Chapter 80
Cloud Computing and Enterprise Migration Strategies

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ABSTRACT

Cloud Computing is a prevalent issue for organizations nowadays. Different service providers are starting to roll out their Cloud services to organizations in both commercial and industrial sectors. As for an enterprise, the basic value proposition of Cloud Computing includes but not limit to the outsourcing of the in-house computing infrastructure without capitalizing their investment to build and maintain these infrastructures. Challenges have never been ceased for striking a balance between Cloud deployment and the need to meet the continual rise in demand for computing resources. It becomes a strategic tool to increase the competitive advantage and to survival in the market for an enterprise. To reconcile this conflict, IT leaders must find a new IT operating model which can enhance business agility, scalability, and shifts away from traditional capital-intensive IT investments.

1 INTRODUCTION

Cloud Computing, nowadays has becoming highly visible as the strategic and tactical focus. It provides a definable and predictable model for business and enables technology to be utilized in an on-demand fashion. It promises a service that's infinitely scalable, rapidly provisioned, cost-effective and secure. This new wave has been accelerated by some of the world leading IT companies like Amazon, Apple, Google, Microsoft, Salesforce.com and Yahoo among other international firms. Cloud Computing is a fundamental part of the IT strategic planning for an enterprise. It emphasis around technology, people, process, culture, performance, reliability, security and operability. This chapter separates fact from fiction, reality from myth. It aids to assist those organization decision makers to make decision on the Cloud adoption. This paper also brings up the considerations that are to be insightfully looking into before migrating to Cloud. What are the main issues to consider during transition to the Cloud? What are the security issues that need to be addressed? The scope and terms of the Service Level Agreement (SLA) that need to safeguard the company against any risk due to migration and operation on the Cloud platform.

DOI: 10.4018/978-1-4666-6539-2.ch080

It aims also at filling up the gap of little guidance on Cloud migration and considerations that need to pay specific attention before the actual migration taking place.

Cloud Computing is defined as an Internet-based computing, whereby system's resources, hardware, software and information are provided to end users on demand basis (NIST, 2011). In general, it applies virtualization technology on a larger scale (i.e. one physical server hosts multiple virtual servers). Cloud consists of groups of virtual servers running on a common physical infrastructure platform with access point(s) interfacing with the Cloud users. It can be run in either private, public or hybrid mode. Access to Cloud can be done via client's computer's web browser and the Internet.

Deployment of applications in the Cloud can lower the infrastructure costs of ownership by removing the undifferentiated "heavy lifting" of both software and hardware expenditures of the individual in-house computer and networking systems (Mell & Grance, 2009). It provides opportunities in;

- Enabling scalable and resilient services to employees, partners and customers,
- Increasing the application processing speed,
- Reducing the administration and maintenance support for licensing issues of software, and
- Removing the time-consuming and costly IT responsibilities from the business line of operation. Hence,
- Increasing in productivity levels; operation efficiency & effectiveness, and
- Reducing the operation cost with higher business agility (TATA, 2011).

Facing with the paradigm shift of organization IT landscape to Cloud Computing, many organizations are worried about the risks of moving to the Cloud. It is anticipated that some legacy applications currently deployed in the business environment might not be technically or practically sensible to move to the Cloud. Before deciding to migrate to Cloud, it is important to understand the potential risks of migration verse the organization requirements towards the new Cloud Computing. Organizations can take incremental steps for the migration. A successful migration relies on: - (i) the application architecture complexity (Sun, 2009); (ii) degree of application coupling with other applications; and (iii) the effort and resources required to be put into migration.

This chapter provides the essential information about the Cloud and will outline the key considerations to be looked into for successful Cloud migration. A phased migration strategy is described with focus on how enterprise to develop his application migration strategy for the organization. A step-by-step, phase-driven approach is described in details. The two major considerations for Cloud migration are- technical; and business. The discussion will focus at determining the right approach and the criteria to support Cloud adoption & migration decision (Staten, 2008).

Definition of Cloud Computing

According to National Institute of Standards and Technology (NIST, 2011), Cloud Computing is defined as a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, CPUs, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction (Mell & Grance, 2011).

2 CLOUD CHARACTERISTICS AND SERVICE

Cloud Computing can provide organization with predictable and definable model for IT and enables technology to be utilized based on user demand.