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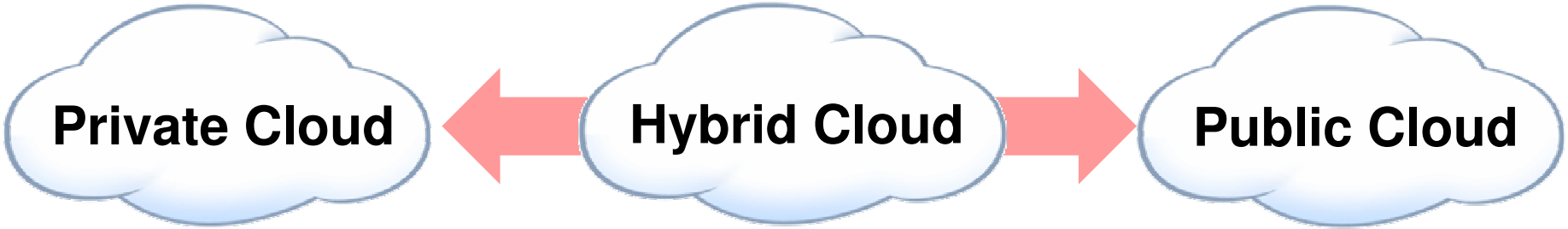
Konsolidacija podatkov v oblaku znotraj organizacije

Robert Korošec
Oracle

Deployment Models: Private, Public, Hybrid

Exclusive

Shared by multiple organizations



- CapEx & OpEx
- Control & visibility
- Not shared

- Cloudbursting – overdraft for peak loads
- Dev/Test & production
- B2B integration

- OpEx
- Outsourced services
- Shared by multiple orgs

Service Types: IaaS, PaaS, SaaS

Different Users

IT Professional

Developer

Business End User

Consumer

Service Provider

Customizations

Application

Platform

IaaS Cloud

Customizations

Application

PaaS Cloud

Customizations

SaaS Cloud

Consumer

Service Provider

Key Driver

Consolidation
Cost Savings

App Development
Focus

New Capability
Speed

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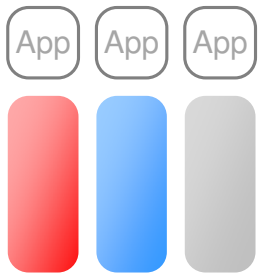
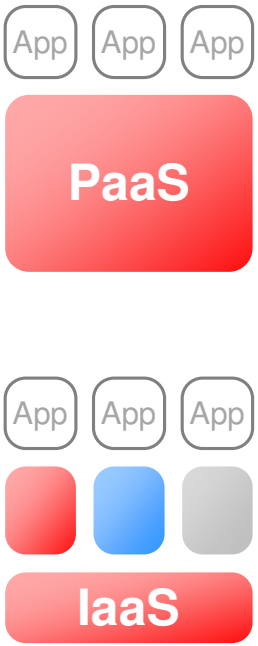
Consolidation at PaaS and IaaS Layers

Consolidate onto standard, shared and elastically scalable PaaS



vs.



- Standardized PaaS for all applications reduces heterogeneity, cost and complexity
- Accelerated new application development
- Cost savings from less hardware, power and data center space

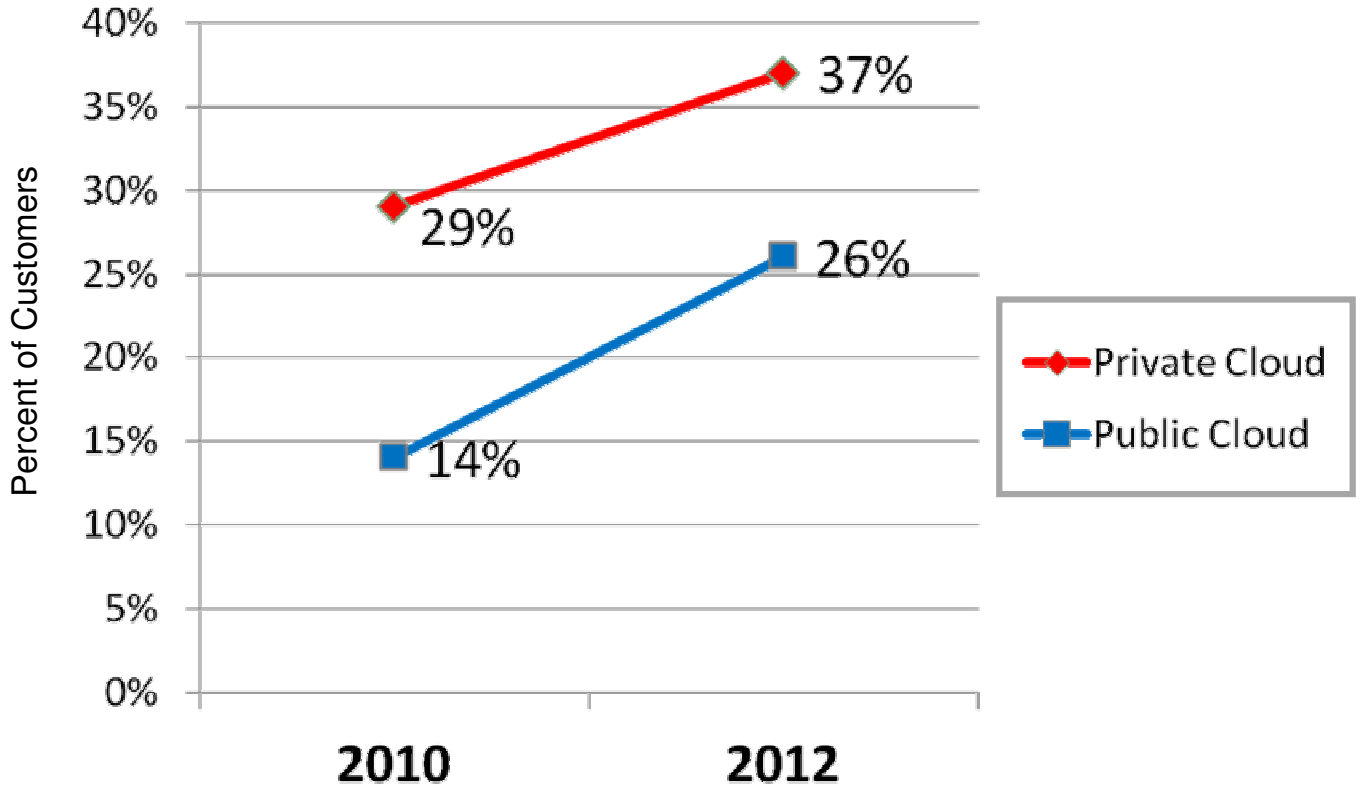
Consolidate onto shared IaaS without standardization

- Software stack heterogeneity, cost and complexity persists
- No administration (O&M) cost savings

- Cost savings from less hardware, power and data center space

What Are Customers Doing?

Cloud Adoption Is Rising



Source: IOUG ResearchWire member studies on Cloud Computing, conducted in Aug-Sept 2010 and Aug-Sept 2012

IOUG ResearchWire

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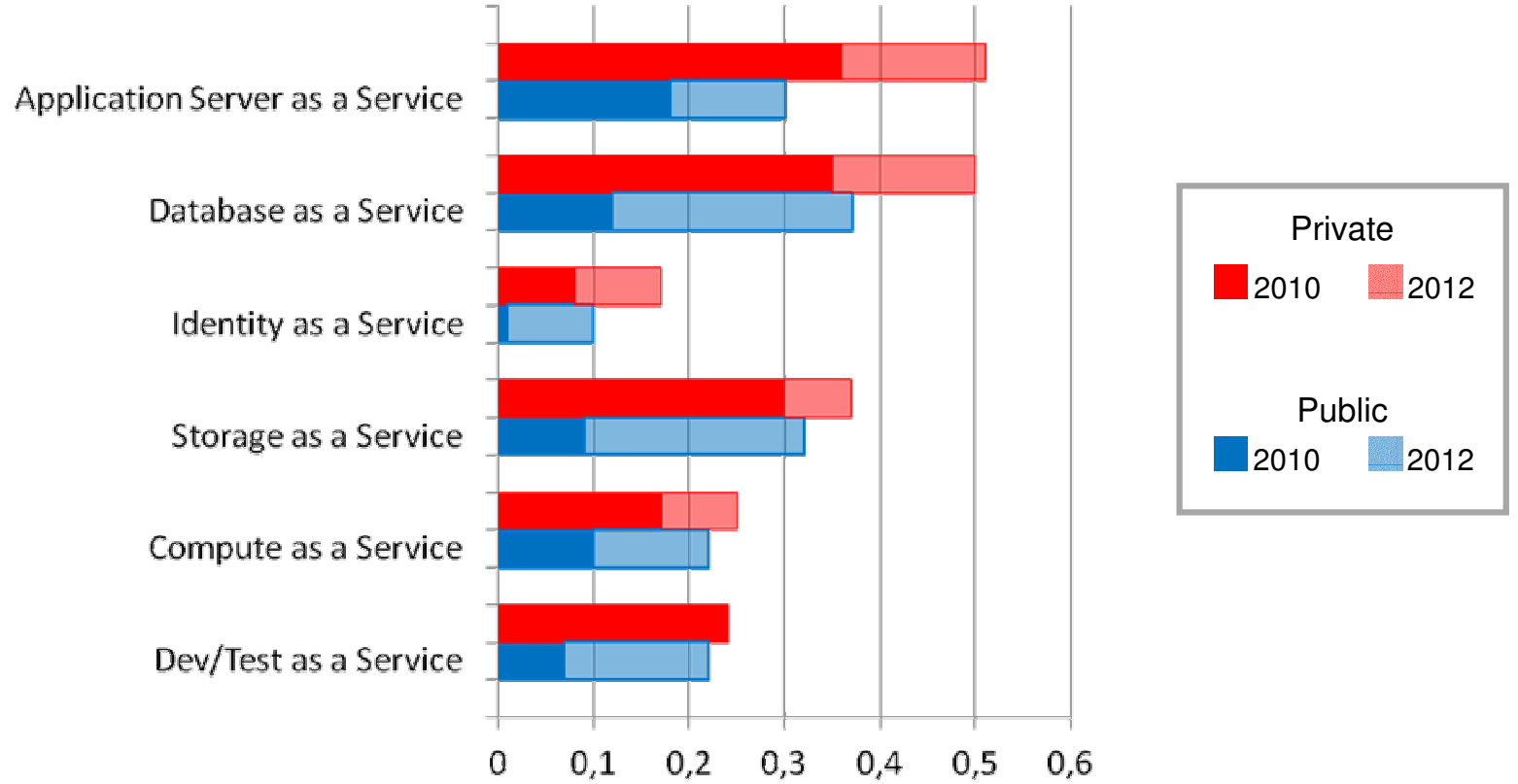
PaaS Outpacing IaaS

Platform as a Service (PaaS)

Infrastructure as a Service (IaaS)



Source: IOUG ResearchWire member studies on Cloud Computing, conducted in Aug-Sept 2010 and Aug-Sept 2012

IOUG ResearchWire

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Private PaaS Examples

Case Study

CREDIT SUISSE

- Solution:
  - JAP – Java Application Platform
  - DHP – Database Hosting Platform
  - CHP – Compute Hosting Platform
  - Centralized deployment of 200+ apps
  - Oracle:
    - WebLogic Server 10.3
    - Oracle Database 11g
    - Solaris
    - Sun M-Series/T-Series
- Benefits:
  - 35% reduction in operating costs
  - 30% reduction in project costs
  - 44% power consumption avoided in 4 years, while doubling capacity
  - No downtime incidents in 3 years

CommonwealthBank

- Solution:
  - "Oracle as a Service" PaaS
  - Consolidate 300 small to medium database environments onto 3 grids
  - Advanced chargeback model for cost recovery
  - Oracle:
    - Oracle Database 11g
    - Exadata
- Benefits:
  - 50% operating cost improvement
  - P&L breakeven in Year 1
  - Server utilization: 15% → 80%
  - Elasticity – CPU can be taken from resource pool as needed
  - Operational Stability HA,DR
  - Customer Service

Deutsche Bank

- Solution
  - Oracle Database as a Service (PaaS) with eGRID
  - Consolidation of >60 applications until now on a standardised platform
  - Standardised environment, process and pricing
  - Attractive price model with very low time to market
- Benefits
  - Very fast deployment
  - Very good performance (> increase in all areas)
  - Cost reduction of > 50%
  - GREEN IT: 57% fewer power used

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Texas Department of Information Resources (DIR)

Data Center Services – Cloud Consolidation

- The Texas Department of Information Resources (DIR) provides statewide leadership and oversight for management of government information. Supports 125 agencies and 45 education organizations.
- One of its leading programs is the Data Center Services program, which was launched to rationalize and consolidate tens of thousands of information systems throughout the state. The program focuses on shared services and shared platforms based on engineered systems.
- In 2005, the state passed legislation mandating that 28 of the largest agencies in Texas could no longer purchase their own IT.
- In 2007, DIR began to consolidate the 28 largest state agencies into two state data centers.
- In 2010 DIR reposted the DCS contract and began looking for new technology partners. Oracle with Xerox and CapGemini created a design of a private cloud based on engineered systems.
- In September 2011, DIR established a twelve-month pilot-project with three of its customers: the Office of the Secretary of State, the Texas Water Development Board, and the Texas Department of Transportation. The pilot went well, encouraging other agencies to join.

Texas Department of Information Resources (DIR)

Data Center Services – Cloud Consolidation

- In 2012 numerous agencies have signed up to use DIR's Exadata-based cloud services including the Texas Education Agency, Department of Assistive and Rehabilitative Services, Department of Family Protective Services, Texas Department of Insurance and the Department of Public Safety. In 2013 the doors will be opened to all of the other agencies to join.
- The Texas cloud architecture supports the five essential capabilities defined in the National Institute of Standards and Technology (NIST) cloud reference architecture:
  1. On-demand self-service
  2. Broad network access
  3. Resource pooling
  4. Rapid elasticity
  5. Measured service
- The chargeback model permits state agencies to consume cloud services on a "pay-as-you-go" basis.

Texas Department of Information Resources (DIR)

Services offered

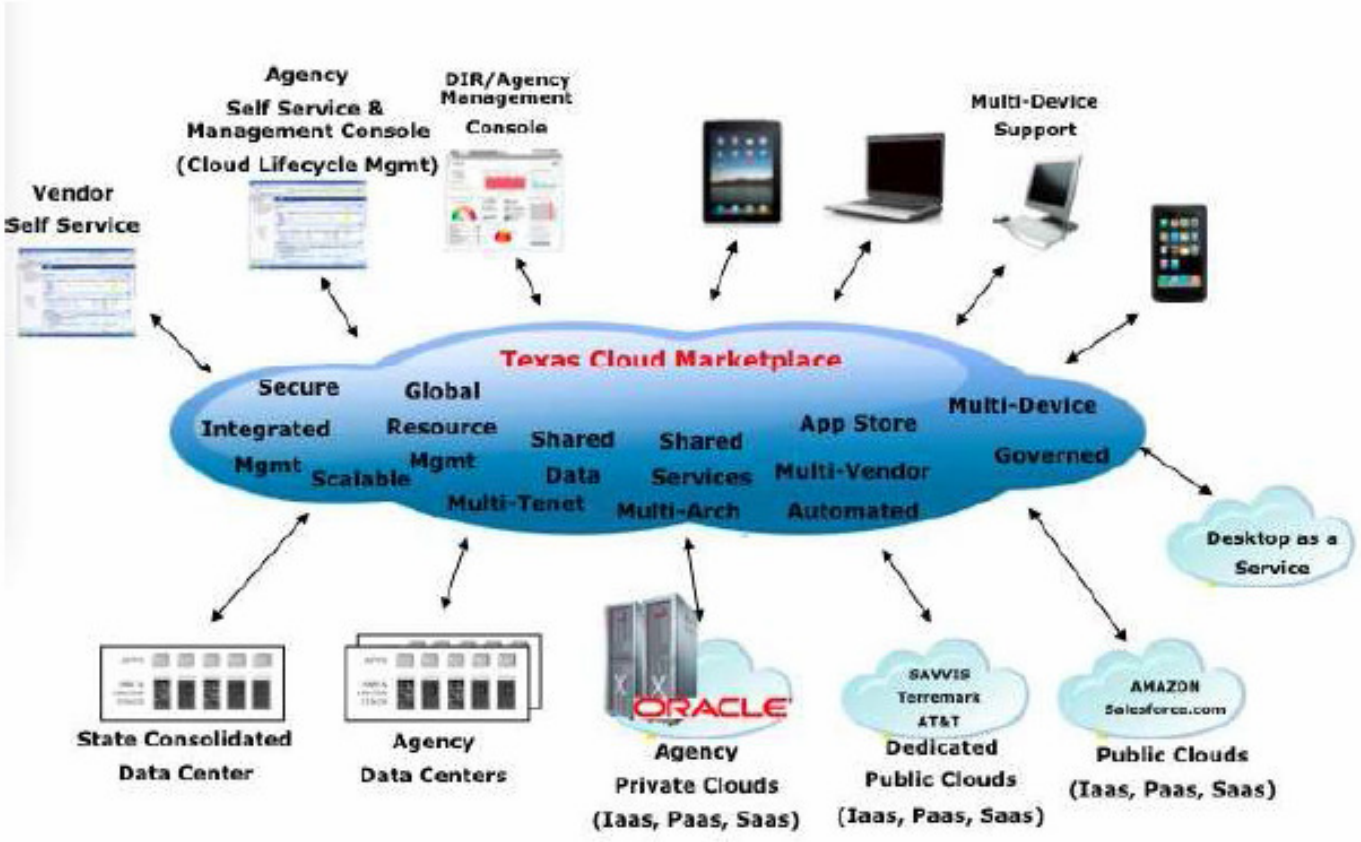
Working with representatives from DIR, Xerox and key stakeholders within state agencies, they identified key cloud services that would be offered, including the following:

1. Database-as-a-Service
2. PeopleSoft-as-a-Service
3. UNIX-as-a-Service
4. Identity-as-a-Service
5. GIS-as-a-Service
6. Infrastructure-as-a-Service

Service Level	DB H/A	Business Continuity	Storage	Backup	DR	Outage RTO (estimate)	DR RTO
Bronze	Single Node (Primary Site)	N/A	No Mirror	Tape	D4-D3	48 Hr Max	+72 Hr
Silver	Dual-node RAC (Primary Site)	N/A	Mirror	Tape	D4-D2	24 Hr Max	+24 Hr
Gold	Dual-node RAC (Primary Site)	50% Capacity (Geo Site)	Multi-cell mirror at both data centers	Rep Storage	D4-D0	8 Hr Max	+8 Hr

Texas Department of Information Resources (DIR)

High level architecture



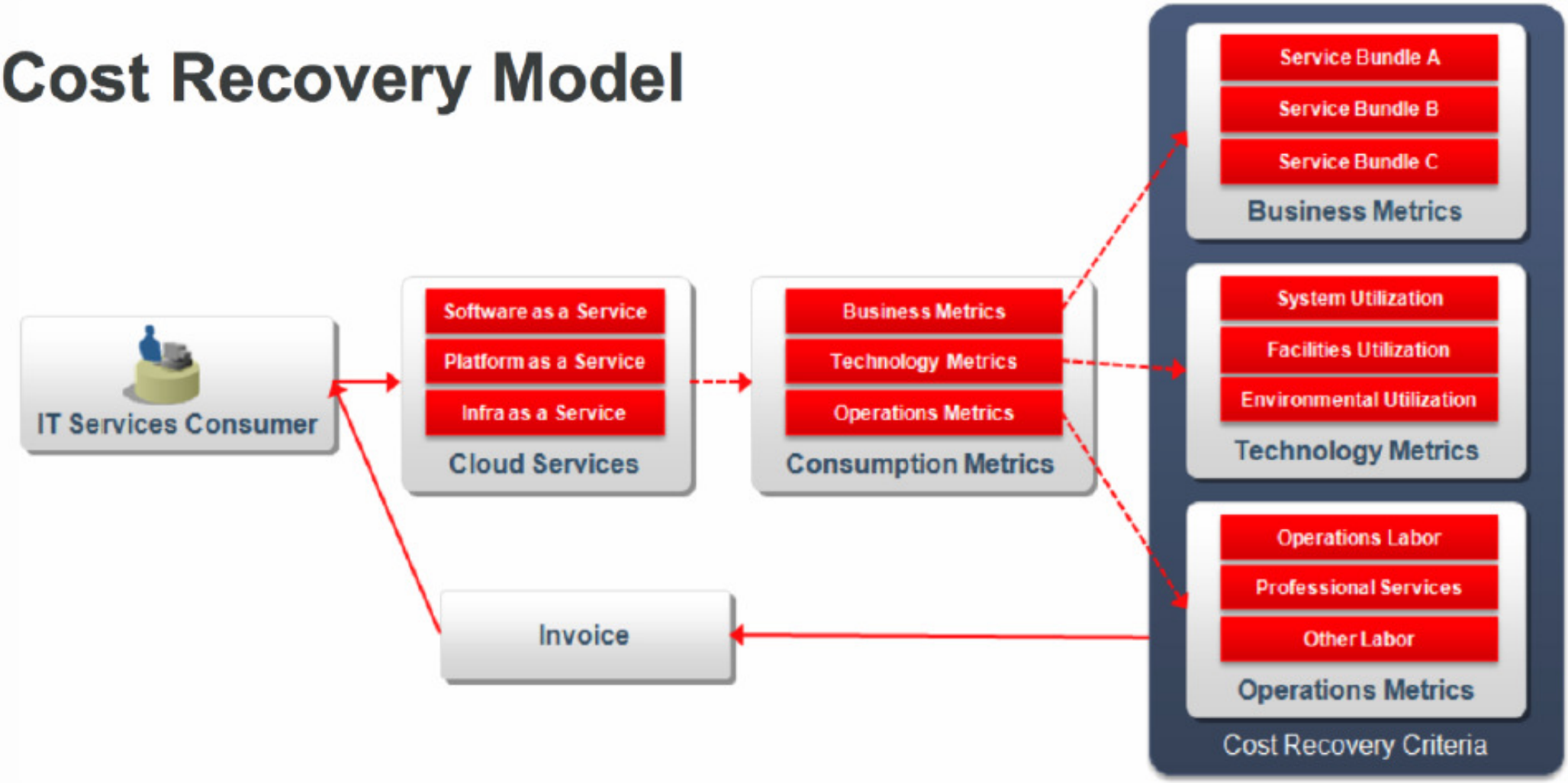
DIR
Dept. of Information Resources

Capgemini
CONSULTING.TECHNOLOGY.OUTSOURCING

Oracle
Public Sector Cloud

xerox

Cost Recovery Model



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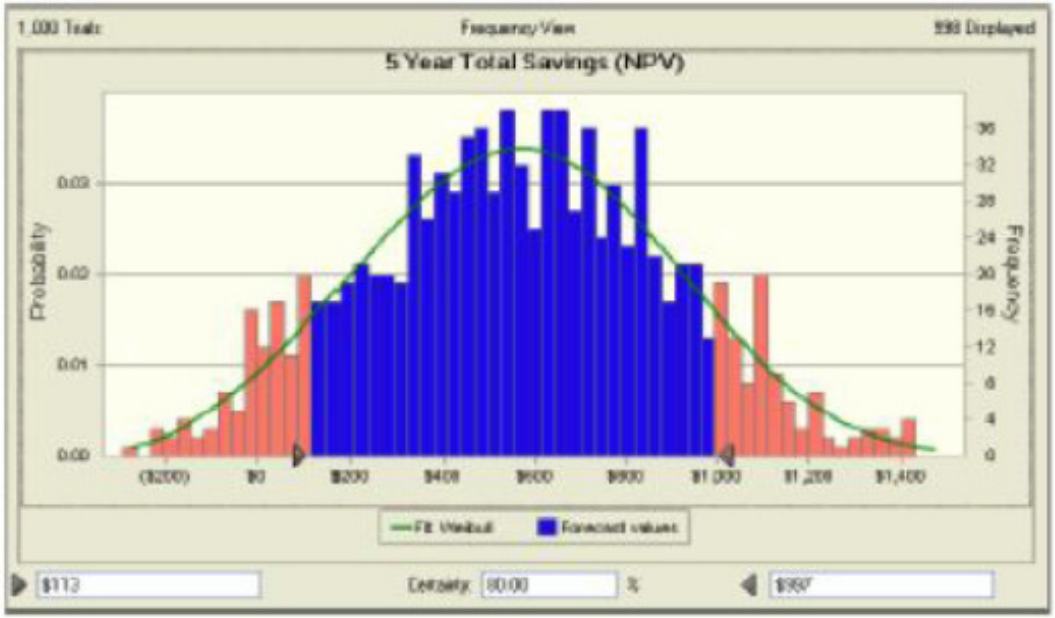
Breakeven At 10% Adoption

Potential 5-Yr Benefits		
Net Present Value	$0	$1
Reduce Storage Costs	$0	$1
Reduce Server Costs	$0	$0



Assumptions

- # of Databases Located Outside of Consolidated Data Center - 600
- 10% Of Potential Databases (60) Needed For Breakeven
- 100% Adoption Based In Year 1
- Need First Tenant With 40 cores and 10 TB of Oracle

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Texas Department of Information Resources (DIR)

Solution Components

Texas DIR Transformer
Solution Components

Infrastructure: Exadata & Exalogic

Business & Technical Service Catalog

- DB-aaS / DW-aaS
- GIS-aaS
- Platform-aaS
- Professional Services
- Security-aaS / SICAM

IT Service Management

DIR Dept. of Information Resources

Capgemini CONSULTING.TECHNOLOGY.OUTSOURCING

Oracle Public Sector Cloud

xerox

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Monitoring & Securing Clouds

Oracle Enterprise Manager 12c

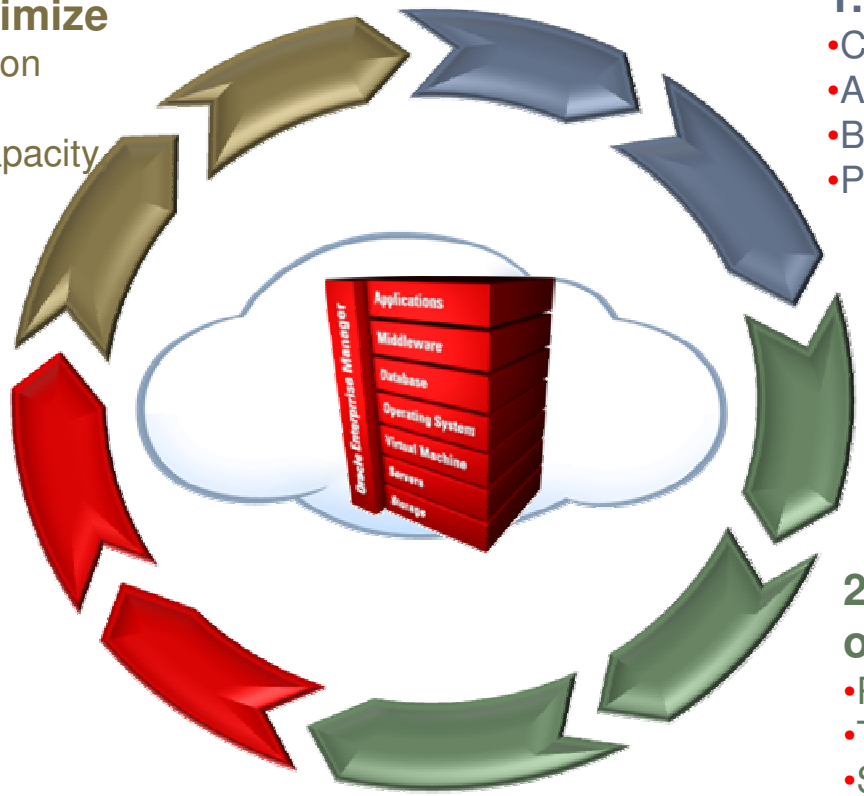
Full Cloud Lifecycle Management for Full Cloud Stack

1. Plan & Setup the Cloud
- Capacity & consolidation planning
- Asset discovery
- Bare-metal provisioning
- Policy setup

2. Build, Test & Deploy Apps on the Cloud
- Packaging apps as assemblies
- Testing applications
- Self-service provisioning

3. Manage & Monitor the Cloud
- Auto-scaling
- Full stack management
- End-user, business-level, app monitoring

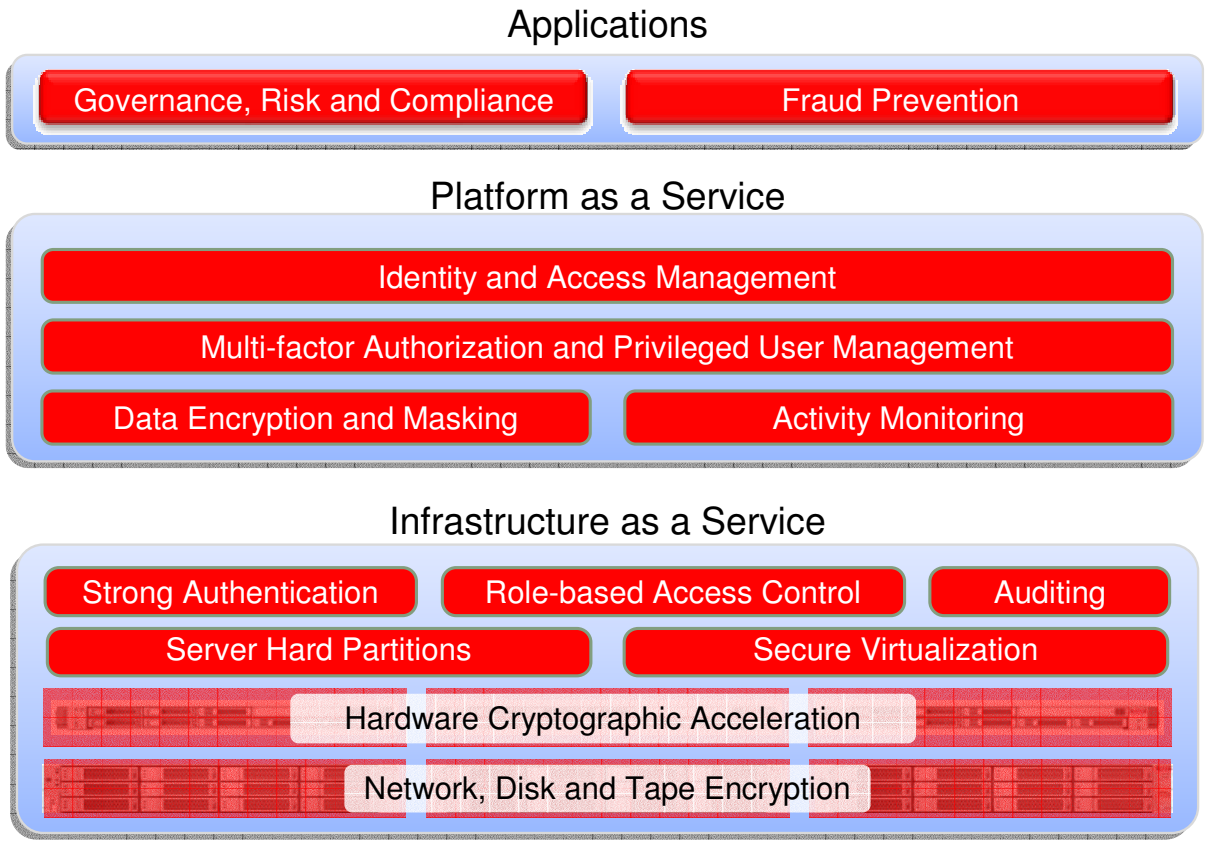
4. Meter, Charge, Optimize
- Metering resource utilization
- Chargeback/Showback
- Optimize performance, capacity, QoS



Cloud Security

Securing the Cloud Inside Out

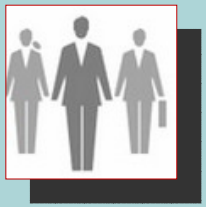
- **End-to-End Protection**
  - From Applications to Disk
- **Complete Choice**
  - Open, Standards-based
- **Best of Breed**
  - Integrated and Integratable



Summary

Database As A Service (PaaS)

Core Capabilities

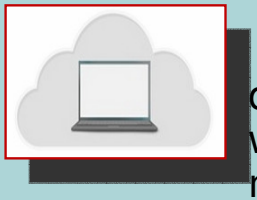


Self-Service
End-users can provision, monitor and manage for greater agility

Metering
Allows chargeback or showback for cost allocation

Security
Defense in depth exceeds organization, industry, and regional requirements

Service Catalog
Standardized database services for rapid, error-free deployment



Elasticity
Support dynamic workloads with minimal excess capacity

High Availability
Reliability through redundancy

Did You Know? *73% of organizations cite reliability as the most important factor in selecting a cloud partner.*
PC Connection, 2013 Outlook on Technology Study

Evolution to a Private Database Cloud

Traditional DB Silos

- Physical
- Dedicated & heterogeneous
- Static with disconnected analytics

Siloed

Standardized DB Platform

- Standardized hardware and software stack
- Standard deployment configuration
- Catalog of database services and service levels

Standardized

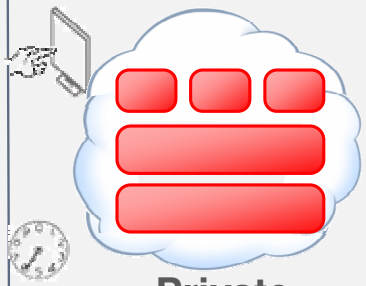
Optimized DB Platform

- Shared & secure central data infrastructure
- Dynamic optimizations & resource mgmt
- Automated systems management

Consolidated

Private Database Cloud Platform

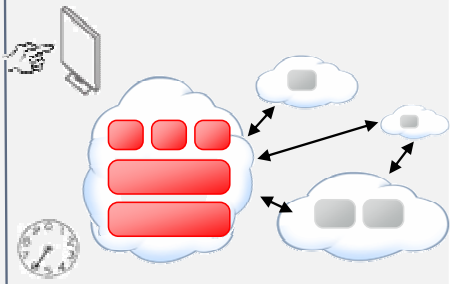
- On-demand, resilient, and tiered self-service
- Rapid service elasticity and automation
- Metering, automated cost allocation & chargeback



Private Database Cloud

Hybrid Cloud Platform

- Fully dynamic and unified resource pools
- IT as cloud broker: arbitration and brokerage
- Secure hybrid cloud integration (vendors, partners, etc.)



Hybrid Database Cloud

Maturity & Capability

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Hardware and Software

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Engineered to Work Together

