



Cloud in Indian e-governance Model

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Abstract— Now a day's E – governance being not only one of the important source of information and communication technology to transform the competence, success, simplicity and answerability for exchange of government, between government and various governmental agencies of National, State, Municipal and Local Levels, citizen and business to authorize citizen , but also is the strength of character for majority of businesses for companies in procuring quality of services from an experienced service provider and also empowers citizens by giving right to access the information. As a natural evolution of the Internet, cloud computing has become the dominant model of enterprise computing because it can profoundly change the way organizations access and use ICT products and services. This paper shows that cloud computing can be used to facilitate “real-time e-governance” across the length and breadth of the country and for cities or towns lacking technological infrastructure, cloud computing can be a major boon because it enables quick project execution. This paper also describe current internet penetration in India is only eight percent and cloud computing if used strategically, can aid internet proliferation substantially.

Keywords—Real-time e-governance, Internet penetration, Proliferation substantially

I. INTRODUCTION

With increase in the economic growth, and all round development, and ever demanding citizens, governments are severely challenged in delivering key citizen services such as healthcare, education, public safety, transportation and utilities. Cloud computing can contribute in a variety of ways to deliver citizen services efficiently and enable IT resources to be provided on demand, at scale in a multi-tenant, yet secured environment. Today's citizens expect services to be delivered along with a secure user experience. As a result, governments are under pressure to provide more efficient and effective citizen-centric applications and services, while also improving inter-departmental and cross-agency collaboration .To better serve their people, governments world over are being asked to transform costly and inflexible legacy infrastructures so as to increase workforce productivity and improve organizational agility. Balancing economic pressures and security, is another ask.

As a natural evolution of the Internet, cloud computing will become the dominant model of enterprise computing because it can profoundly change the way organizations access and use ICT products and services. The business and operational benefits of cloud computing are as relevant to the public sector as they are to the private sector—in some cases, even more. By adopting a cloud-based IT strategy, governments can fundamentally change the way IT services are delivered and consumed while at the same time realize tangible operational and financial benefits—reduced costs, improved organizational agility and transformation in service delivery. Government agencies using cloud computing can optimize legacy IT infrastructure while adding new services, decrease software/application maintenance, decrease project roll out timeframe, administrative costs and improve asset utilization up to 60-70%. In a cloud environment, self-provisioning of services enables workflow collaboration across different agencies seamlessly and helps real-time response to increase/decrease in workload. A cloud environment frees up resources to invest in mission-critical applications, services and shift focus from asset ownership to service management thus improving citizen engagement and quality of citizen services thus delivered.

II. CLOUD IN INDIAN E-GOVERNANCE

Cloud computing can be used to facilitate “real-time e-governance” across the length and breadth of the country. For cities or towns lacking technological infrastructure, cloud computing can be a major boon because it enables quick project execution. Current internet penetration in India is eight percent and cloud computing if used strategically, can aid internet proliferation substantially. In addition, because of its ability to handle large number of transactions, citizens can look forward to better response times for the transaction. With increase in the economic growth, and all round development, and ever demanding citizens, governments are severely challenged in delivering key citizen services such as healthcare, education, public safety, transportation and utilities. Cloud computing can contribute in a variety of ways to deliver citizen services efficiently and enable IT resources to be provided on demand, at scale in a multi-tenant, yet secured environment.

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III. CLOUD SERVICE MODELS

There is no one-size-fits-all cloud solution: organization needs as well as network, computing, storage quality and overall IT complexity differ from agency to agency. In evaluating clouds, government agencies can consider several cloud deployment models. At this point two models are prevalent ; the “public cloud” model where applications and storage are available to the general public over the Internet, typified by the offerings of Google, Amazon etc and the more relevant approach for Government based on “private cloud”, where organizations and agencies develop or procure their own standardized cloud computing environment and allow the various line departments to use the shared, secured, and automated cloud ready infrastructure which is designed to deliver IaaS, PaaS, or SaaS.

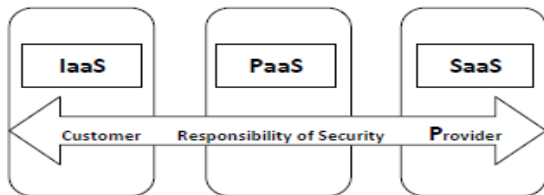


Fig.I. Cloud Architecture

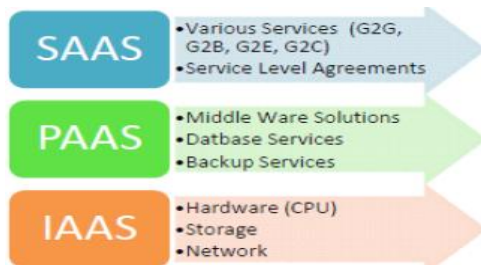


Fig. II e-Governance cloud model

Organizations more concerned about information security and loss of control can opt for a private cloud model. A private cloud can combine both external and internal cloud resources to meet the needs of an application system and is totally under enterprise control. Private clouds come with self-service, pay-as-you-go charge-back, on-demand provisioning, and almost infinite scalability features offering a critical benefit: trust. Discussions have also begun about a hybrid option where an organization might use a public cloud for some functions such as basic business applications or non-sensitive data processing and a private cloud for other sensitive areas for example, data storage. For delivering citizen services the Community Cloud model seems appropriate. It offers a consolidated approach to share resources, allowing cities to be more efficiently planned, managed, and operated based on networked information providing citizens access to a wide variety of services anytime, anywhere and on any device.

IV. CHALLENGES FOR IMPLEMENTATION

To fully embrace the benefits of cloud computing, governments need a high level of confidence in virtualization and cloud computing as a service delivery strategy. Government agencies need assurance of a secure and reliable cloud computing strategy to manage user and citizen information before they commit to change. With IT costs spiraling and budgets decreasing, any commitment of funds must show measurable return on investment (ROI). More than just the high-level benefits, governments need to understand how cloud-based technology can optimize legacy IT infrastructures while providing new capabilities and services. Additionally they need confidence that vendors have the technology based on industry standards, and the industry expertise and strategic partnerships to support the transition to cloud computing. As a first step, Governments can identify all potential opportunities for switching from existing computing arrangements to cloud services and ensure that in-house infrastructure complements cloud-based services. Virtualization will be a key element of a compatible infrastructure. Governments must also develop a cost/benefit and risk-evaluation framework to support decisions about where, when, and how cloud services can be adopted. Along with a roadmap for optimizing the current ICT environment for cloud services, it is important to identify and secure in-house competencies required to manage effective adoption. Designating a cross-functional team to monitor cloud computing services, providers, and standards, and determine if they affect the roadmap will add to the benefit.



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The Future Cloud computing will become more pronounced in developed as well as emerging economies where the Governments adoption of Cloud Computing will progress through varying phases of Datacenter Consolidation, Virtualization, Automation, and leading to adoption of Hybrid, and Community Clouds, and ultimately leading to Inter Cloud deployments as and when the technology, and business practices mature, and security & trust become pervasive. As adoption of cloud computing continues, and as several success stories emerge, the Cloud based consumption of ICT, can help the Public Sector, and Enterprises at large, unravel and deliver next generation citizen services, and further accelerate the economic growth of a country. Emerging cloud computing models and services will represent enterprise ICT finally reaching the point of sophistication and flexibility required to realize their objectives leading to more efficient, effective public sector information management.

V. CONCLUSION

The e-Governance is to provide public services to citizens more efficiently and effectively. The effectiveness and efficiency can be increased further if governments make good use of new and modern computing technologies like service oriented architecture (SOA). Cloud computing is the realization of the service oriented architecture which is the direct outcome of research in virtualization, utility computing, distributed computing, grid computing, content outsourcing . The cloud based e-governance is providing more benefits in the form of efficiency, scalability, flexibility and cost effectively as compared to traditional e-governance system.

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