Aligning IT to Business:
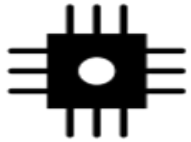# The Competitive Advantage of Cloud Computing

Nick Drabble, Dynamic Infrastructure Leader, IBM Tivoli UKI

Agenda

- Business Challenge

- Cloud Computing

- Business Value

- Q&A

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
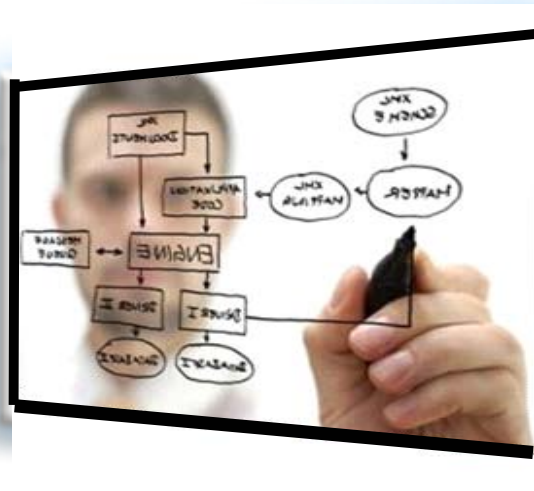
INTELLIGENT

- **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%**
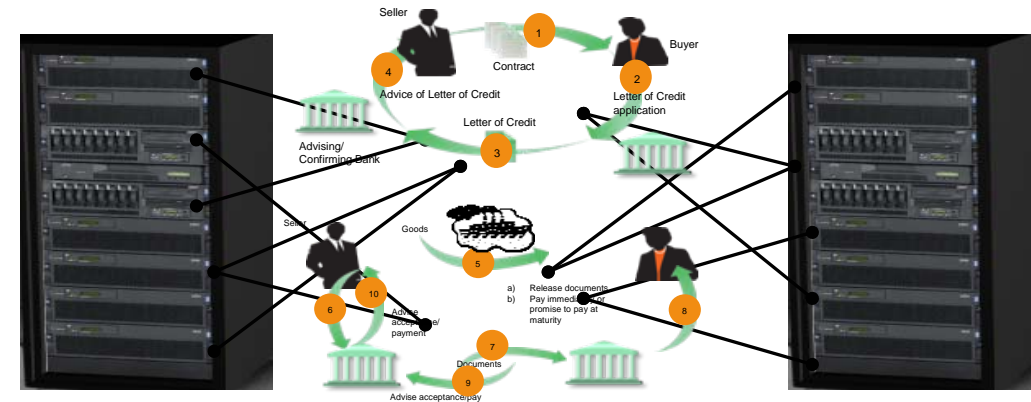
The need for progress is clear

A bank wants to optimize performance…

- Improve liquidity
- Reduce cost of working capital
- Integrate physical and financial processes
- Unleash new financing services

…their IT resources are not easily changed

- Silo'ed , hard-coded,
- Custom linkages among applications
- Inflexible business processes and support

The Opportunity to address today's challenges and tomorrow's opportunities …

IMPROVE SERVICE
REDUCE COST
MANAGE RISK

Dynamic Infrastructure

.…business and IT working in concert to reduce cost, improve service and manage risk.
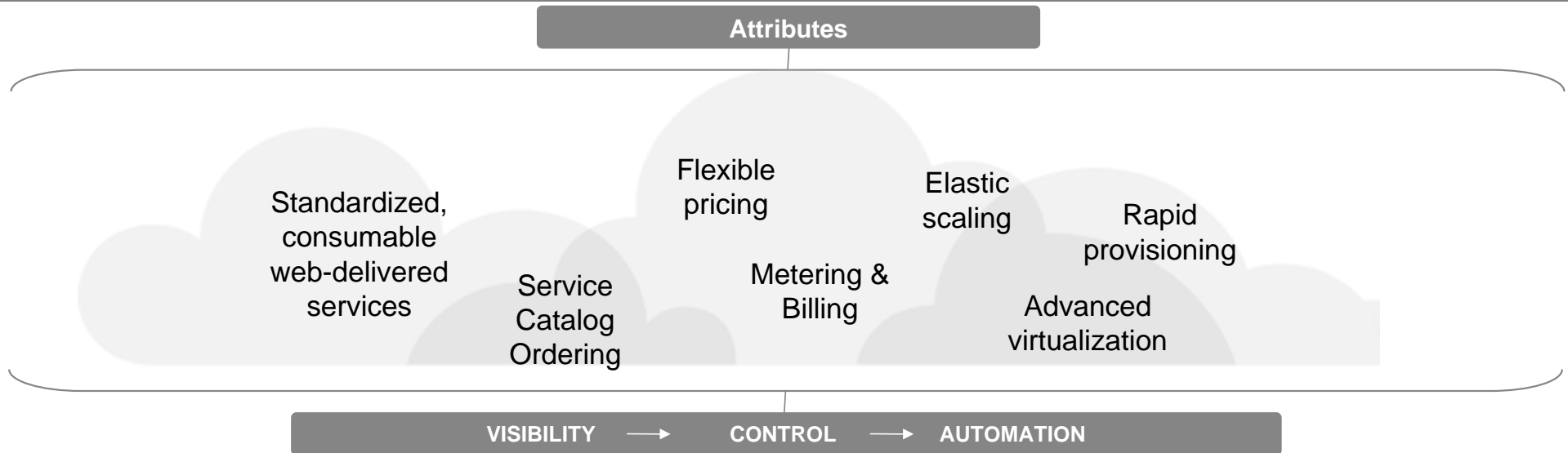
FLEXIBLE SERVICE DELIVERY

- Based on open standards
- Delivered as a service
- Available anywhere
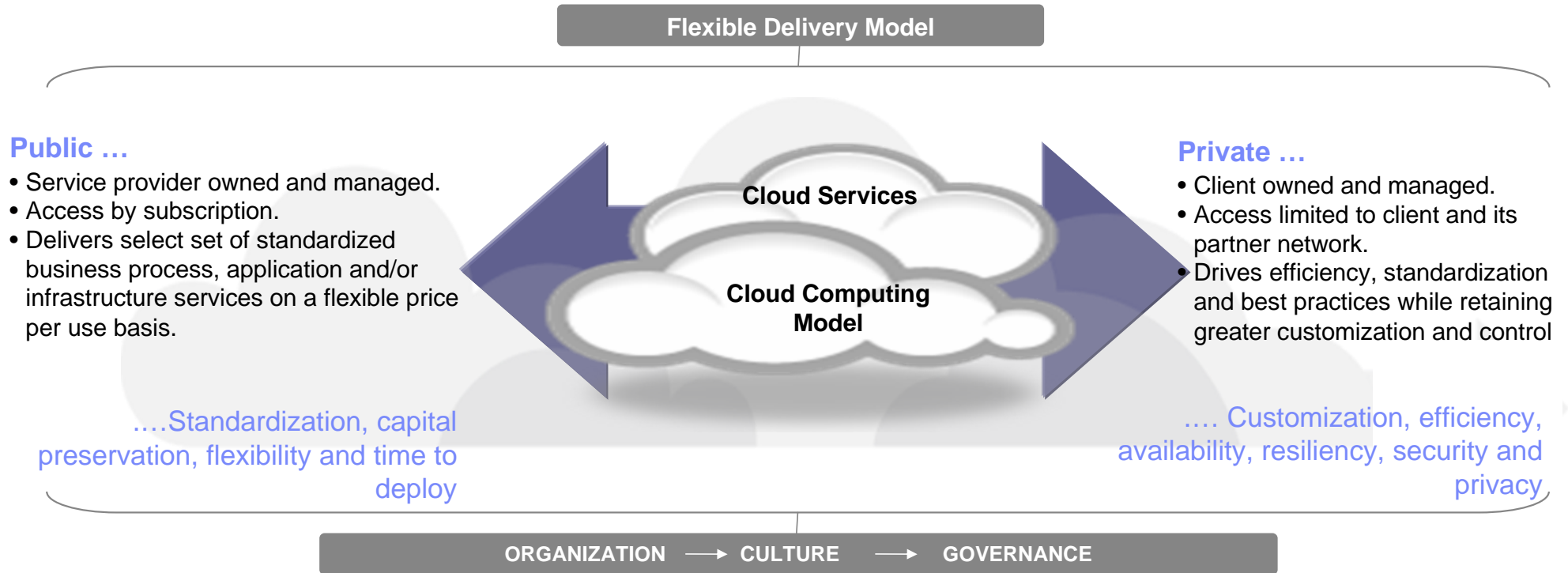
Cloud Computing …

"Cloud" is an emerging consumption and delivery model for many IT-based services, in which the user sees only the service, and has no need to know anything about the technology or implementation

Attributes

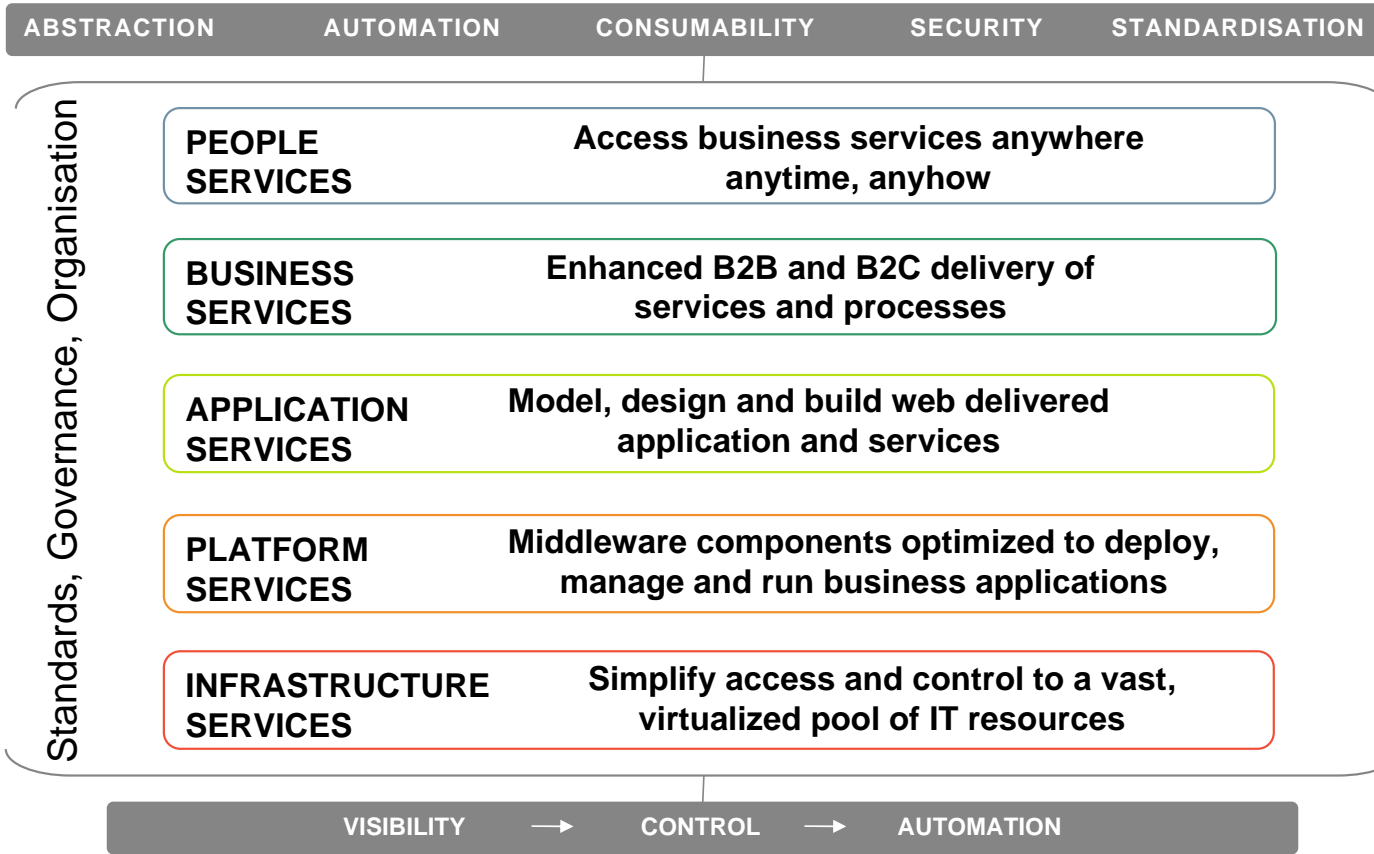Standardized, consumable web-delivered services

Service Catalog Ordering

Flexible pricing

Metering & Billing

Elastic scaling

Rapid provisioning

Advanced virtualization

VISIBILITY ⟶ **CONTROL** ⟶ **AUTOMATION**

....service oriented and service managed

Cloud Computing …

Flexible Delivery Model

Public …
- Service provider owned and managed.
- Access by subscription.
- Delivers select set of standardized business process, application and/or infrastructure services on a flexible price per use basis.

Cloud Services

Cloud Computing Model

Private …
- Client owned and managed.
- Access limited to client and its partner network.
- Drives efficiency, standardization and best practices while retaining greater customization and control

….Standardization, capital preservation, flexibility and time to deploy

…. Customization, efficiency, availability, resiliency, security and privacy

ORGANIZATION → CULTURE → GOVERNANCE

….service sourcing and service value

Building a Service Environment…

| ABSTRACTION | AUTOMATION | CONSUMABILITY | SECURITY | STANDARDISATION |

Standards, Governance, Organisation

| **PEOPLE SERVICES** | **Access business services anywhere anytime, anyhow** |

| **BUSINESS SERVICES** | **Enhanced B2B and B2C delivery of services and processes** |

| **APPLICATION SERVICES** | **Model, design and build web delivered application and services** |

| **PLATFORM SERVICES** | **Middleware components optimized to deploy, manage and run business applications** |

| **INFRASTRUCTURE SERVICES** | **Simplify access and control to a vast, virtualized pool of IT resources** |

…to deliver smarter business outcomes with agility and speed

VISIBILITY → CONTROL → AUTOMATION

Service Sourcing Models…

SERVICE DELIVERY FLEXIBILITY

| Traditional Enterprise IT | | Outsourcing | Service | Build Your Own Cloud | Integration | Managed Services | | Use IBM's Cloud |

- Run traditional mission critical workloads

- Managing traditional mission critical workloads and systems

- Build, manage and automate service delivery workloads and virtualized resources.

- Subscribe / pay per use for resources, platforms and application services

- Support peak demand overflow with on demand resources

.…allow you to develop the right strategy to quickly realize direct business benefit

Cloud derives value from the heart of the IT spend…

Voracious
Worldwide spending, $bn, on:
- Power and cooling
- Server management and administration
- New servers
- Servers, installed base, m

FORECAST

250 — 50
200 — 40
150 — 30
100 — 20
50 — 10
0 — 0

1996 98 2000 02 04 06 08 11

Source: IDC

Source: The Economist, 23 -10 - 2008

Global Annual IT Spending
Estimated US$B 1996-2010

Uncontrolled Management & Energy Costs

Steady CAPEX Spend

….requiring significant reduction in operating complexity

Cloud economics…

CLOUD COMPUTING

VIRTUALIZATION + **ENERGY EFFICIENCY** + **STANDARDISATION** + **AUTOMATION** = **Reduced Cost**
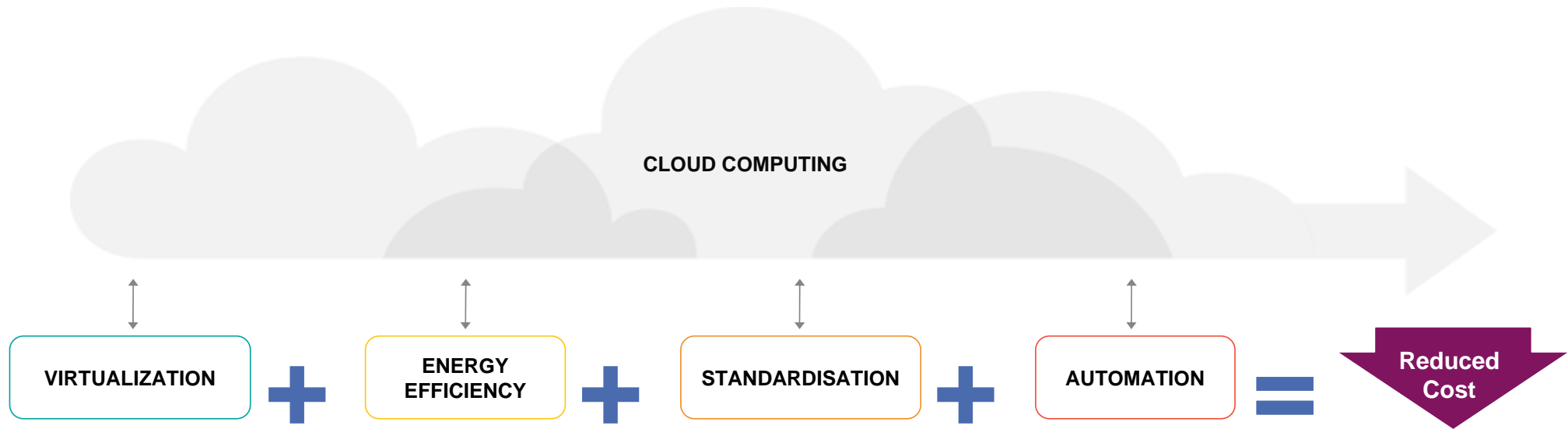
….leverages virtualization, standardisation and automation to free up operational budget for new investment

Cloud leads to real savings…

| VIRTUALIZATION | + | ENERGY EFFICIENCY | + | STANDARDISATION | + | AUTOMATION | = | Reduced Cost |

IBM TAP Example:

The Technology Adoption Program (TAP) is IBM's new model for managing technology to drive innovation for our internal transformation & growth

Hardware, labour & power savings reduced annual cost of operation by 83.8%

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

Cloud economics…

CLOUD COMPUTING

AGILITY **+** BUSINESS & IT ALIGNMENT **+** SERVICE FLEXIBILITY **+** INDUSTRY STANDARDS **=** OPTIMISED BUSINESS
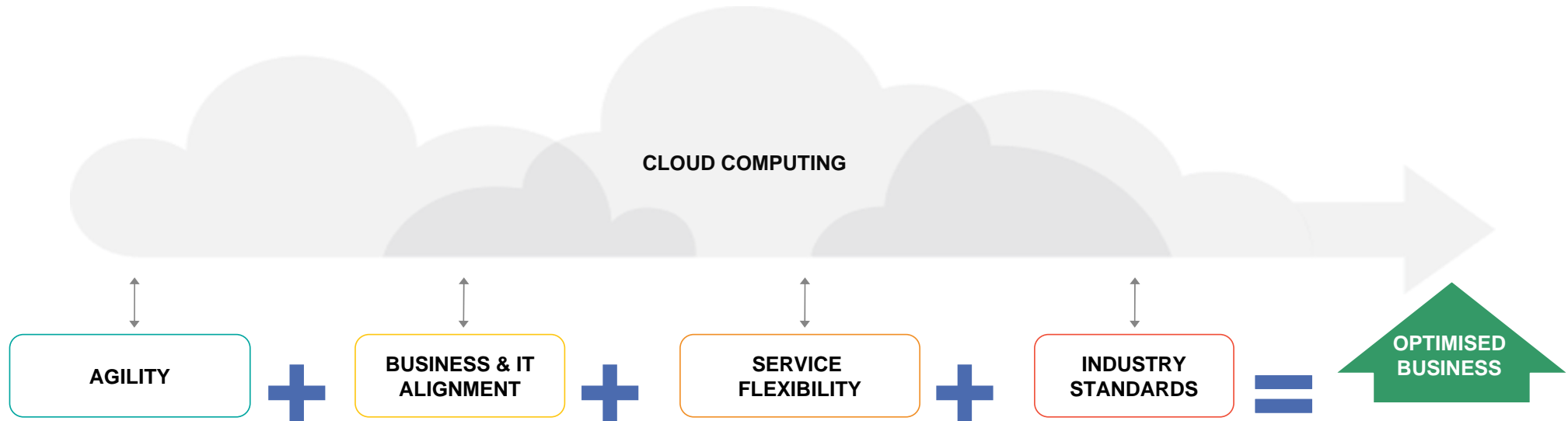
….allowing you to optimize new investments for direct business benefits

Creating business agility and fostering innovation..

Exa Example:

Growing your business through access to cloud-based computing resources

Doubled their business every year for four years growing from a small, local company to a global enterprise. Exa set themselves up for a strong competitive advantage and is able to adapt rapidly and flexibly.

| BUSINESS & IT ALIGNMENT | **+** | SERVICE FLEXIBILITY | **+** | INDUSTRY STANDARDS | **=** | OPTIMISED BUSINESS |

….allowing you to optimize new investments for direct business benefits

Clients see the promise of Cloud…

"I see the *potential to propel my organization's rapid development* efficiently, effectively, and centralized. I think there is endless possibilities for truly building enterprise partnerships using technology to facilitate business relationships around team-based work product" –

In one customer's case IBM's Cloud solution will enable him to achieve a strategic new business model while cutting costs in increasing efficiency

Cloud provides relief from "server sprawl" (where virtualization allowed us to control server sprawl, we're in our second generation, next version of sprawl.) It does this via the functions for automatic de-provisioning based on policies, and will allow us to get to the next level of utilization. Resources that are not in use are freed up for others.

Customer said he has to shave $20 million in costs from his IT costs in 2009 and cloud is a way he thinks he can achieve this

Cloud is a way for our countries to bridge the technology divide. This puts us ahead if not on par with developed countries.

Cloud Computing

Challenge
Implementing a strategic new business model without increasing operational costs – from 100s of servers to 1000s of servers

Solution: Internet Company implemented Service Management Center for Cloud Computing, providing end to end service management layer, and automated deployment & management of bare metal & virtualized infrastructure

Cloud Computing

Challenge:
Improve storage ROI, improve backup success rates and convert legacy tape infrastructure and processes into a standardized, secure and highly distributed IT architecture for on-demand data protection; build a disaster recovery capability to protect mission-critical data
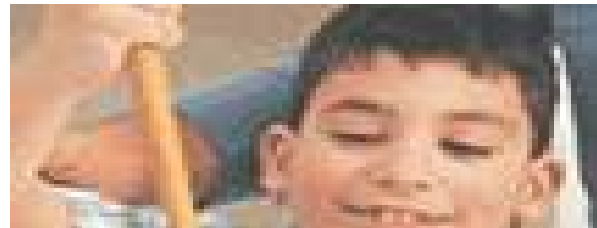
Solution: Implemented BCRS – Remote Data Protection solution to protect 12 servers running MS Exchange, SQL Server and other business applications; improve backup success rates from ~70% to 99%; deployed DR capability to a secure facility 1200 miles away from Houston

The journey to cloud…

Business Value

Centralise > **Consolidate** > **Virtualize** > **Automate** > **Optimize**

Organisation   Culture   Governance
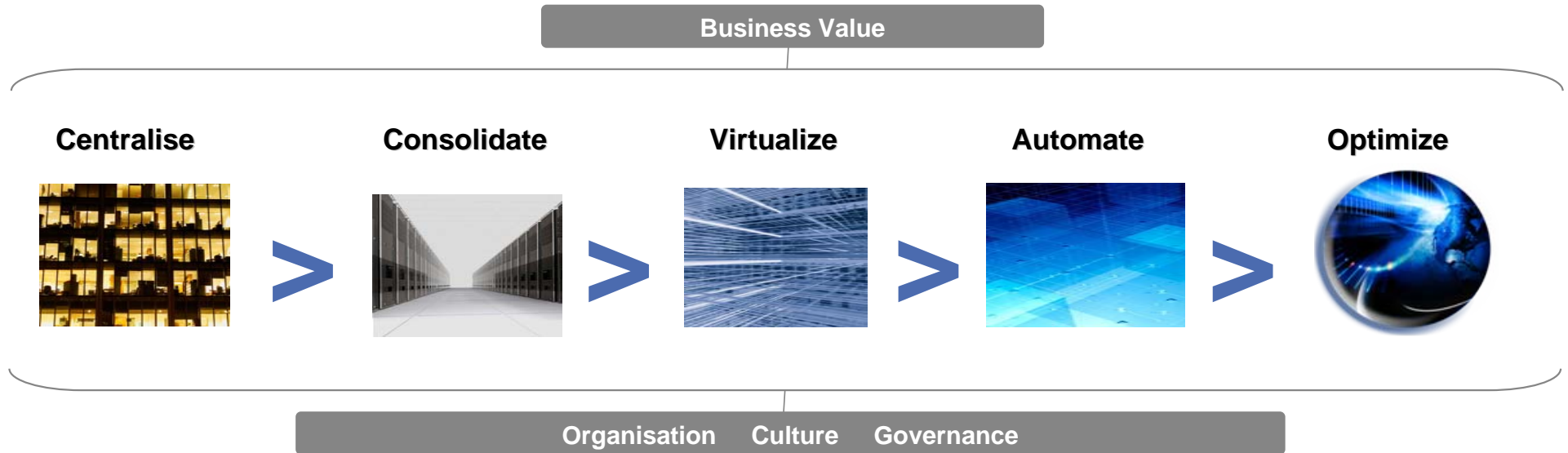
….requires an integrated and orchestrated approach.

IBM's own smart transformation has delivered results

		1997	Today
IBM IT Transformation	• IBM's IT transformation continues: our own IT investments over the past 5 years have delivered a cumulative benefit yield of $4.1B		

	1997	Today
CIOs	128	1
Host data centers	155	7
Web hosting centers	80	5
Network	31	1
Applications	15K	4.7K

Data Center Efficiencies Achieved
- Consolidation and virtualization - thousands of servers onto approximately 30 IBM System z™ mainframes
- Additional virtualization leveraging System p, System x and storage across enterprise
- Substantial savings being achieved in multiple dimensions: energy, software and system management and support costs

Project Big Green
- The virtualized environment will use 80% less energy and 85% less floor space
- 2X existing capacity, no increase in consumption or impact by 2010

Cloud-enabled on demand IT delivery solution
- Self-service for 3,000 IBM researchers across 8 countries
- Real time integration of information and business services

IBM Cloud Computing Offerings

A portfolio of leadership products and services for cloud computing

Cloud Consulting
- Infrastructure strategy & planning for cloud computing
- Business cloud consulting services
- IT optimization services

Cloud Implementation
- Service Management for Cloud Computing
- Tivoli Service Automation Management (TSAM)
- Self-enablement Portal
- Virtual Infrastructure Access
- Scale out File Services
- IBM design & implementation for test environments
- IBM security solutions for cloud computing
- Virtual workplace continuity

Cloud Delivered
- IBM LotusLive
- Computing on Demand
- IBM Information Protection Services
  - *Remote data protection service*
  - *Managed data protection for desktops and laptops*

Challenges

- Workload affinity and characteristics

- Standards

- Security and privacy

- Industry models and governance

Building a smarter planet with IBM…

IMPROVE SERVICE
REDUCE COST
MANAGE RISK

Dynamic Infrastructure
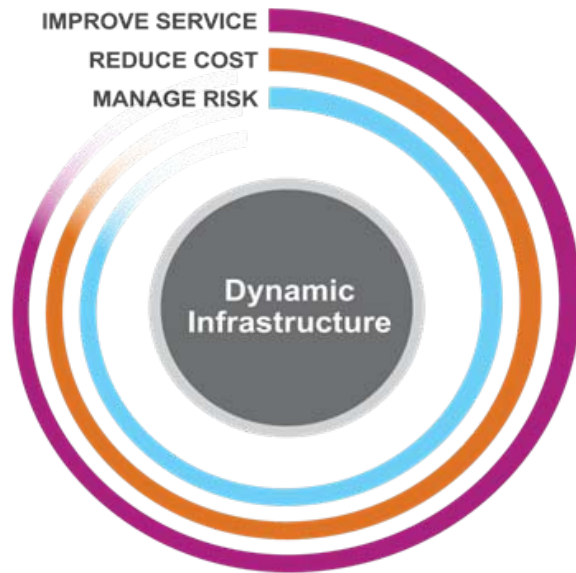
Next Steps?

- *Continue to discover the value of Cloud and assess benefits*

- *Assess your readiness*

- *Analysis of workloads and cloud affinity*

- *Implement a cloud strategy*

FLEXIBLE SERVICE DELIVERY

- Based on open standards
- Delivered as a service
- Available anywhere

….helping you improve service, enable growth, reduce cost and manage risk

Why Cloud with IBM…

*…**IBM** approaches cloud computing from the inside out, designing a cloud environment or providing cloud-based services for each organizations unique requirements. Find out more at*
http://www.ibm.com/ibm/cloud/

Capabilities
- Business domain expertise across all industries
- Deep business, technical architecture and infrastructure expertise
- Proven tools, assessments and workshops that spans the spectrum from ideation to implementation
- Extensive experience and best practices from client interactions from briefings to Proof of Concepts and Cloud Client engagements
- Experiences from our own IBM transformation
- Open standards based approach
- The broadest systems, storage, software and services cloud portfolio in the industry
- Unparalleled research organization and extensive patent leadership

IBM Worldwide Client Centers
- Executive Briefing Centers
- Proof of Concept and Benchmark Centers
- Cloud Computing Centers

Trademarks and disclaimers