Cloud for Business
- Bharati Lele

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Cloud Journey...

- **Exploration**
- **Scale-Up**
- **Transform**

- **Infrastructure as a Service (IaaS)**
- **Platform as a Service (PaaS)**
- **Software as a Service (SaaS)**
**The IaaS Journey**

### PHASE 1

- **Getting the feet wet**
  - Business Drivers
  - Architecture Principles
  - Stakeholder Viewpoints
  - Architecture Decisions

### PHASE 2

- **Enterprise Scale**
  - Business Drivers
  - Architecture Principles
  - Stakeholder Viewpoints
  - Architecture Decisions

### PHASE 3

- **Business Transformation**
  - Business Drivers
  - Architecture Principles
  - Stakeholder Viewpoints
  - Architecture Decisions

### Requirements Management

1. Architecture Vision
2. Business Architecture
3. IS Architecture
4. Technology Architecture
5. Opportunity & Selection
6. Migration Planning
7. Implementation Governance
8. Architecture Change Mgmt.

**Preliminary Phase**

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Phase 1 Getting the feet wet - Business Drivers

- Increasing need for computing (HW/SW) resources on temporary basis
- Time taken for provisioning of new HW/SW is not keeping pace with business demand
- Redundant effort in software installation and tuning multiple copies of the same software
- Need greater discipline to regulate usage of resources e.g. License management, access to compute power
Transition Architecture 1

Presentation Layer

Operations enablement Services

Deployment Location

ElasticFox

Monitoring

Metering

Administration

Others...

Vashi
Transition Architecture 1

Lack of adequate support for Windows

Persistence of data inadequate

Limited support for VMWare

Difficult to create new image

Interoperability with EC2 with constraints
Transition Architecture Final

Visualization

Presentation Services

Operations enablement Services

Abstraction and Orchestration

Deployment Locations

Navigation

Security

SmartGeo

Administration

Metering

Powai

Vashi

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Transitional Architecture Final

- **Substantial improvement in end user experience**
- **Able to handle persistence of data**
- **Easy to add new functionality**
- **Able to support multiple locations**
- **Able to support all windows versions**
- **Need additional functions for enterprise deployment**
- **Architectural dependency on Open2RM identified as major risk**

**Deployment Locations**
- **Powai**
- **Vashi**

**Services**
- **Abstraction and Orchestration**
- **Presentation**
- **Operations enablement**
- **Visualization**
- **Navigation**
- **Security**
- **SmartGeo**
- **Metering**
- **Administration**
Phase 2
Phase 2 Enterprise Scale - Business Drivers

- Increasing need for computing (HW/SW) resources on temporary basis
- Time taken for provisioning of new HW/SW is not keeping pace with business demand
- Redundant effort in software installation and tuning multiple copies of the same software
- Need greater discipline to regulate usage of resources e.g. License management, access to compute power

- Optimize Investment in Production Infrastructure
- Build Reference Implementation to support client specific cloud infrastructure requirements
Phase 2 Enterprise Scale - Architecture Iterations

Visualization

Presentation Services

- Navigation
- Personalization
- Others.....

Operations enablement Services

- Workflow
- Security
- Metering
- License Mgmt
- Monitoring
- Administration
- SmartGeo
- Others...

Abstraction and Orchestration

Deployment Locations

- Powai
- Vashi
- Pune
Phase 2 Enterprise Scale - Reuse Possibilities

Third Party Commercial Tool

Web Services

Enterprise Standard Web Services
Workflow/Orchestration
Enterprise Service Bus

Business Layer

Service Repository

Asynchronous

Cloud Platforms

Synchronous
Phase 2 Enterprise Scale - Reuse Possibilities

Third Party Commercial Tool

Web Services

Cloud Platforms

- Business Rules Engine
- Data Services
- Cloud Platform Adaptor Services
- External Systems Adaptor Services

Cloud Platforms
The Current Architecture

Visualization

Presentation Services
- Navigation
- Personalization
- Others.....

Operations enablement Services
- Workflow
- Security
- Metering
- License Mgmt
- Monitoring
- Administration
- SmartGeo
- Others...

Abstraction and Orchestration

Deployment Locations
- Powai
- Vashi
- Pune
- External
CloudX™ deployment infrastructure
CloudX™ deployment infrastructure
CloudX™ deployment infrastructure

- Private Cloud
- VPC over Public Cloud
- VPC over Dedicated Hosting

Pune
Powai
New
Mumbai
Cloud governance policies implemented through catalog of standard images, defined workflows, timely expiration of provisioned resources

- Ability to delegate the administration of set of licenses to individual unit/location

- Intelligently provisioning of computing resources depending on location, unit, position within the organization

- Ability of end user to create new images based on standard images and submit to addition in standard catalog through formal approval process
- Ability to delegate administration of fixed amount of computing units
- Ability to delegate administration of licensing units
- End user portal for accessing standard catalog for self provision and de-provision
- Ability to reuse and monitor the running usage of provisioned units (ability to meter)
- Ability to reuse and monitor use of licenses for the provisioned resources
Phase 3
### Phase 3 Business Transformation - Business Drivers

- Increasing need for computing (HW/SW) resources on temporary basis
- Time taken for provisioning of new HW/SW is not keeping pace with business demand
- Redundant effort in software installation and tuning multiple copies of the same software
- Need greater discipline to regulate usage of resources e.g. License management, access to compute power

<table>
<thead>
<tr>
<th>Business Drivers</th>
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| Ability to provision for deployment environment                                      |
| Ability to provide consistent, simple and seamless view and services across multiple cloud platforms (all types) |
Deployment Architecture

- Centralized measurement of server load (irrespective of underlying platform)
- Spawning/removal of node instances based on loading
- Session stickiness handled centrally
- Database Replication across platform

On Premise Private Cloud Infrastructure  |  Virtual Public Clouds (Amazon / Azure / Rackspace / Dedicated Hosting)
PaaS
**PaaS - Business Drivers & Challenges**

**Business Drivers**
- De-focusing from Non-Functional IT Requirements
- Commoditize IT Assets
- Abstracting Multi-Tenancy

**Challenges**
- Rapid application Development, Processes & Frameworks not mature enough
Our PaaS Journey

**Explorations**
- Multiple PaaS Platforms
- Identification of Whitespaces
- Integration with Enterprise IT Assets

**Scale Up**
- Core Platform Skills
- Development of Frameworks, utilities for RAD
- Multi-Tenant Application Development

**Transformation**
- Multi-Vendor PaaS mediation
- Seamless view of Cloud across IaaS, PaaS & SaaS
### Business Drivers

- Reduced Investments in IT Assets
- Quick Access - Zero Capital Investment
- Commoditization of non-differentiating IT Assets

### Challenges

- Identification of Services / Platforms
- Readiness to Adopt
- Return of Investment
**Our SaaS Journey**

- **Explorations**
  - Multiple SaaS Platforms
  - Identification of Applications for SaaS
  - Extension of Core SaaS Application

- **Scale Up**
  - Core Platform Skills
  - Development of Frameworks, utilities
  - Integration of SaaS Applications
  - Leveraging PaaS for SaaS

- **Transformation**
  - Multi-Vendor SaaS mediation
  - Seamless view of Cloud across IaaS, PaaS & SaaS
Discernible Trends

- No single cloud that fits all solution
- Evolution of common standards unable to keep pace with technology changes
- Enterprises looking at “Surround the core” options for cloud deployment
- Rapid Maturity of PaaS platforms for deploying enterprise scale applications
- Merging of IaaS and PaaS functionalities
Cloud Mediation Platform

Presentation Services

Integration Services

End Users

Existing Infrastructure
Learnings

- Flexibility of how to go along with business
- Governance for deployment of IT assets
- Choice of where IT assets should be deployed
Cloud for Business

Consulting & Assessment
Migration to Cloud Infrastructure
Setup of Enterprise Cloud Infrastructure
Software as a Service (SaaS) Enablement
SaaS Package Implementation
Cloud based Integration Services

Frameworks, Templates, Skills, Tools, Methodologies
Thank You

Our Business Knowledge,
Your Winning Edge.

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