



WHITE PAPER

Embracing the Cloud: Top Seven Imperatives for an Organization

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ABSTRACT

A gradual increase in the adoption of cloud platforms and cloud services by the enterprises of today points to a paradigm shift in the way the IT services are procured and managed. This shift is creating an Industry Mutation – impacting both businesses and IT Service providers. The old way of delivering and managing IT is being replaced by a new way, which is why we view this change as a Creative Destruction of sorts.

Gartner estimates that by the year 2012, 20% of the enterprise market e-mail seats will be delivered via the cloud and at least one-third of business application software spending will be as service subscription instead of as product license.

The imperative for an organization is to align to the cloud paradigm. The bigger question is since a majority of organizations are at a turning point, where do they start in defining the right cloud strategy for their organization? This paper analyzes the impact of the cloud on the IT Ecosystem and provides answers to what an organization needs to do in embracing a right cloud strategy.

MOVING TOWARDS SIMPLICITY AND SAVINGS

Cloud Computing points to a paradigm shift – to the manner in which IT services will be delivered and managed. Customers of IT, rather than buying fixed IT services year after year, will now be able to buy cloud services as and when required with just the click of a mouse without upfront capital investments. The New York Times, for example, has used Amazon Web Services (EC2 or Elastic Cloud Computing and S3 or Simple Storage Service) to generate PDFs of 11 million articles in the paper's archives in less than 24 hours using 100 instances of EC2, reducing the upfront investments in the new hardware for the project. NASDAQ uses EC2 to power its service providing historical stock market information called Market Replay.

Comments Deepak Jain, Senior Vice President & Global Head -Technology Infrastructure Services, Wipro Technologies. "By embracing the Cloud Strategy, organizations can achieve scalability and standardization, and reduce time for implementation. More importantly, a cloud service offers a cost variable model, which is critical in this economy."

Cost control and variability, increasingly complex systems, the paucity of trained talent, shrinking space in the data centers, and the need for scalable and elastic computing power on the fly and an urgent demand to simplify business processes is the key to why enterprises are keen to avail IT services from a third-party cloud.

CLOUD HAS CAUSED CREATIVE DESTRUCTION IN THE IT SERVICE

The industry views this paradigm shift in the delivery of IT services as disruptive and radical, creating significant value to consumers of IT. This shift has altered the traditional way of delivering, charging and managing IT services and is enabling Industry Mutation, which has resulted in the following:

- Significant increase in the investments by key players such as Cisco, EMC, Microsoft, SAP in the cloud platforms and cloud services
- Global IT Service Providers building capabilities required to enable cloud services for their customers
- Change in the IT buying from a traditional fixed price to a pay-per-use model
- Cloud Services gaining traction from the businesses



- Rise of New Entrants - offering a variety of cloud services
- Race to Learn - Businesses and IT gaining capabilities in understanding the features and benefits of the cloud services

These changes are now seen to be triggering an increase of aggregate supply and demand of Cloud Services. This industry mutation has changed the fundamental economic structure of delivering IT services leading to what economist J Schumpeter called "*Creative Destruction*" - or the altering of the old way of delivering and managing and replacing it with what is essentially time-share of raw computing power, storage and applications. In a August 2008 survey of IT leaders conducted by CIO, 58 percent said cloud computing will cause a radical shift in IT and 47 percent said they're already using it or actively researching it. IDC predicts that spending on IT cloud services will hit \$42 billion by 2012.

BRACING UP TO THE CLOUD

Organizations must take a holistic approach in understanding the implication of the cloud and the benefits of it to their businesses. In order to gain a better understanding of the business implication of the Cloud, they must answer the following key questions first:

- Why is the Cloud important to the organizations now?
- How will Cloud impact the IT sourcing strategies of an organization?
- What is the impact of Cloud on the Traditional IT provider Ecosystem?
- How should IT organizations change to gear up to cloud?
- What are the key risks associated with the cloud, and how should these be handled?
- What services are amenable to move into the Cloud?
- What IT functional roles should an organization retain/change?

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WHY IS CLOUD IMPORTANT TO THE ORGANIZATIONS NOW?

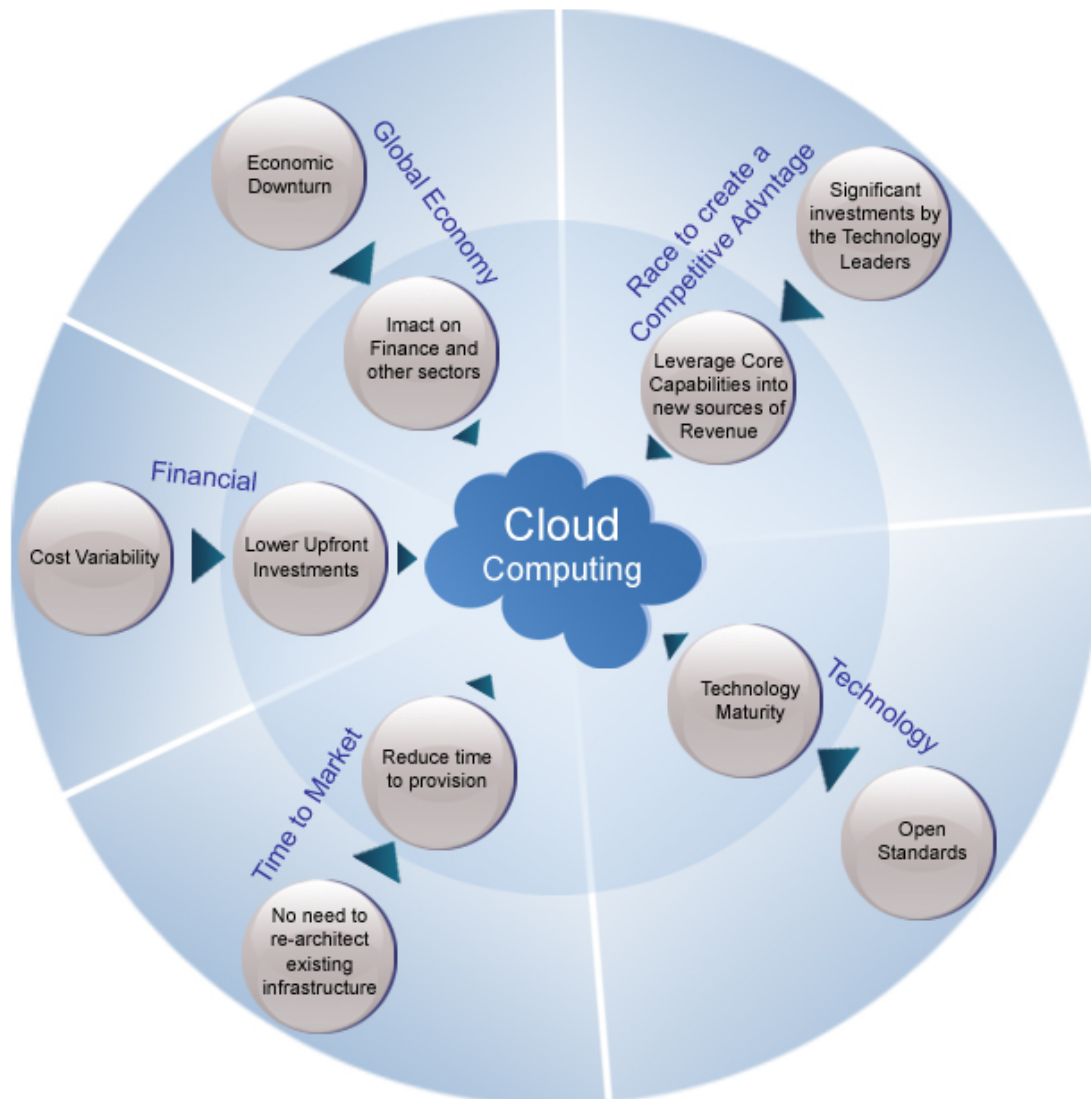
There have been many drivers which have collectively propelled the engine of Cloud Computing today. These can be broadly categorized into five dimensions.

- **Global Economy:** As large enterprises carve out new business strategies to maneuver through the economic downturn, IT, which enables the fulfillment of the enterprise strategy, needs to scale up/down rapidly. Scalability, which is inherent to Cloud Computing, is a catalyst to meet this imperative. We see that the current economic downturn is already sparking interest in cloud computing both in financial and other sectors and organizations are thoroughly examining the impact of cloud to their businesses.
- **Financial:** By leveraging the cloud services, businesses are able to manage variable workloads at required performance levels. They have an advantage - of making IT costs - variable with the IT demand, and lowering up-front investments which would otherwise be required to implement a similar solution.
- **Time to Market:** By adopting cloud, organizations are able to drastically reduce the lead time required to provision the required IT services, without having to re-architect their existing infrastructure.



- **Technology:** Availability of ubiquitous bandwidth and technologies such as Virtualization are appreciated by the enterprises today. Virtualization is a key technology foundation block in creating a cloud computing platform. Secondly, the approaches to sharing technology, open standards and open source, and vendor neutral stacks are the key drivers to why technology is easily accessible and why adoption has become compelling now than in the past.
- **Race to create Competitive Advantage:** Enterprises such as Amazon have built large server farms and technologies - to sell their services online. They are currently deploying proven methods of leveraging already built-up technology to offer cloud services such as storage-on-demand to their customers. The focus of such companies is not only to generate new revenue streams, but more so to gain a first-mover advantage and sustain competitive advantage in this space. The technology heavyweights, such as Cisco, Microsoft, SAP have joined this race by making heavy investments and commitments in building cloud platforms and offering cloud services.

THE DRIVES FOR CLOUD ARE IN THE EXHIBIT BELOW





HOW WILL CLOUD IMPACT THE IT SOURCING STRATEGIES OF AN ORGANIZATION?

The organizations that have outsourced internal IT functions to the Service Providers have traditionally gained savings via labor arbitrage, process efficiencies, best practices, and technology adoption. In this economy, organizations are looking at their Service Providers, to provide additional cost savings and flexibility to scale their operations as required. To the advantage of the organizations, Service Providers such as IBM and Wipro are responding by offering the usage based cloud services along with their traditional suite of IT services. Wipro being a global strategic partner with global technology leaders such as Cisco, Microsoft, SAP and Oracle is integrating the partner's proven technology platforms with its own solutions and services and is providing new cloud based business models for the customers.

We acknowledge that Cloud has the attributes and potential to support a global outsourcing environment with better scalability and elasticity - to meet the business-IT demand in this unpredictable global economy. The Cloud will have a bigger play in the IT sourcing strategy of the organizations and, organizations will be able to choose a bouquet of cloud services along with the traditional IT services from the Service Providers.

Cost control, increasingly complex systems, the paucity of trained talent, shrinking space in the data centers, and importantly, the need for scalable and elastic computing power on the fly and an urgent demand to simplify business processes is the key to why enterprises are keen to avail IT services from a third-party cloud.

WHAT IS THE IMPACT OF CLOUD ON THE TRADITIONAL IT PROVIDER ECOSYSTEM?

The mix of the traditional IT provider ecosystem, comprising of organization's Internal IT and/or Service Provider(s) – all providing services to its businesses is changing. In the future, internal IT will continue to be the focal point, provisioning services from the traditional IT player, a third party cloud provider (public cloud) or build its own cloud (Private cloud).



THE TRANSITION FROM THE TRADITIONAL IT PROVIDER ECOSYSTEM TO THE NEW IT ECOSYSTEM IS SHOWN IN THE EXHIBIT BELOW



HOW SHOULD IT ORGANIZATIONS CHANGE TO GEAR UP TO CLOUD?

As a first step, an organization needs to take a learning perspective and assess the following:

- The CIO and IT leadership must gain a deeper understanding of the value proposition of the Cloud Providers and how their organizations may benefit from it
- Assess the costs and benefits of the cloud services offered by various cloud providers
- Form a Risk Review Board comprising of CIO, Information Security Officers, and representation from the Compliance and Audit Team, with a mandate of performing a comprehensive risk review of cloud services with respect to the business goals, regulatory and compliance, and security requirements
- Analyze the impact of cloud on the business stakeholders and detail the extent of change management required in the existing IT Systems, Processes and People
- Define a Governance Framework and control processes required to manage the services of the cloud provider



Secondly, IT organizations should build / buy and the associated operational decisions on the cloud

- Decide which IT services are ripe to move to a cloud and when
- Conduct feasibility analysis of whether to avail cloud services from a Cloud provider or build an internal Private Cloud
- Understand service levels and commercials offered by the Providers and assess fitment of such services to their business
- Assess business and operational risks of leveraging the cloud services
- Examine Business Continuity Plans / Recovery Plans of the cloud providers

Wipro believes that the Cloud has the attributes and potential to support a global outsourcing environment with better scalability and elasticity to provide computing resources and cloud services to meet demand in this unpredictable global economy.

WHAT ARE THE KEY RISKS ASSOCIATED WITH THE CLOUD, AND HOW SHOULD THESE BE HANDLED?

Organizations can potentially achieve cost savings and variability, and time to market, but not without understanding the associated risks of the selected cloud services.

- **Viability:** Organizations should perform a due diligence on the cloud provider to check the performance and stability of the cloud provider with respect to the other players in the industry. Does the provider have a long-term road map and does it align with your organization's long-term strategy? Do they have a history of delivering world-class IT solutions for the businesses? As the industry is evolving from the early stages, acquisitions and consolidations are likely to happen going forward and the implications of such events to the services provisioned needs to be assessed. Organizations must understand how they can in-source the provisioned service and get their data back into their replacement systems if required.
- **Availability:** Recently, Microsoft's cloud Azure melted down and went into the dark for 22 hours. Over the course of the last year, we have heard about cloud services outages with other early entrants such as Google and Flexiscale. Though these vendors fixed the issue, the risks associated with availability and recovery still remain. These risks can be mitigated by designing required SLA and Performance Guarantees with the cloud providers and having a comprehensive tested business continuity plan in place.
- **Data Integrity, Privacy and Backup:** Since Cloud computing environments are hosted externally and are shared, organizations need to evaluate risks in areas such as data integrity and privacy and understand the encryption methods used. The organization should find out if their authorized staff can get access to the back up data in case of an emergency.
- **Compliance and Audit:** The organization must validate if selected cloud provider supports audit and compliance by providing the required information on a timely basis. If the cloud provider declines to co-operate in audits, then only nontrivial IT services should be sourced to such a provider.



WHAT SERVICES CAN BE MOVED INTO THE CLOUD?

We recommend that an organization must take gradual steps in adoption to the cloud, before embracing it in a big way. For organizations, this provides an opportunity to master the alignment of processes in Governance, Change Management, Service Integration, End User Communication and Training, Control and Measurement of services, Security and Risks – to the cloud – and hence be in a position to utilize cloud services effectively.

- Organizations must first start by moving low critical services into the cloud. Many enterprises have taken advantage of SaaS collaboration, sales, and marketing applications, so organizations which have not leveraged cloud in these areas can begin here
- Infrastructure services such as storage and archiving and utility type of services such as email are candidates to be moved into the cloud
- On the applications side, web based applications should be moved into the cloud, preferably starting with the non-critical standardized applications
- Applications in development and staging environments can be migrated into a cloud prior to moving production applications
- Also, organizations should use cloud to provision computing resources to meet the surge in the IT demand or to provision resources for a specific project

WHAT IT FUNCTIONAL ROLES SHOULD AN ORGANIZATION RETAIN/CHANGE?

A few key functions in the IT organizations will evolve with the acceptance of Cloud Computing. The *Sourcing Office* who oversees the IT sourcing strategy will need to collaborate with the internal IT teams in evaluating the business case for Cloud Computing. The *Transformation and IT Strategy Office* responsible for rolling out the value add services will need to revisit the enterprise architecture strategy and evaluate the technical, operational and business fitment of the cloud services into its existing IT strategy. The *Relationship Managers* who interface with the business stakeholders will need to work with the organizational Change Agents to ensure that the businesses understand the new processes. The *Program Management Office* needs to create a reporting framework and control processes to measure and monitor the services provided by the cloud providers. The *Risk Management Office*, responsible for managing the operational and business risks of an enterprise, needs to evaluate risk impact of the cloud services on its business ecosystem. New functions called *Service Brokers* who specialize in managing interfaces with the cloud providers may emerge as well.



THE IT FUNCTIONAL ROLES REQUIRED TO SUPPORT THE CLOUD STRATEGY IS IN THE EXHIBIT BELOW



THE IMPACT: BIG HITTERS WILL CREATE BEST PRACTICES

As industry heavyweights such as Microsoft, Cisco, EMC, SAP build Cloud Computing platforms and demonstrate its value to the recipients of the cloud, the Global IT service providers such as Wipro, who have a strong global strategic alliance network with these industry leaders are collaborating and building cloud-based business solutions for their customers. These service providers are leveraging their global training and consulting capabilities which will help to transfer the industry best practices to and from the organizations rapidly.

EMBRACING CHANGE

"Is my organization ready for cloud computing?" is a question on every CIO's mind. One way to answer that question is to test what is best for you by first migrating low-critical services to the cloud with the assistance of experienced and qualified Service Providers.

IT organizations need to experience the lowered costs and increased benefits before growing their plans to adopt Cloud Computing in a more pervasive manner. With industry spends ready to hit \$42 billion in cloud computing, the shift is clearly on its way.



Wipro being a global strategic partner with global technology leaders such as Cisco, Microsoft, SAP, Oracle is integrating partner's proven technology platforms with its own solutions and services and is providing new cloud based business models for its customers.

HOW IS WIPRO EMBRACING THE CLOUD

Wipro's Global System Integration and Consulting practice provides end-to-end expertise in enabling cloud services for its customers. The scope of services includes evaluation and assessment of cloud services, design and implementation, and alignment of key processes – Enterprise Architecture, Governance, Service Management, Risk Management, and Compliance and Audit processes - to the cloud.

Leveraging on its end-to-end IT services portfolio including hosting capabilities and its global strategic partner network, Wipro is building a portfolio of multi-tenant cloud services in various verticals, which it offers to its customers. Some of these are listed below.

- ***Mortgage Origination Platform***
Platform based, "Pay-per-loan", end to end mortgage loan origination services for Mortgage industry leveraging Wipro-GFS NetOxygen technology.
- ***Corporate Email Platform***
Solution for Hosted Messaging and Collaboration (HMC) based on Microsoft enterprise products such as Microsoft Exchange Server, Microsoft Windows SharePoint Services, and Microsoft Office Communications Server 2007.
- ***Hosted Intelligent Document Management System***
SaaS based document management services to capture and manage documents for transactional content for conserving capital and going towards 'paper less' office.
- ***Hosted EDI***
Hosted B2B collaboration platform for streaming B2B and EDI operations and lower total-cost-of-ownership (TCO). The platform also supports domain specific solutions such as VMI, CPFR, Track and Trace, and Retail Analytics.
- ***Carbon Accounting Tool***
SaaS solution to enable socially responsible enterprise to measure, manage, monitor, report and monetize their Green House Gas (GHG) emissions.
- ***WEE – Retail E-commerce Solution***
A comprehensive ecommerce solution offered in a SaaS model. The solution supports features like merchandising, catalog, pricing, ordering, shopping cart, inventory and order fulfillment.



ABOUT THE AUTHOR

Milind Halapeth is the Group Head in the Global IT Outsourcing Practice in Wipro. He has performed key roles in defining solutions for clients in large Global Outsourcing deals. Prior to that, he has managed large IT programs in the US and European Geographies. Milind's areas of interests are Global Outsourcing and he has been involved in practice development of Cloud Computing.

ABOUT WIPRO TECHNOLOGIES

Wipro is the first PCMM Level 5 and SEI CMMi Level 5 certified IT Services Company globally. Wipro provides comprehensive IT solutions and services (including systems integration, IS outsourcing, package implementation, software application development and maintenance) and Research & Development services (hardware and software design, development and implementation) to corporations globally.

Wipro's unique value proposition is further delivered through our pioneering Offshore Outsourcing Model and stringent Quality Processes of SEI and Six Sigma.

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