AN INTEGRATED APPROACH FOR THE DEPLOYMENT OF CLOUD COMPUTING: A NINE STEP PROCESS

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ABSTRACT
The adoption of cloud computing by businesses and academic institutions is on the rise. Cloud computing platforms could reduce cost and increase information systems responsiveness for those organizations that are adopting it properly. The ROI of cloud platforms is a challenging task to calculate and traditional capital budgeting techniques may not be applicable. This paper first examines the existing opportunities and challenges in cloud computing environment and then offers nine integrated steps for managers to consider before adopting this technology. If these steps are carefully analyzed they should increase the chances of success when deploying cloud computing [Bidgoli, 2014].

Keywords

THE LANDSCAPE OF CLOUD COMPUTING
A recent survey on the status, applications, and opportunities gained by using cloud computing platforms reveals interesting facts as follows:

In 2014, Cisco, Google, Amazon, and Microsoft all made major cloud computing announcements and investments with significant implications for businesses and consumers. Microsoft Office 365 and Google Apps now compete to win desktop in the business world [Knorr, 2014].

IBM is steadily decreasing its involvements with hardware and increasing its involvements with all sorts of cloud computing initiatives [Snyder, 2014].

IDC estimates 25 to 30 percent of all the servers shipped in 2014 will be delivered to cloud services providers. By 2017, nearly 45 percent of all the servers will be purchased by cloud providers. At the same time IT managers are increasingly replacing servers with SaaS (software-as-a-service) [Thibodeau, 2013].

Research firm 451 Group predicts that IaaS (infrastructure –as-a-service) revenue for providers such as Amazon Web Services (AWS) will jump at an annual rate of 57 percent through 2016, reaching $10.2 billion in 2016, up from $2.9 billion in 2012. This indicates that the cloud is replacing enterprise hardware and software [Linthicum, 2013].

According to IDC, PaaS (platform-as-a-service) market will reach $14 billion by 2017. This is due to the high interest in faster application development and lower IT costs [Kanaracus, 2013].

Cloud computing will play a major role in fighting drought in California. Sensor devices and the Internet of Things will also have a role [Thibodeau, 2014].

Even finance executive support deployment of cloud computing for more than just its cost saving advantage, they also include increased productivity and security among its advantages, although others argue “security”
as one of the disadvantages of this platform [Linthicum, 2012].

According to experts it makes no sense for smaller enterprises to operate their own data centers. Cloud computing will be both cost effective and also environmentally safer and cleaner for such organizations [Krill, 2010]. Cloud computing platforms certainly support the growing phenomenal of green computing and could help organizations to achieve their “green” goals.

Tata Communications will offer cloud computing that include services for computing, data transfer, and storage [Ribeiro, 2010].

China is building a city-sized cloud computing and office complex that will include a mega data center. Cloud computing is among the projects supporting that country's double-digit growth in IT spending [Thibodeau, 2011].

This paper presents nine integrated steps that if followed should increase the chances of success when introducing cloud computing into your organization. These steps provide managerial literacy as well as checklists that organizations could use before introducing this technology into their organizations. The steps include:

STEP #1: Understanding Grid Computing
STEP #2: Understanding Application Service Providers
STEP #3: Understanding Utility (On-Demand) Computing
STEP #4: Understanding the Components of a Cloud Platform
STEP #5: Understanding Public, Private, Hybrid, and Community Clouds
STEP #6: Understanding the Security Issues in Cloud Computing
STEP #7: Understanding Cloud Computing Failures and Challenges
STEP #8 Understanding the ROI of Cloud Computing
STEP #9: Preparing a Cloud Computing Plan for Implementation

RESEARCH QUESTIONS

What are critical success factors in cloud computing implementation?
How to increase chances of success while introducing cloud platforms into your organization?
What to do if cloud computing implementation fail?
Is cloud computing adoption ROI justified?

CONCLUSION

This paper introduced nine integrated steps for introducing cloud computing into your organization. The nine steps include: (1) understanding grid computing, (2) understanding application service providers, (3) understanding utility (on-demand) computing, (4) understanding the components of a cloud platform, (5) understanding public, private, hybrid, and community clouds, (6) understanding the security issues in cloud computing, (7) understanding cloud computing failures and challenges, (8) understanding the ROI of cloud computing, and (9) preparing a cloud computing plan for implementation. If these steps are carefully analyzed and followed, they should increase the chances of success for the introduction and utilization of this fast growing technology.

REFERENCES


