



Smarter Computing in the New Era of IT

The IT infrastructure that enables a Smarter Planet

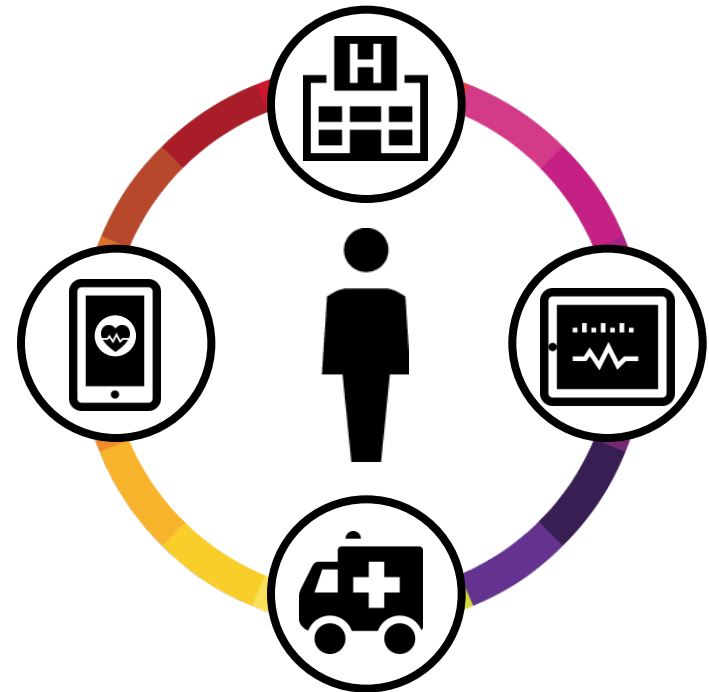
Doug Balog
General Manager
IBM System z

Today, 71% of CEOs identify technology change as the most important external force impacting their organizations¹

Cloud, analytics, social and mobile aren't simply remaking computing...

“All clients are experiencing the phenomena of what we call ‘front office transformation’ – social media, devices, mobility – all reshaping the way they want to engage their customers, and how they capitalize on big data and analytics.”

– Ginni Rometty
Chairman, President and CEO IBM



Organizations are embracing this technological shift to reshape the value they deliver



What if you could empower the general public to create citizen-centric applications with access to years worth of city data?

Self-service secure cloud portal and mobile applications enrich civic life



What if you could enable the real-time integration of data seamlessly and securely to provide trusted information for critical analysis on increasing amounts of rapidly changing data?

Real-time integration of data facilitates monitoring and mitigates risk

The world is changing. Is your infrastructure ready?

The time is now to...

Connected devices will surge to **22 billion** by 2020², with digital content rocketing to **8 zettabytes** by 2015 (**90%** unstructured)³

Unlock the power of big data to deliver more actionable insight

70% of IT budget is devoted to operations and maintenance¹

Leverage cloud to speed time to market and improve efficiency

\$5.5 million is the average total organizational cost of a data breach⁴

Secure critical information to protect and reduce risk

¹ IDC, Game Changing Virtual Technology: Major Shifts and Innovations that will Forever Change your IT Business

² Forrester, BT 2020: To Thrive In The Empowered Era, You'll Need Software, Software Everywhere, Phil Murphy, January 30, 2012.

³ IDC, IDC Predictions 2012: Competing for 2020, Doc #231720, December 2011,

⁴ 2011 Cost of Data Breach Study: United States, Ponemon Institute LLC, March 2012.



An IT infrastructure to enable a smarter planet

A Smarter Computing approach is...

Responsive...



Data Ready

Efficient...



Cloud Ready

Safe...



Security Ready

Smarter Computing: What's Next. Ready Now.

zEnterprise: The Modern IBM Mainframe Platform

Process complex analytics queries up to **2000x faster**

Real-time operational analytics

Highly available hybrid computing

Centralized management

Manage **tens of thousands** of virtual servers in a single system

Elastic, scalable cloud computing

Protection of data and access/usage

Delivers the **highest certification level** for enterprise-class servers: EAL5+

Ultimate security

Built-in cryptography

Security intelligence



Integrated | Agile | Trusted

System z: Integrated by design

Enabling information-centric computing



Semiconductor
Technology

Microprocessor
Design

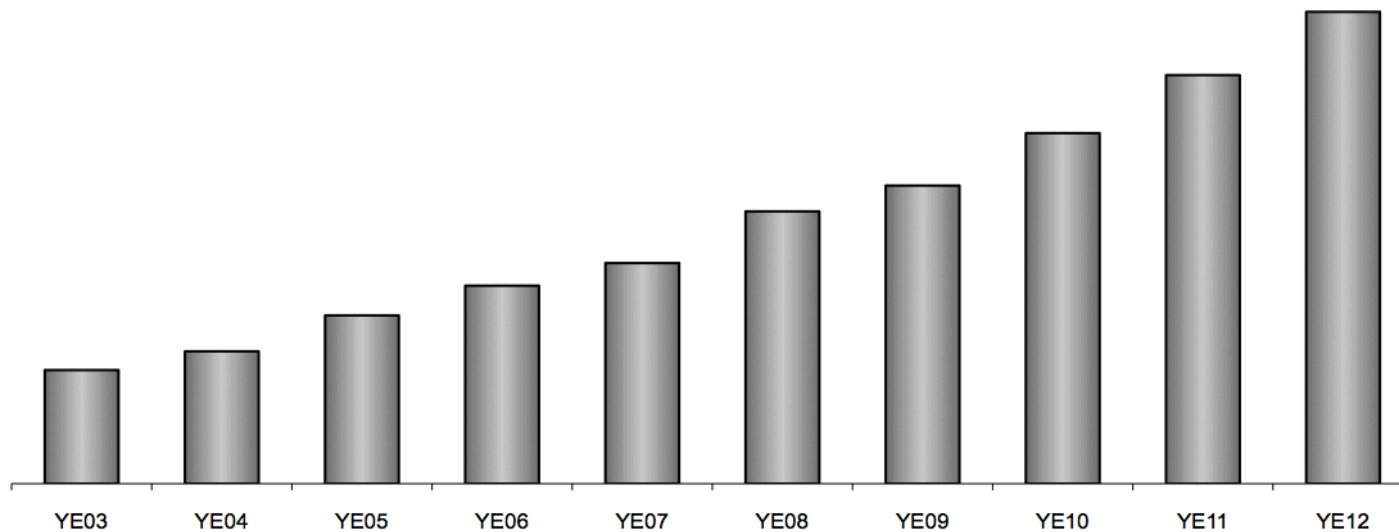
Systems
Design

Virtualization
& Operating
Systems

Compilers,
Tools & Java
Virtual
Machine

Optimized
Middleware

The growing IBM zEnterprise System ecosystem



*4Q12: 66% yty
The most
absolute
number of
shipped MIPS
in the quarter
in our history.*

System z Total Installed Capacity

56%

yty revenue growth in 4Q12, best absolute dollar amount since before 2000

180+

new accounts since 3Q10 zEnterprise launch, with 1/3+ in growth markets

220+

hybrid computing units shipped since 3Q10

3/4+

of Top 100 enterprises have installed IFLs

[IFL = Linux-on-z Only Engine]

1,000+

schools in 67 countries are part of the IBM Academic Initiative for System z

7,400+

ISV apps run on IBM System z; 90 new ISVs added in 2012

The value of System z



Cal Braunstein @calbraun

#IBM Reports 2012 Fourth-Quarter & Full-Year Results - [yhoo.it](#)
/VYq2CY IBM exceeds expectations. #Systemz #mainframe up 56 percent!

35m

**zEC12 Drives
Buoyant IBM Results**
– DancingDinosaur
(24 Jan 2013)

Robert Frances Group via Twitter

"When you really need a vehicle that does many things, particularly **business analytics, very well and offers few compromises**, System z probably is your answer. It should be at the top of your selection short list." – *Steve Bartlett, The Clipper Group*

"The new zEnterprise EC12 solutions are one more proof point that **IBM mainframes are viable offerings, capable of meeting the critical business needs of today and tomorrow**, and IT executives should include them in their analysis." – *Cal Braunstein, Robert Frances Group*

"IBM's PureSystems are ramping quickly and **System z mainframes may highlight a new pecking order in the data center.**"

– ZDNet (23 Jan 2013)

Smarter Computing.

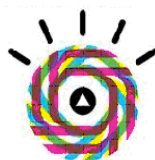
The IT infrastructure that enables a Smarter Planet



Data Ready to deliver more actionable insight



Cloud Ready to speed time to market and improve efficiency



Security Ready to protect and reduce risk



System z. The secure cloud for data.

Demands to be more responsive to clients drives **data** to top of mind

83%

of CIOs ranked business intelligence and analytics as a high priority in their visionary plans¹

2X

likelihood that organizations embracing business analytics will substantially outperform their industry peers²

¹ IBM, *The Essential CIO: Insights from the Global Chief Information Officer Study*, May 2011.

² The New Intelligent Enterprise, a joint MIT Sloan Management Review and IBM Institute of Business value analytics research partnership.

System z delivers a **Data ready** IT infrastructure that delivers more actionable insights



A zEnterprise data solution will...

Shared access to trustworthy information

- Allow access to unstructured data, no matter where it resides, through secure virtualized file storage and information lifecycle management

Optimizes access to billions of files

Actionable insights on operational data

- Bring intelligence to the transaction using accelerated analytic architectures

Ability to process complex queries up to 2,000x faster

Maximum availability of business insight

- Empower clients with insights at the highest point of impact with IBM's low latency system and storage designs

Faster analytics with 99.999% uptime

Data ready System z innovations in action

**What if you could analyze
petabytes of structured
and unstructured data to
avoid risk, grow business
and increase customer
satisfaction?**



"Marriott is realizing performance benefits from the new zEC12 implementation that will boost the performance and reduce the operating cost of our industry leading customer reservation system. We intend to provide the industry's best customer experience based on the business intelligence and booking rules that rewards our loyal customers."

– Misha Kravchenko

The continuous need for speed and efficiency drives **cloud** computing to top of mind for clients

60%

of CIOs ranked cloud computing as high priority in their visionary plans, up from 33% in 2009¹

2/3

of organizations fall behind schedule when deploying new IT capabilities²

¹ IBM, *The Essential CIO: Insights from the Global Chief Information Officer Study*, May 2011.

² IBM Market Insights Study, 2011 Business Benchmarking Time-to-Value Study.

System z delivers a **Cloud ready** IT infrastructure that speeds time to market and improves efficiency



A zEnterprise cloud will...

An efficient, scalable infrastructure

- Improve utilization, enhance flexibility, and drive down costs with scale-out, scale-up and scale-within technologies

Achieve up to 80% reduction in data center footprint

Improved speed and flexibility

- Realize faster deployments leveraging IBM's patterns of expertise with integrated systems management, service automation and self-service provisioning

Ability to deploy systems in less time

Business innovation

- Deliver IT without boundaries through the use of advanced orchestration technologies

Experience efficiency gains up to 20%



Cloud ready System z innovations in action



What if you could deploy an IBM Cloud solution that could shrink a data center footprint by 80 percent, reduce energy consumption by 58 percent, and cut administrative workload by 50 percent?



EUROCONTROL

"Of all the technologies we investigated, the IBM zEnterprise hybrid solution came out on top. zEnterprise offered the combination of flexibility, high-performance and rock-solid reliability we needed."

– Kumar Sivakumaran,
Advanced Middleware
Engineer



The need to protect data, cloud and a business' reputation has elevated **security** to a boardroom issue

71%

of CIOs and IT Managers identified security as their most significant challenge in adopting mobility¹

\$5.5M

The average total organizational cost of a data breach²

¹ IBM.com, "Achieving success with a flexible workplace", September 2012.

² Ponemon Institute, 2011 Cost of Data Breach Study: United States, Larry Ponemon, March 2012.

System z delivers a **Security ready** IT infrastructure that protects critical information and reduces risk



A zEnterprise security solution will...

Data security & integrity

- Protect and verify data at every stage in the data chain with built-in security across the entire stack

96 out of top 100 banks trust IBM to secure their sensitive financial information

Trusted identity & access management

- Ensures that the right people have access to the right data at the right time and place through role based access controls

Zero setup time to achieve trusted protection from the hardware to the OS

Minimal overhead to meet compliance requirements

- Mitigate risks in real-time, and improve productivity with automated policy-based security compliance reporting and monitoring

Save up to 70% in security audit and compliance overhead



Security ready System z innovations in action

**What if you could create
the ultimate security
environment, including an
enterprise-wide
encryption service?**



vantivTM

“What we’re finding with the IBM Crypto Co-Processors is we can scale easily 10 x where we are today with no impact to our Crypto Graphic processing and our capability to complete our transactions in the fastest time available today.”

– Tom Kesselring, Vantiv

System z. The secure cloud for data.



Operational Analytics



Efficiency at Scale



Ultimate Security



zEnterprise Industry Solutions for a Smarter Planet

Smarter Planet® – Industry Solutions

Banking

- IBM Financial Transaction Manager on zEnterprise
- SAP Bank Analyzer on zEnterprise
- IBM Core Banking Solution on zEnterprise
- FSS Business Intelligence and Data Analytics Solution
- IBM Smarter Analytics Anti-Fraud Infrastructure for zEnterprise



Insurance

- IBM Smarter Analytics: Anti-Fraud, Waste and Abuse Solution for Insurance
- IBM Genelco® Insurance Administration Solution
- IBM zEnterprise Insurance Integration Hub



Government / Smarter Cities

- IBM zEnterprise Starter Edition for Cloud for Government
- IBM Intelligent Operations Center for Smarter Cities
- IBM Smarter Infrastructure for Social Services - Curam on zEnterprise**
- IBM Enterprise Asset Management (Maximo) for Government**



Healthcare / Life Sciences

- IBM Smarter Analytics Signature Solution: Anti-Fraud, Waste and Abuse
- IBM Health Plan Integration Hub

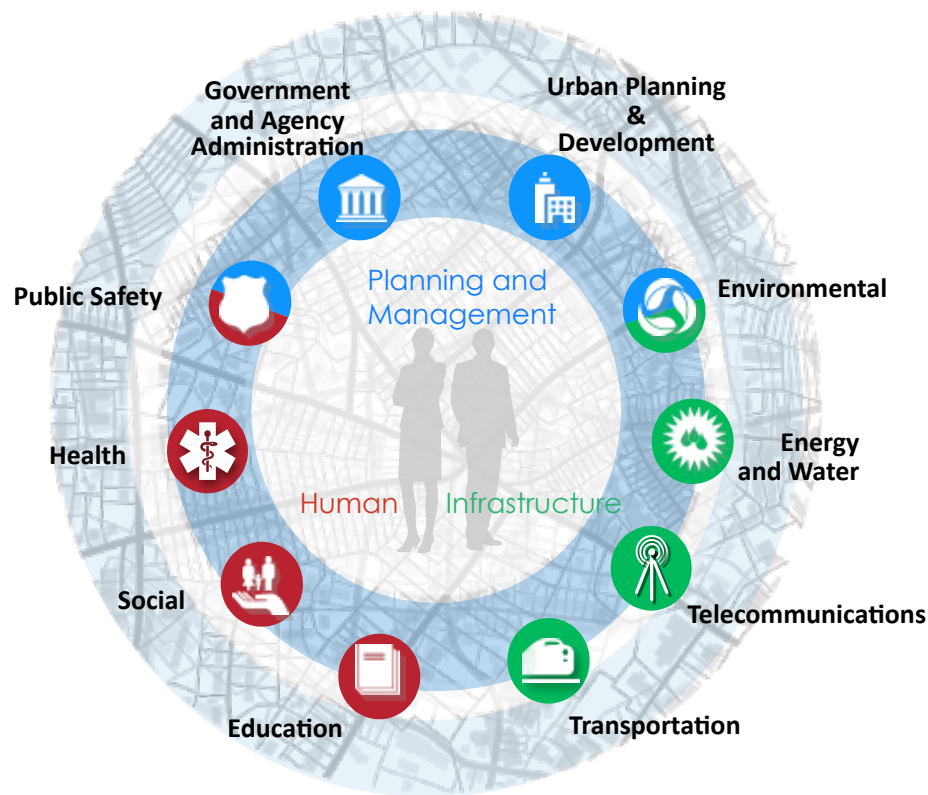


Retail

- IBM zEnterprise Smarter Analytics for Retail**



Smarter Cities with IBM zEnterprise



City Operations – Intelligent Operations Center

Information available when you need it to make the best decisions real time

Social Program Management Curam on zEnterprise

Trusted and secure citizen's integrated data to create and improve citizen services

IBM Enterprise Asset Management (Maximo) for Government

Optimal management by integrating data and using analytics on high value assets for quick time to value

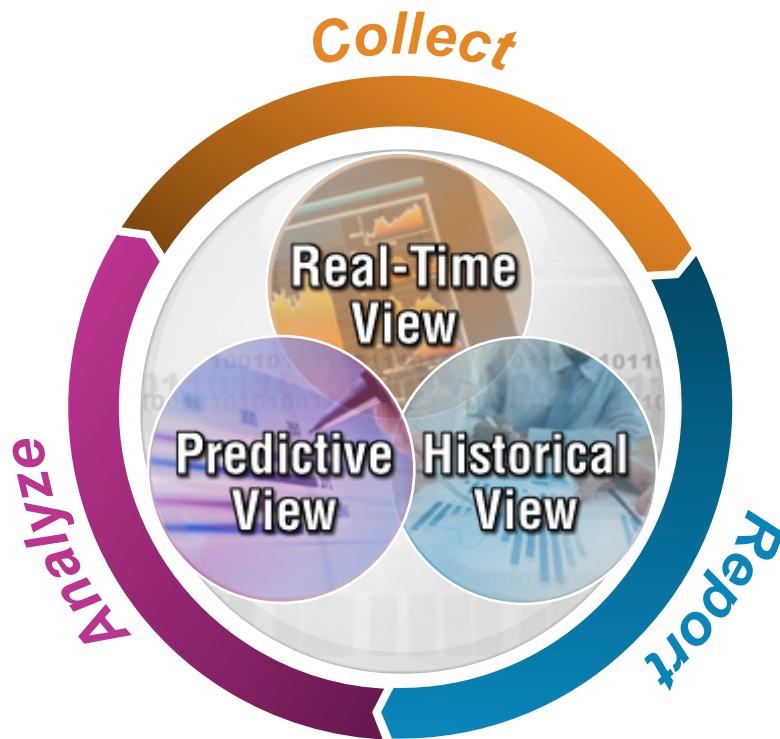
“ Working with IBM enabled us to take an innovative approach. Instead of following the long processes of other governments or even the private sector, we were able to get things up and running quickly. ”

-- Gordon J. Bruce, director and CIO of the Department of Information Technology, City and County of Honolulu



IBM Smarter Analytics Anti-Fraud Infrastructure for zEnterprise

Foundational infrastructure to quickly integrate real-time analytical and reporting capabilities with operational systems



Why System z for fighting fraud*:

- **Less leakage:** 7x the transaction rate of remote scoring with a 7x reduction in response time, with more fraudulent requests detected pre-payment.
- **More efficient warehousing:** 26x throughput and 33x price/performance improvements compared to competition.
- **Reduction of data movement cost:** typical 4yr cost just to transfer/house z/OS data on distributed systems for analysis: \$8M+ USD.

** These results are based on internal competitive measurements*

IBM Enterprise Key Management Foundation

A highly flexible and secure key management system that leverages a client's investment in System z cryptography



Ultimate Security on zEnterprise

Data Protection
Only the System z provides an integrated encryption infrastructure – from the server, to the z/OS operating system, and protecting sensitive data over the internet, on databases, and tape.

Auditing
Up to 70% in security audit savings.

Compliance
zEnterprise enables a reduction of risk and simplification of governance and compliance.

Transaction Processing
Vantiv, the #1 Largest processor of PIN Debit transactions in the US, performs over 2 billion crypto transactions per month

System z Future Announcement Previews



Operational Analytics **z/OS V2.1... Foundation for** **today 's Solutions**

- *Extend the power of the zEC12 to drive qualities of service*
- *More power for data serving & analytics*
- *Enhanced security to protect data and manage access*
- *Extended service support period*



Ultimate Security **z/OS Management Facility** **V2.1 ...Simplified, Efficient** **Management of z/OS**

- *Manage software inventory more effectively*
- *Improved workflow of admin tasks*
- *Simplified security configuration*



Efficiency at Scale **z/VM 6.3....Cloud Ready**

- *Higher server consolidation ratios to leverage economies of scale*
- *Improved price performance with more efficient processor utilization*

System z Priorities for 2013

- Leverage marketplace momentum to drive ecosystem growth
- Assist client adoption to the new zEnterprise technologies
- Lead the industry discussion around high-end systems and Smarter Computing
- Continue the System z culture of innovation to solve complex business problems

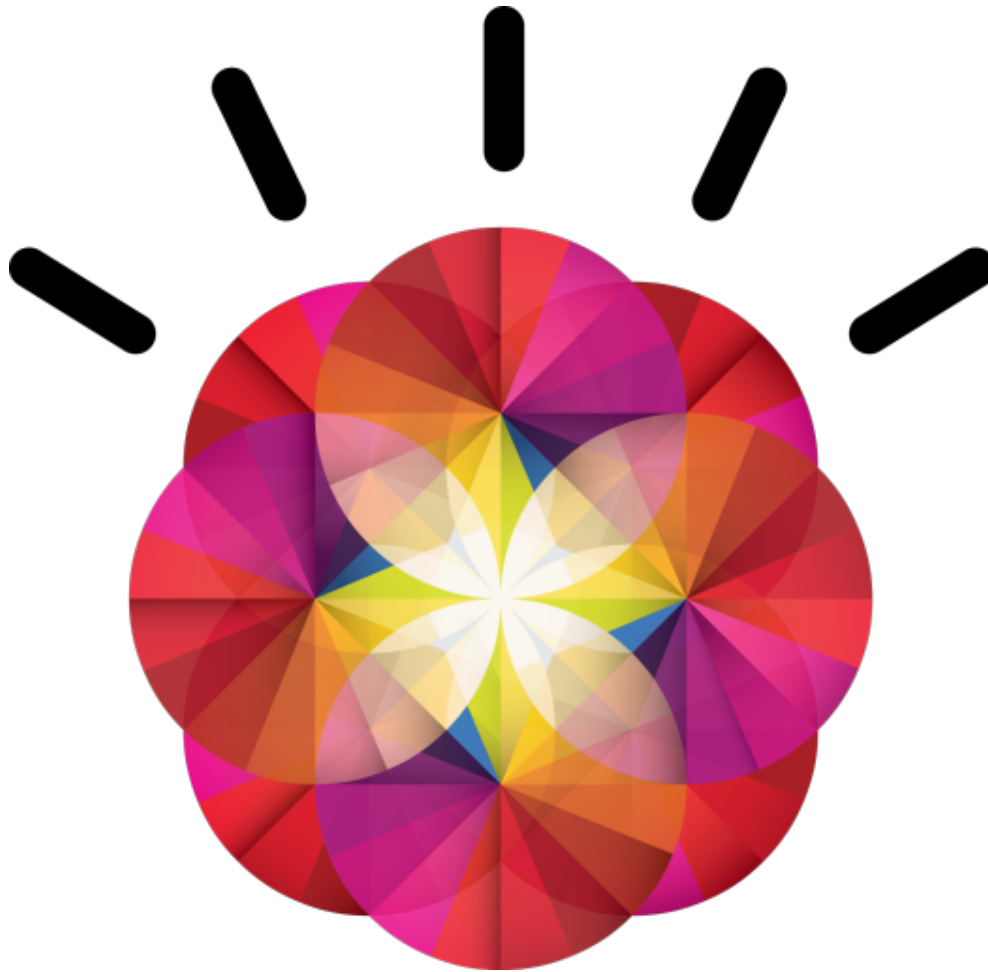


Cloud Ready

Data Ready

Security Ready

26 All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only. Complete your session evaluation online at SHARE.org/SFEval



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