Surak Thammarak

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EMC² Pivotal RSA vmware
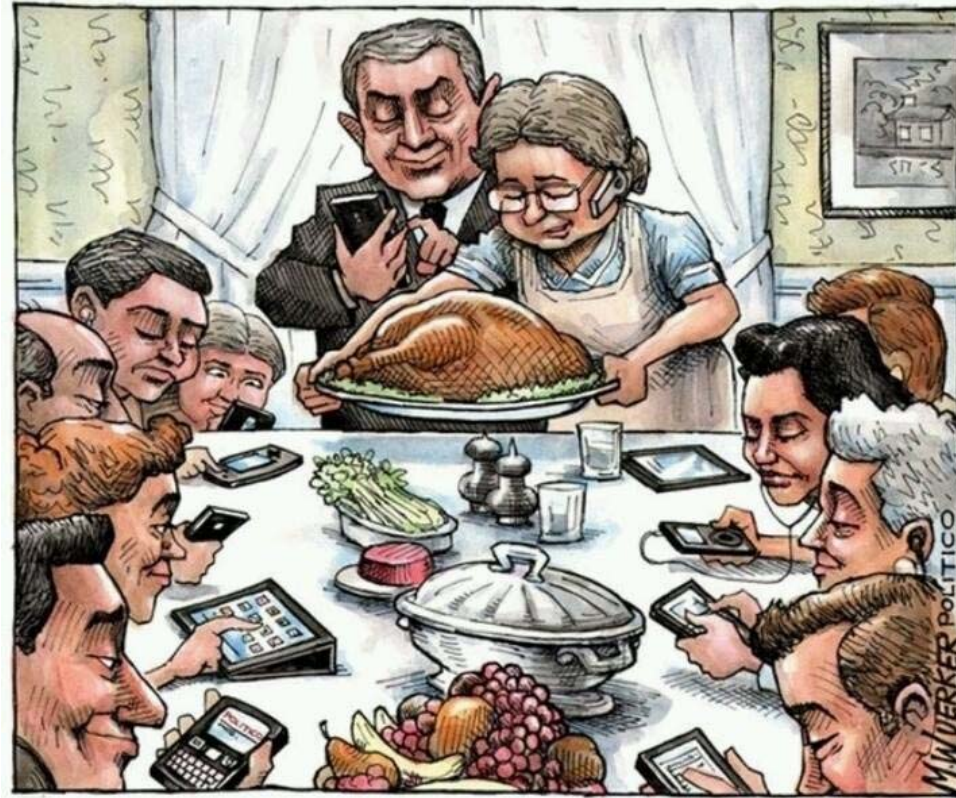
?? Today's Life ?? - สังคมก้มหน้า

Gartner and IDC - Mobile Platform
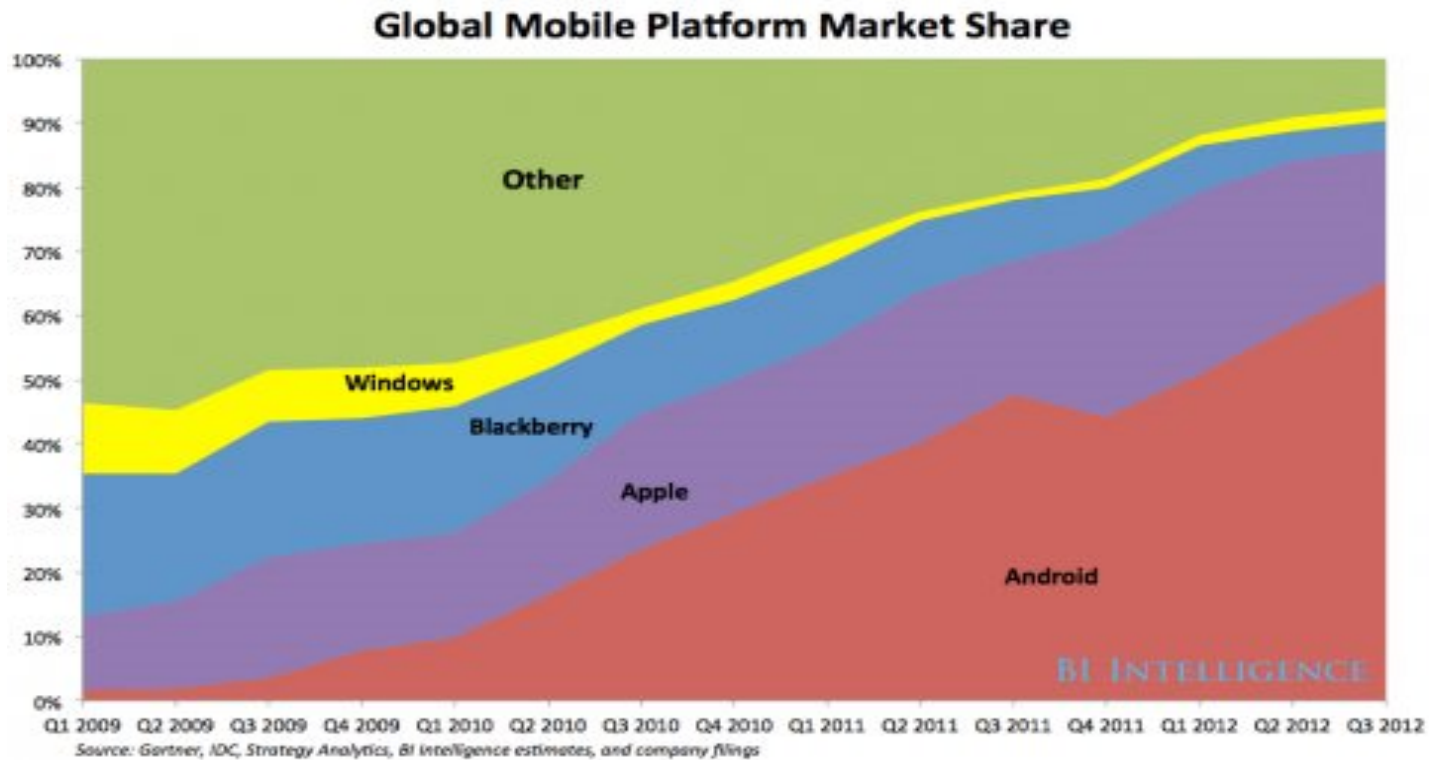
Global Mobile Platform Market Share

Source: Gartner, IDC, Strategy Analytics, BI Intelligence estimates, and company filings

Digital Universe 2014

2013

2020

4.4 ← **10x** → **44**
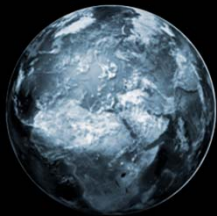
ZETTABYTES

MORE
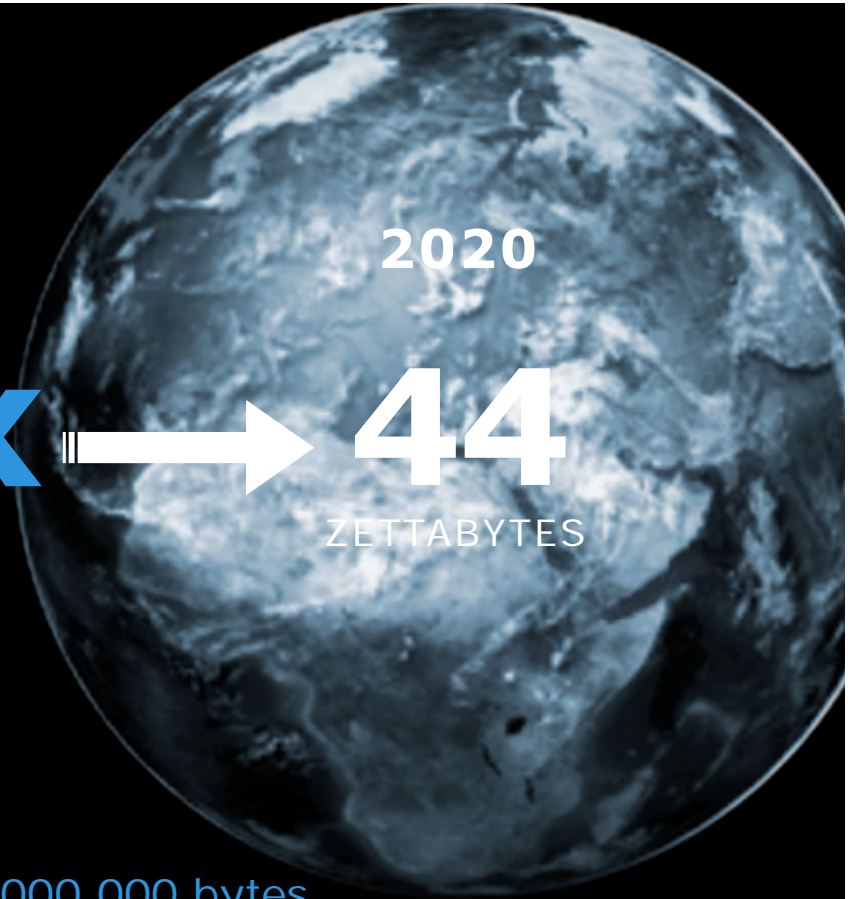
ZETTABYTES

ZETTABYTE = 1,000,000,000,000,000,000,000 bytes

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Digital Universe 2014

2013

28
MILLION
IT PROS WORLDWIDE

8
MILLION MORE
OF YOU

2020

36
MILLION
IT PROS WORLDWIDE

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Digital Universe 2014

230

GB PER IT PRO

5x

MORE
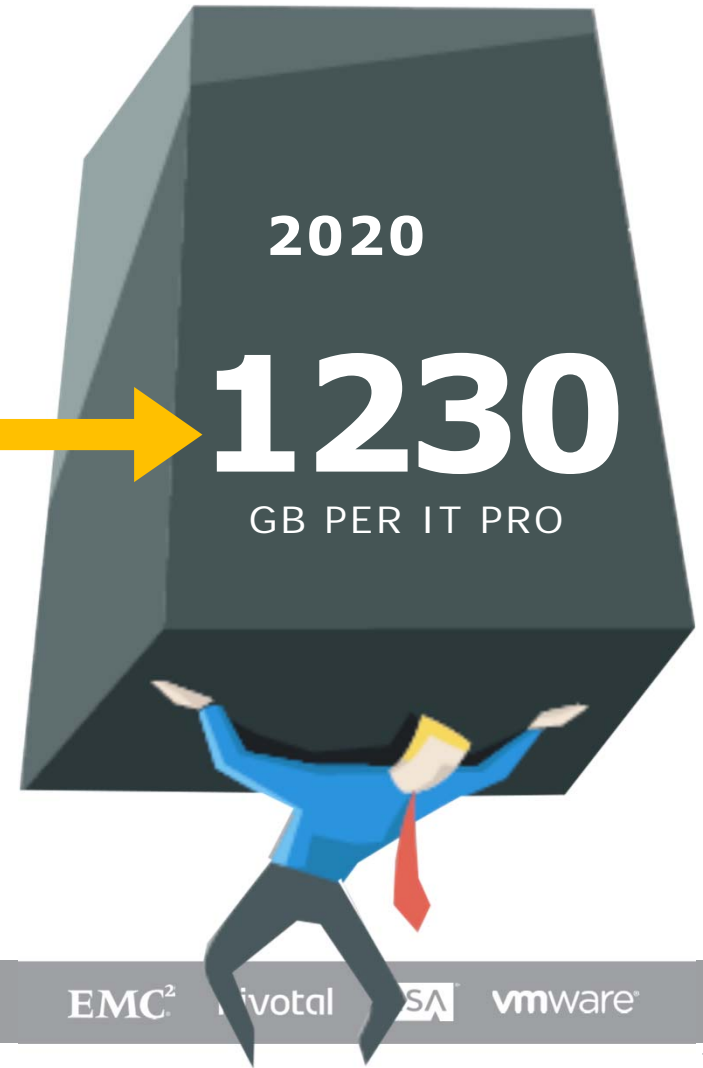
2020

1230

GB PER IT PRO

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Data Deluge Growth Drivers

MOBILE

Mobile "Connected Things" will generate 27% of the Digital Universe by 2020

CLOUD

Less than 20% of the Digital Universe was touched by cloud in 2013. Cloud will touch 40% by 2020.

BIG DATA

Organizations will need to ingest huge amounts of data quickly, reason over it and act on it in real time

SOCIAL

Social networking is transforming the way humans interact

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BILLIONS OF USERS
200 BILLION DEVICES

MILLIONS
OF APPS

Innovative Industry Solutions

Cloud
Big Data/Analytics
Em Markets
Mobilit
Social Business

15% growth

3rd Platform
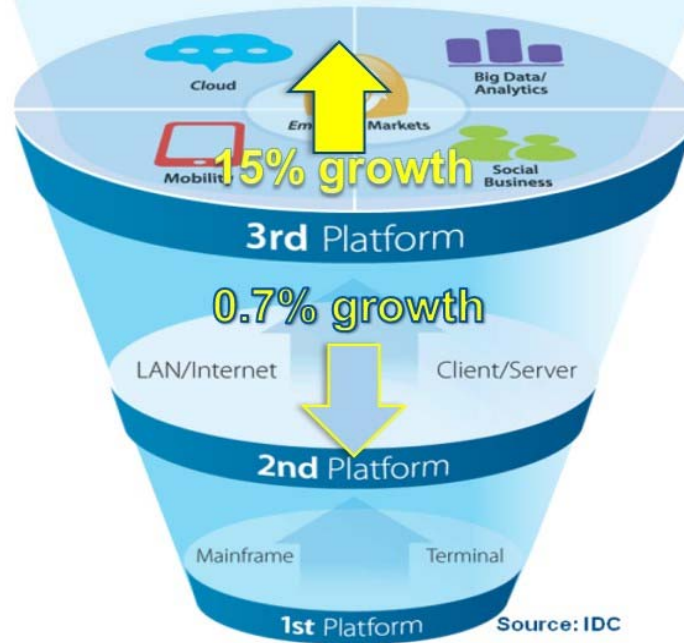
HUNDREDS OF MILLIONS
OF USERS

TENS OF THOUSANDS
OF APPS

0.7% growth

LAN/Internet
Client/Server

2nd Platform

MILLIONS
OF USERS

Mainframe
Terminal

1st Platform   Source: IDC
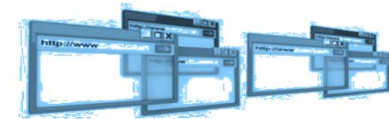
THOUSANDS
OF APPS

Source: IDC

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EMC Federation 2014
Our Strategy: Build A Differentiated Stack
Best Of Breed. Architected Horizontally, Not Vertically. Choice.

Pivotal

Paul Maritz

SOFTWARE-DEFINED ENTERPRISE
PLATFORM FOR
CLOUD & BIG / FAST DATA
APPLICATIONS

Arthur W. Coviello Jr.

vmware

Pat Gelsinger

SOFTWARE-DEFINED DATA CENTER
HYBRID CLOUD
END USER COMPUTING

ADVANCED SECURITY

RSA

EMC II

David Goulden

SOFTWARE-DEFINED STORAGE
INFORMATION STORAGE & PROTECTION
INFORMATION SECURITY
INFORMATION INTELLIGENCE

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New IT Agenda

Cut Operational Costs & Legacy More Than Ever

React Faster To Find New Growth

Balance Risk

	Provide Access To All Applications & Data Through **Mobile Devices.**
	Use **Agile Development** To Build New Customer-Centric Applications.
	Build A **Data Lake** To Deliver Insights And Applications On All Data.
	Move To A **Software-Defined Data Center** Infrastructure And Expand It To A Hybrid Cloud.
	Use **Adaptive, Data-Driven Security** To Rapidly Respond To Emerging Threats.

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A Unique Federation Of Companies

Delivering The Software-Defined Enterprise. Solutions & Choice.

SOFTWARE DEFINED DATA CENTER	**PLATFORM AS A SERVICE**

VIRTUAL WORKSPACE	**BUSINESS DATA LAKE**

SECURITY ANALYTICS

New IT Agenda

Provide Access To All Applications & Data Through **Mobile Devices**

Use **Agile Development** To Build New Customer-Centric

ENTERPRISE DATA CENTER

Pivotal
BIG DATA SOLUTIONS
PLATFORM AS A SERVICE
AGILE APPLICATION DEVELOPMENT

vmware
ENTERPRISE MOBILITY
SOFTWARE-DEFINED DATA CENTER

EMC II
INFORMATION INFRASTRUCTURE
CONVERGED INFRASTRUCTURE

ADVANCED SECURITY
RSA

SERVICE PROVIDER

Partners
vmware EMC II

vCloud Hybrid Service
vmware EMC II

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Many Industries Face Structural Change

NEW APPLICATIONS REDEFINE BUSINESS

NEW APPLICATIONS
REDEFINE
INFRASTRUCTURE

EMC²

Workloads Have Different Requirements

PERFORMANCE

CAPACITY

SIMPLE DATA SERVICES

ADVANCED DATA SERVICES

High Performance Computing

Full Motion Video

Tech Apps

Data Analytics

File Sync & Share

Online Backup

Web Content

Online Archive

Storage As-A-Service

Home Directories

Application Development

Email

Decision Support

VM Infrastructure

Transaction Processing

IT Applications

Content Management

EMC²

Flash Delivers New Levels Of Performance

PERFORMANCE

FLASH

SIMPLE DATA
SERVICES

ADVANCED
DATA SERVICES

CAPACITY

EMC²

A Flash Portfolio for Every Use Case

PERFORMANCE

100uS

Server Flash
Most Extreme Performance
Highest Possible IO
Lowest Possible Latency

SDS
Block
Capacity Pooling
Advanced Availability
Elastic Scale

Software

All Flash Array
Consistent Performance

Purpose Built
All Flash Array
Software Defined
Flash Optimized Data Services
Inherent Balance

Flash Optimized
Hybrid Array
Higher Perf/Lower Latency
File & Block Workloads

Hybrid Storage Array
Balance Cost and Performance   Large Data Sets
Changing IO Patterns   Competing Workloads

5mS

SIMPLE
DATA SERVICES

ADVANCED
DATA SERVICES

EMC² Pivotal RSA vmware

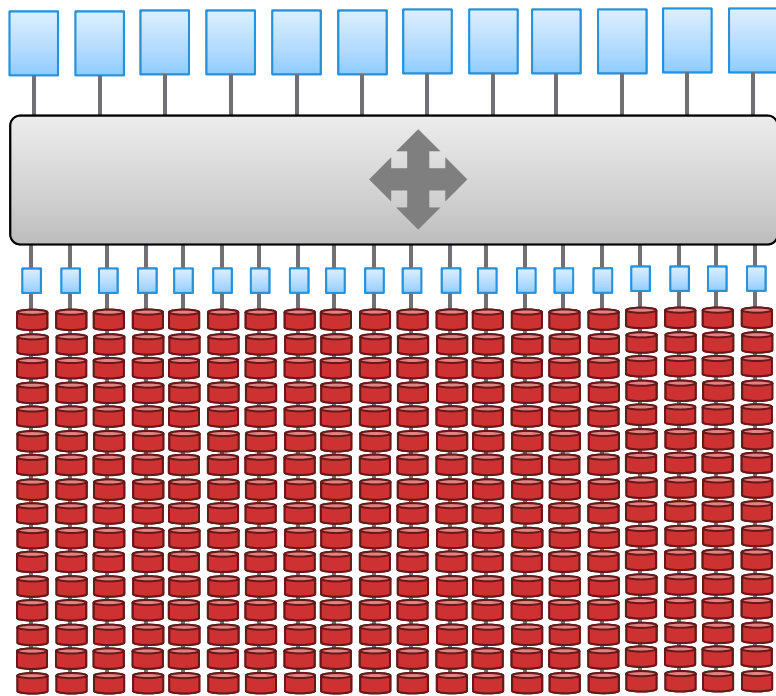# New Workloads Need New Infrastructure

In-Memory Databases, High Performance / Realtime Analytics

# Welcome World. 5th Storage Architecture.

- Flash "Top of Rack" Pool

- Ideal for Rack Scale Architectures

- **NO** need for SCSI.
  NO need for File Handles.

- Hyper-coupled PCIe and NVMe connectivity

- Directly called by libHDFS and Key Value
  Stores (...and direct memory mapping, and
  block / file primitives if you WANT)

- Buffering Flash Latency
  with Unique IP.

EMC²   Pivotal   RSA   **vm**ware

Flash Everywhere

Distributed, Buffered, Memory Extension
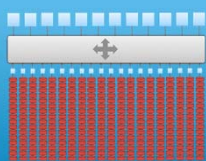
PERFORMANCE

Server Flash
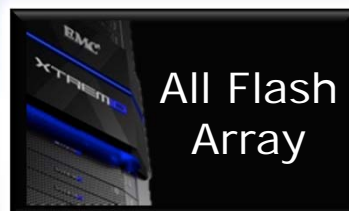
All Flash Array

Hybrid Arrays

50µS

100µS

500µS

5mS

SIMPLE DATA SERVICES

ADVANCED DATA SERVICES

EMC²

Enterprise Data ARCHITECTURE

Data Ingestion System

Stream/CEP

Data Staging Platform

Analytic Data Marts

MPP Database

Operational Intelligence

In-Memory DB

Run-Time Applications

In-Memory Object

Enterprise Data Warehouse

RDBMS

Traditional BI/Reporting

Data Visualization

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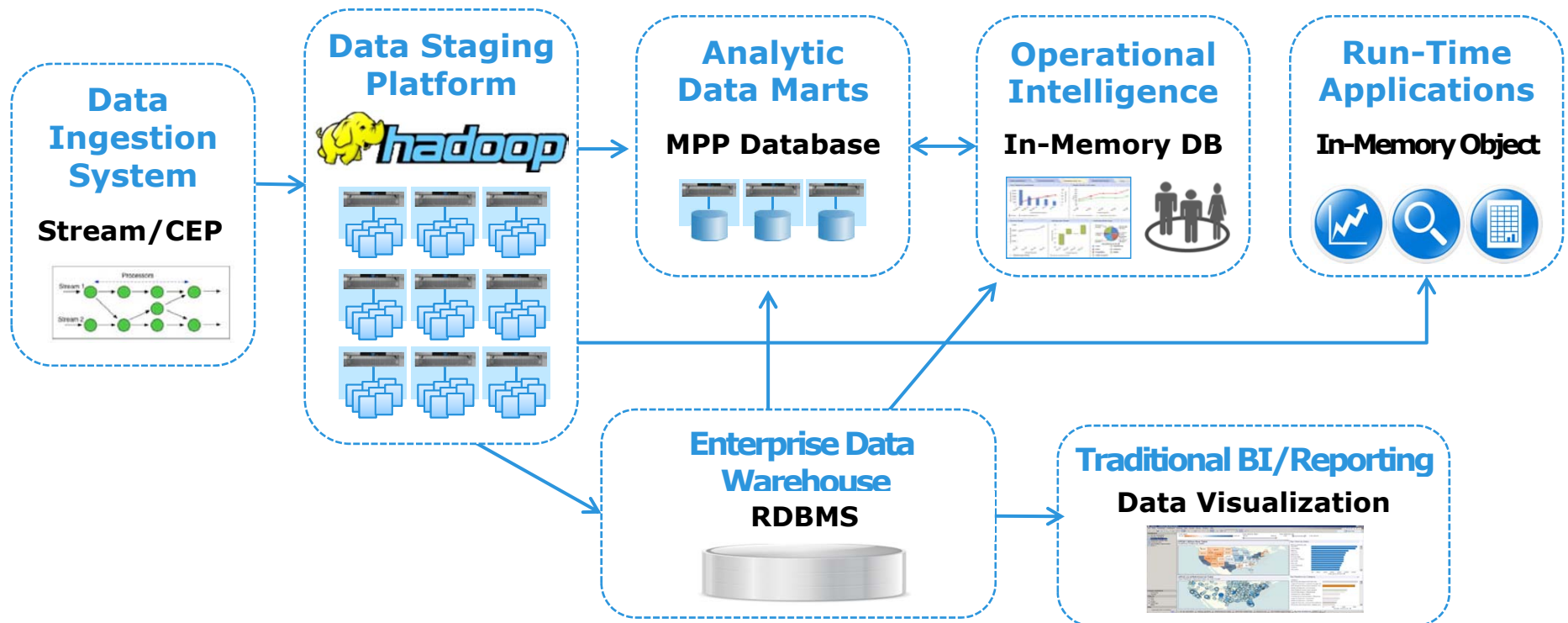
Applications for Big Data Analytics

Big Data Case Studies

Agency Organization	Underpinning Technology	Big Data Metrics	Initial Big Data Entry Point	Public/User Benefits
Transportation Traffic Pattern Analysis	Streams analytic software, predictive analytics	Gigabits/sec	Streaming and Data Analytics	Improve traffic in metropolitan areas by decreasing congestion and reducing traffic accident injury rates
National Weather Service	HPC modeling, data from satellites, ships, aircraft and deployed sensors	Petabytes, Terabytes/sec, Semi-structured	Streaming Data & Analytics, Warehouse Optimization	Provide weather, water, and climate data, forecasts and warnings for the protection of life and property and enhancement of the national economy
Revenue Service	Multiple analytics applications, descriptive, exploratory, and predictive analysis	Petabytes	Streaming Data & Analytic, Warehouse Optimization, Distributed info Mgt	Provide taxpayers top quality service by helping them to understand and meet their tax responsibilities and enforce the law with integrity and fairness to all
Center for Medicare & Medical Services Medical Records Analytics	Columnar and NoSQL databases, Hadoop, EHR on the front end, with legacy structured database system	Petabytes, Terabyte/day	Streaming Data & Analytics, Warehouse Optimization, Distributed Info Mgt	Protect the health of all citizens and ensure compliant processing of insurance claims

AGILE
SECURE
SIMPLE

REDEFINE
HYBRID CLOUD

EMC²

The New Role Of IT: Cloud Broker

BY A MARGIN OF ALMOST

3 - 1

line-of-business users prefer
IT to broker their services.

EMC²   Pivotal   RSA   vmware

RAPID ADOPTION OF PUBLIC CLOUD

INNOVATORS & ENTREPENUERS

rackspace

Windows Azure

vmware vCloud Air Network

at&t

Google Cloud Platform

amazon web services | S3
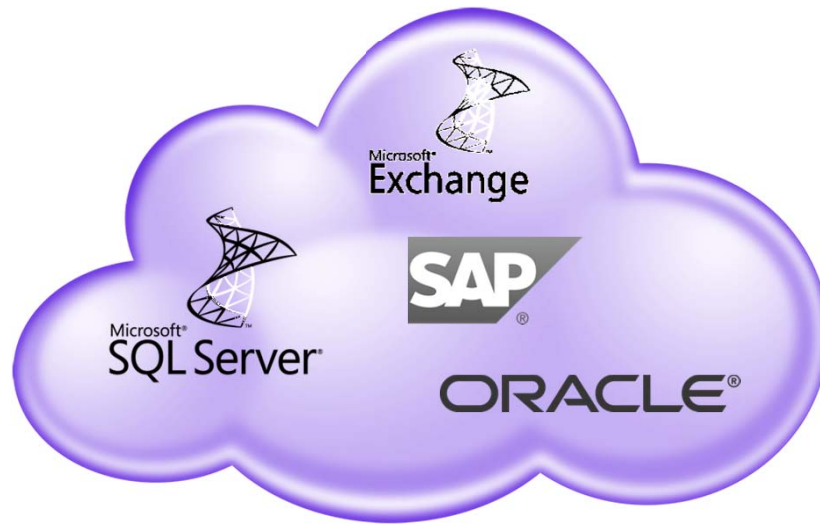
SIMPLE | LOW-COST | FLEXIBLE

EMC² Pivotal RSA vmware

RAPID ADOPTION OF PRIVATE CLOUD

TRUSTED | CONTROLLED | RELIABLE

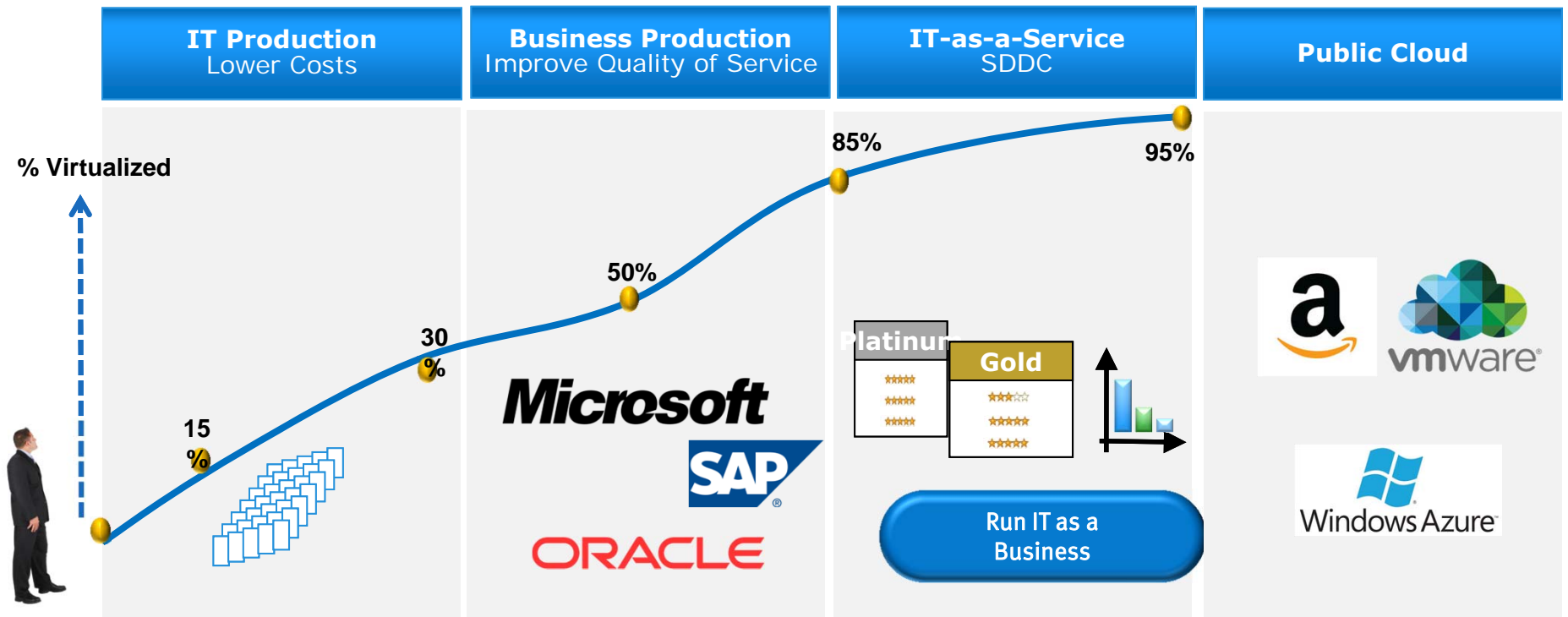# Build Your Hybrid Cloud Strategy

Economic Evaluation	Trust Assessment	Functional Assessment

All Workloads

SAP
Linux
Exchange Server 2010
Windows Server
ORACLE DATABASE
Linux

Workloads Cheaper On Private/ Public Cloud

Legacy Workloads For Cost Reasons

Workloads Can Be Moved To Public Cloud Because They Meet Trust Requirements

Private Cloud Workloads For Trust Reasons

Public Cloud Workloads

Private Cloud Workloads For Functionality Reasons

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The Journey to the Private Cloud

IT Production Lower Costs	Business Production Improve Quality of Service	IT-as-a-Service SDDC	Public Cloud

% Virtualized

85%

95%

50%

30%

15%

Platinum

Gold

Run IT as a Business

Microsoft

SAP

ORACLE

What is an Enterprise Hybrid Cloud (EHC)?

Existing Infrastructure + EMC Methodology= Hybrid Cloud

Enterprise IT

Existing IT Infrastructure

+

EMC Reference Architecture

EMC Hybrid Cloud Assessment

EMC Technology

Hybrid Cloud

Hybrid

Public   Private

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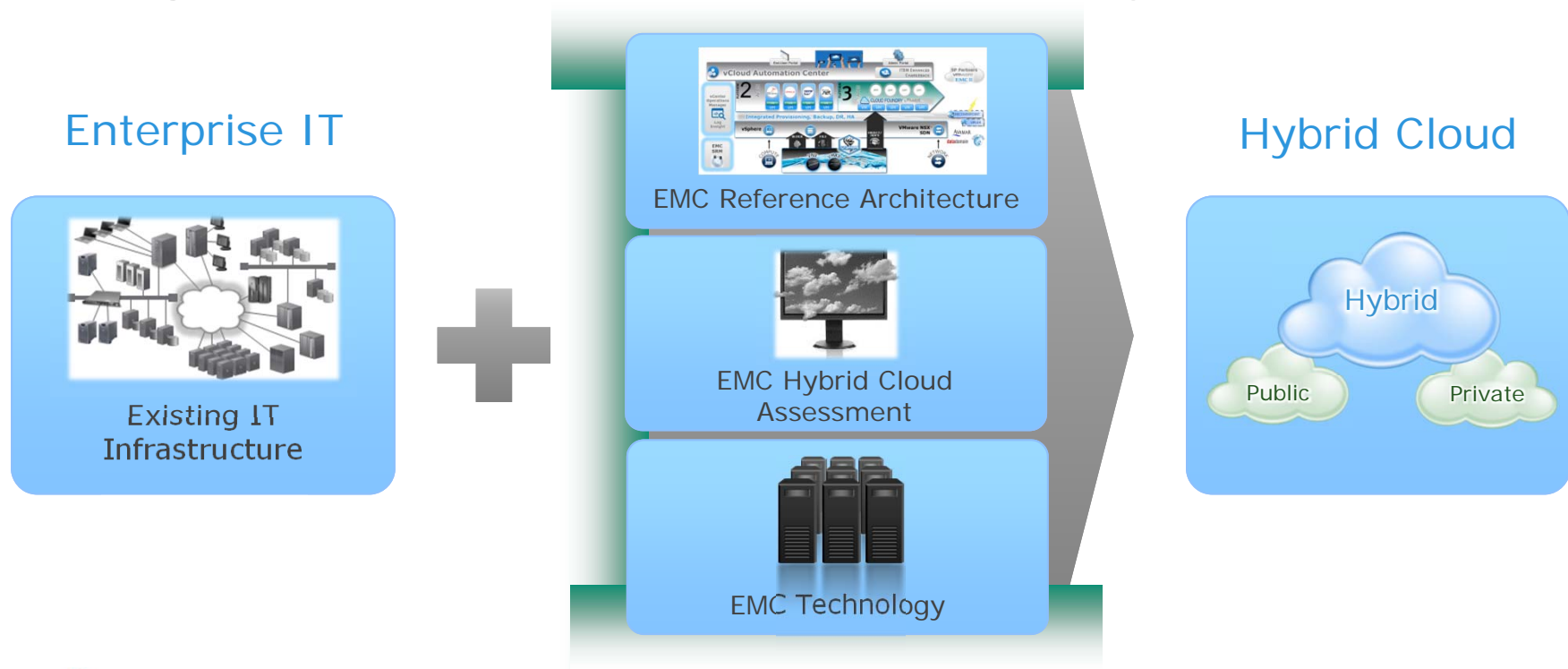
End User View - IaaS Services

Self Service Portal
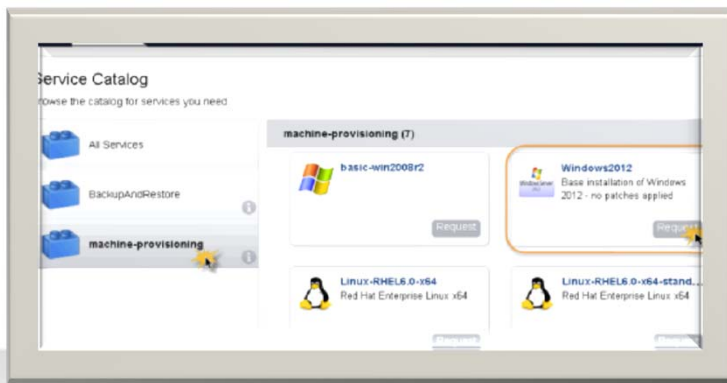
Policy-enabled Cloud Service Provisioning

IaaS

Apps

Backup Policy & Retention Choice

- Daily Backup with 1 Year Retention
- On-Demand Restore

Storage Choice

- Platinum
- Gold
- Silver
- Public Cloud

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End User View - Everything *aaS

Self Service Portal
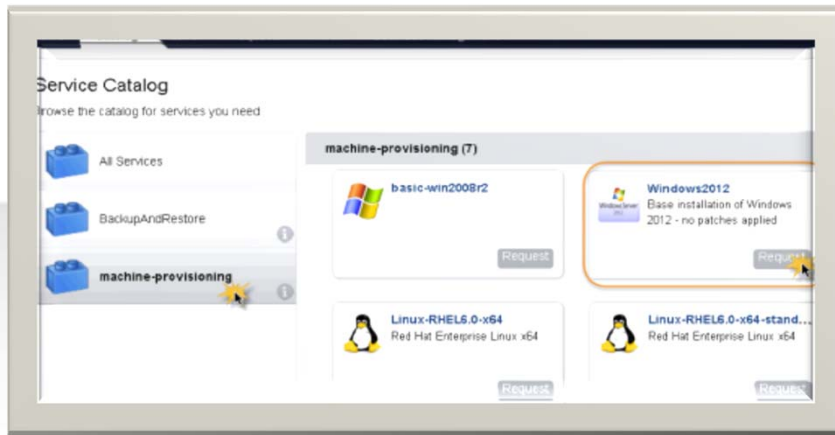
EMC Hybrid Cloud Enables Anything-As-A-Service

PaaS

AaaS

Backup Policy & Retention Choice

Storage Choice

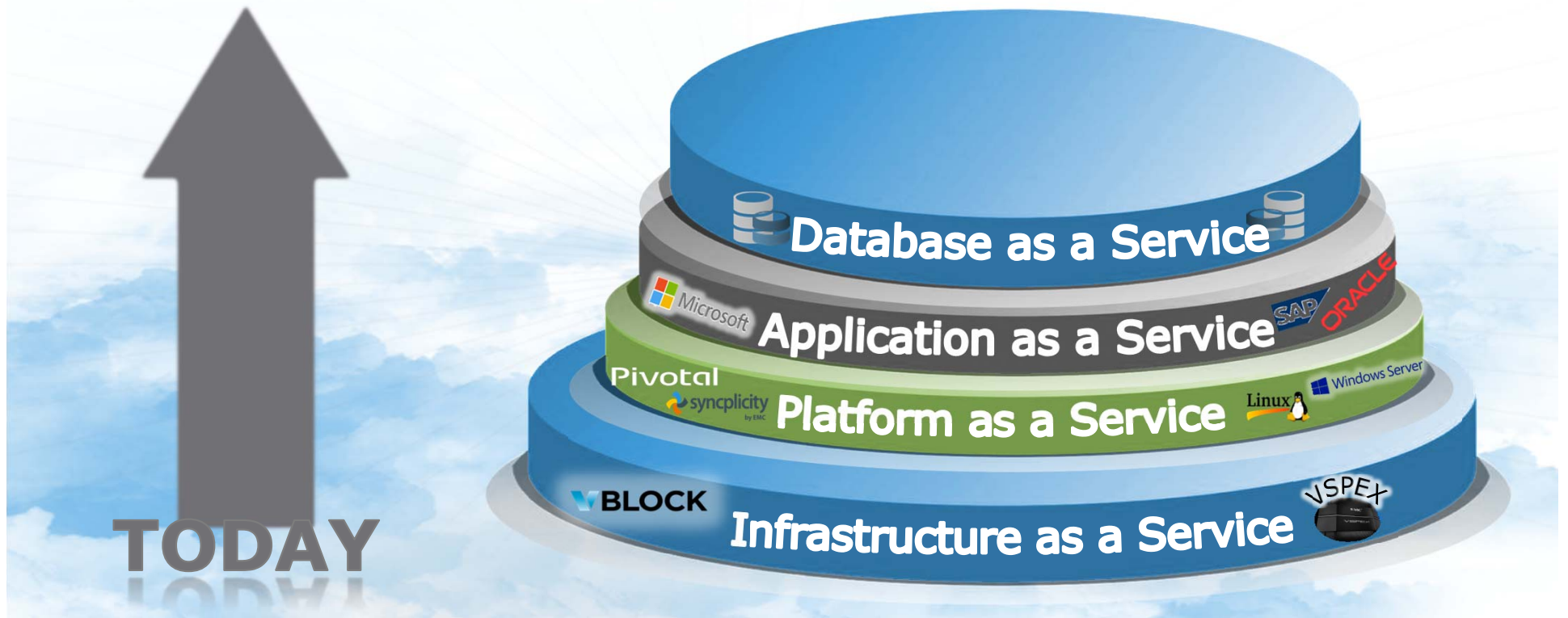- Daily Backup with 1 Year Retention
- On-Demand Restore

- Platinum
- Silver
- Gold
- Public Cloud

Automation & Service Level Selection

- High Availability for Workloads
- Automated Disaster Recovery

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"Everything As a Service" Delivery

TODAY

Database as a Service

Application as a Service

Platform as a Service

Infrastructure as a Service

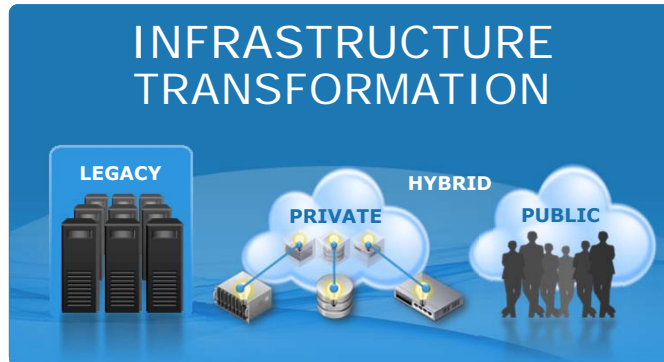EMC² Pivotal RSA vmware

The EMC Hybrid Cloud Reference Architecture

Hybrid Clouds → More Than Technology

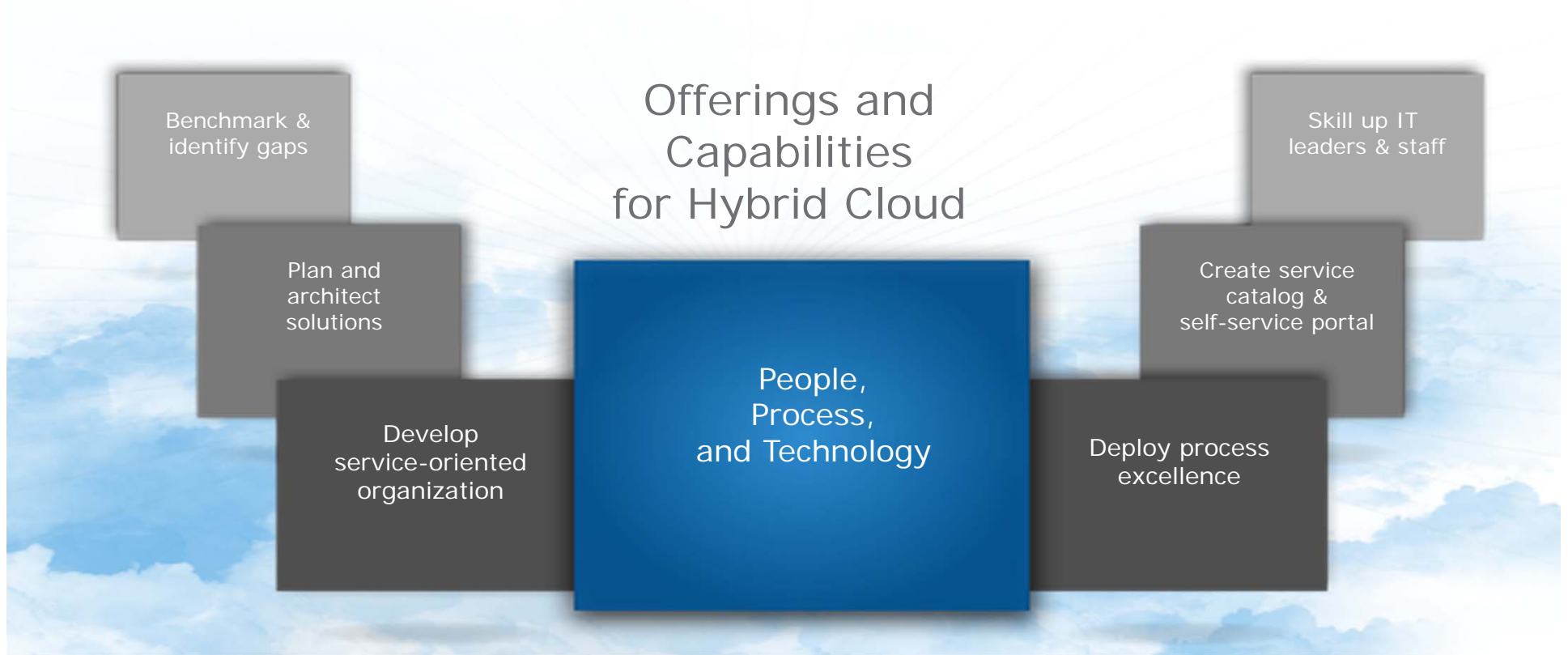Align Workloads With Most Suitable Cloud Model And Empower Them For Mobile And Big Data Solutions

APPLICATION TRANSFORMATION

Application Fabric

Data Fabric

Cloud Fabric

ORACLE Microsoft SAP

2nd Platform
Existing Apps

3rd Platform
New Apps

INFRASTRUCTURE TRANSFORMATION

Build a Cost-Efficient, Agile Infrastructure to Enable Private and Hybrid Cloud

LEGACY

HYBRID

PRIVATE

PUBLIC

OPERATING MODEL TRANSFORMATION

User Portal

New Roles

Service Catalog

Policy Engine

Orchestration Engine

Agile Processes

Metering Engine

Package And Orchestrate Services For Agile IT Operations And Convenient Consumption

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People&Process development for Cloud

Benchmark & identify gaps

Plan and architect solutions

Develop service-oriented organization

People, Process, and Technology

Offerings and Capabilities for Hybrid Cloud

Skill up IT leaders & staff

Create service catalog & self-service portal

Deploy process excellence

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Transforming IT for the cloud

BUILD CLOUD INFRASTRUCTURE

DEFINE SERVICE LEVELS

ESTABLISH METERING & REPORTING

EXPAND SERVICES: BUILD, BUY, OR PARTNE

SERVICE CATALOG

TRADITIONAL ROLES

SYSTEMS ADMIN | STORAGE ADMIN | BACKUP & RECOVERY ADMIN | NETWORK ADMIN | SECURITY

NEW ROLES

CLOUD ARCHITECT | CLOUD ADMIN | CLOUD CAPACITY PLANNER | IT AUTOMATION ENGINEER | SVC MGMT

EMC² Pivotal **RSA** **vm**ware
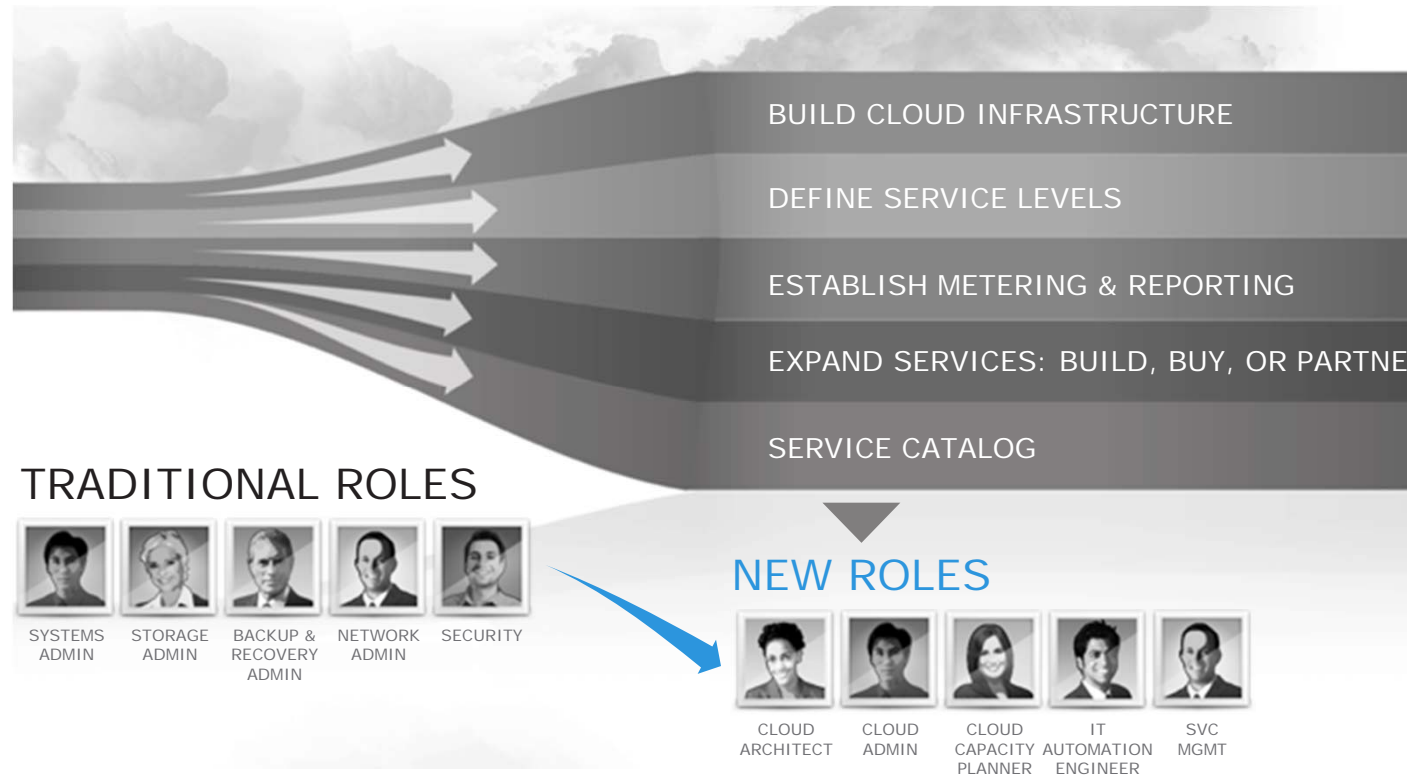
Bridges The Gap

3RD PLATFORM

2ND PLATFORM