



Cloud as an evolution from Virtualisation

Nick Drabble – Tivoli UKI Cloud Leader

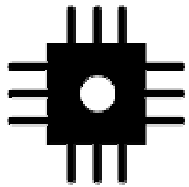
IBM Software

PCTY2010 
Pulse Comes to You

Optimising the World's Infrastructure

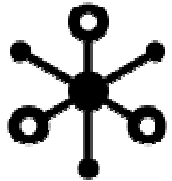
3 November, IBM South Bank

Consider how our world is changing: Our world is becoming **smarter** and more...



INSTRUMENTED

- **30 billion** embedded RFID tags by 2010
- **1/2 of all sensors** in transportation, facilities & production equipment are smart sensors



INTERCONNECTED

- **1/3 of the world's population** on the Web by 2011
- **4B mobile subscribers** globally at the end of 2008
- **37K cyber attacks** in the US in 2007; 158% increase since 2006



INTELLIGENT

- **15 petabytes of new information** generated every day (8x more than the information in all U.S. libraries)
- **64B credit card transactions/annum; up 35%**

As the world gets smarter, demands on the infrastructure will grow



Smart traffic systems



Intelligent oil field technologies



Smart food systems



Smart healthcare



Smart energy grids



Smart retail



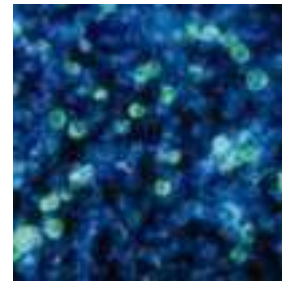
Smart water management



Smart supply chains



Smart countries



Smart weather



Smart regions



Smart cities

IT needs to be service-driven and highly efficient

... about delivering “services” and service management

... about optimising workloads

... about deployment choices



Analytics



Collaboration



Development
and Test



Desktop and
Devices



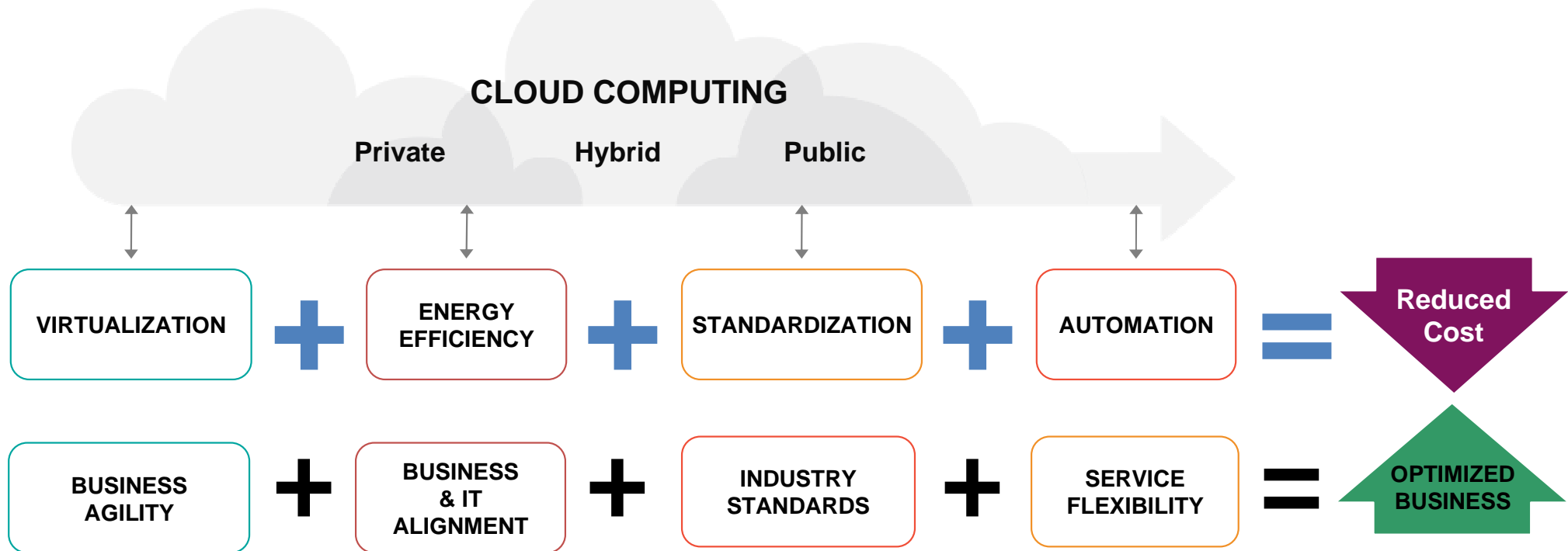
Infrastructure



Business
Services

Cloud Computing Infrastructure:

Is optimized to achieve more with less....



...leveraging virtualization, energy efficiency, standardization and automation to free up operational budget for new investment.

Effectively we are entering a new phase of "IT Industrialisation" to improve efficiency, responsiveness, lower cost and manage risk

Transformation Roadmap for virtualized environments

Fully virtualized IT with integrated Service Management

Cloud

Physical Consolidation



- Improve utilization
- Reduce costs
- Lower power usage

Improve capacity utilization by as much as 60%, while reducing the power and cooling costs

Advanced Virtual Resource Pools



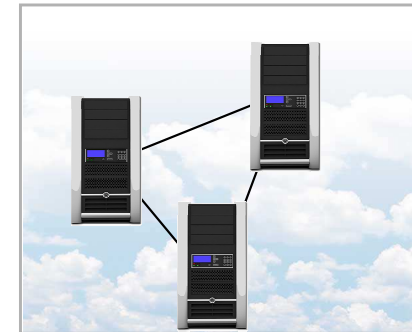
- Decouple complexity from scale
- Share resources optimally
- Automate workload management
- Incorporate HA & DR

Hands-free operation, eliminate mundane tasks and manual processes and deploy workloads in minutes



- Sense and respond to workload requirements
- Dynamically move workloads to best-fit infrastructures
- Integrated virtualization management with IT processes

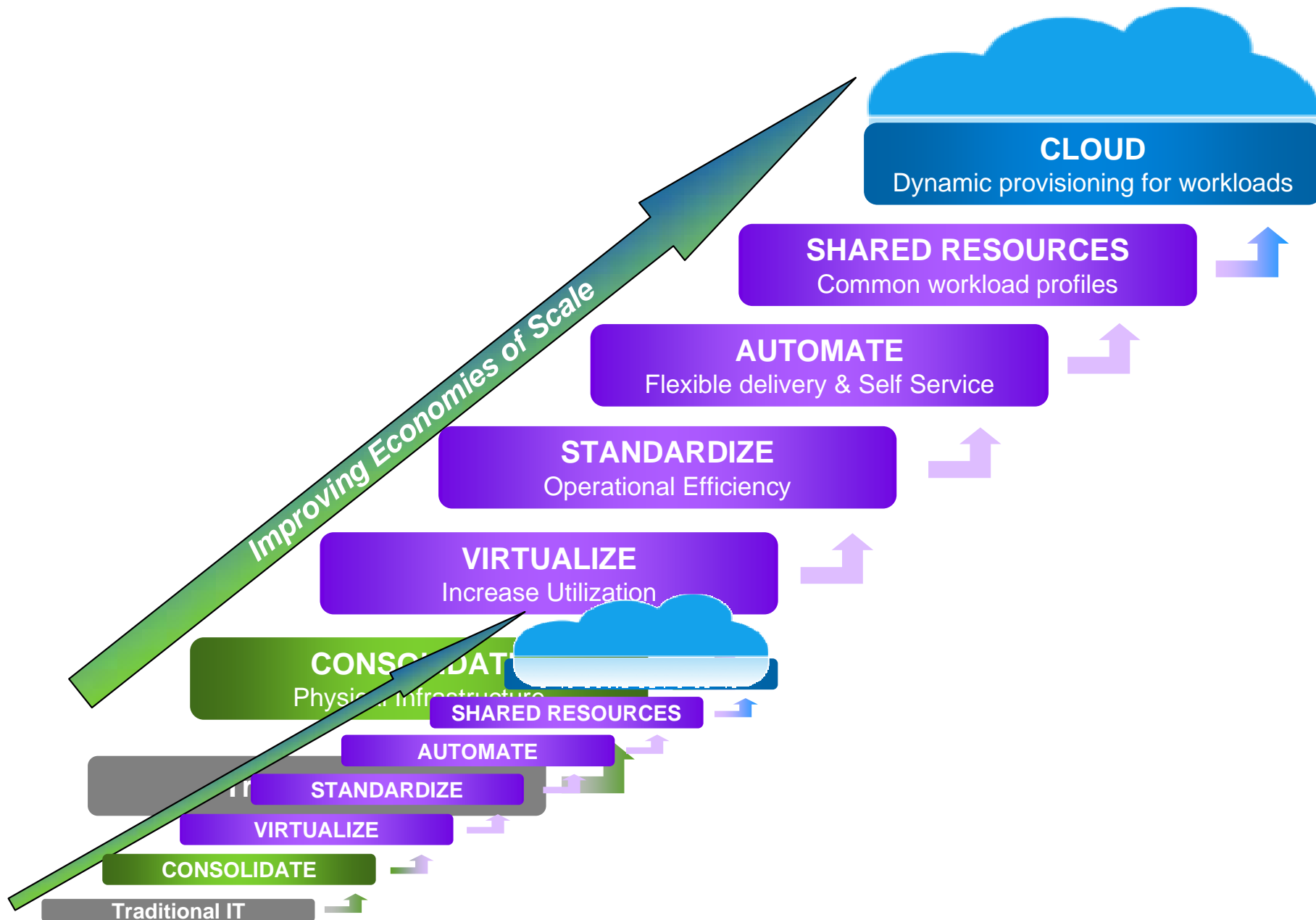
Save time and reduce skill level required for workload provisioning through pre-packaged automation templates



- Low cost through economies of scale
- Fully virtualised
- Globally available
- Elastic scaling
- Automated service management
- Pay for use
- Self-service with rapid provisioning
- Service catalog

Give users the flexibility to request and pay for services they want without the complexities of establishing an IT infrastructure

The Journey to Cloud



A Spectrum of delivery options

← OWNERSHIP & CONTROL

ECONOMIES OF SCALE →

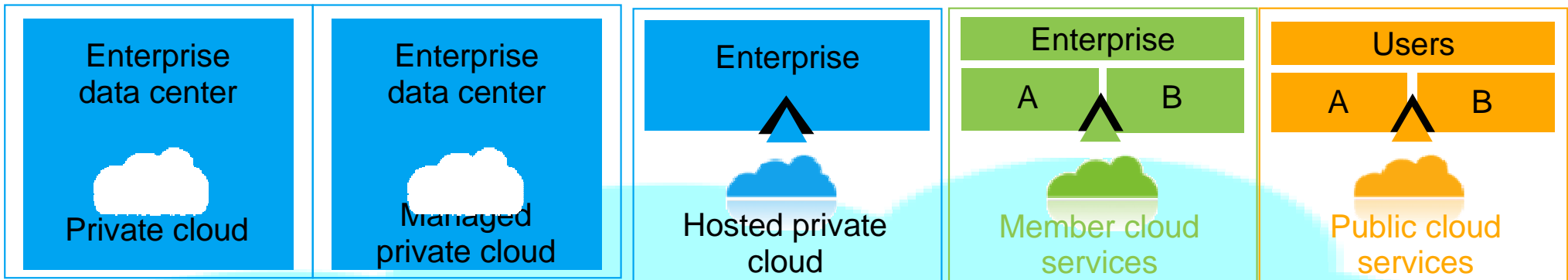
- Private
- On client premises
- Client runs/ manages

- Third-party operated
- Client owned
- Mission critical
- Packaged apps
- High compliancy
- Internal network

- Third-party owned and operated
- Standardization
- Centralization
- Security
- Internal network

- Mix of shared and dedicated resources
- Shared facility & staff
- VPN access
- Subscription or membership based

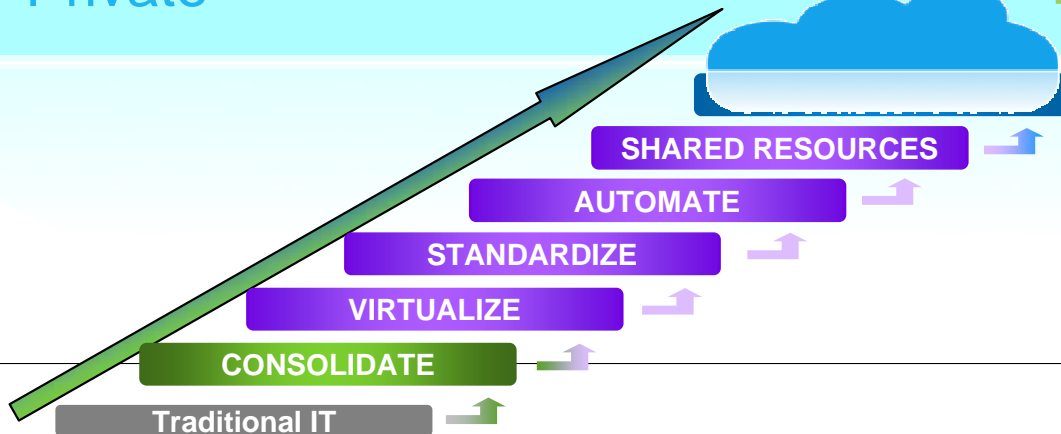
- Shared resources
- Elastic scaling
- Pay as you go
- Public Internet



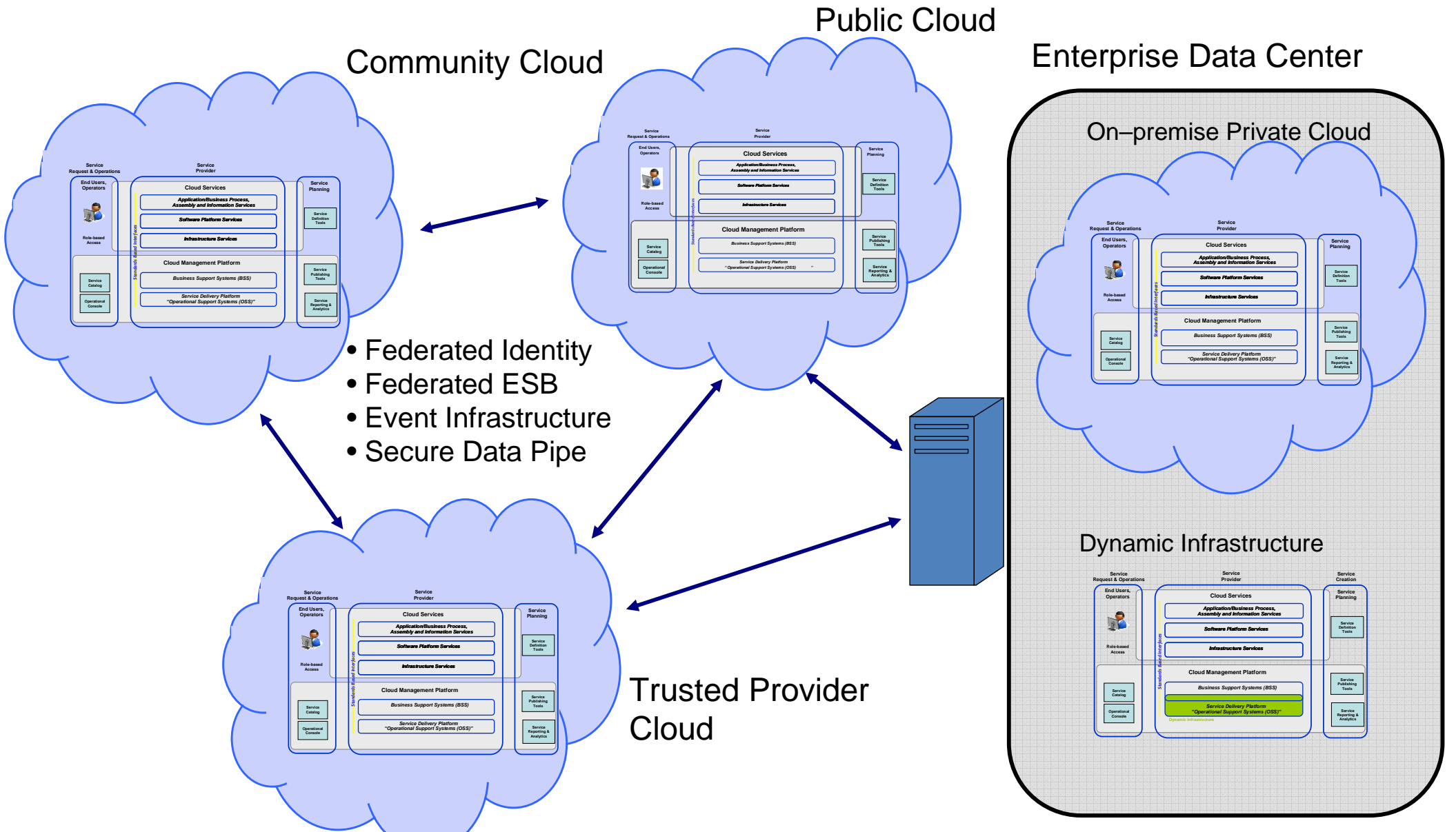
Private

Hybrid

Public



Enterprises will connect to multiple clouds



A Virtualised Infrastructure

← OWNERSHIP & CONTROL

ECONOMIES OF SCALE →

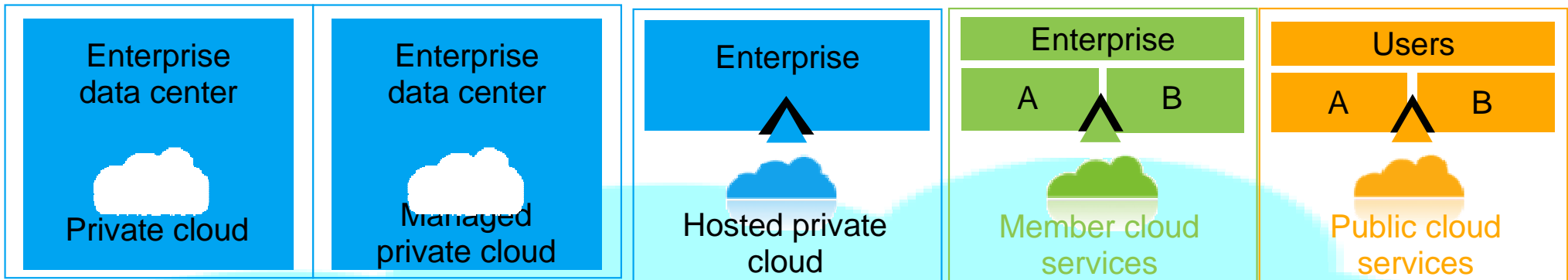
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Private

Hybrid

Public

Virtualised Infrastructure

Private

Hybrid

Public

SHARED RESOURCES

AUTOMATE

STANDARDIZE

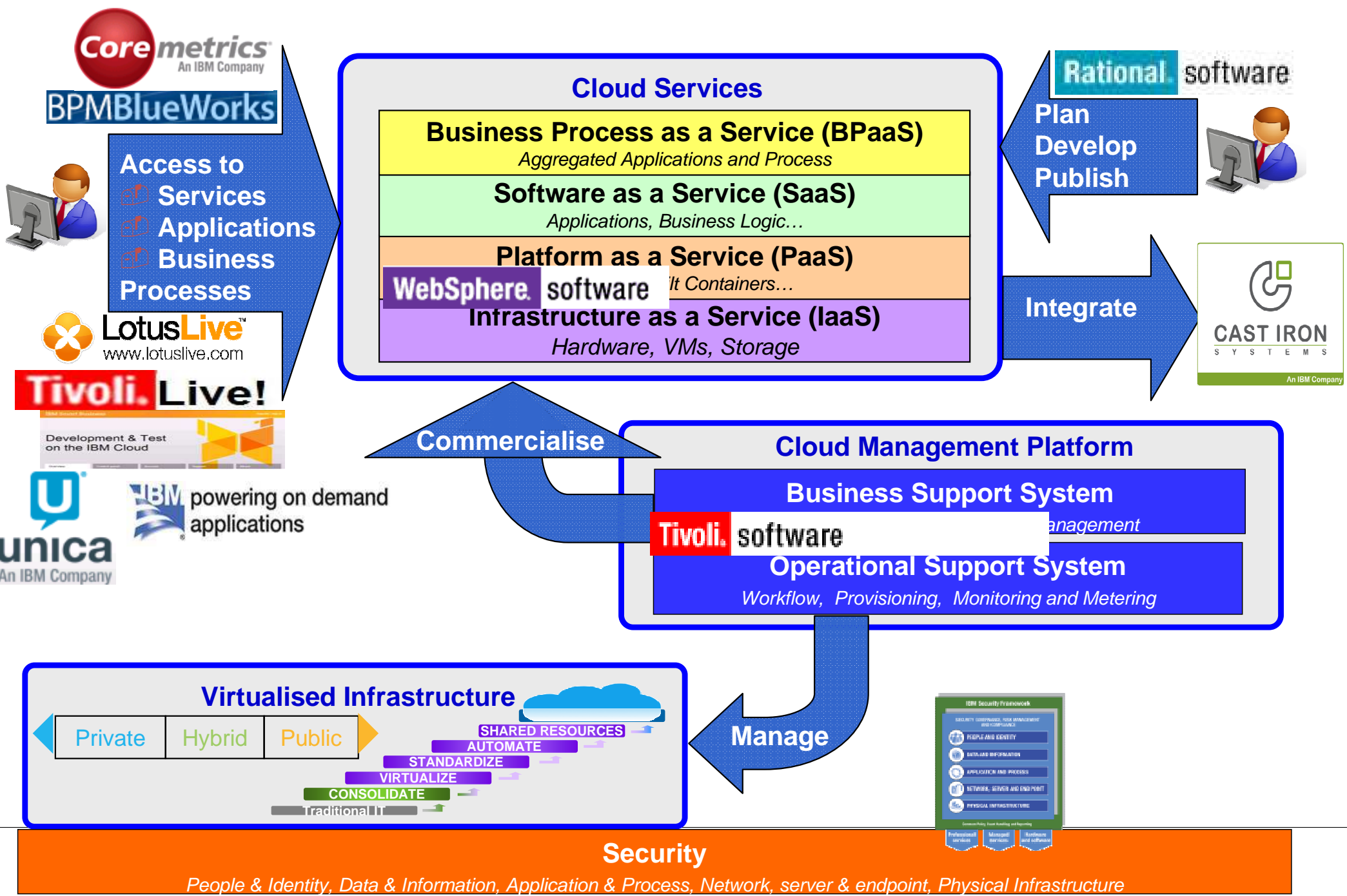
VIRTUALIZE

CONSOLIDATE

Traditional IT

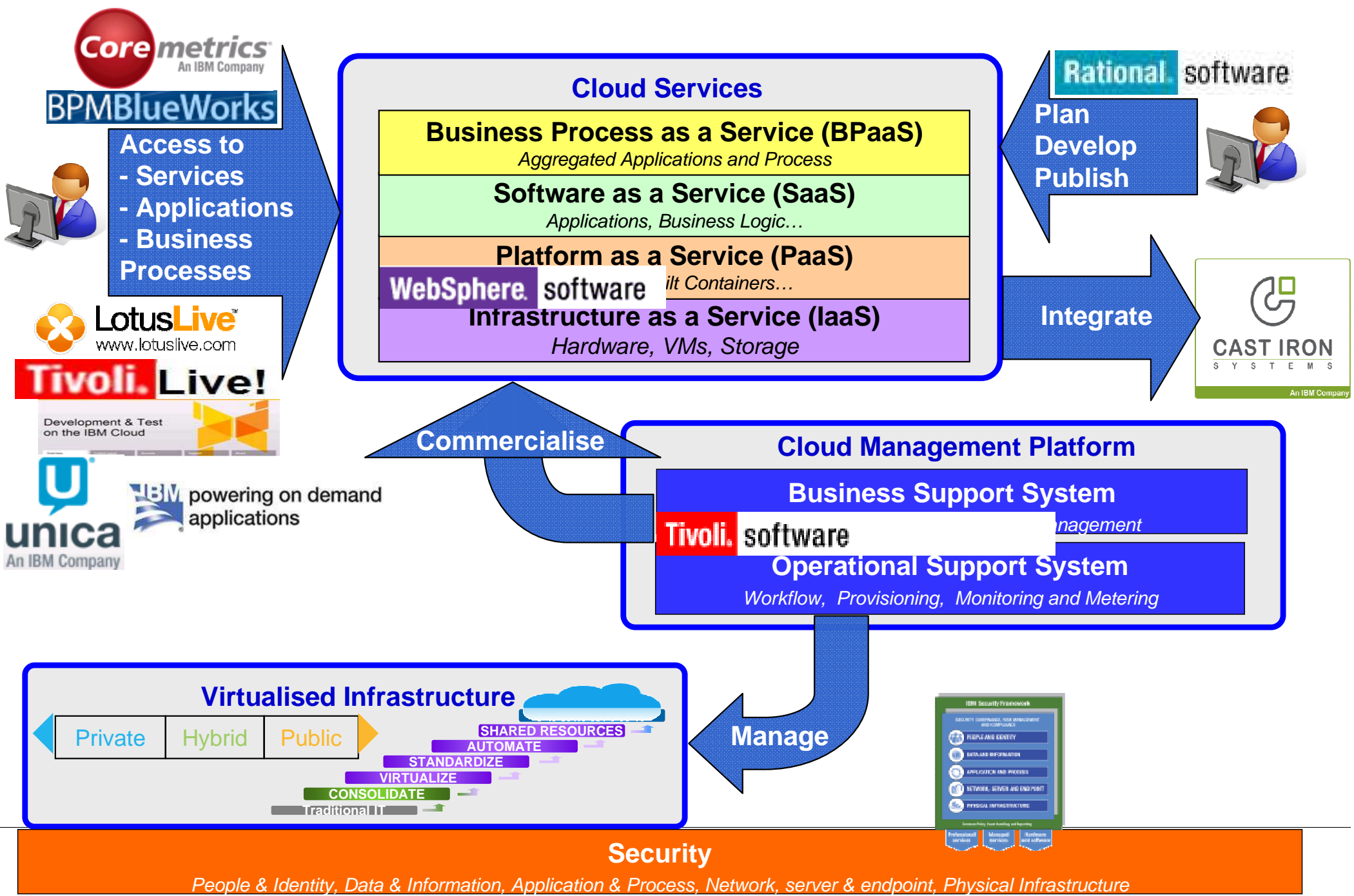
Traditional IT

From Virtualisation to the Cloud Value Stack



People & Identity, Data & Information, Application & Process, Network, server & endpoint, Physical Infrastructure

The Cloud Value Stack



Introducing Cloud Reference Architecture

Cloud Service Providers

Cloud Service Consumers

Service Users



Consumer End User

Consumer Business Manager

Consumer Administrator

Standards Based Interfaces

Cloud Services

Business Process as a Service (BPaaS)

Aggregated Applications and Process

Software as a Service (SaaS)

Applications, Business Logic...

Platform as a Service (PaaS)

APIs, Pre-Built Containers...

Infrastructure as a Service (IaaS)

Hardware, VMs, Storage

Cloud Management Platform

Business Support System

Financial, Customer & Contract Management

Operational Support System

Workflow, Provisioning, Monitoring and Metering

Standards Based Interfaces

Service Planning



Planner

Developer

Publisher

Cloud Service Creators

Virtualised Infrastructure

Private

Hybrid

Public



Security

People & Identity, Data & Information, Application & Process, Network, server & endpoint, Physical Infrastructure

... delivery of “services” and service management

- Standardised processes
- Service management systems provide visibility, control and automation
- Lower operational costs and higher productivity

... optimised workloads

- Rate and degree of standardisation of IT and business services
- Complex transaction and information management processes
- Rapid return-on-investment and productivity gains

... deployment choices

- New service delivery options integrated across the enterprise
- Self-service, economies-of-scale, and flexible sourcing options
- New choices of deployment – business service based



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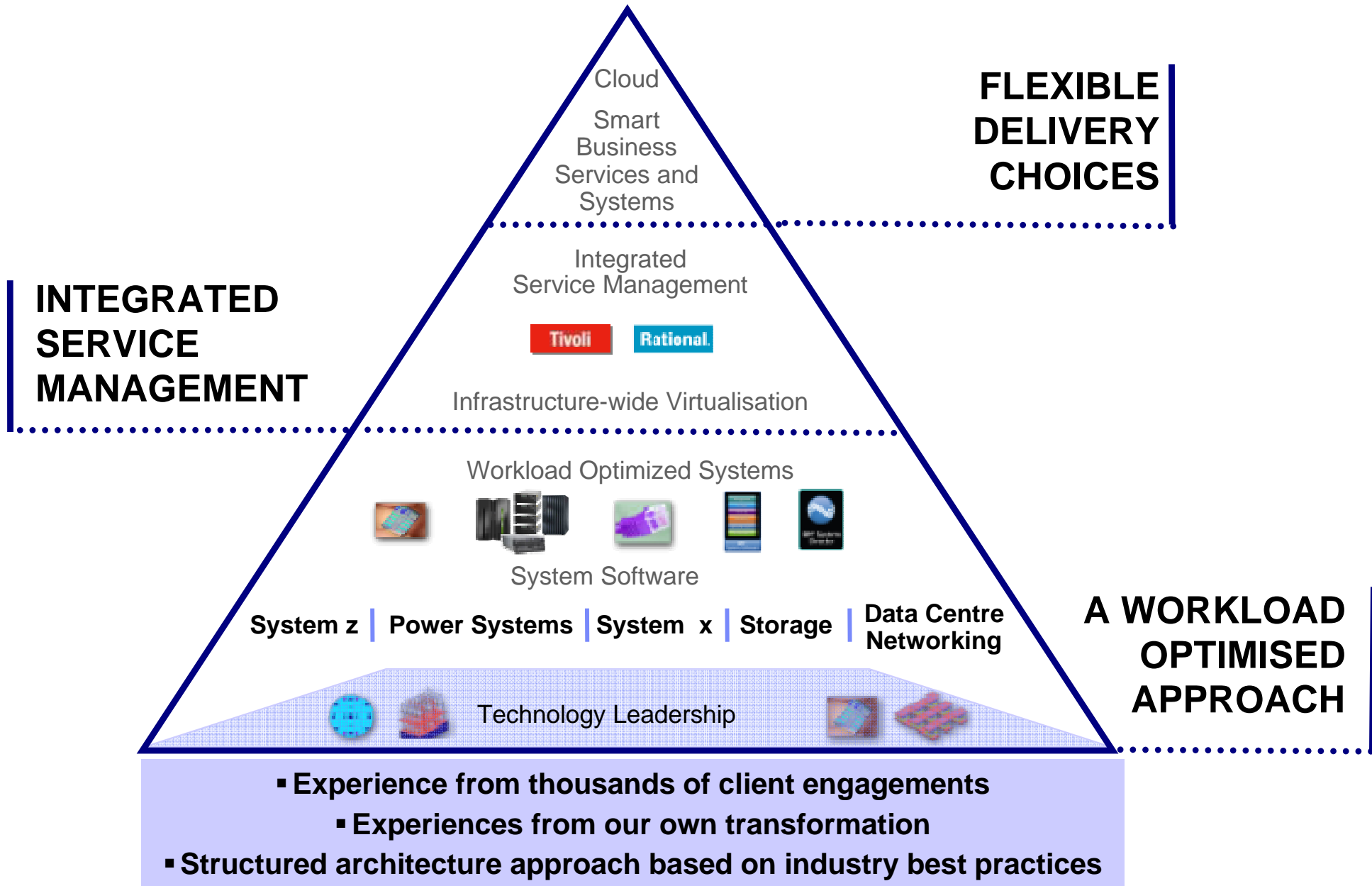


Infrastructure



Business
Services

Why IBM as Cloud Computing Partner?





IBM Software

PCTY2010

Pulse Comes to You

For more information, please visit: ibm.com/cloud

Or contact nick_drabble@uk.ibm.com



Q&A

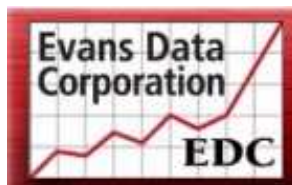
IBM Position on Cloud



IBM wins big in Vegas

Forget the slot machines and blackjack – IBM took home the top prize based on its strong enterprise cloud capabilities, with the ['Best of Interop' for cloud computing award](#) from InformationWeek Analytics and Interop.

- ✓ Cloud is core to IBM's Dynamic Infrastructure & Smarter Planet strategy and IBM will strive to be a market Leader in Cloud computing
- ✓ IBM will play in all Cloud markets
- ✓ IBM will take a phased approach to match market demands
- ✓ IBM will fully support its partner eco-system in the development and deployment of Cloud offerings



IBM is the top choice of developers for Private Clouds, according to Evans Data's recently released Cloud Development Survey 2010.

Almost 30% identified IBM as the top Private Cloud provider, in this survey of over 400 software developers released end of June.