

Research paper

Adoption Of Cloud Computing and Services – An Objective Analysis

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An in-depth business analysis that gives decision makers and organizations a true perspective of cloud computing and its challenges to business enterprises on either end of the spectrum, based on facts and balanced viewpoints.

Contents

Background	2
Business and Cloud Computing	2
Advantages to Business	2
Downside to Business	3
Public, Private and Hybrid Clouds	4
CapEx, OpEx and Marginal cost of adopting Cloud	4
Economies of Scale and Boxing the Customer	4
Tactical and Strategic Decision-making	5
Conclusion	5

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Background

Technology continues to influence the direction taken by business entities in an apparent attempt to gain a competitive advantage over the rest of its direct competitors. One of the innovations that best embodies the desire to gain an advantage over direct competitors is through the use of cloud computing to improve efficiency and effectiveness in customer satisfaction. Cloud computing essentially involves using a network stemming from remote servers on the internet to process and disseminate data. Cloud computing uses remote network servers instead of a personal computer or a local server and its use also includes managing and storing data for a variety of purposes that a business chooses to engage in at its pleasure. Although the use of cloud computing offers business an extensive advantage, the approach hides a number of carefully concealed risks which might discourage investing in the use of such a tool for business purposes. With respect to the increasing value of cloud computing to business efficiency, it is integral to objectively scrutinize its role in modern day business settings and the merits or demerits it portends.

Business and Cloud Computing

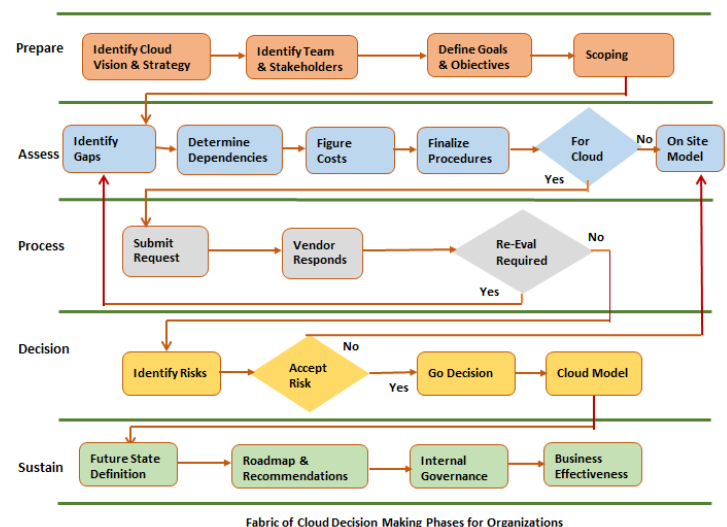
Business and cloud computing are two entities that merge to produce a fruitful relationship that will develop and lead on to newer heights for the performance of the business. Cloud computing offers a typical business plenty of opportunities to grow and expand its coverage thus increasing market penetration and market share figures. Ultimately, these figures translate to profitability thereby fulfilling one of the primary goals of business which is to generate profit. One of the major reasons behind the choice of using cloud computing and incorporating it into the basic framework of business transaction is efficiency. Cloud computing utilizes minimal renewable resources that sold the business a very insignificant amount compared to the returns it will retain in the form of profits and customer satisfaction. Cloud computing enables the business to streamline its IT operations thereby eliminating any wasteful channels that drain resources and increase the cost of operations.

The concept of cloud computing renders it as an internet based operation that provides efficient and effective handling for the employees of a business through improved accessibility and limited space consumption. Every other merit that cloud computing affords business is down to the effectiveness or efficiency its use brings upon the business entity which will eventually reflect on the profitability of the business.

Technological giants like Microsoft®, Amazon® and SAP® are frontrunners in terms of pushing for the implementation of the incorporation of cloud services primarily because they have stakes in technological innovation. However, that fact aside the possibilities that cloud computing could add to a business are significant and very rational. The companies mentioned above realize the significant steps that business could adopt if cloud computing could increase its market penetration for instances in small and medium enterprise SMEs. SMEs could improve their market reach, customer satisfaction, employee job satisfaction and profitability margins while reducing the redundant cost of operating business in today's highly competitive business environment.

Advantages to Business

While cloud computing is undoubtedly the present and future of business efficiency and effectiveness, its advantages are not outright. The online platform provides several advantages that determine the effectiveness of a business regarding the fulfillment of its targets or long term objectives. Cloud computing sets the tone for business growth through several means discussed below. The first advantage is the ease of implementation in the business. Numerous technological innovations are complicated in installation and operations thus rendering them preposterous and ineffective for the business entities. Cloud hosting, as a platform, allows business to continually use the same applications and processes without necessarily coming face to face with backend technicalities which would inconvenience the support staff. The unique feature of cloud computing allows it to operate with a level of



effectiveness unparalleled in the current business world. The cloud features are easily accessible through the internet thus making cloud infrastructure easily and readily available to enterprises. The speed and accuracy of the operations guarantee customer satisfaction and other advantages in service producing companies.

Cloud computing guarantees the users access to their data anytime and anywhere thus affecting decision making processes in real time regardless of the physical location that an individual decision maker finds himself or herself. The above mentioned feature is responsible for facilitating collaboration and joint decision making that normally would require a centralized point of access. A centralized point of access limits the effectiveness and efficiency of any decisions made in real time because they will heavily depend on the speed by which the executives respond to the underlying conditions. Primarily, cloud computing is associated with less clutter and limited space usage hence releasing the business organizations that incorporate it into their system from the burden of catering to the cost of the space used. Alternatives to cloud computing occupy a considerable physical option which increases the cost of existence and operation through increased cost of securing space. The absence of a physical structure that the company could consider an asset is a productive asset in itself thus playing a dual advantage role.

Cloud computing opens up several operational advantages for the business organization that chooses to utilize it in the long run. Cloud hosting services enable a business to reduce the cost of operation productivity by reducing the amount of resources allocated to a specific aspect of production. The extra time, capital and other resources created by utilizing cloud computing enable the business to reallocate the resources to better-served location. Efficient allocation and utilization of resources result into better company outlay and improved profitability margins. Another notable feature that results directly from the implementation of cloud computing is the flexibility that the system offers the business organization that chooses to incorporate it into their daily operations and process leading to consumer satisfaction.

The company that incorporates cloud computing services to its operations secures itself a tool that allows flexible growth in the sense that the companies can allocate and reallocate resources according to

their choosing. Such freedom is a key for a company seeking to please its consumers. Due to various tastes and preferences which continually break patterns and formations according to customer preference, a company must be able to accommodate sudden demands by the customer. Consequently, the flexibility offered by cloud computing opens up a rewarding channel for the business organization.

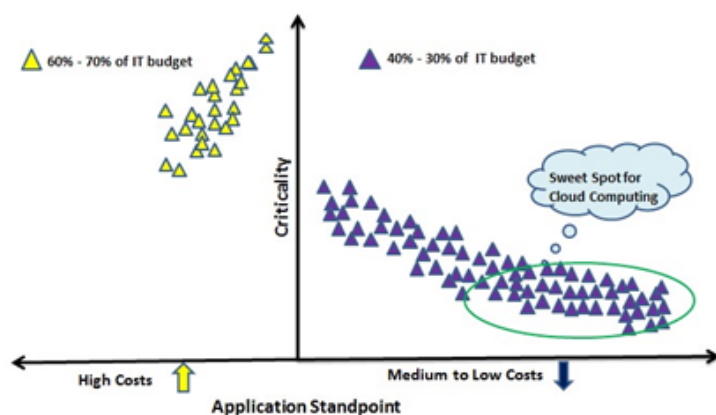
Finally, cloud computing allows the business organization sufficient time to recover from various exertions on the core business process. Cloud computing allows the business organization faster delivery and accurate retrievals of various applications required in the specific process in play through its guaranteed minimal downtime thus handing effective recovery period for a business in case such a situation should ever manifest. Such a quick recovery period allows the business to stay on par with other competitors who might have equally efficient models or applications in place. Such a unique feature attracts customers who are keenly searching for a business that is likely to serve effectively and efficiently. In retrospect, cloud computing offers the flexibility of service, flexibility to customer demands, controlled costs of production and large economies of scale for businesses which utilize their expansive state to forge their way forward.

Downside to Business

Similar to all other technological innovations, cloud computing experiences shortfalls that are unique in nature to its bare essence. The unique features that guarantee unparalleled competitive edge are the same features that might derail a business if not managed properly. The business organization stands to face several risks that come with the incorporation of the cloud technology in an everyday business transaction, whose results could be catastrophic for the business. One of the risks is the fact that the business organization is no longer in control of the data hosted in the cloud. When incorporating cloud technology into the core business operation, the business is essentially handing over data and information from the in-house IT-department to the cloud.

While this means that most of the issues arising from the organization using cloud are out of control of the staff, it does not necessarily mean that the rectification process will be inefficient. It only stipulates that the data and the information are now under the managers of the cloud and not the in-house IT specialist who previously handled the bulk of the work.

Cloud computing also exposes the business to a risk in the form of inconsistent features; cloud services are not uniform in nature since certain service providers provide a limited feature on their packages. The cloud technology service providers may opt to provide only the most popular features and lock out the remaining features. Such a practice might prove to be very costly when the need for a certain feature arises and the company has no access to it thus effectively rendering it useless to the business organization. The efficiency of the presence and operation of the cloud technology leads to the illusion that server requirements are at an all-time low thus rendering their need obsolete. This misconception could prove costly because such a state translates to an absence of backup and recovery information in case of a hitch.



Consequently, the cloud computing technology might fail and the only plausible solution will be the redundant servers that the company ought to do away with in the first place.

Cloud computing also exposes the business organization to bandwidth issues that might stem from packing large information components into limited data centers. Cloud computing dictates that the business organization must package smaller servers and storage devices into smaller sets of data centers. Hence, the use of cloud hosting service is limited in the amount of storage available effectively making it a concern for management. Finally, cloud computing faces redundancy concerns as well as the absence of a proper backup system. Due to this flaw, the business organization that utilizes cloud technology stands the risk of losing vital information should there ever occur a technical breakdown or fatal error. Consequently, it is advisable to hold on to physical back-up information in order to avoid any form of inconveniences caused by such a break down.

Public, Private and Hybrid Clouds

For the case of public business, the use of infrastructure as a service (IaaS) is the best option for a business entity of such nature. The IaaS involves the provision of cloud capabilities or resources to organizations in a bid to provide networking, storage and data center space, servers and even computers on a pay-per-use arrangement. The logic behind this choice lies in the fact that IaaS provides the business with three distinct advantages. The advantages include the ability to provide flexible and innovative services on demand, provision of infrastructure on demand and finally the absence of the need to invest in hardware. A public company is able to structure itself in a manner that it can readily respond to the demand placed upon it by customers in an effective and efficient manner that is likely to generate profit.

	Hosted on Cloud	On Site
CapEx	Low CapEx cost	The larger the company, the larger the CapEx
Migration strategy	IT teams can add new cloud features and those features can be readily available	Complete change of structures must take place over an extended period
Infrastructure required	The hosted structure is needed to provide cloud functions	May vary depending on the service provider
Disaster recovery	Reliant on the internet link and hosting service	Expensive to install redundancy but back up available

Comparison between onsite and cloud model

For a private business, the platform as a service (PaaS) model is well endowed to handle such needs. The PaaS model involves third party providers hosting development tools on their infrastructures which enable users to access tools over the internet Using Web portals, APIs or

gateway software. This unique feature of the PaaS model dictates that it is used primarily for software development; private entities are then able to access the software after it is developed. Finally, the Hybrid, which consists of elements of both public and private, is best suited by Software as a service (SaaS) which primarily delivers software over the internet. The model is suitable for an individual rather than customers who in this case can access the system from anywhere as long as they have a working internet connection and a device that can access the software delivered. The decision to choose any of the three models relies on two distinct factors which include the IT landscape of the firm that asks to use the services and the data volume expected.

CapEx, OpEx and Marginal cost of adopting Cloud

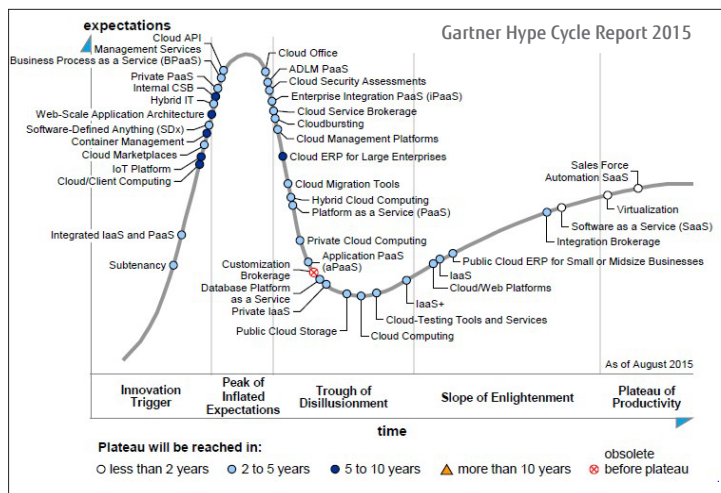
The capital expenditure and operations expenditures are the cost incurred by the business enterprise in the pursuit of entrepreneurial excellence. Operation expenditures refer to the continual cost of operating a business or a system while capital expense refers to the cost of producing goods or services for the customer. With respects to the analogies drawn from both OpEx and CapEx, it is crucial that cloud computing must fulfill its capacity within the confines of either expense. Any deviation from the set limit will create an unfavorable return on investment (ROI) thus making the endeavor null. Naturally the capital expenditure should be more than the operation expenditure in order to balance out the balances and to avoid bankruptcy. The capital expenses translate to a higher asset base that could offset any debts created by operations expense.

Economies of Scale and Boxing the Customer

Using the cloud is a sure way of boxing the customer in through the services available at the company's disposal. Cloud computing is a tool that could change how a customer views a certain business and the type of relationship they pursue. The platform created by cloud computing could be an avenue for pushing the customer towards an organization's goods or services. The use of cloud technology results into various percentages of success thus giving the customer a wide variety of choices over their preferences. The economies of scale that accompany cloud computing depend heavily on the size of the company. A major company is likely to enjoy the economies of scale in comparison to small SMEs which will not record changes in the financial statement. Consequently, any changes in the production process will equally reflect on the profitability of the organization unlike a smaller enterprise which might record little or nothing at all in terms of the marginal cost changes.

Tactical and Strategic Decision-making

From a tactical point of view, implementation of cloud computing into business could reveal itself as a perfect play for breaking into and gaining market dominance. The play lands the best option available at the moment to the executives who are looking to make a profit from their investment. The use of cloud computing represents a systematic attempt at gaining market share as well as improving productivity. From the same tactical point of view, cloud technology represents a current and uniquely qualified system that could be used to pursue



Reference: From Gartner "Hype Cycle for Cloud Computing, 2015," "05 August 2015"

business objectives in the short term. The short-term goals might include stabilizing the operational costs to an optimal level through efficient steps and effective decision making using the cloud technology to the company's advantage. On a strategic or long-term basis, cloud computing represents the sustainable solution to some of the problems facing companies in the long term.

As per the latest 2015, IT research firm Gartner's hype cycle report shown above, cloud computing is mentioned at the bottom of the "Trough of Disillusionment" phase. This implies that most business organizations very well understand the benefits and risks associated with it. As businesses are getting a better handle on cloud capabilities they will apply it to the right scenarios and reap the true benefits of scalability, elasticity, agility, shared and self-service. It's important for a business to separate hype from reality which is critical to a successful cloud implementation. Having a good understanding of the fundamental capabilities of cloud computing and services is paramount for a business to be successful and cost effective.

Conclusion

Retrospectively, cloud computing and other technological innovations will continue to influence how business transactions take place and the convenience that comes with it. Successful incorporation of the cloud services will enable a business to operate with minimal interruptions as well as convenience. While cloud computing is not fully water-tight in the sense of its service delivery, it is a good avenue for businesses looking to stabilize and take advantage of the current market trends. The changes that cloud hosting and pertinent services provide to an organization are equally rewarding for the employers as well as the employees. Cloud computing also offers disadvantages which might derail an organization if not checked regularly. Unfortunately, the economies of scale are limited to large organizations that have extensive network coverage and employee work base. In conclusion, cloud computing and associated services will continue playing a central role in the modern trends of business thus culminating into improved performances and productivity of a typical workday.

Questions



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