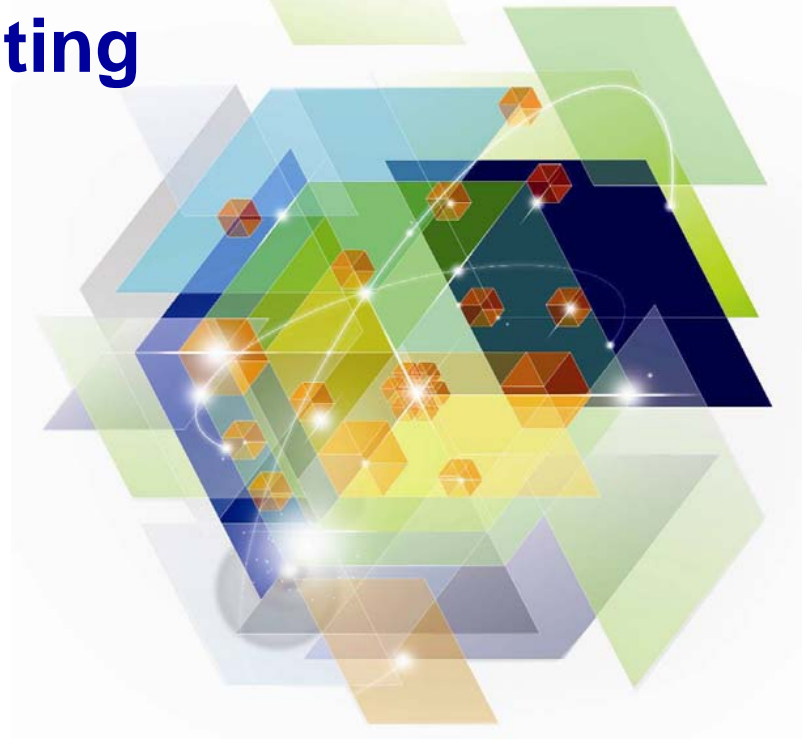# IBM System z Strategy and Direction – The Road to Smarter Computing

Doug Balog

General Manager, IBM System z

21 August 2012

On a Smarter Planet, information-centric processes are exploding in growth …

China online banking **transactions tripled** from 50B to 150B from 2009 to 2011[1]

Asia's largest independent life insurance firm (AIA), had **50% transaction growth** in 2011, while serving 20M+ policy holders

US Healthcare IT outsourcing $20B market nearly doubled 2009 – 2011, **transactions grew 35%+** annually

European central government System z workload growth rate 2007 – 2011: **25%+**
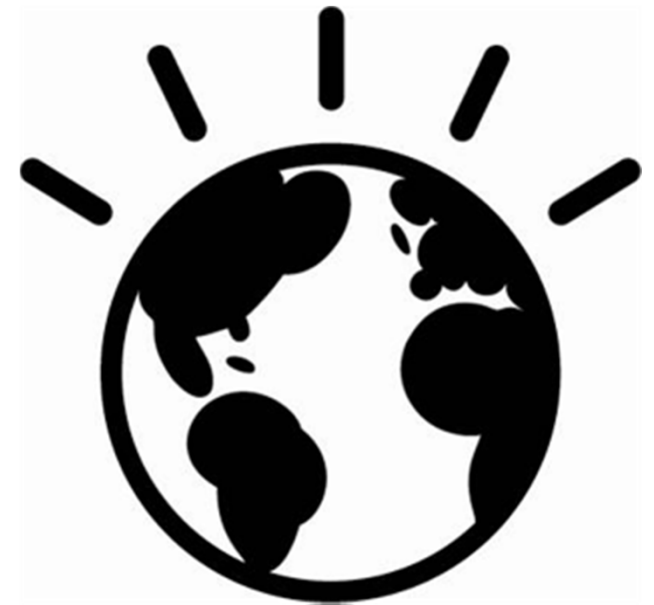
1. According to PBOC (the People's Bank of China)

We are entering a new era of Information Technology

Process-Centric era

- Business process automation

- Bottom-line improvement

- Long business cycle

- Terabytes of largely structured data

Information-Centric era

- Real-time, pattern-based action

- Top-line revenue growth

- Reactive for shorter product cycles

- Zettabytes of largely unstructured data

Innovative clients are implementing new technologies to …

Deliver new business opportunities …

by using actionable insight for information-centric processes

Capture new markets and drive top-line revenue growth …

by strengthening the customer experience

React to shorter product cycles and invest in new services …

by delivering IT efficiency for core business transactions

The industry's broadest systems portfolio

Enterprise Systems

IBM zEnterprise / Power Systems

Security of Data

Infrastructure Efficiency

Information Delivery

Expert Integrated Systems

IBM PureSystems

Built-in Expertise

Integrated by Design

Simplified Experience

Smarter Storage

Efficient by Design

Self-optimizing

Cloud Agile

Volume Systems

Cost

Scale

Ecosystem Leverage

Systems design matters
Enterprise Systems

System z

- Multi-architecture, real-time analytics and built-in security
- #1 revenue share in >$250K servers
- New clients: 140+ since z196 launch, with 36% in Growth Markets
- 2012: Plan for system capacity increase, even greater resilience and security

BNP PARIBAS

embasa
empresa baiana de águas e saneamento s.a.

FLORIDA HOSPITAL

Power Systems

- Portfolio breadth, complex analytics (Watson) and secure virtualization for private clouds
- #1 Unix revenue share, with 16 consecutive quarters of share gains
- Competitive displacements: 2,400+ for more than $2.2B, since 1Q10
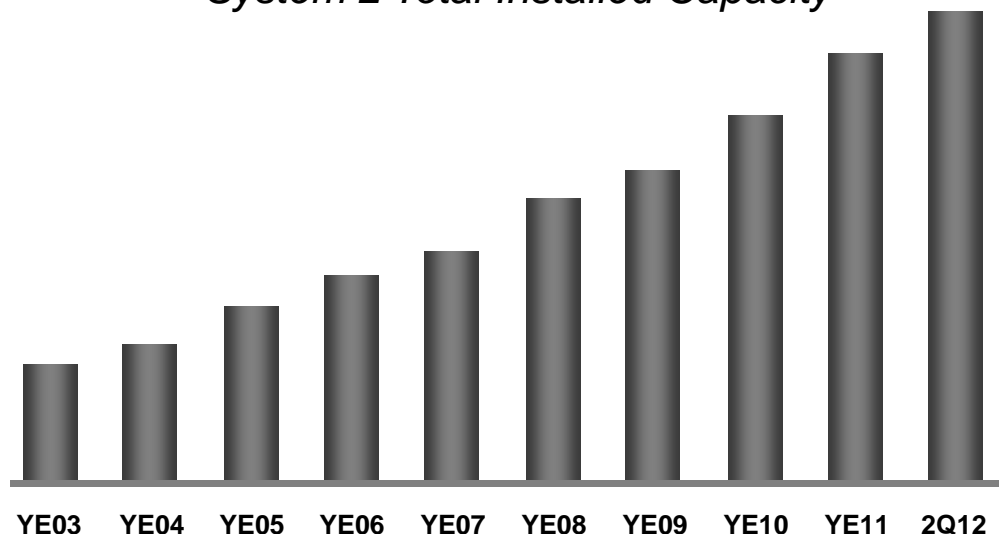- 2012: Plan for 140% system capacity increase

LANDSTAR

UPMC
University of Pittsburgh
Medical Center

U-H

System z share per IDC 4Q11 Server Tracker (Feb12)

Power Systems share per IBM 1Q12 earnings statement (Apr 12)

Clients continue to invest in the value of zEnterprise

System z Total Installed Capacity

YE03 YE04 YE05 YE06 YE07 YE08 YE09 YE10 YE11 2Q12

150+	140+	1/3	2/3+	1/3+	1/5+
BladeCenter Extension units; 1100+ blades shipped*	new accounts since 3Q10 zEnterprise launch	new accts expansion in growth markets	of Top 100 customers have installed IFLs**	System z customers have IFLs installed	of total installed MIPS run Linux

[as of 2Q12]

*Includes Strategic Outsourcing
[**IFL = Linux-on-z Only Engine]

zEnterprise momentum in IBM growth initiatives

Smarter Planet

Double-digit

growth
year to year
in 2Q12

U.S. – Utility

Smart meter solution
helps improve grid
efficiency and lower
energy consumption.

Analytics

Double-digit

growth
year to year
in 2Q12

Europe – Gov't

Near real-time
monitoring and
analysis to vet visiting
foreign nationals.

Cloud

Double-digit

growth
year to year
in 2Q12

China – Public Sector

GPS-enabled
management of farm
equipment through
zEnterprise cloud
solution.

Growth Markets

11%

growth
year to year
in 2Q12

So. America – Telco

New-to-z client uses
hybrid solution to
securely support its
growing customer base.

IBM zEnterprise System integrates resources for …

Operational analytics
Deliver information and insight across the enterprise

Trusted security and data resilience
Provide unmatched security and reliability for core business processes

Efficiency at scale
Enable flexible delivery of services through a private enterprise cloud

Operational analytics
can rapidly deploy actionable insight

Zero enterprise data loss

8 seconds or less for complex queries[1]

Real-time *insights*

- Uncover new business opportunities at time of impact
- Reduce risk at time of transaction
- Predict outcomes at time of decision
- Deploy decision services to bring intelligence and predictive insight into repeatable decisions

Empowering employees, customers and suppliers

- Simplify access to current, consistent information
- Allow real-time intelligent interactions during the lifecycle of business transactions
- Integrate analytics in to operational processes
- Make fact-based decisions

[1] *(Source: customer case studies, individual results may vary)*
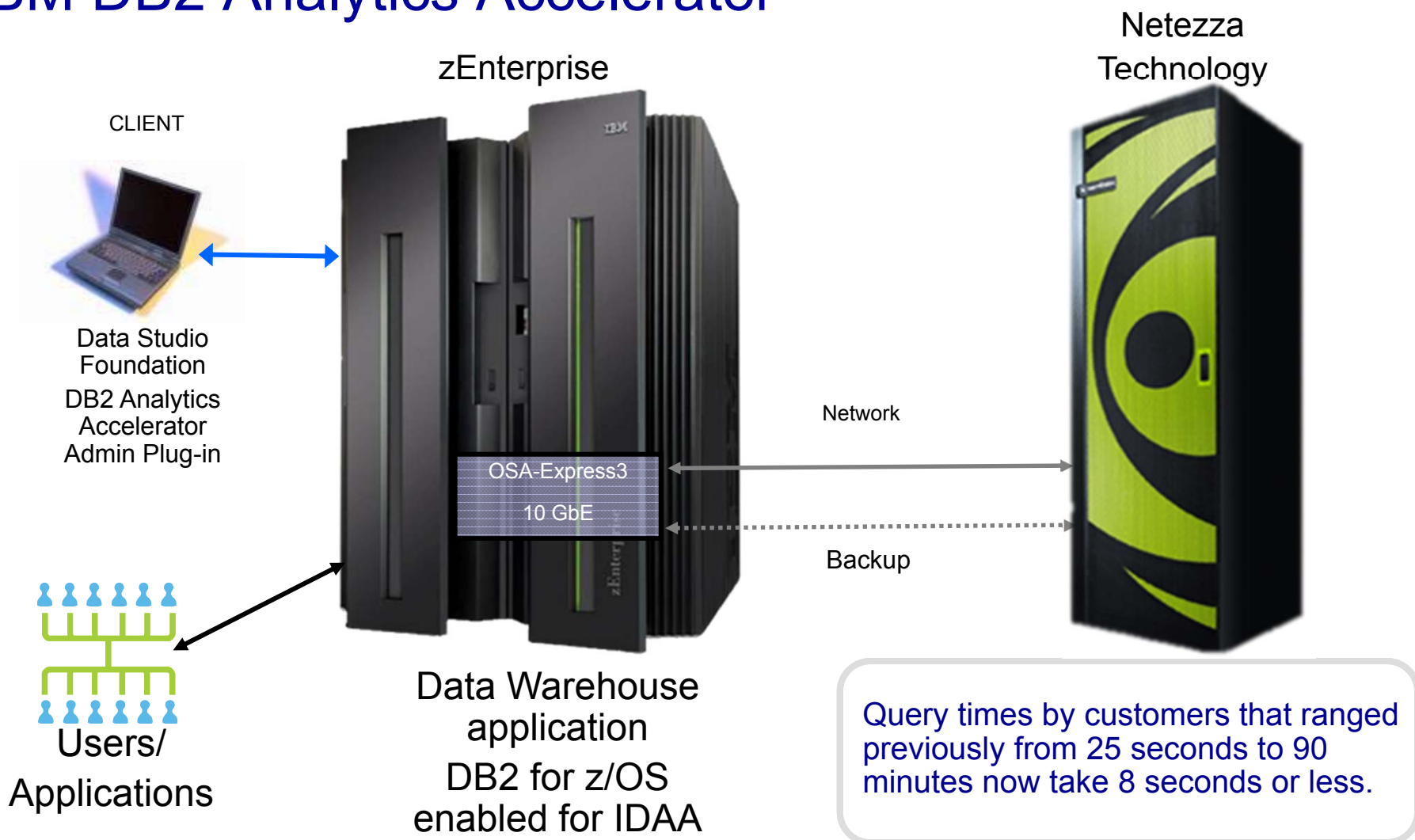
The analytics opportunity on zEnterprise

- **Co-locations** of data warehousing, business analytics, transactional data

- Reduced **data movement**

- **Lower latency** and **near real time** data

- **Rapid acceleration** of complex queries

- High **security** (EAL5)

- High **availability** (99.999%)

- Performs at **100% capacity**

- **Prioritization** of critical queries & workloads

- Integrated **disaster recovery**
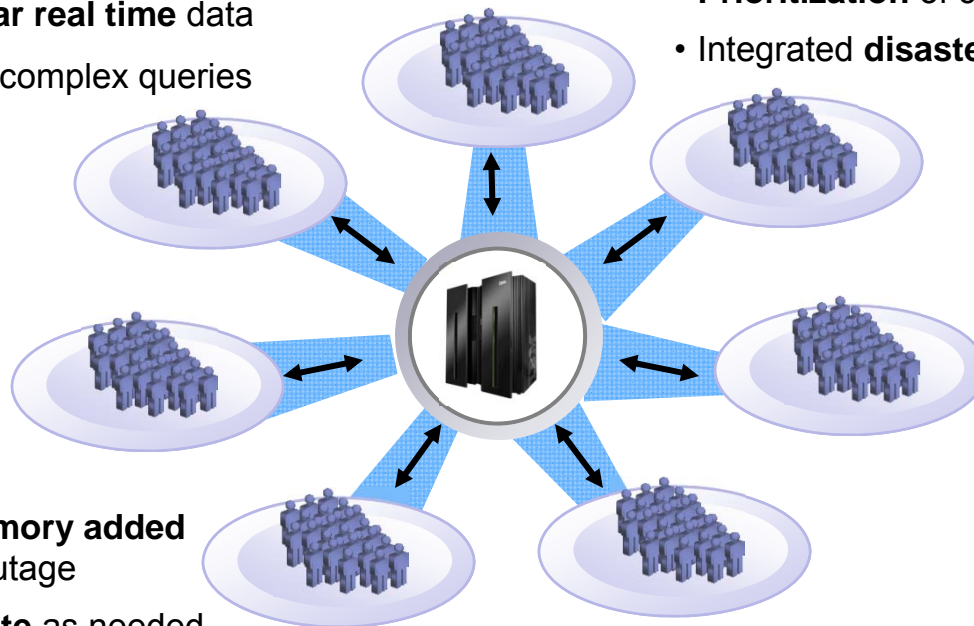
- **Processors, disk, memory added dynamically** without outage

- **Pre-install then activate** as needed

- **Flexible deployment options**

- **Centralized, scalable** infrastructure

- **Virtualization**

- Start with your **final architecture**

Technology in action:
IBM DB2 Analytics Accelerator

CLIENT

Data Studio
Foundation

DB2 Analytics
Accelerator
Admin Plug-in

Users/
Applications

zEnterprise

OSA-Express3

10 GbE

Data Warehouse
application
DB2 for z/OS
enabled for IDAA

Network

Backup

Netezza
Technology

Query times by customers that ranged
previously from 25 seconds to 90
minutes now take 8 seconds or less.

Operational analytics
can rapidly deploy actionable insight

"The IBM DB2 Analytics Accelerator delivers the speed to create the insights we need to work smarter. Putting the right answers into the hands of decision makers in seconds, across our business enables us to quickly adapt and grow."

– Reto Estermann, Director, Information Technology, SwissRe

Swiss Re

"We deployed our production business analytics environment on System z within 11 days, providing us with an efficient platform that ensures the flexibility, availability and reliability that our users demand. Creating a new Cognos server used to take months, and now it takes just hours."

– Adrienne DiPrima, Manager, Strategic Technologies Support, Miami-Dade County

MIAMI-DADE COUNTY

Trusted security and data resilience
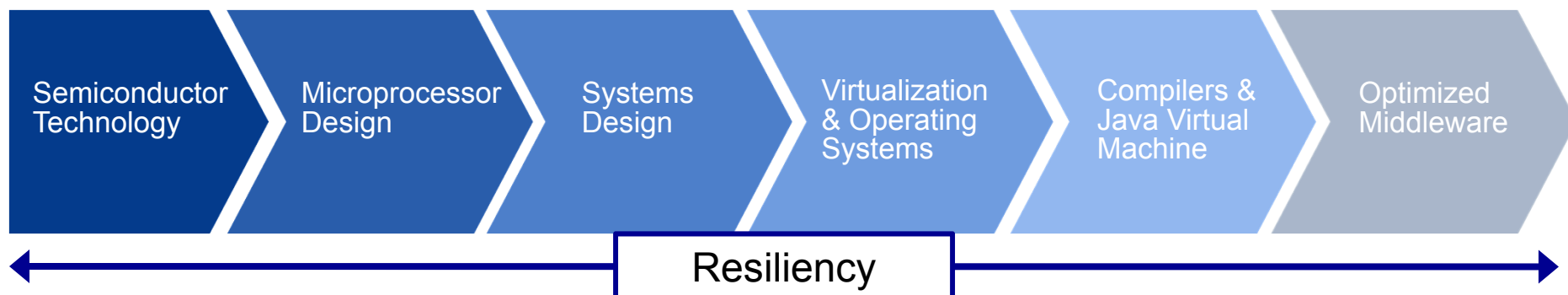reinforces customer trust

Deliver **EAL5⁺** highest level of certification for general purpose servers

Save up to **70%** in security audit and compliance overhead
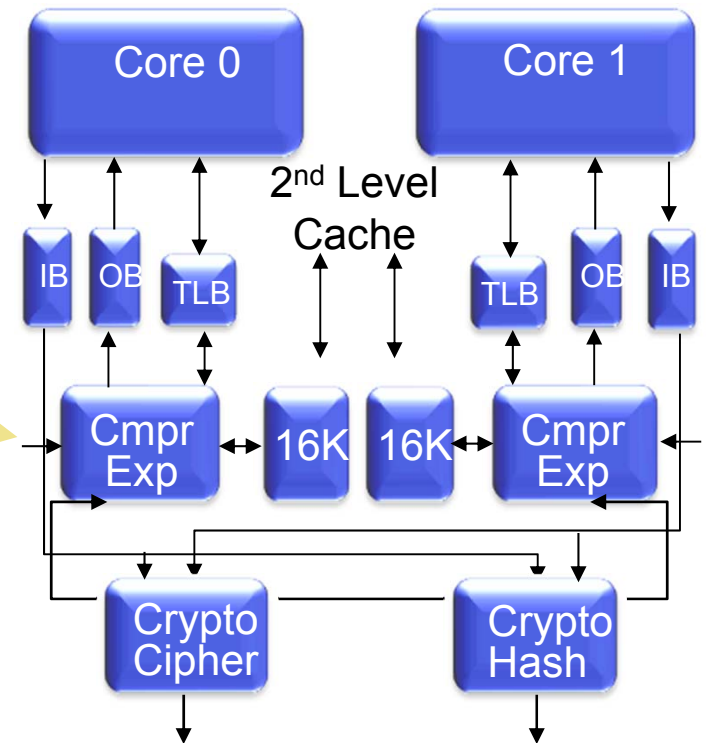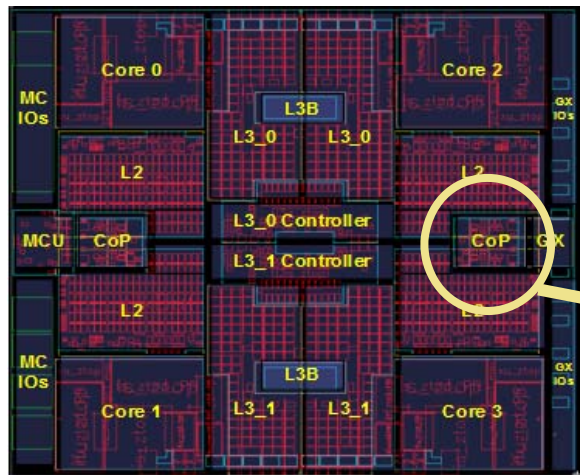
- Conduct business *with the highest level of integrity*
  - Reduce risk of security and data breaches
  - Secure sensitive data and identities
  - Uncover possible intrusion attempts
  - Enforce policy compliance and enhance security intelligence

- Continuous *availability to increase growth*
  - Reduce the impact to business by eliminating outages which cost on average >$500K
  - Eliminate the costs for an hour-long outage which can vary from $225 to $89K an hour and can affect millions of users

An optimized system
Resiliency built into zEnterprise foundation

z/OS

z/TPF

AIX

z/VM

Linux

z/VSE

Java

Rational

WebSphere

Information Management

Tivoli

Lotus

Cognos

| Semiconductor Technology | Microprocessor Design | Systems Design | Virtualization & Operating Systems | Compilers & Java Virtual Machine | Optimized Middleware |

Resiliency

Technology in action:
In-processor accelerators

- Cryptographic / data compression co-processor
  - Invoked by special instructions
  - Tightly integrated with microprocessor core

- Many other instructions fit this category
  - Floating point (hex, binary, decimal)
  - TCP/IP checksum
  - String operations

Trusted data resilience
reinforces customer trust

"The new zEnterprise is the heart of our health insurance system, responsible for integrating all data and exchanging it securely with other institutions and healthcare partners. We have grown from 400,000 to 1.7 million transactions per day, and we continue to enjoy full availability of services and data around the clock."

– *Mirjana Kregar, CIO, ZZZS*

"Colony Brands puts Customer Trust and Loyalty as top priorities within the organization. We are proud to leverage IBM's zEnterprise throughout our organization due to the Trusted, Proven, and Secure nature of the platform.

Within zEnterprise exists numerous Security components that help reduce our overall risk. For example, Encryption on zEnterprise is critical to our company success to allow us to protect customer privacy data while it is stored on our mainframe and while it is exchanged with other parties for processing."

– *Todd Handel, Director, IT Strategy and Architecture, Colony Brands*

Efficiency at scale
enables smart IT investments

Support **57M** account postings per hour with SAP solutions

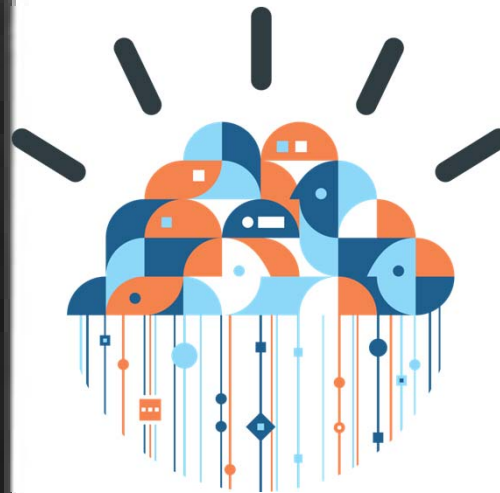Up to **70%** lower TCO over x86 technology for Oracle Enterprise database solutions

- An efficient infrastructure improves business results
  - Reduce costs to enable investments in new services
  - Accelerate deployment of new applications
  - Provide an efficient deployment model for new and existing services to co-exist and deploy in a cloud environment
  - Support unplanned increases in business demands by deploying virtual servers in minutes versus days

- *Core business efficiency*
  - Reduce software costs up to 90% by consolidating and managing Oracle licenses
  - Minimize cloud failures that have cost businesses $70M+
  - Increase labor productivity up to 70% through industry leading resource utilization
  - Provide millions of transactions/day with <1 second response

Accrete workloads on zEnterprise BladeCenter Extension creates efficiencies

- Improved administrator productivity

- Low latency access to critical data

- Consolidate Linux workloads and heavy I/O workloads on Linux for System z

- Consolidate light workloads and heavy CPU workloads on zBX blades

- Datapower appliance blade yields stunning price performance

Technology in action:
Establishing private cloud IaaS delivery model

Tivoli
Provisioning
Manager
(TPM 7.2.1)

with
z/VM workflows

Optional
Monitoring
(OMEGAMON XE)

Enterprise Linux Server (ELS)
or
Solution Edition for
Enterprise Linux (SEEL)
(z/VM)

- Eases service deployment while rapidly scaling to the dynamic needs of users

- Customizable with design and deployment patterns improving efficiency

- Offers efficiency with large-scale Linux consolidation

Efficiency at scale
enables smart IT investments

"Because of the way in which our online programs work and our students come from literally around the world, the tool had to be available 24x7. Our zEnterprise Cloud solution provides 99.999% availability so there is no disruption to our students."

– *Harry Williams, CTO, Marist College*

"When consolidating all Linux-based Business Support applications and Oracle databases operating at the EUROCONTROL Maastricht Upper Area Control Centre (MUAC) from distributed servers to the System z Ensemble, MUAC reduced floor space by 80%, reduced energy consumption by as much as 58% per year, reduced need for hardware maintenance effort by 43% and saw 50% savings in software, particularly for Oracle, all running on System z with Linux."

"With the great savings achieved with the System z Ensemble, MUAC saw a 43% ROI."

– *Huub Meertens, Head of the SUP Engineering Section, EUROCONTROL MUAC*

# Delivering smarter computing with zEnterprise

- Continued investment in improving the virtualization and management capabilities for hybrid computing environments

- Expand hybrid computing capabilities

- zEnterprise and STG to deliver enterprise-wide management capabilities across all STG systems with Tivoli
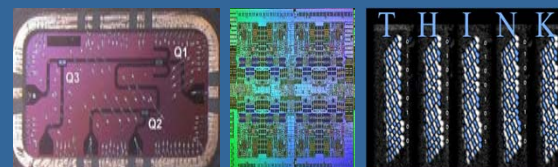
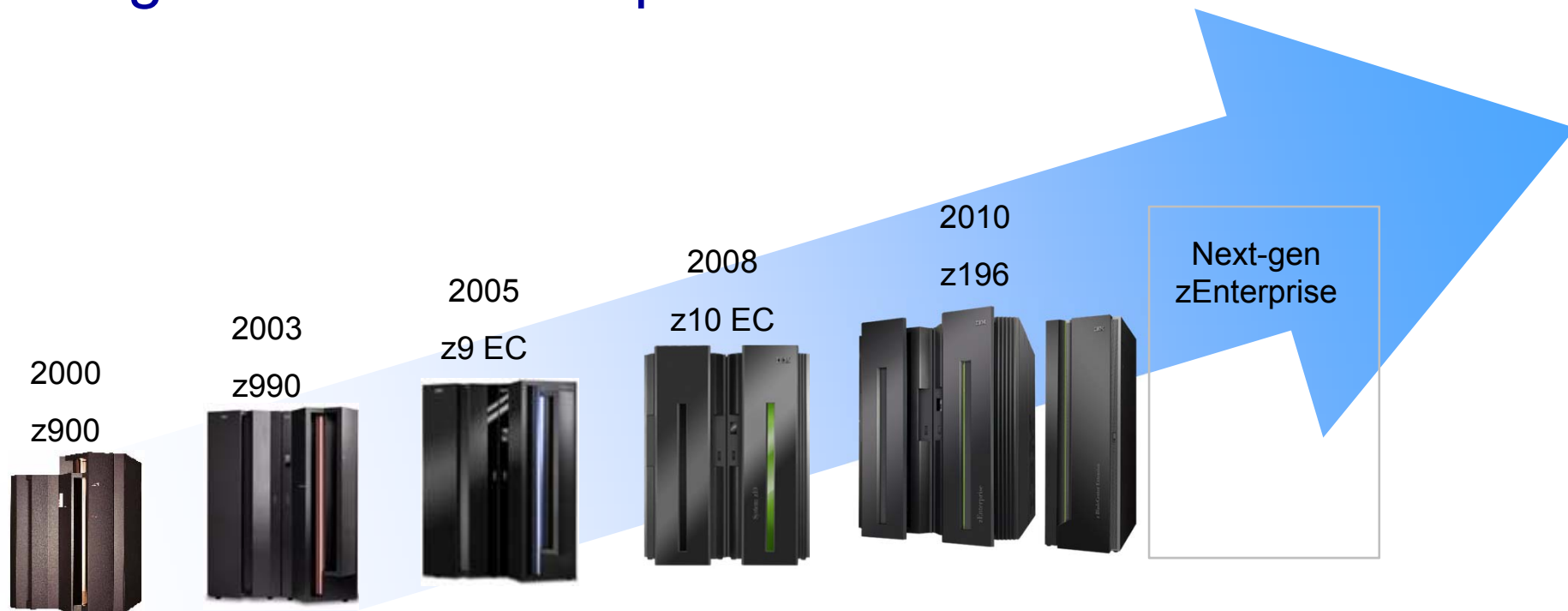Far-reaching research

Applications

Architectures

Core Technology

T H I N K
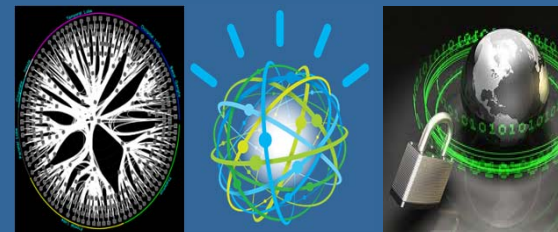
Next-generation zEnterprise – the z196 follow on

2000

z900

2003

z990

2005

z9 EC

2008

z10 EC

2010

z196

Next-gen
zEnterprise

* All statements regarding IBM future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.

Lasting technologies continuously innovate and advance while preserving core values
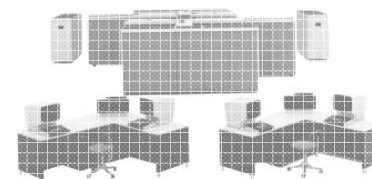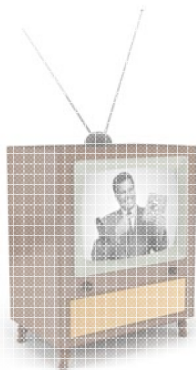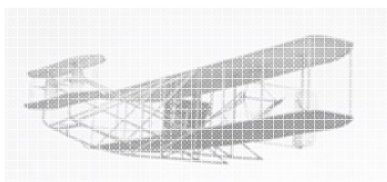
Summary

Operational analytics to enable business opportunities

- Most sophisticated data warehousing and analytics solutions with the fastest query performance

- Leverage data to build competitive advantage

Trusted data resiliency for unmatched security and reliability

- Most secure system with 99.999% reliability

- Unified platform for rapid development of secure applications end-to-end

Efficiency at scale

- Most efficient and fastest system for mission critical workloads

- Increased efficiency will free up IT resources to focus on new services to drive growth

Thank you.

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•Cognos*	•POWER*	•System p*	•zEnterprise
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•DB2*	•POWER4	•System z10*	•z/VM*

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