Hybrid Cloud Use Cases

A Structured Approach to move to Hybrid Cloud

Explore Hybrid cloud/IT, its benefits, areas of interest/priority, and solutions which can accelerate hybrid adoption

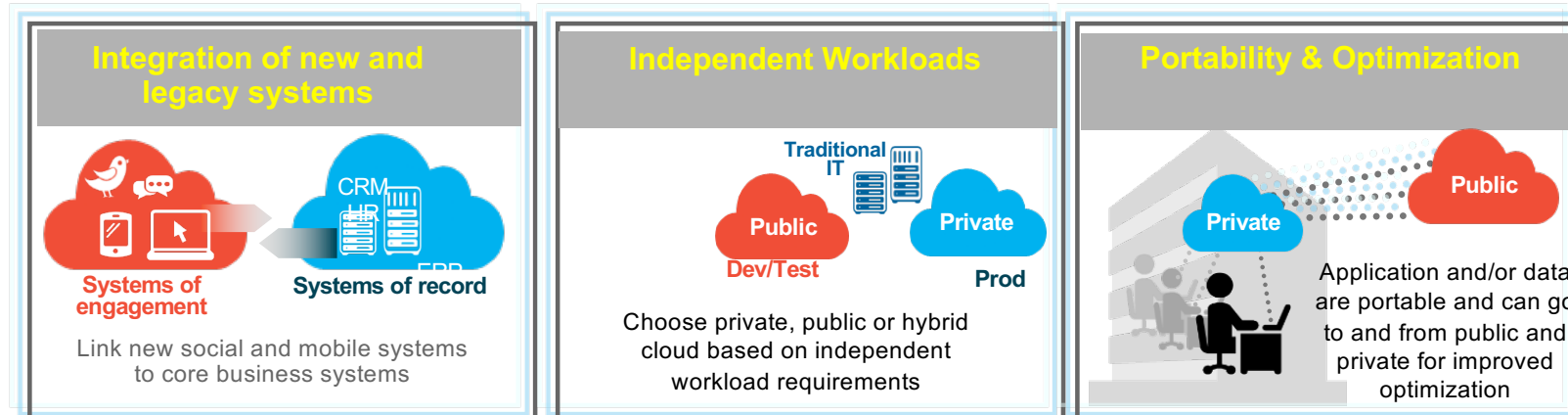|	1 Motivators and challenges	2 Hybrid POV and use cases	3 Hybrid POV architecture	4 Cloud value	5 Hybrid scenario candidates
PURPOSE	Identify and prioritize client motivators and challenges to hybrid implementation	Discuss Hybrid Cloud point of view and the 7 hybrid use cases/ scenarios	Discuss IBM's point of view on hybrid architecture and components	Discuss client hybrid examples and value	Evaluate candidate workloads against hybrid operational concepts
OUTCOME	**Team validated motivators and challenges** — Considerations for implementation and elements to be addressed within a cloud strategy	**Prioritized hybrid scenarios** — Identification of suitable hybrid scenarios for implementation	**Hybrid architectural understanding** — Clarity regarding an architectural approach and considerations	**Known value of top priority hybrid scenarios** — Understanding of value for selected hybrid scenarios	**Hybrid implementation next step(s)** — Identification of workload(s) for hybrid implementation

Hybrid clouds use cases

Integration of new and legacy systems

Systems of engagement

Systems of record

CRM
HR
ERP

Link new social and mobile systems to core business systems

Independent Workloads

Traditional IT

Public
Dev/Test

Private
Prod

Choose private, public or hybrid cloud based on independent workload requirements

Portability & Optimization

Private

Public

Application and/or data are portable and can go to and from public and private for improved optimization
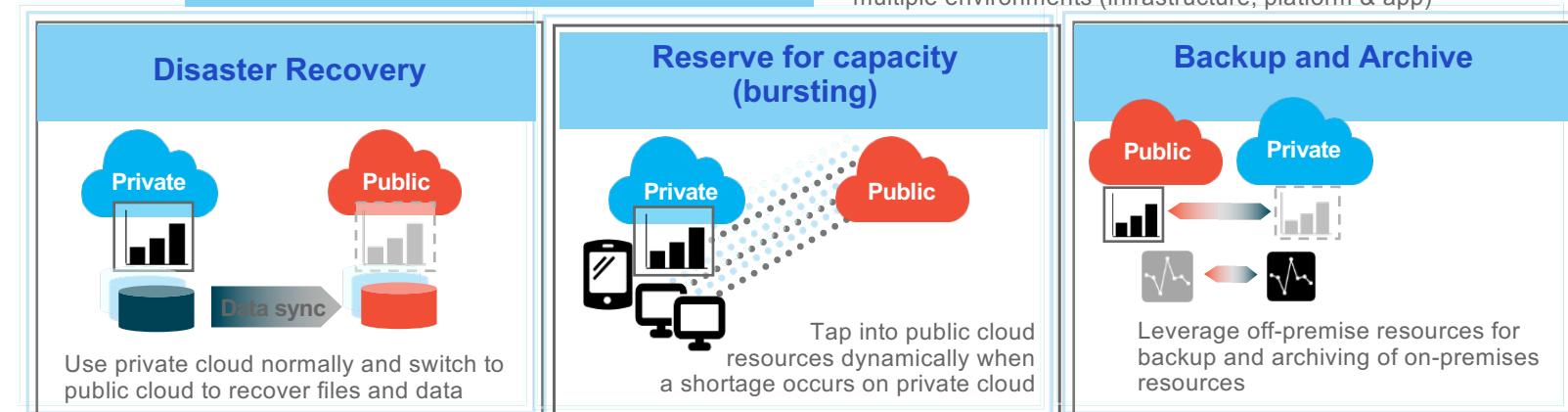
Able to be implemented quickly, without infrastructure or application changes
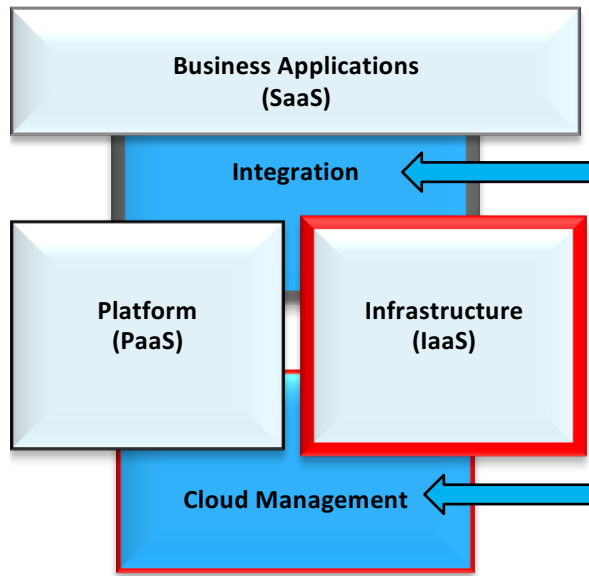
Hybrid Cloud Brokerage & Management

Planned or Policy based Management and sourcing across multiple environments (infrastructure, platform & app)

Disaster Recovery

Private

Public

Data sync

Use private cloud normally and switch to public cloud to recover files and data

Reserve for capacity (bursting)

Private

Public

Tap into public cloud resources dynamically when a shortage occurs on private cloud

Backup and Archive

Public

Private

Leverage off-premise resources for backup and archiving of on-premises resources

More complex deployment, possibly requiring infrastructure or application changes

INTEGRATION
Infrastructure
Application
Data

IT Agility and Cost Reduction with Hybrid Cloud

Business Applications (SaaS)

Integration

Platform (PaaS)

Infrastructure (IaaS)

Cloud Management

Reserve for capacity (bursting)

Private

Public

Tap into public cloud resources dynamically when a shortage occurs on private cloud

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IBM Learning example: Remote Labs Platform (RLP)Transformation

- IBM Training and IBM's Global Training Providers are responsible for the delivery of training to IBM employees, partners and customers.

- The IBM RLP needs to provide cost effective access to IBM software & hardware in a robust, easy-to-use, hands-on training environment.

> 60 *countries*

2 500 Courses available

>2000 Students / Week

Delivering a valuable remote lab experience to IBM Customers

IBM Training and Skills
What IBM Skills Do You Want To Learn Today?

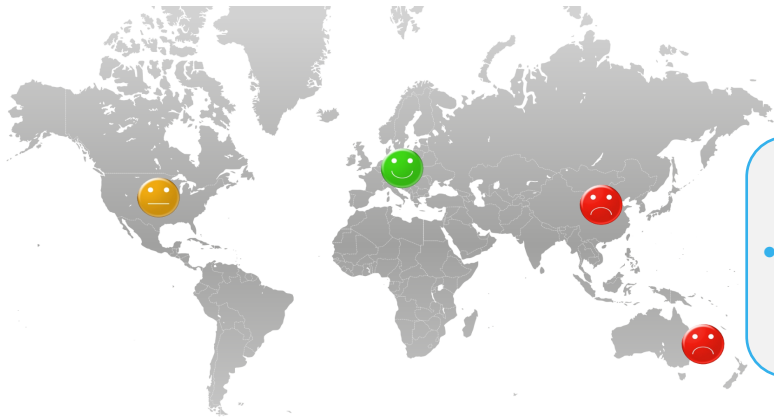| Analytics | Cloud | Commerce | Mobile | Security | Systems | Watson |

Hybrid Cloud for IBM Training services: Why?

Interaction & collaboration regardless of geographical location

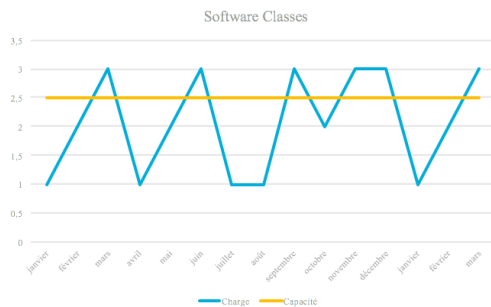Performance expectations

Scalability

- User response time & feedback

Customer satisfaction   *Quality of Service*

- Leverage Softlayer Network High performance for user access
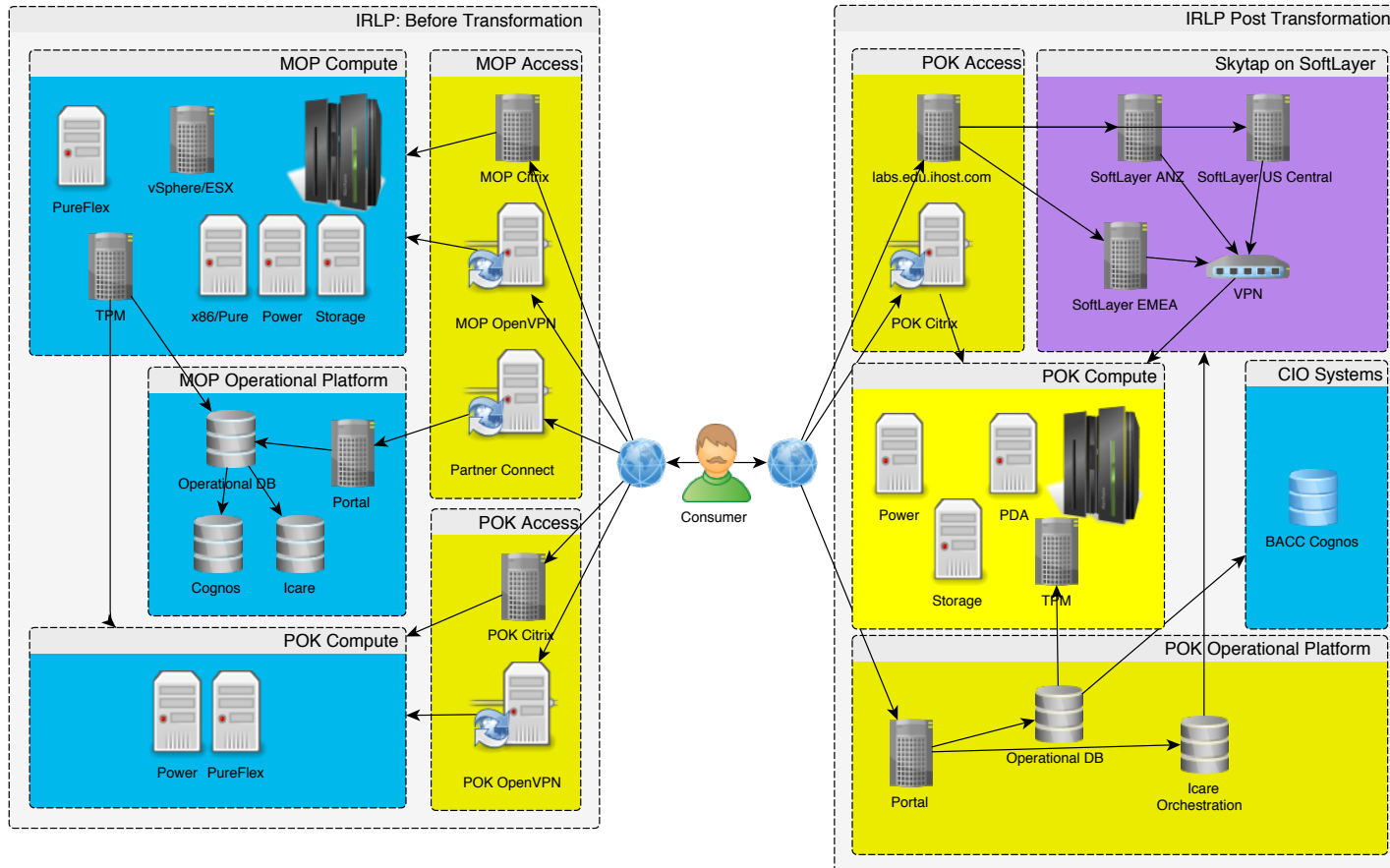
- Peak workload & overbooking

Software Classes

Business Growth

- Improve scalability & flexibility to:
  – Absorb peak Workload
  – Remove overbooking and Course cancellation

# IBM Remote Lab Platform Transformation from Private to Hybrid

IRLP: Before Transformation

- MOP Compute: PureFlex, vSphere/ESX, TPM, x86/Pure, Power, Storage
- MOP Access: MOP Citrix, MOP OpenVPN, Partner Connect
- MOP Operational Platform: Operational DB, Portal, Cognos, Icare
- POK Access: POK Citrix, POK OpenVPN
- POK Compute: Power, PureFlex

Consumer

IRLP Post Transformation

- POK Access: labs.edu.ihost.com, POK Citrix
- Skytap on SoftLayer: SoftLayer ANZ, SoftLayer US Central, SoftLayer EMEA, VPN
- POK Compute: Power, PDA, Storage, TPM
- CIO Systems: BACC Cognos
- POK Operational Platform: Portal, Operational DB, Icare Orchestration

The Transformation of the IRLP from private cloud to hybrid cloud
- Simplifying access
- Reducing capital and operating costs
- Increasing consumer satisfaction
- Utilizing best of breed providers for key services
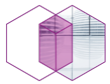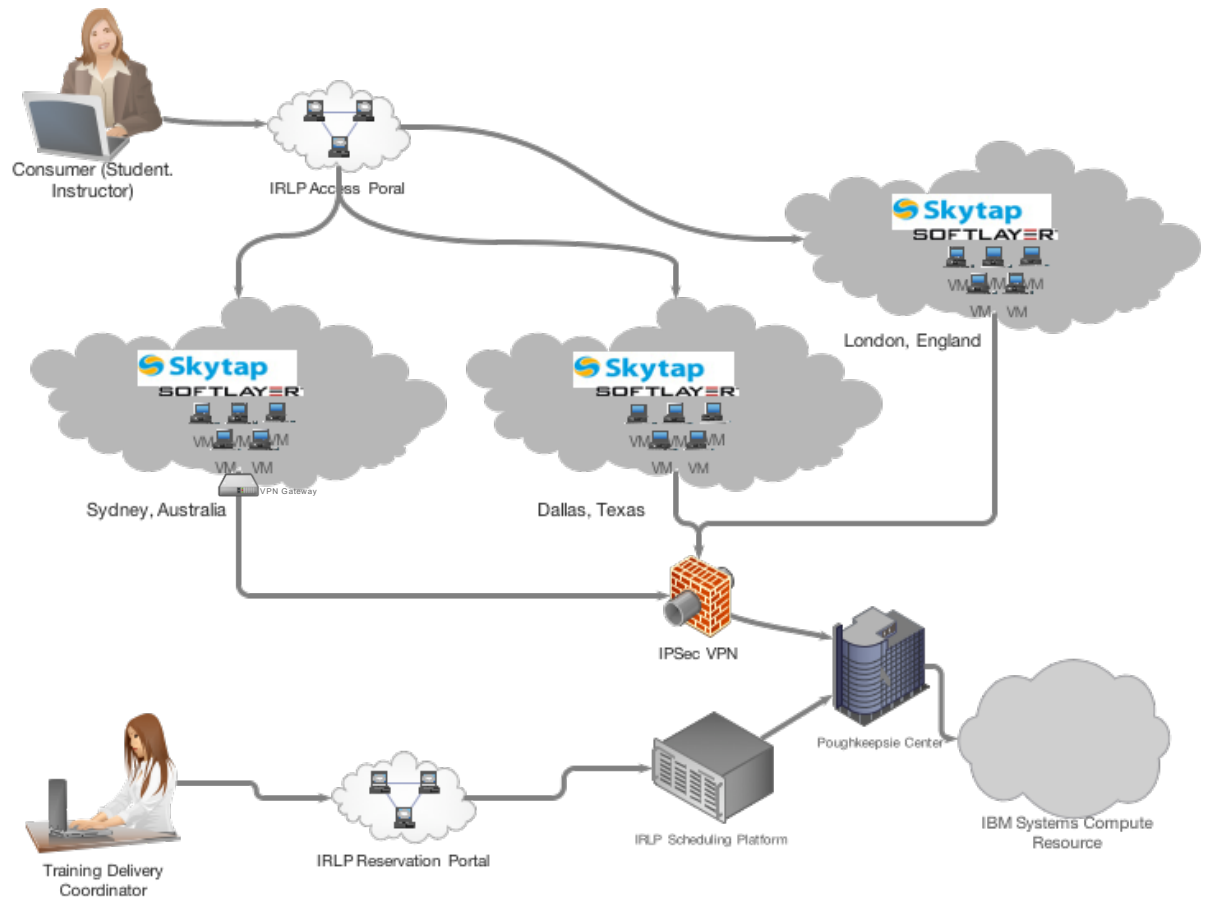- Enabling participation in the API Economy
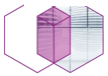
Benefits of Global Access Points: improved performance & QoS

50% reduction in connectivity related tickets

Typical latency of >300ms from Australia reduce to <100ms

Reduced maintenance downtime: 0 down time to environment since full transition

Distributed workload addresses workload contention issues

Hybrid Cloud Use Case Benefits

Transforming the IBM Remote Lab Platform from a dedicated, 100% on-premises environment to a hybrid implementation using on-premises IBM hardware in conjunction with IBM SoftLayer public cloud capabilities.

Business benefits

>3 million
dollars saved in year one

50% reduction
Help desk tickets
related to connectivity to the IRLP environment

100% increase
average capacity utilization
than in previous environment

IBM Remote Labs and IBM Training and Skills

An essential component to the success of IBM product implementation is hands-on training with the products.
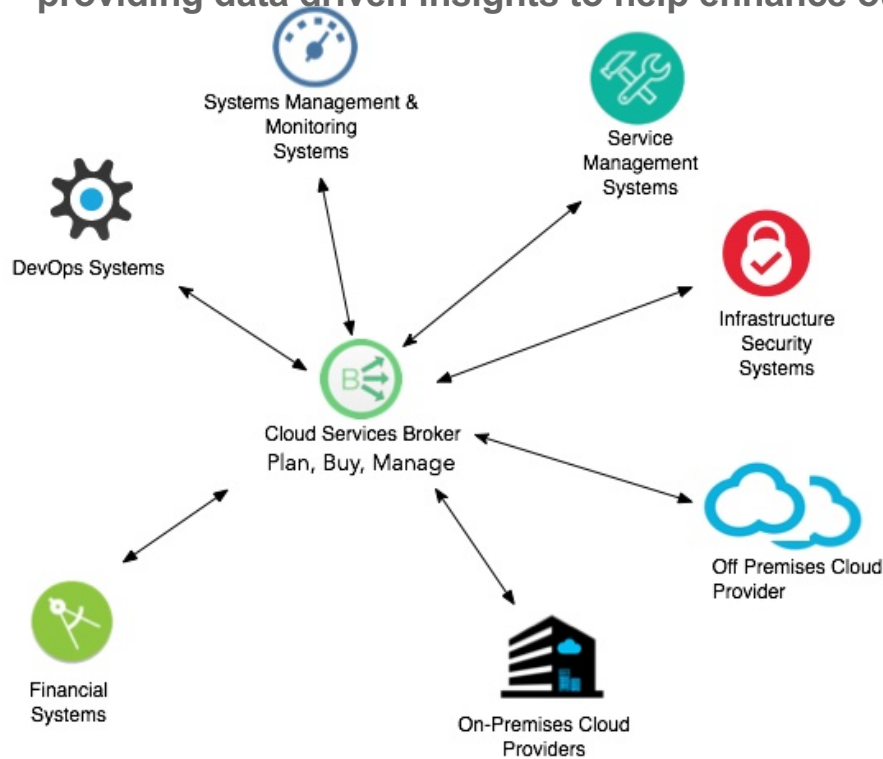
The IBM Remote Lab Platform provides this experience to nearly 75,000 training consumers every year.
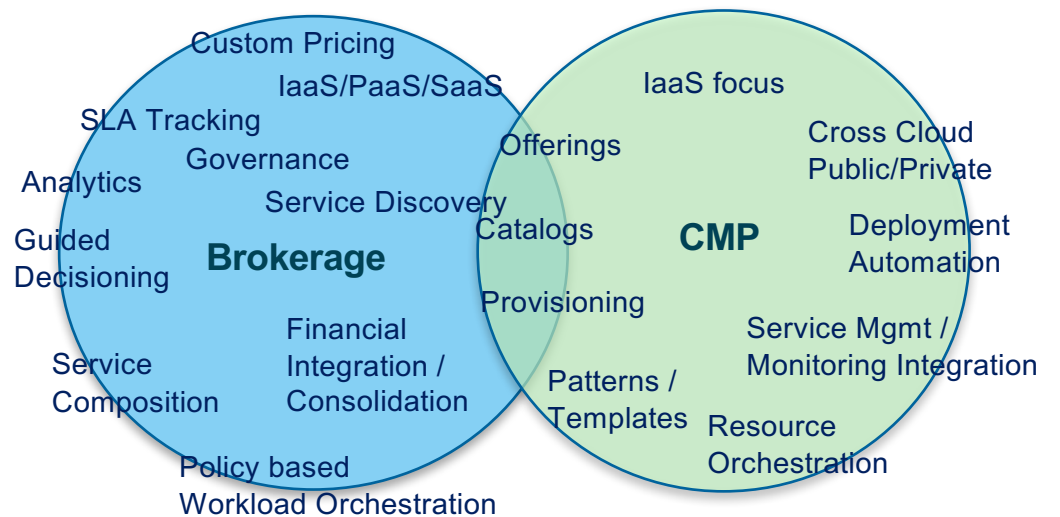
Solution components
- IBM® WebShere®
- IBM DB2®
- IBM WebSphere Portal®
- IBM InfoSphere® Information Server
- IBM SoftLayer®
- IBM Power Systems™
- IBM Control Desk®
- IBM Tivoli Monitoriing®

Cloud Services Brokerage extends the capabilities provided by Cloud Management Platforms to address key business needs

Brokerage services provide visibility to the end-to-end IT-as-a-Service supply chain and buying behavior of clients, providing data driven insights to help enhance our offerings and cross-sell and upsell additional services
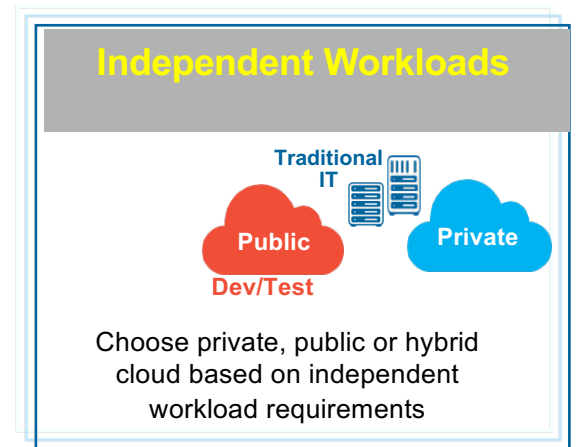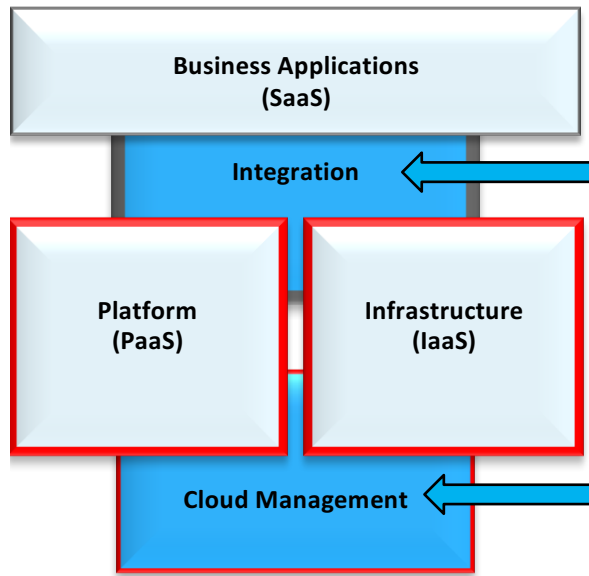

Systems Management & Monitoring Systems

Service Management Systems

DevOps Systems

Infrastructure Security Systems

Cloud Services Broker
Plan, Buy, Manage

Off Premises Cloud Provider

Financial Systems

On-Premises Cloud Providers

Brokerage

Custom Pricing

IaaS/PaaS/SaaS

IaaS focus

SLA Tracking

Offerings

Cross Cloud Public/Private

Governance

Analytics

Service Discovery

Catalogs

CMP

Deployment Automation

Guided Decisioning

Brokerage

Provisioning

Service Composition

Financial Integration / Consolidation

Patterns / Templates

Service Mgmt / Monitoring Integration

Resource Orchestration

Policy based Workload Orchestration

Service Brokerage works in conjunction with other existing systems in an organization including financial, service management, and systems monitoring

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Business Velocity & Better time to market with Hybrid Cloud

Application Deployment Automation

Client

- Worldwide Equipment Manufacturer
- Appli design & Dev remain at the customer
- 1 DC in each geographical zone (EMEA, NA, Latin America & Asia Pacific)
- 68 manufacturing plants with local plant's applications

VALUE

- Agility:, **10 times improvement in deployment volume,** and **divide time to market by 2+**
- **Costs: Reduced application deployment time by 60%**
- **Service Quality:** quality is constant for automated parts

Solution

- **IBM Cloud Orchestrator, UrbanCode Deploy, Chef** for automating / orchestrating the end-to-end build process, (provisioning & deployment of a whole application stack (application, middleware, system mgmt, virtual/physical resources), based on **DevOps SoftLayer** in place, implementing private cloud
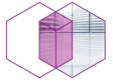
| Cost Efficiency | Business Velocity | Service Improvement |

Challenges

"Cut IT operating costs by 30% over the next 3 years." supporting international operations,

"Deliver systems in minutes/days instead of weeks/months."
"Quick adaptation to changing business conditions"
"Reduce drastically down time to apply changes".

"Improve the quality of the IT service we deliver."

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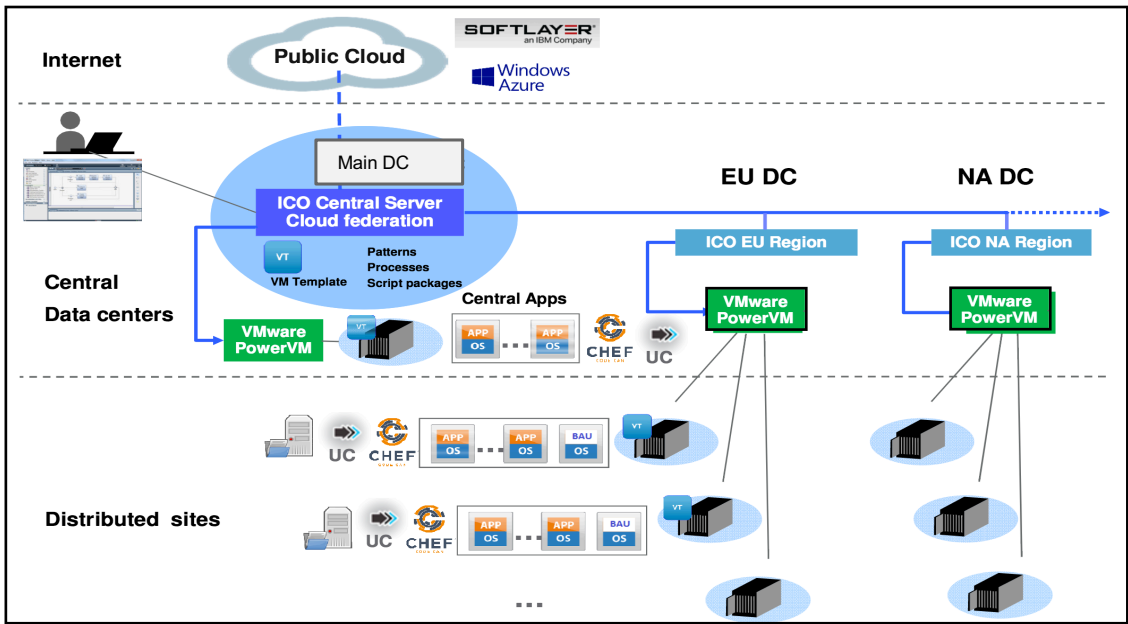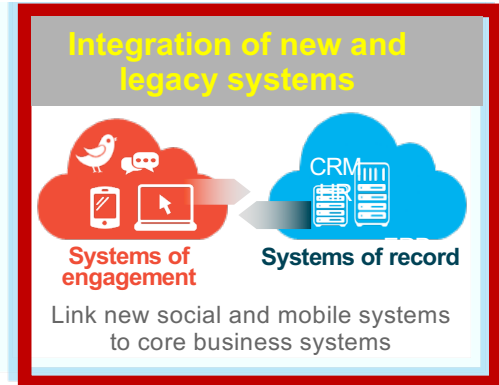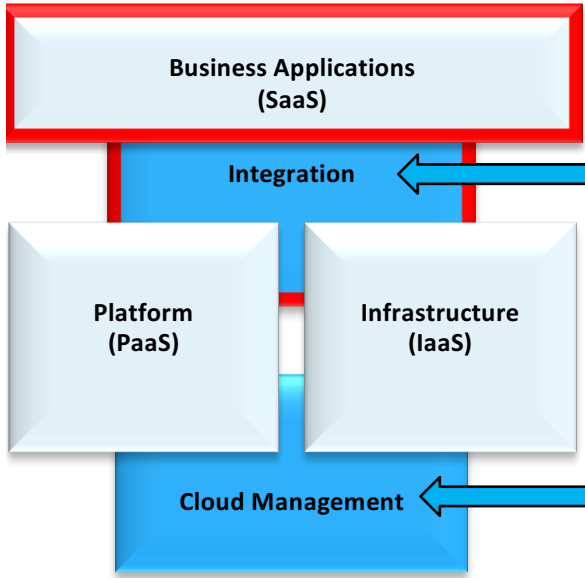
Deliver innovative service with Hybrid Cloud : SoE-SoR integration

Expose systems as APIs to enable composable services

Hybrid Cloud with IBM System

Hybrid Cloud

POWER8

Digital transformation

Bluemix capacities to support & drive innovation

API Economy API Management

IBM apiconnect

DataPower

Data integration

Delivers innovative & performing Internet of Things service with Hybrid Cloud

A big data connected device application

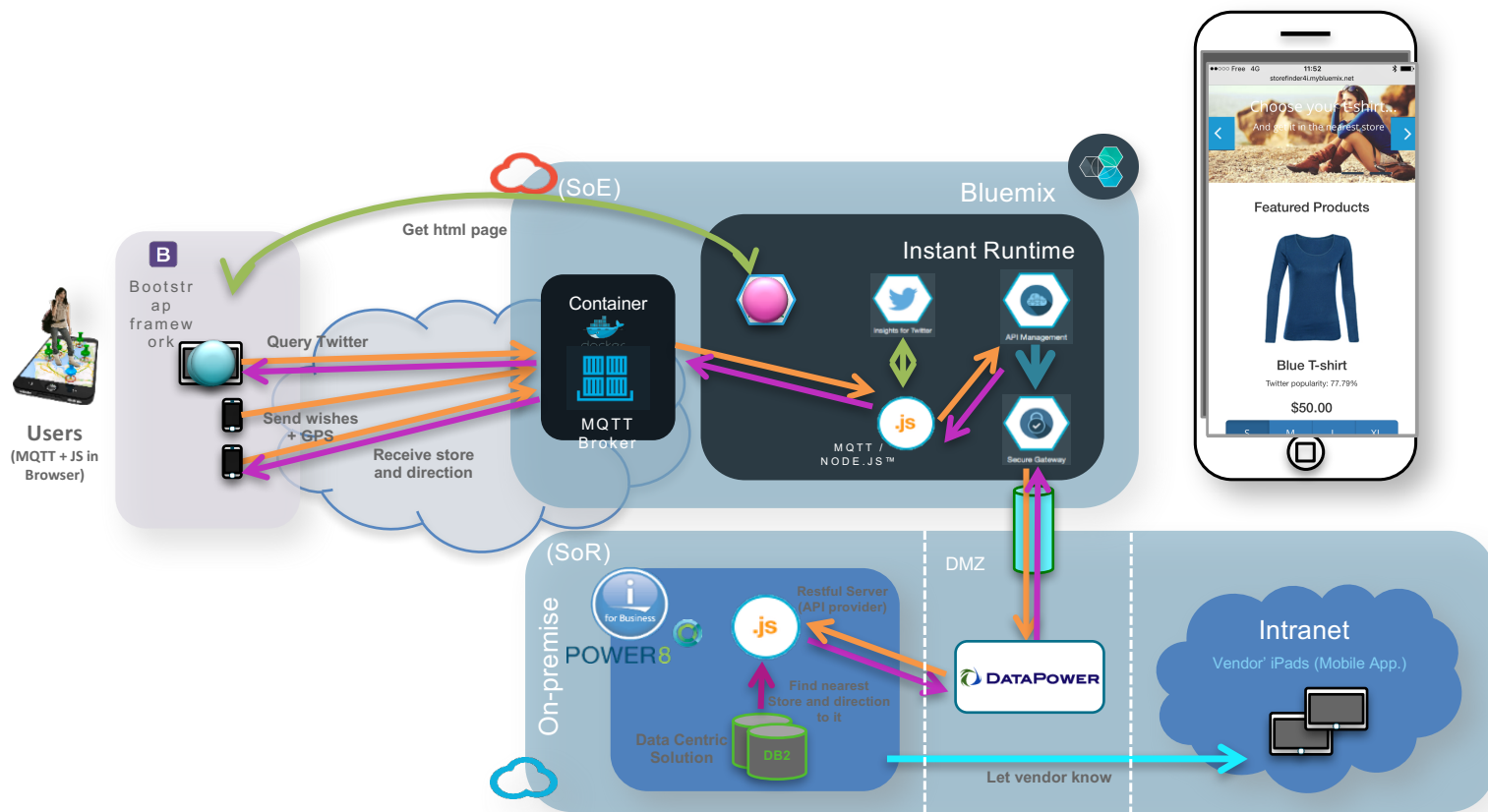*collected data accessible thru API's*
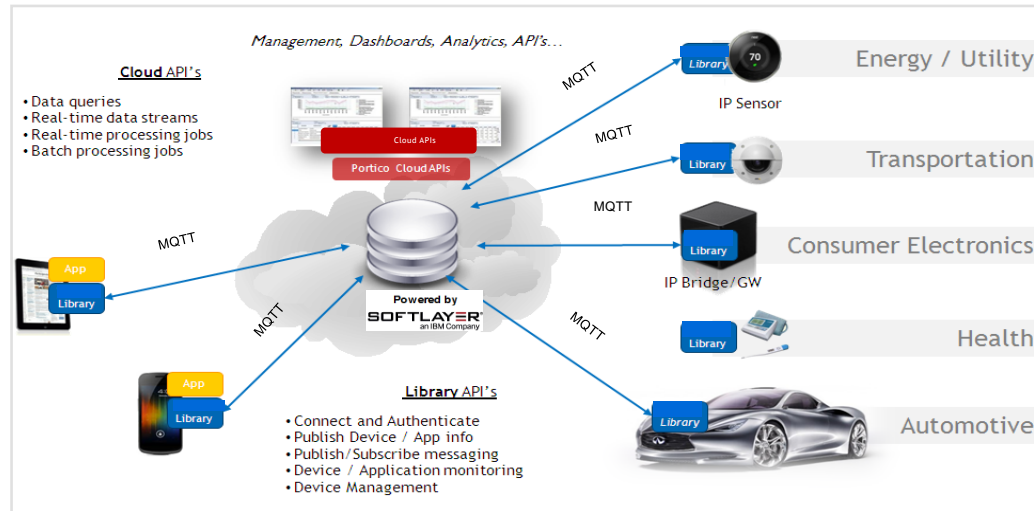
Connected car fleet management application

IBM Cloud
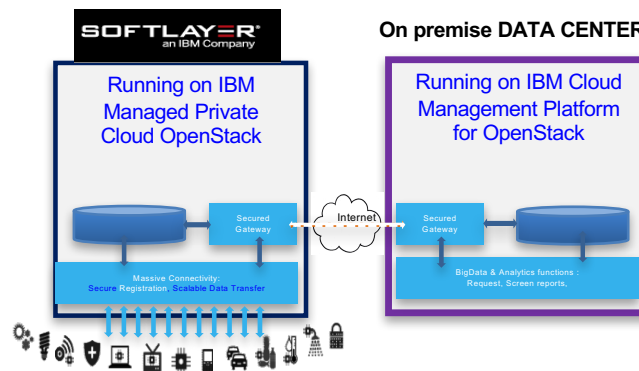
Power & Hybrid Cloud Reference Architecture:
Modernization of Legacy environment in a retail scenario

Building Blocks

On premise
- PowerVC
- Power Systems running classical workloads such as Oracle, SAP, CRM, including system I workloads

In the Cloud
- SoE application (Mobile, Social…) using Bluemix services and Bluemix connectors to the Power SoR application.
- The connection between the Customer SoR and Softlayer can de done through dedicated links or Secure Gateway

System of Record – System of Engagement integration:
- New mobile application connected to back end
- Legacy systems modernization

Example of SoR SoE integration and Internet of Things

Internet of Things & Predictive Maintenance with Power Systems and IBM Cloud

Scenario….

❑ **In the Oil & Gas industry, up to 30% of the oil can be lost between the two ends of a pipeline.**

❑ Integration of sensors of all kinds in all industries is becoming key, for event processing and pro-active actions…

This demonstration illustrates an oil pipeline instrumentation with shock detection sensors and shock reporting in real time, alerting and asset management, and work order creation in the asset management solution based on sensors events.

Value:
Innovative E2E IoT solution and proactive maintenance

Connected Pipeline

Pipeline dashboard
http://demostepat.mybluemix.net/

Watson IoT

Bluemix Public

Events
MQTT

Step AT

IoT Box

Demonstrated IBM Solutions
• IBM Power system (Linux/AIX)
• Bluemix Watson IoT
• IBM Maximo integration with IoT

ENNOVIA
Diagnostic & Predictive Maintenance

Node-RED

QB4MX

QUICKBRAIN

IBM maximo

AIX

Power Systems

Thank You

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