IBM SolutionsConnect 2014

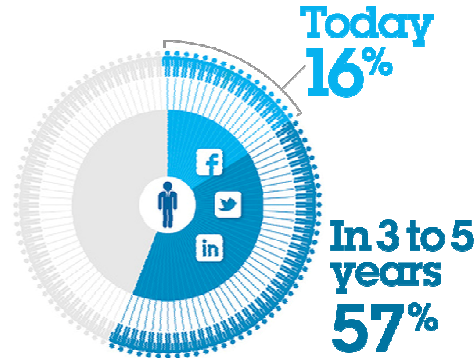## A New Era of Smart

13 Mar 2014 | Philippines

Mobile, Social, Big Data & Analytics are redefining client engagement

Mobile

90% of mobile users keep their device within arm's reach **100%** of the time[1]

Social

Today **16%**

In 3 to 5 years **57%**

% of **CEOs using Social** to Connect with Customers[2]

Big Data & Analytics

8 zettabytes

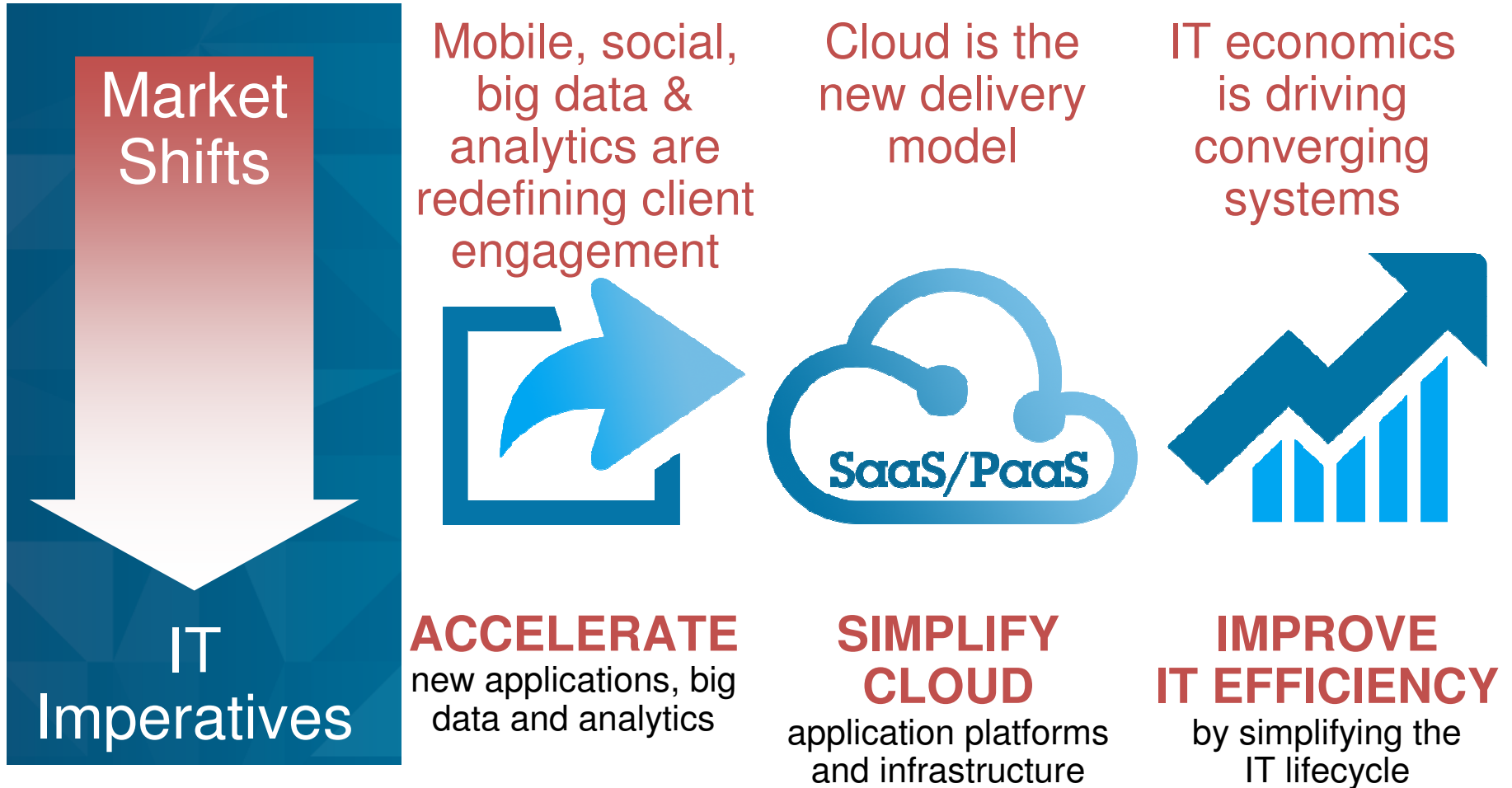**8 zettabytes** of digital content created by 2015[3]

Increasing the need for

Speed

- Very short cycle times
- Rapid iteration
- Real-time access
- Faster insight

- Immediate context
- Rapid scaling for unpredictable demand and large volume

These market shifts are driving IT imperatives

Market Shifts

IT Imperatives

Mobile, social, big data & analytics are redefining client engagement

ACCELERATE
new applications, big data and analytics

Cloud is the new delivery model

SaaS/PaaS

SIMPLIFY CLOUD
application platforms and infrastructure

IT economics is driving converging systems

IMPROVE IT EFFICIENCY
by simplifying the IT lifecycle

The challenge: the time and effort spent on today's IT environment

Design/Deploy

Manage/Maintain
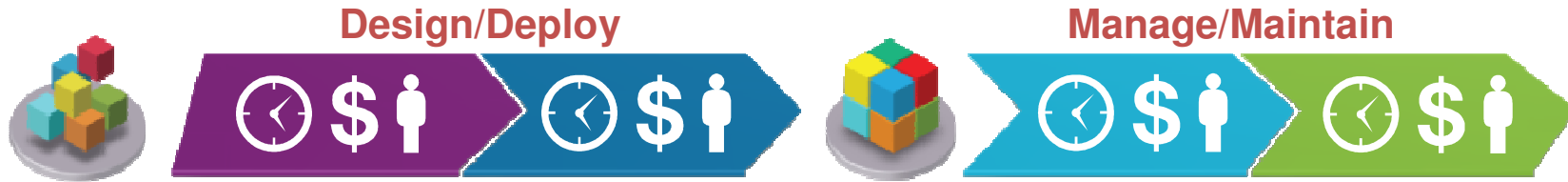
Typical IT Project Time and Budget

Phase	Time (days)	Budget
Specify/design	73 - 96	14% - 16%
Procure	57 - 112	19% - 21%
Implement	74 – 93	12%
Configure/test	74 – 80	10% - 11%
Cluster & HA	66 – 104	11% - 12%
Backup	44 – 108	10%
Tune	89 – 98	9% - 10%
Management	67 – 110	9 – 10%

Top Causes of Project Delays

Hardware
- Troubleshooting and tuning production environment
- Integration, configuration and testing of the infrastructure — 45%
- Installation, cabling and network access for the environment — 29%

Software
- Integration, configuration and testing of applications — 41%
- Integration, configuration and testing of middleware — 35%
- Configuration, build and deployment of applications — 34%

Benefits grow when moving from virtualization to Expert Integrated System

Lifecycle

| Operations |
| Implementation |
| Development |
| Infrastructure |

Operations & Maintenance

Stack Provisioning (Labor)

Testing (Labor)

Application Design and Development (Labor)

Architecture (Labor)

Software License

Hardware

Facilities

20% -25%

Virtualization

25% -30%

Infrastructure Mgmt
Auto Provisioning
IaaS

30% -35%

Expert Integrated Systems

Traditional IT Model – Challenges:
§ Difficulty tracking resources
§ Labor intensive install and configuration
§ Low resource utilization; high maintenance costs
§ Longer application development cycles, increased defect potential

Benefits:
§ Reduced hardware and software costs through consolidation, increased utilization
§ Improved data center space efficiency
§ Improved continuity, reduced outages
§ Improved provisioning through virtual servers and script-based deployment

Additional Benefits:
§ Self service infrastructure deployment and on-demand infrastructure provisioning
§ Automated resource usage tracking
§ Reusable image library to deploy O/S
§ Automated scaling capabilities

Additional Benefits:
§ Automated, policy-driven (SLA-based) resource management and dynamic scaling capabilities
§ Automated health management (isolation and recovery), tracking, and monitoring
§ Standardized pattern-driven platform management
§ Consistent, on-demand, pattern-driven workload provisioning (application, middleware, database) across dev/test and production

How can we have an end to end solution that knows what the businesses needs in terms of SLA – at a system-wide level – and also understands how to optimize itself for any workload?

PureSystems: Simplifying cloud, big data & analytics – tailored for your business

PureFlex

Flex System

Infrastructure

Delivering Cloud Infrastructure Services

PureApplication

Application Platform

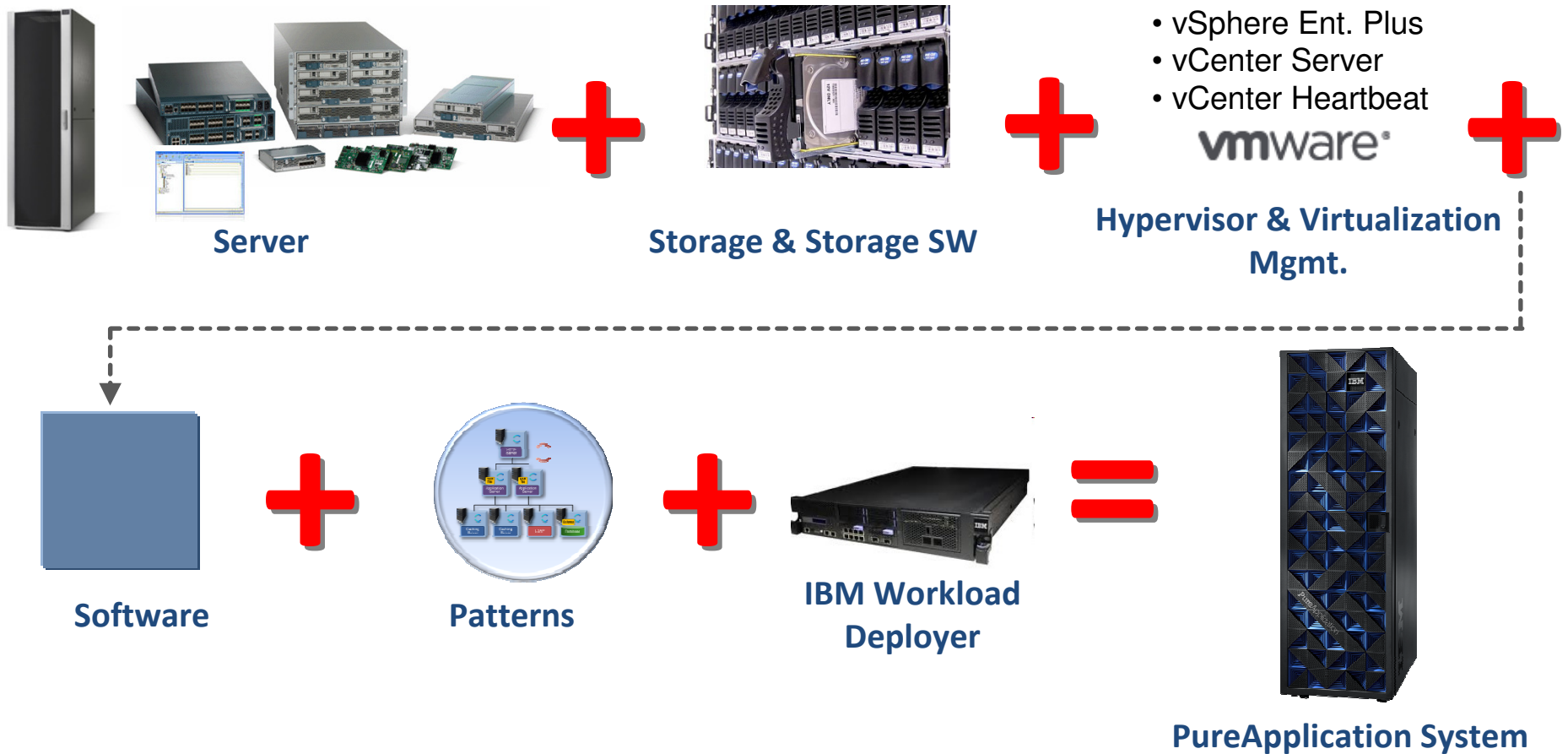*Delivering Cloud Application Platform Services*

PureData

Data Platform

Delivering Big Data Platform Services

PureSystems

❖ **Simplified Experience**

❖ **Built-in Expertise**

❖ **Integration by Design**

What is IBM PureApplication ?

Server + **Storage & Storage SW** +
- vSphere Ent. Plus
- vCenter Server
- vCenter Heartbeat

vmware

Hypervisor & Virtualization Mgmt. +

Software + **Patterns** + **IBM Workload Deployer** = **PureApplication System**

PureApplication

Integration by Design

A complete system that is cloud-ready, more secure and designed from the start to work together

"Patterns of Expertise"

Infrastructure patterns and self-optimizing technology for lower cost, based on the experience of managing tens of thousands of data centers

Simplified Experience

Management integration and choice at every step, to make IT easier

IBM

Integration by Design

Up to:

Intelligent cloud technology	**2X** application density in same floor space **50%** improvement in administrator productivity
Security innovation	**0** setup time to achieve enterprise risk reduction with trusted protection built in from the hardware up
Scale-in systems networking	**50%** latency improvement for faster application performance

IBM-designed management across compute, storage, and networking – in a single system with upgradability to future technologies

Built-in Expertise

Up to:

Smart data placement

300% increased performance of critical applications

Thousands of virtual machines on single system

2X improvement in system utilization

70% fewer cores for reduced software licensing

Management integration

50% lower management costs

2X improvement in fault diagnosis

Over $2B in R&D and acquisitions over 3 years
Millions of development hours across 37 labs in 17 countries

A New Era of Smart

Simplified Experience

Up to:

Factory pre-configured and tested	**70%** faster setup time
Dynamic resource allocation	**Days** to **minutes** for workload deployment time
Management across physical & virtual resources	**75%** lower systems costs over 3 years **98%** time savings in storage provisioning

Management from a single pane of glass with open choice of environments and applications

The right model to fit your needs

Latest! POWER7+ technology

NEW! > 64 core options

New

"Mini"

Enterprise

Small rack (25U)
- 32, 64, 96, 128 core options
- 30% less power consumption
- Smaller footprint

Large rack: (42U)
- 64, 96, 128, 160,192, 224, 384 & 608 core options
- Higher computing density

- All models are **integrated by design** and share the same **built-in expertise and simplified experience**
- Upgrade to larger configurations in a rack **without taking an outage**

PureApplication – A fully redundant private cloud solution

Top of Rack Switches
10/1 Gbps Ethernet
320 Gbps to DC

v7000 SAN
EasyTier
80 x 600GB SAS HDD
16 x 400GB SAS SSD

Flex System Chassis
40 Gbps Backplane
14 Slots
16GB FC
10 Gbps Ethernet

Full Wide Compute Node
32 core 3.61 GHz P7+
(4 x 8 core Power 7+)
512GB RAM
16 GB/core
2 x 10 Gbps Ethernet
2 x 8 Gbs FC

PureSystems Manager

Virtualization System
Manager
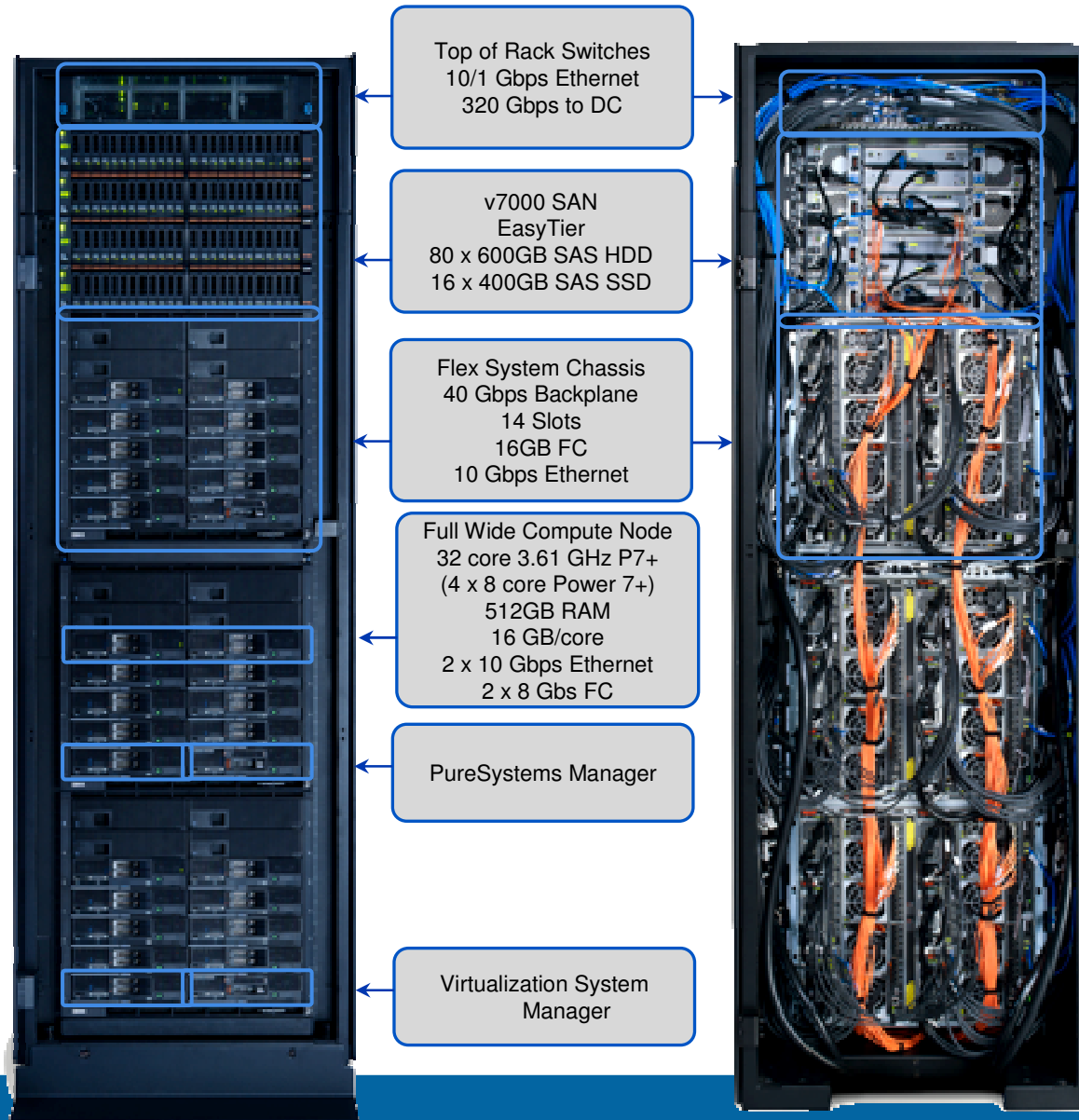
PureApplication System W1700: Pre-Optimized, Pre-Entitled Software

- "All you can eat" entitlement to run the following software on the full capacity of the purchased System
  - Virtualization hypervisor and virtualization management
  - Full stack monitoring (hardware, OS, entitled middleware)
  - Tooling for creating patterns
  - Virtual System Patterns:
    - IBM OS Image for Power Systems (AIX v6.1 TL 8 SP2 & AIX v7.1 TL 2 SP2)
    - IBM WebSphere Application Server Hypervisor Edition v7.0.0.29 with IMP (WAS 7.0)
    - IBM WebSphere Application Server Hypervisor Edition v8.0.0.6 with IMP (WAS 8.0)
    - IBM WebSphere Application Server Hypervisor Edition v8.5.5 with IMP (WAS 8.5)
    - IBM DB2 9.7 FP8 Enterprise Server Edition HV*
    - IBM DB2 10.1 FP2 Enterprise Server Edition HV*
    - IBM DB2 10.5 Enterprise Server Edition HV*
    - Automation Framework HV (for migrating applications)
    - IBM Mixed Language Application Modernization Pattern v1.0 (for C & COBOL apps)
  - Virtual Application Patterns:
    - Java Pattern v1.0.1 (64-bit Java 7 SDK)
    - IBM Workload Deployer Pattern for Web Applications v1.0.1 (with WAS v7)
    - IBM Web Application Pattern v2.0.1 (with WAS v8)
    - IBM Transactional Database for Cloud v1.1.0.7 (DB2 9.7 FP8, 10.1 FP2, & 10.5)
    - IBM Data Mart for Cloud v1.1.0.7 (with DB2 9.7 FP8, 10.1 FP2 & 10.5)

*DB2 ESE with options entitled:
• Storage Optimization
• Label-Based Access Control
• Optim Performance Manager

The optimal cloud platform for enterprise applications

What's unique in PureApplication System

- Increased flexibility with the first pre-integrated **application platform** for **Windows** *and* **Linux**

- Lower TCO through the **high performance** hypervisor in PowerVM-based system

- Ease of use with **cross-site disaster recovery** for applications setup **in 5 clicks**

- Improved **application security** with integrated encryption support

- **Faster response times** during usage spikes

- **Improved governance** through new license tracking and reporting and OS maintenance

- Investment protection through **broad ecosystem** of **optimized application patterns**

PureApplication

Enhanced!

Pure and Simple.

Patterns of Expertise: Proven best practices and expertise for complex tasks learned from decades of client and partner engagements that are captured, lab tested and optimized *into a deployable form*
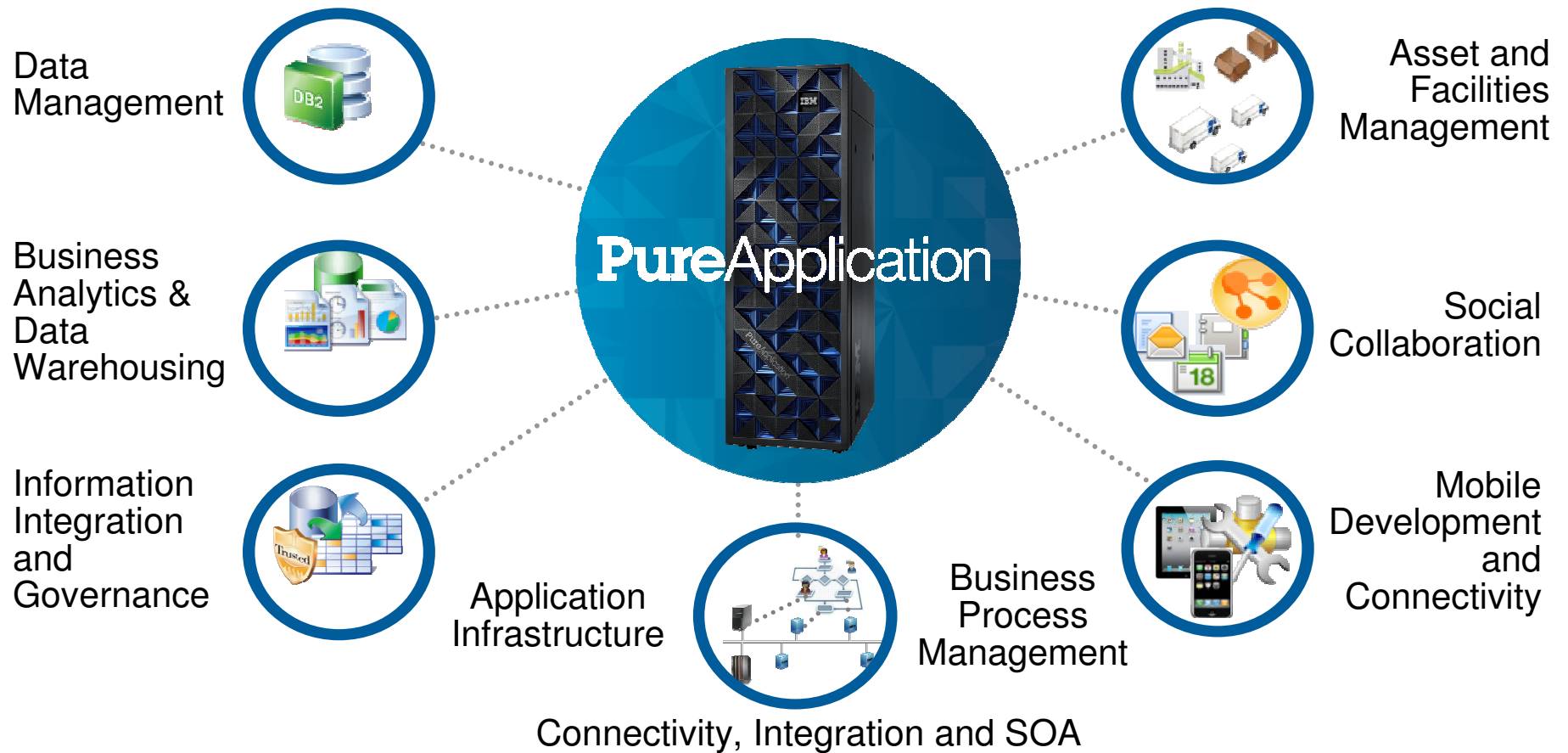
What is a Pattern?

- The pre-defined architecture of an application
- For each component of the application (i.e. database, web server, etc)
    - Pre-installation on an operating system
    - Pre-integration across components
    - Pre-configured & tuned
    - Pre-configured Monitoring
    - Pre-configured Security
    - Lifecycle Management
- In a **deployable form**, resulting in **repeatable deployment** with **full lifecycle management**

- **Delivering** superior results:
    - **Agility:** Faster time-to-value
    - **Efficiency:** Reduced costs and resources
    - **Simplicity:** Simpler skills requirements
    - **Control:** Lower risk and errors
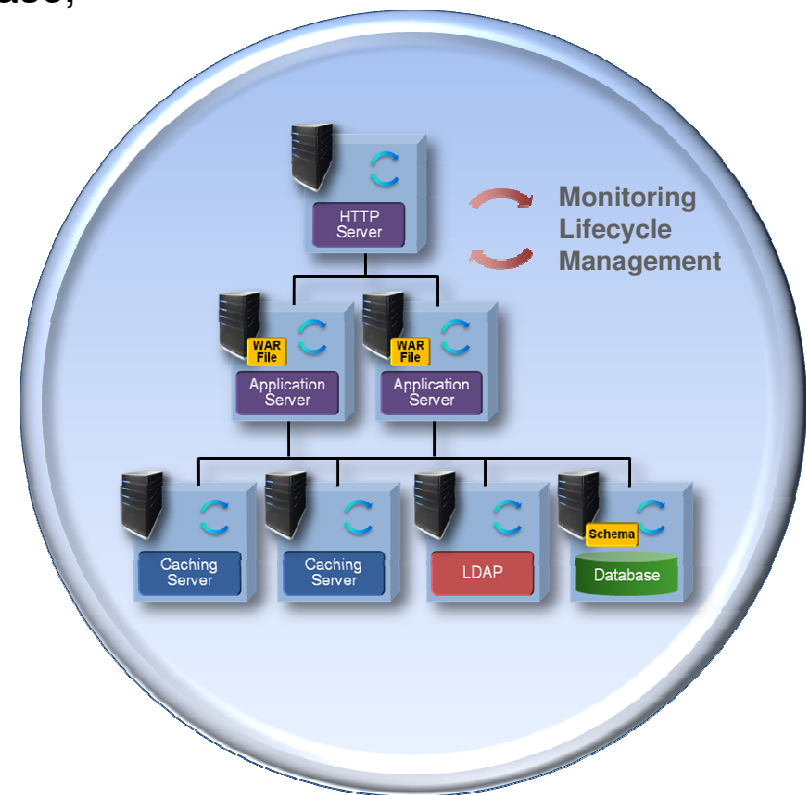
Application deployment and management in the cloud has never been easier with IBM Software !

Data Management

Business Analytics & Data Warehousing

Information Integration and Governance

PureApplication

Application Infrastructure

Connectivity, Integration and SOA

Business Process Management

Asset and Facilities Management

Social Collaboration

Mobile Development and Connectivity

We're Partnering across Key Industries to Bring on Critical Applications

IBM

Big Data
Data Management
Business Analytics & Data Warehousing
Information Integration & Governance

Mobile
Mobile Development
and Connectivity

Social
Collaboration
Web Experience

- SAP Business Suite
- Smarter Process
- DB2 with BLU Acceleration

New

Partners

Banking

Financial Markets

Telecom

Retail

Consumer Products

Healthcare

Energy & Utilities

Insurance

Government

PureSystems Centre
Extending the Value of IBM PureSystems

IBM PureSystems

150+ Patterns available on PureSystems Centre

IBM

Singapore Exchange, Ltd. (SGX) invests in optimizing the application development lifecycle

1 day
POC to install and configure PureApplication System

ESR
for POC to upgrade SGX applications from WebSphere Application Server V6.1 to V8.5

Reduce risk and simplify
application development with automation and role based access to minimize human error

Business Challenge:
To meet regulatory and market structure changes SGX had to securely and rapidly migrate from IBM WebSphere Application (WAS) Server V6.1 to V8.5 in support of trade reporting, clearing and back office applications.

Onsite POC : Proof Points and Success Criteria

- Use Case 1 – **WAS migration using AMC**

  – Migrate WAS v6.1 configurations of existing SGX applications and deploy them using WAS v8.5 patterns in the IBM PureApplication System using Advanced Middleware Configuration (AMC).

  – To be done without code changes or change of JEE level where possible

- Use Case 2 – **Hardening and agent installation**

  – Deploy one custom WAS v8.5 image with automated execution of SGX hardening and installation scripts

- Use Case 3 – **SNMP and monitoring**

  – Monitoring of IBM PureApplication System and SNMP traps

Benefits of the IBM PureApplication System for SGX

	Traditional Approach	PureApp Approach
Migration	Time consuming & error prone with Manual effort	No OS/WAS installation required and WAS configuration migrated automatically
Deployment	Deployment of WAS takes days and is error prone	WAS deployment based on "golden" topology take minutes.
Operation & Maintenance	Manual patch / fixes requires time and effort	Reduce effort on OS & WAS maintenance with greater reliability
DC & Managed services	Nodes/Images sprawl due to multiple projects	Self-service approach smaller HW footprint and lower managed services costs

IBM

Business Benefits for SGX

- Ability to expedite on meeting Regulation Compliance. With PureApplication as an appliance they just need to Power up and setup network and then can start implementation.

- Accelerate Migration time and reduced Migration risk. By leveraging configuration management capabilities of PureApplication system in conjunction with IBM's WAS Migration Toolkit, the solution enabled SGX to effectively upgrade their applications in shorter time and reduced risk.

- Accelerate Time to Market of core application requirements. By leveraging core capabilities of PureApplication System, Singapore exchange can now deploy key applications to market quickly, thereby gaining quicker ROI on their core applications.

- By leveraging an Expert Integrated System, SGX derived huge business values on overall operation cost, TCO , time to market and ROI compared to traditional hardware platform.

A Strategic View of IBM Cloud Portfolio

- Simplified cloud portfolio for bring-your-own hardware, pre-integrated offering & public cloud with hybrid connectivity

- Open, common, standards-based architecture adoption providing choice, flexibility, interoperability and portability

- Enterprise capabilities & pattern portability

Related Standards & Organizations

ISO International Organization for Standardization   CCRA   OSLC   Cloud Standards Customer Council

THE Open GROUP   Making standards work

DMTF   CIMI & OVF   OASIS STANDARD   TOSCA   openstack CLOUD SOFTWARE

SmartCloud Orchestrator
Orchestration across multiple environments and domains

SmartCloud Provisioning
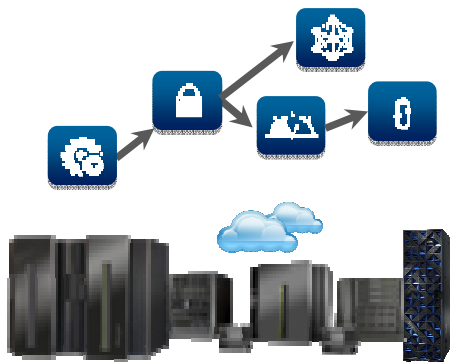
PureApplication

Roll Your Own Cloud   **Pre-integrated Systems**
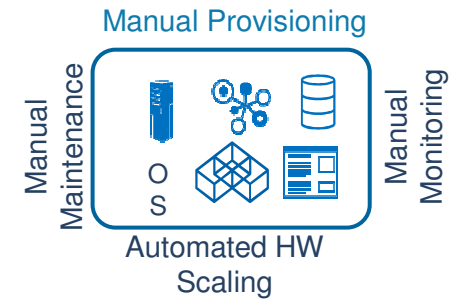
SOFTLAYER®

IBM Public Cloud

A new era with PureApplication on SoftLayer that brings **cloud economics** & **hybrid cloud** capabilities

Manual
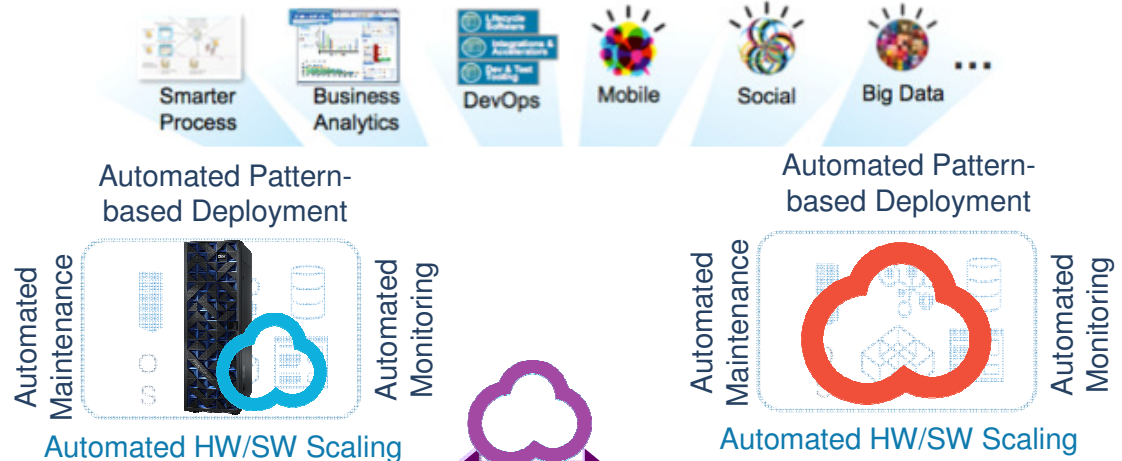
Deployment Monitoring, Scaling & Maintenance is manual

Manual Provisioning

Manual Maintenance · Manual Monitoring

O S

Manual HW/SW Scaling

Manual Provisioning

Manual Maintenance · Manual Monitoring

O S

Automated HW Scaling
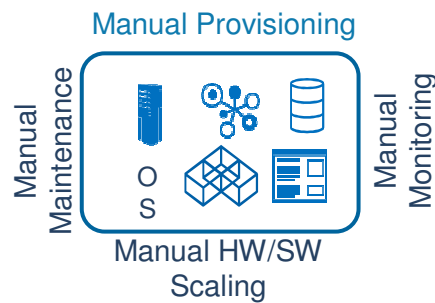
Roll Your Own

Public Cloud Roll Your Own

Automated

Simplicity, Speed & Lower TCO

Smarter Process · Business Analytics · DevOps · Mobile · Social · Big Data ...

Automated Pattern-based Deployment

Automated Maintenance · Automated Monitoring

O S

Automated HW/SW Scaling

Automated Pattern-based Deployment

Automated Maintenance · Automated Monitoring

Automated HW/SW Scaling

Hybrid

PureApplication System

PureApplication on SoftLayer

Summary

- IBM PureApplication System is a game changer
- PureApplication System provides a powerful and easy to deploy private cloud
  - Pre-assembled rack provides integrated hardware and software
- Integrated hardware and software system designed to dramatically simplify the development, provisioning, and management of applications
- Includes integrated management capabilities, allowing self-service provisioning of elastic workloads
- Supports multiple deployment models to cater to variety of needs
- While optimized for IBM middleware, PureApplication System has capabilities to expand beyond the available S/W by allowing clients to bring in their own Virtual image and add that to the shared cloud resources within PureApplication System

IBM

Put your business in motion. Become a mobile enterprise.

Impact 2014 delivers four days of best practices, technical education and roadmaps for business transformation and leverages deep insights from topics like the mobile enterprise, cloud, big data and analytics, Smarter Process, connectivity, application infrastructure, and the Internet of Things. Join over 9000 developers and business and IT leaders for Impact 2014 and discover how to reach new markets, gain competitive advantage and unleash a catalyst for innovation in a mobile-enabled world.

## The Top Ten Reasons to Attend Impact 2014

1. Discover innovative strategies that leverage mobile technologies to shorten the value chain by driving transactions at the point of engagement.

2. Learn how to transform your business around a mobile infrastructure to create new value from customer, supplier and employee interaction.

3. Hear first-hand from clients and Business Partners how they are adopting smarter processes that increase efficiency and profitability in their organizations.
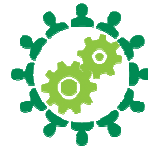
4. Understand smarter process linkages and integration with Enterprise Content Management (ECM), Master Data Management (MDM), Analytics, ERP, CRM and other systems.

5. Learn why and how businesses are choosing IBM cloud computing to innovate faster, give their users the software they need, and develop mobile applications all while saving time with self-service.

6. Hear innovative strategies for building, deploying and managing applications with high scale and continuous availability, from front office to back office - whether mobile, web, or cloud applications.

7. Learn how to leverage the explosion in the volume of data from sensors and mobile devices - the Internet of Things - to support business decisions and build customer loyalty.

8. Gain expertise in implementing solutions to enable your business for the API Economy, IOT and Mobile.

9. Explore the potential of cutting-edge technologies that provide leadership advantage and change the way you do business.

10. Overcome the challenge of managing and securing an infrastructure that connects an endless array of intelligent devices and sensors outside of your control.
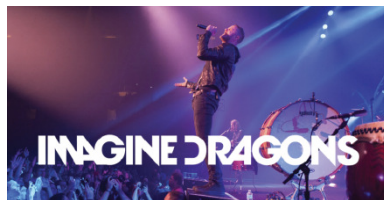
See Imagine Dragons at Impact 2014!

The breakout rock band of the year with platinum-selling singles **"It's Time"** and **"Radioactive"** will perform live for our conference attendees.

Visit ibm.com/impact to see detailed information on tracks, sessions and registration.

A New Era of Smart

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IBM SolutionsConnect 2014

A New Era of Smart

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Thank You