Chapter 54

KIET Framework for Cloud Adoption:
Indian Banking Case Study

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ABSTRACT

The expenses in the sustenance of IT investments has become a major ledger item in businesses to the extent that in some cases business priorities had to be changed for sustaining IT systems. Cloud computing, a disruptive technology, is changing the sustenance model with on-demand and metered service approach. However, the adoption of this technology has not been consistent across sectors due to fear on loss of control and changes required in application development and deployment. Authors propose KIET (Knowing, Initiating, Evolving and Transforming) framework based on diffusion theory for adoption of cloud computing in organizations that have strong regulatory framework. Authors implemented the proposed framework on the Indian Banking sector, with majority of the banks being in the public sector. After the implementation of the framework, 49.4% of the banks have adopted cloud computing and another 27.8% of the banks have started the initial steps for adoption.

INTRODUCTION

Broad network access, resource pooling, rapid elasticity, measured service and on-demand self-service are the key characteristics of cloud computing. Cloud computing is becoming a 'GOTO' strategy for IT enablement across industries including in government sector. While Infrastructure as a Service (IaaS) continues to dominate, organizations are steadily transferring workloads (Columbus, 2017) to Software

as a Service (SaaS) as it brings standardization and cost efficiency. To meet increasing demand and strengthen existing relationships, software virtualization providers, server manufacturers, network providers with advantage of last mile connectivity and existing datacenter space providers have taken the journey of providing cloud services. However, providers like AWS, Microsoft Azure and Google App Engine continue to have larger market share because of their continuous innovations, pricing models and early starter advantage. Some of the Cloud Service Providers (CSPs) have established regions across globe to take the advantage of business potential and cater to data sovereignty requirements. Apart from public CSPs, hybrid and private cloud adoptions are also steadily increasing (Weins, 2017). While there are many successful cloud adoption case studies on cost efficiency, ability to scale on demand and transparency, the adoption has not been consistent across industry sectors due to concerns on security. Some sectors that are heavily regulated have an expectation that the government/regulator would provide a direction, and/or they could wait for someone to make the first call on cloud computing (any emerging technology) has slowed the adoption rate. To address the adoption concern, authors extended the work on Diffusion Theory for Innovation (Rogers, 2010) and Technology Acceptance Model (Tornatzky, Fleischer, & Chakrabarti, 1990) for promoting cloud computing. The extended framework is referred as KIET (Knowing, Initiating, Evolving and Transforming) and has stages for identifying root causes of the concerns in adoption, bringing community together, building awareness, identifying champions in the community, piloting with some of the use cases and steadily guiding for increased adoption. As an implementation of the framework, Indian banking sector is selected as a case study as it is well known fact that banks across the world are the largest users of IT (Sony Shetty, 2017) and are also heavily regulated. If banks adopt an emerging technology, the technology benefits become obvious to their community in specific and other sectors as well in general. Indirectly, implementation of the proposed framework for banking sector leads to improved adoption across other sectors. Involvement of a community (banks) also reduces the degree of uncertainty and perceived risk in the diffusion process; authors involved the community members in the awareness, decision making, execution and feedback on cloud adoption. The community approach is proposed taking cues from the work of McMillan and Chavis (McMillan & Chavis, 1986) that states "…members of a community have a belonging and a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together…" In the following sections of the paper, (i) Background on technology adoption in Indian banking sector and various adoption models for emerging technologies are discussed, (ii) framework for implementing cloud adoption sin Banking sector ensuring it is community driven with measurable progress, (iii) results and findings from adoption approach and finally conclusions are elaborated.

BACKGROUND

Technology Adoption in Indian Banks

IT adoption in Indian banks has started only in 1990s with push from banking regulator. Today, some of the Indian banks are leading IT adopters (IDRBT, 2017) across the world. This dramatic transformation in banking is by new regulatory requirements and the technological advancements that aid banks in meeting and exceeding such requirements. Bankers perform complex works such as auditing, account reconciliation, loan underwriting and processing, etc. in a cost-effective manner with IT enablement. Though IT plays the role of a game changer in banking sector, it poses a big challenge for banks as it

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