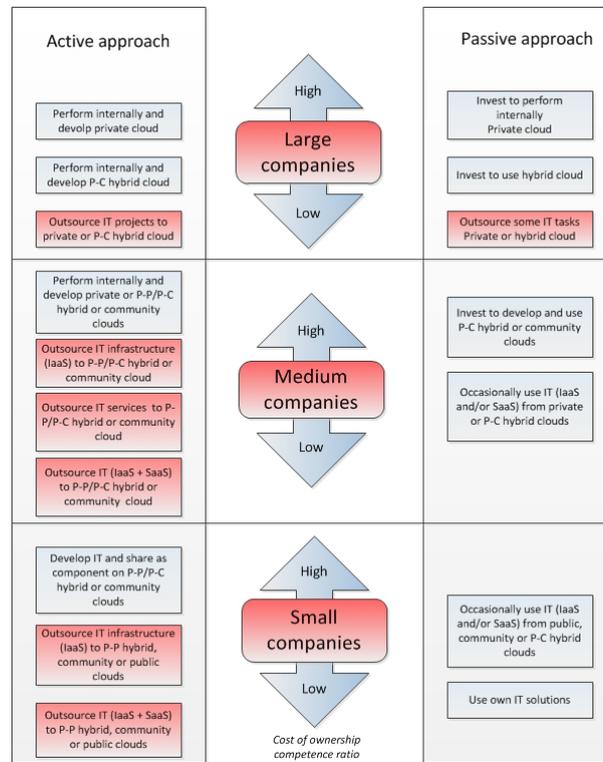


Figure 4: Outsourcing IT strategies based on cloud computing

A *proactive* attitude of the companies means implementing and using cloud computing technologies in the current activity and may lead, depending on the cost/competence ratio, for the *large companies* to assess four strategic options:

- * *perform internally and develop private cloud* - a convenient implementation operating costs, associated with a higher than average IT competences lead to the selection of a solution to develop their own cloud, which finally leads in obtaining various benefits. The private cloud can be used to solve their own infrastructure (virtual machines, storage, communication between applications) which eventually will host applications (whether on-premise, that is installed on local computers, whether they are exposed as services in the private or hybrid cloud).
- * *perform internally and develop private-community hybrid cloud* is the solution which one can choose in case the Operational Expenditures (OPEX) and deployment costs are too high and/or IT skills do not allow the development of a private cloud system. The optimal solution becomes to join a hybrid system that allows lower costs and a certain level of load takeover by the cloud community. Most often used when the private cloud can not handle all the load spikes (periods with high demands) or when the cloud is shared with other companies if it provides special capabilities that do not deserve a local/own investment.

- * *outsource the implementation of the IT projects to private or hybrid private-community cloud provider* - is a convenient solution when the costs are too high and/or there is a lack of IT competences or there are overloads for the technical personnel and it is impossible to complete the projects inside the company. In this way the company can have its own projects in private or hybrid cloud. It could be a trade between the company and third party service providers in terms of computation power (if surplus inside the private cloud) and IT staff (if too few human resources, projects can be externalized).
- * *outsource the implementation of all IT projects to a private cloud or private-community hybrid cloud* - based on the concrete situation, the company may opt for outsourcing the implementation of all IT projects, focusing the efforts on other specific activities.

For the *medium sized* businesses, a proactive activity is translated in using a cloud computing system in the following variants:

- * *perform internally and develop private-community or private-public hybrid cloud* is the situation in which the company can opt for a private cloud formula, especially in case of high IT competencies, or a hybrid containing private investments and shared in public, or community cloud, in a hybrid solution, depending on the security level of data handled. The second option allows, for the medium sized companies, using private and shared solutions simultaneously to avoid overloads and benefit of economy of scale, opposed to the exclusive use;
- * *outsource IT infrastructure (IaaS) to private-community or private-public hybrid clouds or community cloud* - is a solution that allows the access to proper amount of high performance equipment that companies need at optimal costs considered for this service;
- * *outsource IT applications Software-as-a-Service (SaaS) to private-community or private-public hybrid clouds or community cloud* - is a solution that allows the access to the appropriate top software solutions that companies need at an optimal cost considered for this service;
- * *outsource IT infrastructure or services (IaaS/SaaS) to private-community or private-public hybrid clouds or community cloud* - allows simultaneous access to applications and top equipment costs considered optimal for this service. The medium sized businesses access to this kind of cloud solutions is lower because the cost/competencies is often unfavourable.

In the case of *small businesses*, proactive attitude consists primarily in using cloud solutions. Often the small companies having limited access to all resource types (human, financial, material), technologies (including information) and although have problems concerning about transparency and regulatory burdens relative to the large companies [34]. Typically, small businesses can not afford the access to the high competencies IT specialists, excepting the cases where that company is a specialized one, making impossible an independent or private cloud computing approach. The options are:

- * *develop IT projects and share as components in public-community or public-private hybrid clouds or community cloud* - IT development is the essential step that could lead to share beneficial option as the ratio between costs and competencies involved;
- * *outsourcing infrastructure or services (IaaS or SaaS)* - are similar situations to those available for medium-sized companies.

A *passive* attitude is associated to reluctance in adopting cloud solutions, on one hand because of the IT competencies shortage, on the other hand by the lack of understanding of the benefits of technology. In the general given conditions of accelerated IT-ization (see Figure 1) this approach will eventually generate a competitive handicap to the company.

For the large companies, the available options are:

- * *invest to perform internally private cloud* - is a solution which basically will delay the optimal capacity use of the private cloud, the company being focused on IT competencies development and cost optimization. The cloud applications development is in the background;
- * *invest to use private-public hybrid clouds* is a solution that will allow access to a hybrid environment, essential for data security but also having the capabilities to deal with the load peaks in terms of infrastructure. The access in the public side will be performed only temporary;
- * *outsource some IT tasks to private or private-public hybrid clouds or to community cloud* is a solution that the company will perform only to outsource the projects or components of projects being in progress to the private or community cloud. Fractionation of IT projects will increase the IT management difficulties which also lead to the growth of the operating costs.

For the *medium sized companies*, the available options are:

- * *invest to develop and use private-public hybrid clouds* is an action aimed to achieve further benefits from the exploitation of cloud solutions
- * *use occasionally SaaS and/or IaaS from private-public or private-community hybrid clouds or community clouds* - this is a solution used when a temporary need of specialized services or infrastructure occurs. This is the most simple and affordable solution for IT outsourcing to the cloud

For the *small sized companies*, the available options are:

- * *use occasionally SaaS and/or IaaS from public, public-community hybrid clouds or community cloud providers* - the same solution used by the medium sized companies
- * *use own IT solutions* may involve occasional and partly involuntary use of common solutions of the public cloud, like e-mail or social networks

IT outsourcing solutions in the cloud allow several options available for each company type. Major differences lie in the magnitude and number of IT projects developed by a company.

While the large companies require large IT projects whose implementation is complex and often expensive, small and medium-sized companies require projects whose management is less difficult, but the dysfunctions caused by impaired implementation IT projects / operation can cause serious problems for any type of company. Choosing a cloud computing solution and the outsourcing decision are important strategic choices in the overall strategic management of the company. The complexity of the current IT projects are facing the companies to make important decisions related to the solution that have to be adopted. There is a thin line that makes the separation between a good or bad approach of the problem, by using enterprise class packages or very specialized libraries. However, wrong decisions are transformed in project delays, cost overruns or solutions that does not fit the business.

6 Future work

The author proposes to study the degree of acceptance of cloud computing solution in Romania into B2B (business/organizational) market and furthermore the degree of developing of IT outsourcing strategies.

7 Conclusions

The organizations' infrastructure could be highly virtualized, stringing together mass quantities of IT equipments into one or more easily managed logical resource pools, practically building the high quality cloud computing infrastructure. The resources needed to make this happen require massive investment in terms of expertise, equipment and support. Such premises conduct on the strategic decision of outsourcing IT to a cloud provider as a vendor targeted for an individual market though can distinguish that provider and allow it to offer complementary services to the industry as well, at reasonable costs and totally customized. The decision of outsourcing IT is bounded from benefits in terms of reduced costs for the infrastructure, remove the burden of the infrastructure and networking management for the companies, offers the chance to use multi-tenant applications that are easy to be updated by the application developers and so on. A systematic analysis is necessary in order to support strategic marketing embraces activities and decisions that draw on some view of the future.

The company size and type of business make, for instant, the difference between outsourcing IT or keeping in house, but that will be not for so long. A managerial approach is needed also by IT service providers. They will need to own or manage the full stack of IT capabilities on a massive scale in order to provide deep expertise in delivery of services-on-demand.

The contribution of the present paper is related to an analysis performed on the current IT market (Section 2), finding new opportunities for the companies that need to reduce their costs. Cloud computing is a promising sector that could be a solution for many companies in terms of cost reduction and state of the art technologies. A pertinent review of the most important Cloud computing benefits, approaches and implementations is performed to sustain the ideas of IT externalization (Section 4). New practical examples of outsourcing activities were identified and in the same time it is revealed why they are related with responsible managerial decisions (Section 5).

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