Meeting the Business Analytics & Data Warehousing Needs of Your Users

IBM Business Analytics & Data Warehousing on System z

January 2011

Generate
More Revenue

Reduce Risk

Predict Future Outcomes
with Greater Confidence

Lower Costs

Business Analytics

Better
Outcomes

Smarter
Decisions

Actionable
Insights

Relevant
Information

Analytics correlates to performance

Organizations that lead in analytics outperform those who are just beginning to adopt analytics

Top Performers are more likely to use an analytic approach over intuition*

*within business processes

Source: Analytics: The New Path to Value, a joint MIT Sloan Management Review and IBM Institute of Business Value study. Copyright © Massachusetts Institute of Technology 2010.

Market Dynamics are Shifting

- **Business Analytics is now <u>mission critical</u>**
  - *Need to support broader users*
  - *Users are more intense with increasing data access demands*
  - *Requirements for high scalability, availability & performance*
- **Asked to do more with less (IT & Business)**
  - *Better access to relevant information*
  - *Need economies of scale*
  - *Consolidation with reduced complexity*
- **Corporate regulatory compliance**
  - *Driving intense scrutiny of data security policies*
- **Environmental concerns still top of mind**

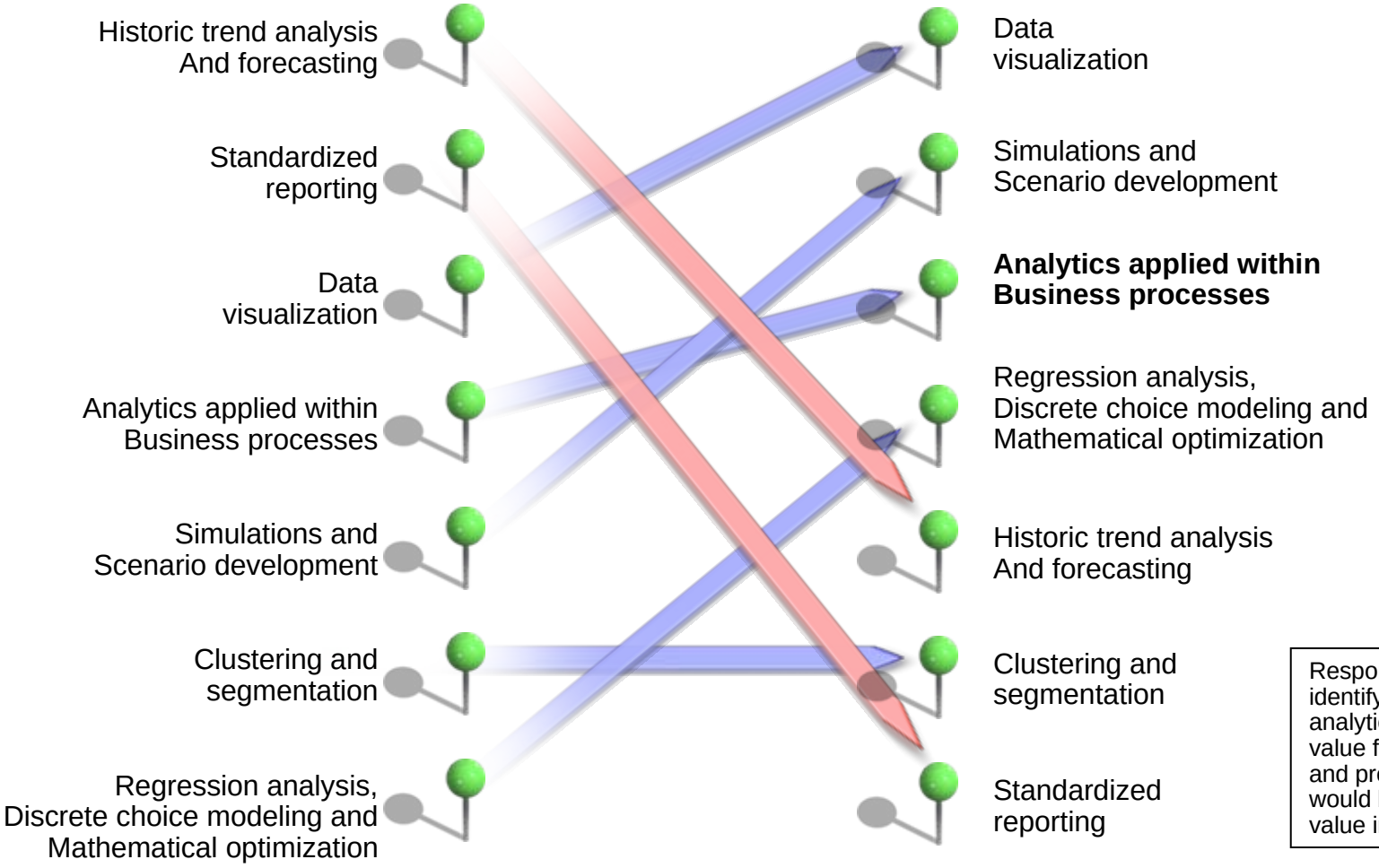
By 2014, externalizing BI will increasingly become an expected aspect of most companies' relationships with customers and partners.

Externally focused BI programs will frequently go beyond information dissemination by facilitating a collaborative decision-making process that breaks through the firewall to involve stakeholders from organizations in a broad ecosystem

Source : Gartner, Prepare for Customer-Facing Business Intelligence, Kurt Schlegel ,October 2010

What matters is changing

Results of New Intelligence Enterprise Survey of nearly 3,000 executives



Respondents were asked to identify the top three analytic techniques creating value for the organization and predict which three would be creating the most value in 24 months.

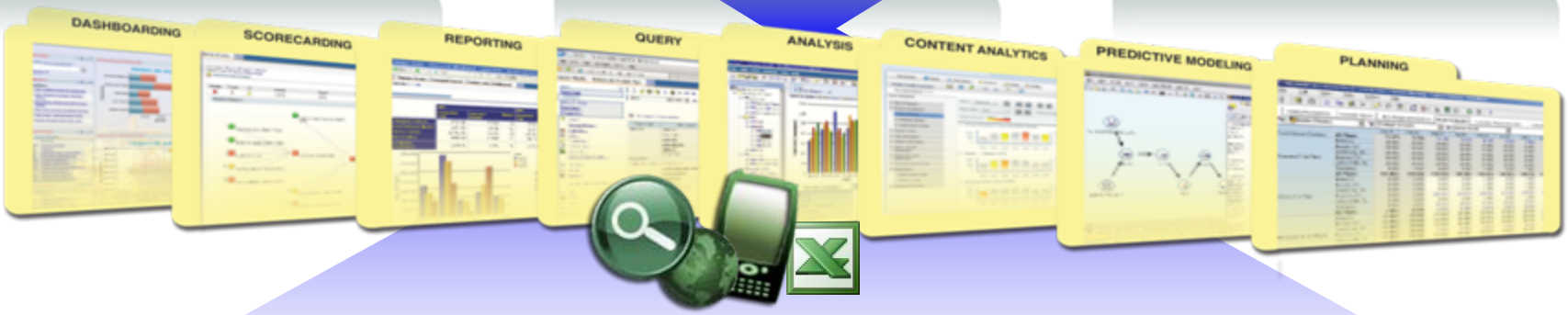
Source: MIT Sloan Management Review,10 Data Points: Information and Analytics at Work, N Kruschwitz and R Shockley, Fall 2010

All departments, all users, in all roles across the organization need access to business insights

How are we doing?

Why?

What should we do next?



Real-time or historical; operational or strategic

Guided or self-service access and exploration…

Foresight using Statistical, and Predictive Analytics…

Common Business Model

Message Sources

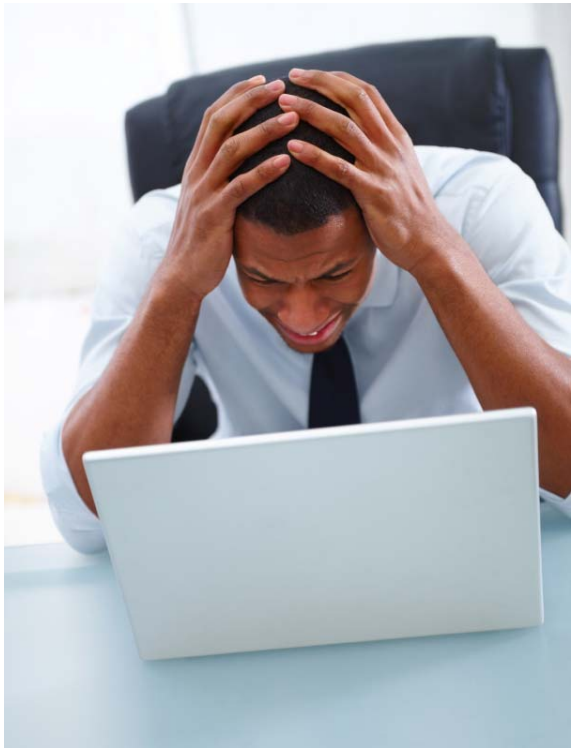
Relational Sources

Application Sources

OLAP Sources

Modern and Legacy Sources

Today, many business users are not getting to the information they need, when they need it



60%+ of CEOs need to do a better job capturing and understanding information rapidly in order to make swift business decisions

47% of users don't have confidence in their information

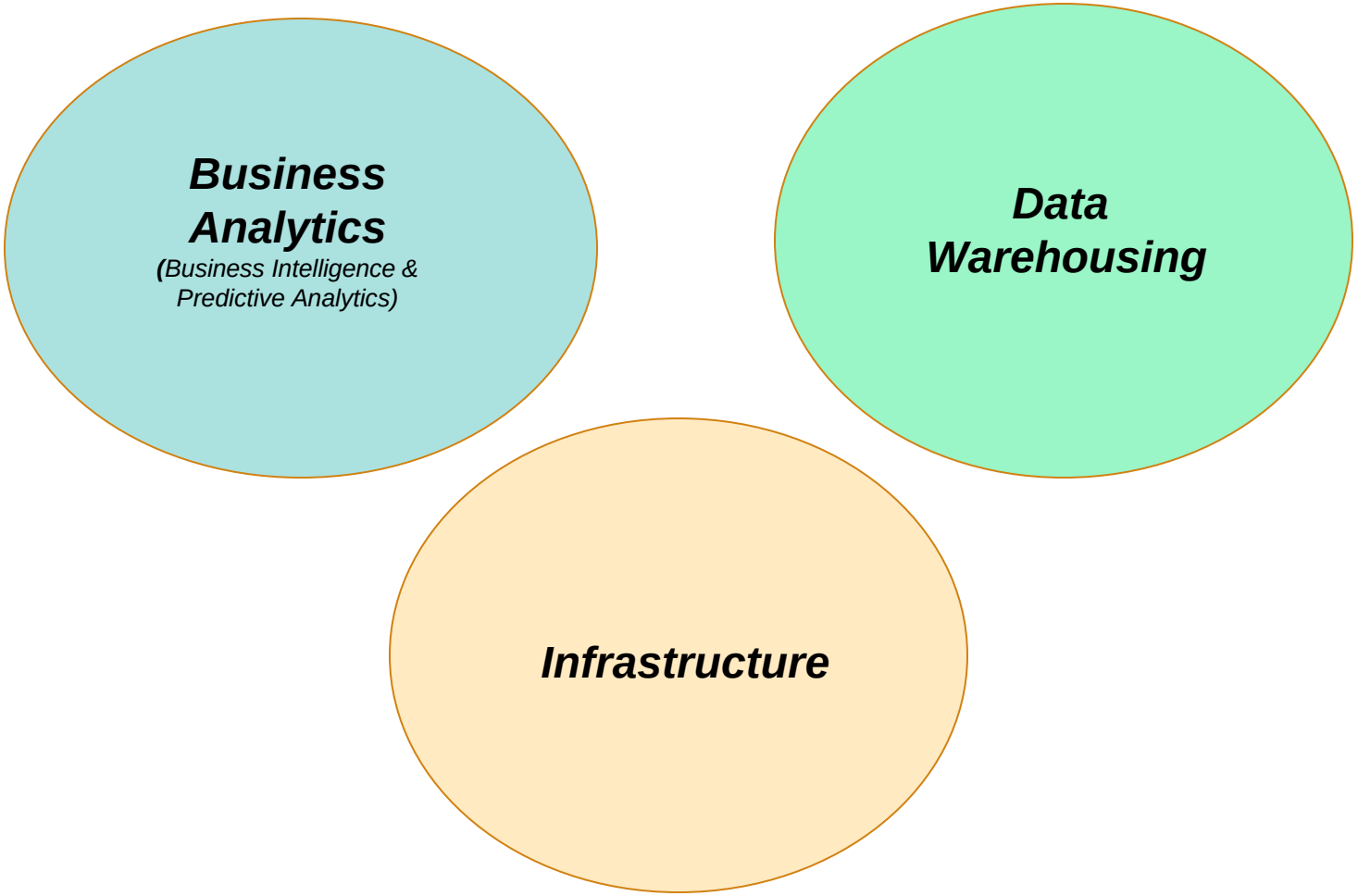
59% of users say that they miss information that might be of value to their jobs because they can not find it

27% of managers time is spend searching for information

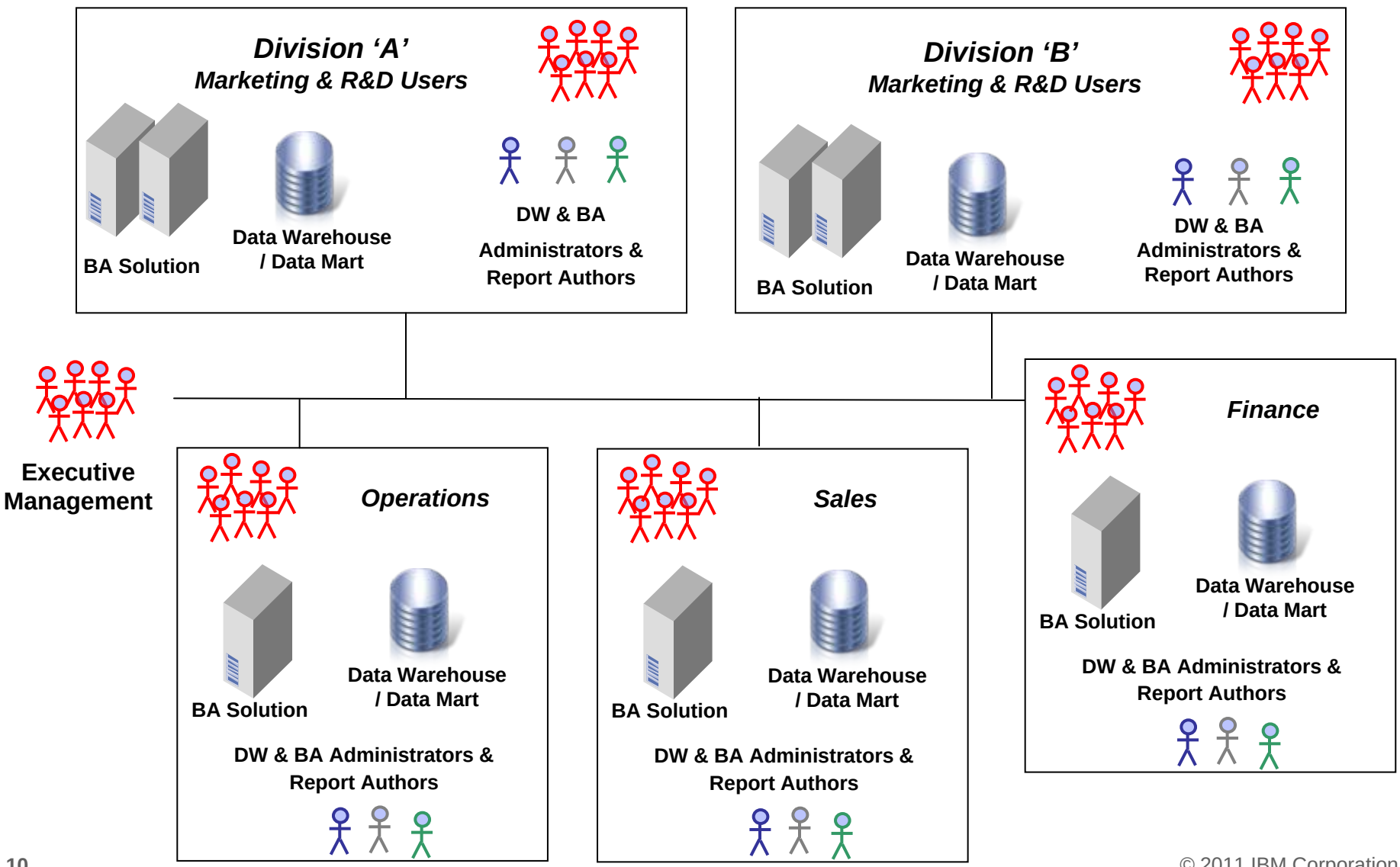
50% of the information they obtain has no value to them

Sources: IBM & Industry Studies, Customer Interviews
IBM CIO Survey, June 19, 2007
Accenture survey, January 04, 2007

Key components for Business Analytics success are being implemented & managed in isolation



Today's Traditional Infrastructure – *a siloed approach*



Business Analytic not keeping pace with changing business requirements

- Supporting multiple BA tools
- Disparate tools lack functionality users need access to more data
- Users need access to diverse types of data (transactional & historical)
- Infrastructure costs are a barrier to entry
- BA taking too long to deploy, access, and grow
- Information quality/security is in question

Only 8.2% of the employees of a typical organization regularly use BI applications

Source: The BI Survey 8, Gartner, 03/09

Data Warehouses have become isolated

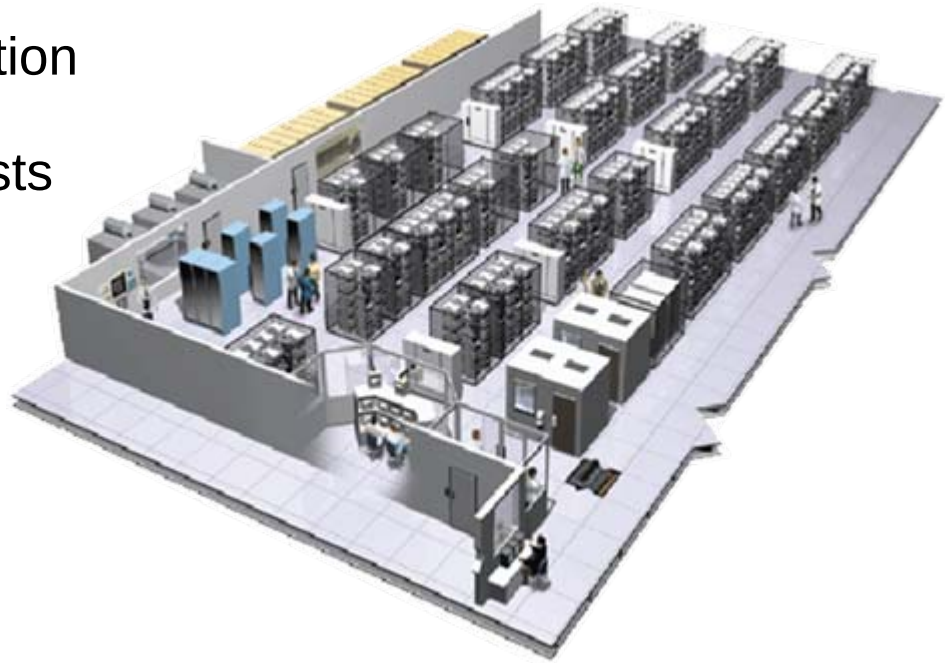
- Information to drive the business is known but not available to the decision makers
- Information in the DW is limited to a small number of people in the organization
- Little to no interactivity with other systems
- Not built with the same criteria as the operational systems
- Difficult to manage and maintain multiple servers and copies of the data
- Minimal control over who is accessing the data

*"**Nearly 70%** of data warehouses experience performance-constrained issues of various types."*

- Gartner 2010 Magic Quadrant

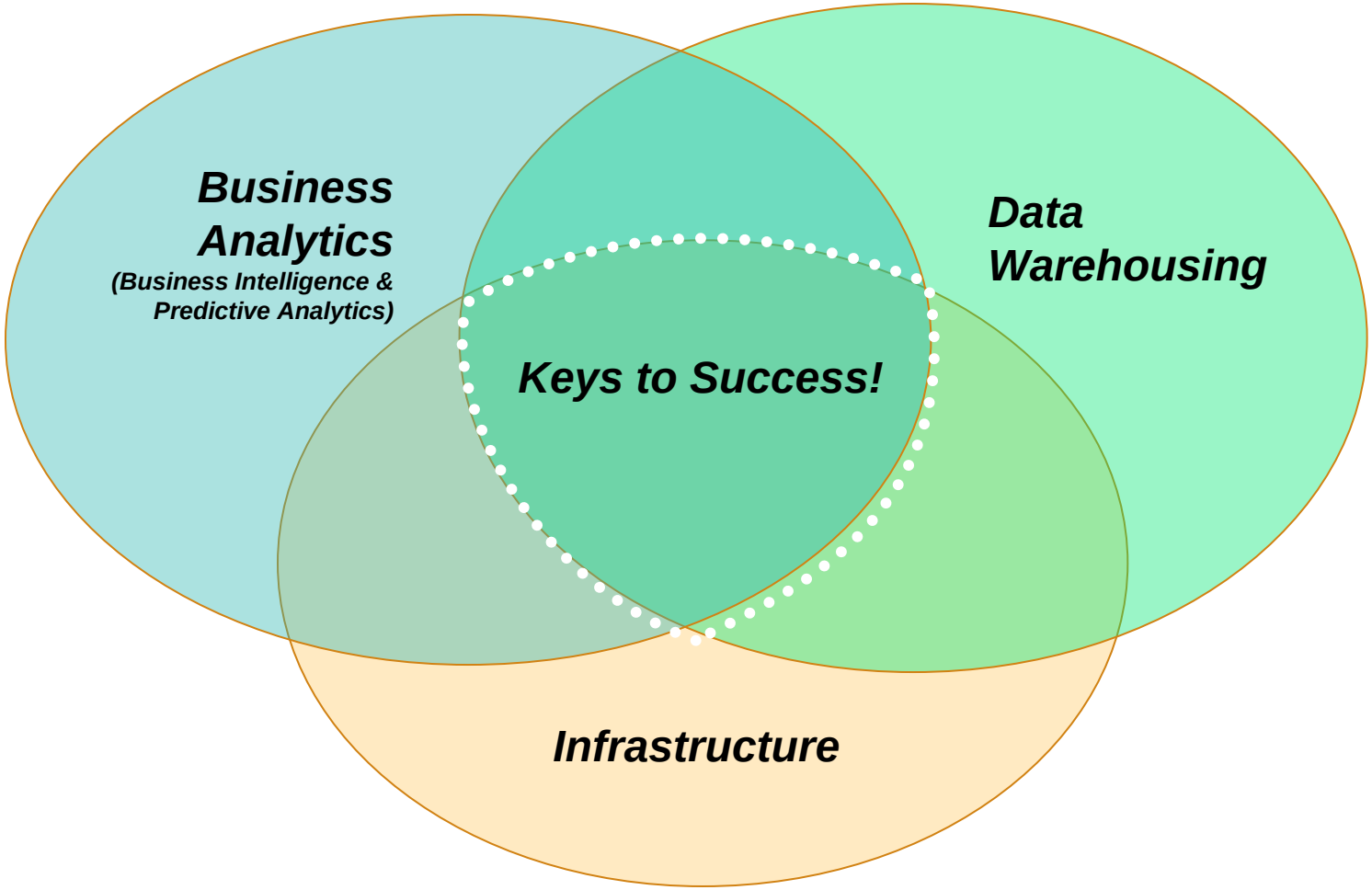
Infrastructure complexity and cost on the rise

- Growing physical servers and network gear
- Excessive energy usage and heating problems
- Inadequate power and cooling infrastructure
- Data Silos and Data Synchronization
- Linear per processor software costs
- Linear Staffing Costs
- Frequent outages



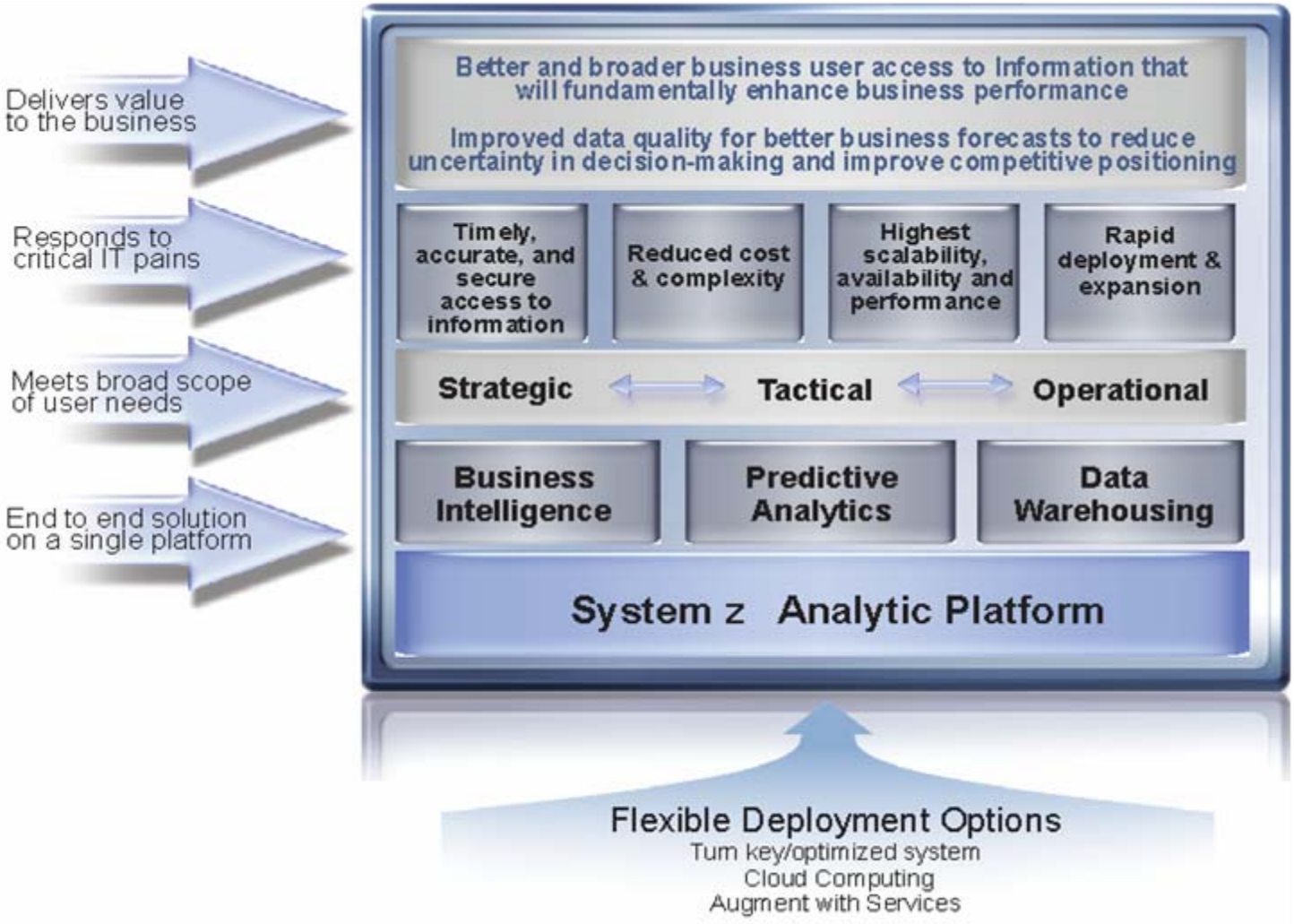
Source: The BI Survey 8, Gartner, 03/09

A successful strategy requires the integration of all key components



A new option …

IBM Business Analytics and Data Warehousing on System z



Customers Select System z to Meet Critical Business Needs

High business growth

HIGH SCALABILITY

Continuous business operations

HIGH AVAILABILITY & RELIABILITY

Flexibility and speed to respond

EXTREME VIRTUALIZATION

Reduce business risk

INDUSTRY LEADING SECURITY

Green strategy Energy and space

EFFICIENCY

Secure Cloud Services

CLOUD

Companies are recognizing mainframe cost savings

*Based on an analysis of actual IT spend and business performance, comparing companies with greater than average mainframe mix vs. less than average mainframe mix…**

44%

lower IT cost per credit card transaction

31%

lower IT cost per consumer loan

25%

lower IT cost per mega watt hour produced

24%

lower IT cost per hospital bed

20%

lower IT cost per airline passenger

26%

lower IT cost per new vehicle

25%

lower IT cost per retail store

23%

lower IT cost per barrel of oil

*"…in the long run the marketplace **rewards those that make the optimum use of the right computing resources in the right way** as evidenced by business performance"*

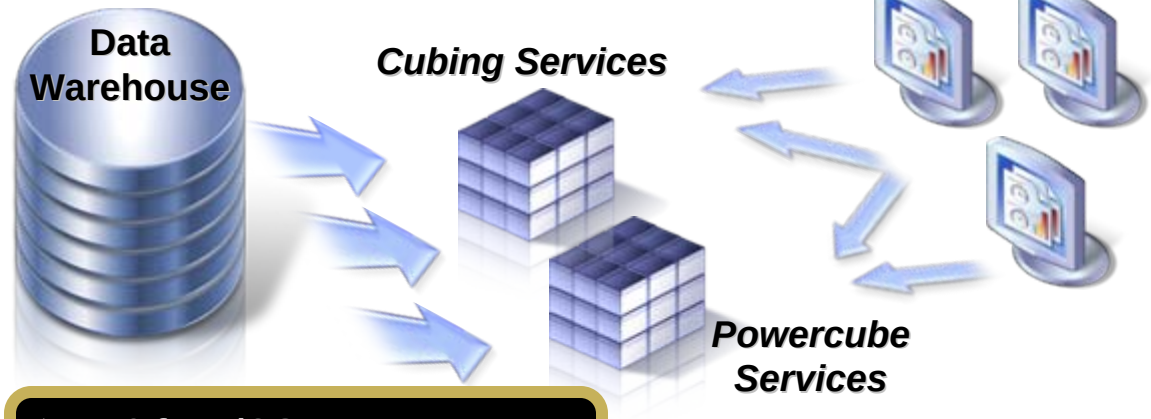
Dr. Howard Rubin, CEO and Founder, Rubin Worldwide

The value of System z to an Enterprise BA & DW Initiative

Timely, Accurate & Secure Access to Information	✓ *Provides faster access to transactional data on System z through co-location* ✓ *Speeds up business decisions / faster access to broader, more detailed data* ✓ *Protects against unauthorized access to data* ✓ *Minimizes data duplication to increase user confidence in the data*
Reduced Cost & Complexity	✓ *Reduces total cost of computing through consolidation/standardization* ✓ *Reduces complexity through a simple, flexible architecture* ✓ *Reduces administration cost up to 50%*
Highest Scalability, Availability & Performance	✓ *Applies the industry's highest availability to mission critical business information* ✓ *Quickly implements cost effective disaster recovery* ✓ *Scales up to more users, out to more functionality and data* ✓ *Drastically improves query response times up to 1000X*
Rapid Deployment & Expansion	✓ *Provides agility to align strategy with minimal expense and disruption to the business* ✓ *Offers a cost effective enterprise solution that can grow incrementally with growing business requirements* ✓ *Flexible deployment options to accommodate unique business needs*

End to end Business Analytics & Data Warehousing Solution on a single platform

- IBM System z
- InfoSphere Warehouse
- Smart Analytics Optimizer
- Cognos BI
- SPSS Predictive Analytics



- DB2 for z/OS VUE
- DB2 Utilities Suite

ELT

Operational Source Systems - Structured & Unstructured Data

Flexible deployment options

Smart Analytics System 9600, Cloud Computing, IBM Services

IBM Cognos Business Intelligence for Linux on System z

Business Analytics

- **Full range of BI capabilities**
  - Query, reporting, analysis, dashboarding, realtime monitoring
- **Delivers information where, when and how it is needed**
  - Self-service reporting and analysis
  - Automated delivery of information in context
  - Author once, consume anywhere
- **Purpose-built SOA platform** that fits client environments and scales easily

IBM SPSS

Business Analytics

- **Full breadth of predictive analytics**
  - Data collection, statistics, data mining, predictive modeling, deployment services…
- **Putting prediction in hands of the business**
  - Decision Management
- **Driving better business outcomes**
  - Attract and retain more profitable customers
  - Detect and prevent fraud
  - Improve resource allocation

IBM InfoSphere Warehouse

Data Warehousing

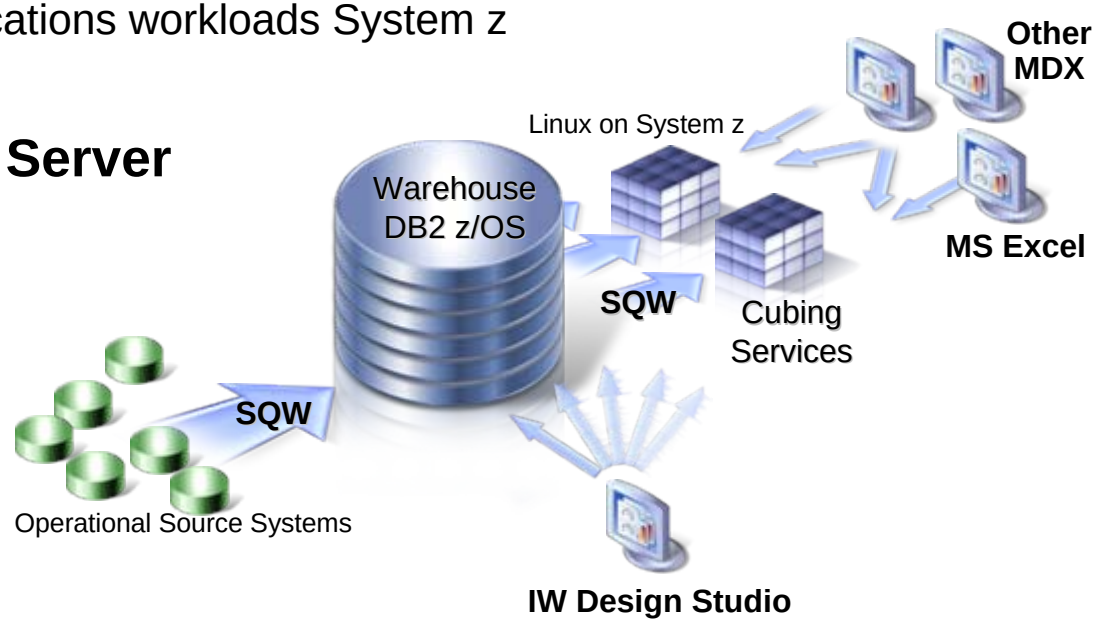
- Adds core DW and analytics capability to DB2 for z/OS
- Advanced physical database modeling and design
- In-database data movement and manipulation capabilities
- Multidimensional reporting and analysis of data with Cubing Services

IBM DB2 Value Unit Edition

- Offers the same robust DB2 for z/OS data server at a one-time charge price
- Available for eligible net new applications workloads System z

IBM InfoSphere Information Server

- Profiles, cleanses and integrates information from heterogeneous sources to drive greater business insight faster, at lower cost



IBM Smart Analytics Optimizer

Capitalizing on the best of relational and columnar databases

Data Warehousing

What is it?

The IBM Smart Analytics Optimizer is a workload optimized, appliance-like add-on that enables the integration of business insights into operational processes to drive winning strategies. It accelerates select queries, with unprecedented response times.

How is it different

- **Performance:** Unprecedented response times to enable 'train of thought' analyses frequently blocked by poor query performance.
- **Integration:** Connects to DB2 through deep integration, providing transparency to all applications.
- **Self-managed workloads:** queries are executed in the most efficient way
- **Transparency:** applications connected to DB2 are entirely unaware of the accelerator
- **Simplified administration:** appliance-like hands-free operations, eliminating many database tuning tasks

Breakthrough Technology Enabling New Opportunities

IBM zEnterprise System

A New Dimension in Computing

Infrastructure

Unified management for a smarter system: zEnterprise Unified Resource Manager

- *Unifies management of resources, extending IBM System z® qualities of service end-to-end across workloads*
- *Provides platform, hardware and workload management*

The world's fastest and most scalable system: IBM zEnterprise™ 196 (z196)

- *Ideal for large scale data and transaction serving and mission critical applications*
- *Most efficient platform for Large-scale Linux® consolidation*
- *Leveraging a large portfolio of z/OS® and Linux on System z applications*
- *Capable of massive scale up, over 50 Billion Instructions per Second (BIPS)*

Scale out to a trillion instructions per second: IBM zEnterprise BladeCenter® Extension (zBX)

- *Selected IBM POWER7® blades and IBM System x® Blades[1] for tens of thousands of AIX® and Linux applications*
- *High performance optimizers and appliances to accelerate time to insight and reduce cost*
- *Dedicated high performance private network*

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

IBM zEnterprise 196: The heart of the new machine

*The industry's **fastest and most scalable** enterprise system*

Infrastructure

- 5.2 GHz superscalar processor
- Up to 96 Cores, 1 to 80 configurable for client use
- Up to 3 TB RAIM memory
- Over 100 new instructions
- 1.5MB L2 Cache per core, 24MB L3 Cache per processor chip
- Cryptographic enhancements
- Optional water cooling

Dramatic improvement over IBM System z10™:

For Linux

Up to **60%**

Improvement in performance

for **35%**

Less cost

For z/OS

Up to **40%**

Improvement in performance

with **60%**

More capacity

- **With no increase in energy consumption**
- **And even better performance with new software**

IBM Smart Analytics System 9600

Unprecedented Value in Deploying New Business Analytics

Flexible Deployment Options

An integrated solution of hardware, software and services that enables customers to rapidly deploy cost effective game changing analytics across their business.

- ✓Broad Analytic capabilities
- ✓Powerful Warehouse capabilities
- ✓Scalable & fully-integrated IBM hardware
- ✓Set-up services & single point of premium support

Delivers business results in days, not months

What it delivers

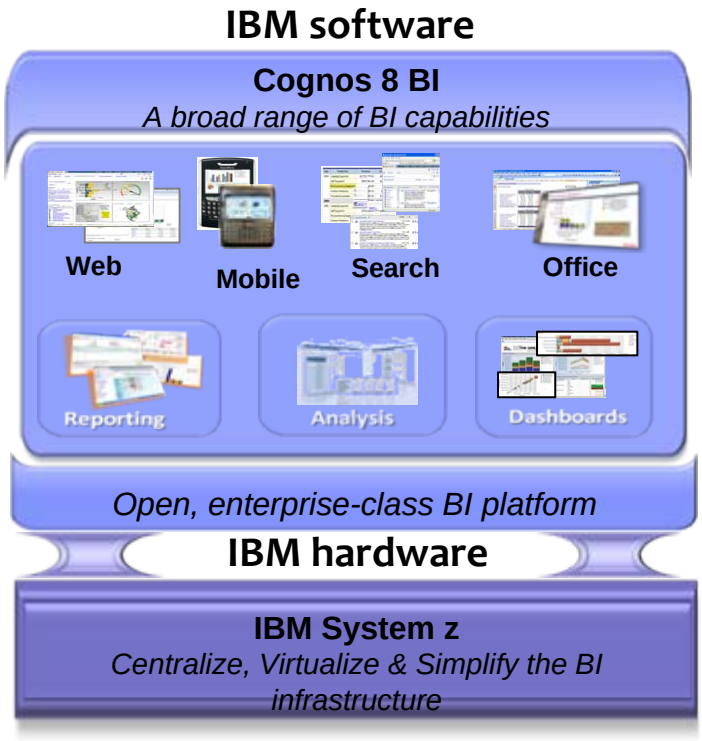
- Pre-integrated end to end solution on a single platform
  - Reporting, Analysis, Dashboarding & Data Warehousing
- Reduced total cost of acquisition
  - Competitively priced solution
- Faster time to value
  - Delivered fully integrated/ready to go
- Improved performance
  - Pre-tested and optimized

IBM Smart Analytics Cloud

Flexible Deployment Options

	Creates …	*That delivers …*
Smart Analytics Cloud	**A private cloud within the enterprise**	**A solution for delivering business intelligence to the entire organization**

The solution components …



IBM Services

- **Phase 1**: Create awareness of, a strategy for and a governance foundation for BI across the organization
- **Phase 2**: Preparation for the Smart Analytics Cloud

- **Phase 3:** Install the base cloud, integrate into the corporate enterprise and test the cloud use cases
- **Phase 4:** Educate the enterprise for on-going success with the Smart Analytics Cloud

IBM Professional Services
Accelerated Success

- New “how-to” books deliver expertise
  - BI Strategy Book
  - BI on Cloud
  - BI Redbook
- Workshops to help shape strategy
  - Champion workshops
  - Business Analytics experience
- Services & Training
  - Proven practice workshops, learning assessment and user adoption services
  - Broader portfolio of self-paced training options
- Growth in communities
  - Innovation Center
  - DeveloperWorks, C^3 Blog
  - Twitter, facebook and linked-in

Miami-Dade County

Selects IBM System z platform to expand their IBM Cognos 8 BI enterprise infrastructure

> *…We are now* ***able to expand the usage of our Business Intelligence reporting****. By the end of 2010, we will have* ***users from over 42 County departments with over 1500 users creating and consuming reports with stable environments on System z.***

—Jaci Newmark, Project Lead, Enterprise Business Intelligence Architecture, Miami-Dade County

- ✓**11 days to go from distributed to System z deployment model**
- ✓**Consolidated multiple BI deployments onto a single platform**
- ✓**Consolidate multiple, disparate data sources onto a single platform**
- ✓**Ensured 99.999% availability & complete disaster recovery plan**

University of North Carolina Health Care

Deploys a hybrid data warehouse solution combining the strengths of InfoSphere and DB2 software on System z and System p platforms

"With the deployment of the Carolina Data Warehouse for Health, we have been able to increase the timeliness of the information available to our researchers, staff and physicians," "Because the system can also support general queries that relate to the diagnosis and treatment of a wide array of patients, we are now able to make more intelligent decisions leading to improved patient care."

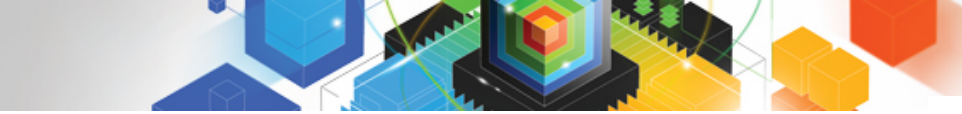
Donald Spencer, MD, MBA,
Associate Director of Medical Informatics, UNC Health Care

Numius' Client Success Story

Uses DB2 for z/OS and Cognos 8 BI for Linux on System z

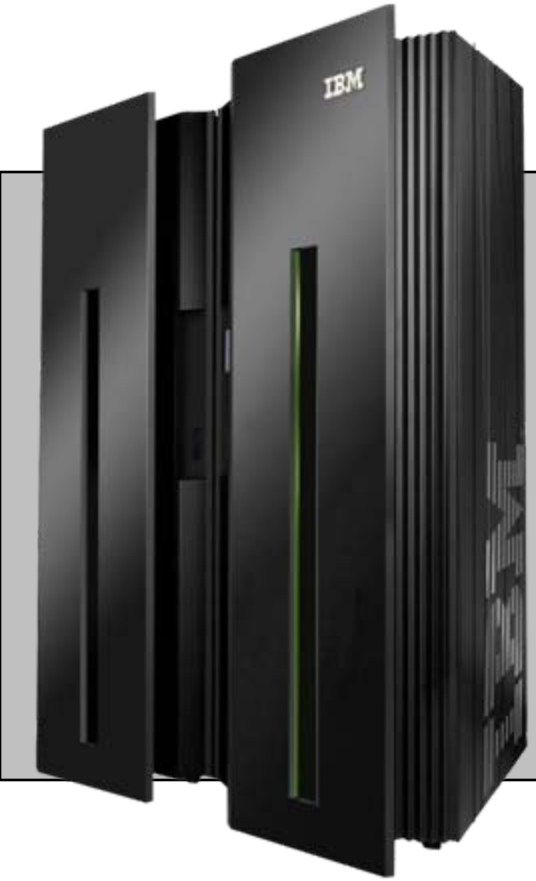
- ✓Produced 400 reports in the same time as 1 report in the old environment
  - ✓400 reports ran in 45 minutes as opposed to 1 report in 46 minutes
  - ✓Easily supported 130 concurrent users, as opposed to 8 on the source environment
- ✓No reports timed out, not one user was rejected. Even when the system slowed down, it remained stable
- ✓The client would not need to redesign his application to achieve his objective of reaching out to a large community
- ✓This solution helps improve waste control in Belgium by informing producers, consumers and authorities faster and more thoroughly

Jo Coutuer, Senior Business Intelligence Architect, Numius



IBM Cognos BI Total Cost of Ownership Study

Explores the TCO of choosing an x86 based infrastructure vs. System z for a Cognos 8 BI deployment using proven IBM TCO measurement methodology



- ✓Average savings over 5 years of with a System z deployment: 36%
- ✓Reduction in high availability costs with System z: 50%
- ✓System administration savings alone pay for System z investment.

Blue Insight,
The IBM internal Private Analytics Cloud

> *Our commitment to informed decision making led us to consider private cloud delivery of Cognos via System z, which is the enabling foundation that makes possible* ***+$25M savings over 5 years****.*
>
> *-IBM CIO Office*

- ✓Consolidated 115 multi-product, departmental BI deployments to 1 Cognos 8 BI on System z
- ✓Support for our global workforce (2009: 72K, 2010: 130K, 2011: 200K)
- ✓Realizing value from +60 data sources across IBM
- ✓Projected $25M in savings (60% Consolidation, 35% Standardization, 5% Automation

Industry Analysts Agree

*"In short, I believe that **mainframes are the most modern platforms available** in the commercial marketplace today."*

Source: Clabby Analytics, Migrate From Mainframe? To What?, Joe Clabby, June 24, 2010

*"Companies that buy into outdated hype about its complexity fail to realize the potential **performance gains associated with mainframe use**."*

Source: Aberdeen Group, The Fable of Mainframe Complexity, Max Gladstone, May 5, 2010

*"Clients wishing to **evolve** their legacy application portfolios **into more-modern technologies and architectures can do so on the IBM mainframe**."*

Source: Gartner, Mainframe Modernization: When the Platform Is the Solution, Dale Vecchio, 8 January 2010

*"The mainframe has long been recognized as a platform with an **enviable reputation for reliability, security, and efficiency**, Ovum considers that IBM by exploiting these characteristics has produced the next generation of data centre and cloud centre management platforms."*

Source: Roy Illsley, Principal Analyst, Ovum

Typical Utilization for Servers

Windows: 5-10% Unix: 10-20% **System z: 85-100%**

System z can help **reduce** your floor space up to **75%-85%** in the data center

Thank You

For additional information please visit
www.ibm.com/software/data/businessintelligence/systemz/

System z can lower your total cost of ownership, requiring **as little as 30%** of the power of a distributed server farm running equivalent workloads

The cost of storage is typically **three times more** in distributed environments

IBM Product Portfolio
Business Analytics and Data Warehousing on System z

Business Intelligence

- Cognos 10 Business Intelligence

Predictive Analytics

- SPSS Statistics 19
- SPSS Modeler
- SPSS Collaboration and Deployment Services

Data Warehousing

- DB2 for z/OS VUE (Value Unit Edition)
- InfoSphere Warehouse
- Smart Analytics Optimizer

**Solution Edition for Data Warehousing (pricing option)*

Data Integration and Movement

- InfoSphere Information Server
- InfoSphere Change Data Capture
- InfoSphere Replication
- InfoSphere Federation
- Global Name Recognition

Master Data Management

- InfoSphere Master Data Management Server

InfoSphere Industry Models

- Banking, Insurance, Retail. Telco, Heath Payor, Heath Provider, Financial Markets

Flexible Deployment Options

- IBM Smart Analytics System 9600
- IBM Smart Analytics Cloud
- IBM Services

Information protection & compliance on the System z platform

- Reduce number of security intrusion points by reducing the complexity of the architecture
- Secure data with cryptography, encryption, user identification, authentication at all levels
- Apply security capabilities rated the highest by government agencies
- Provide granular protection with column access control at the cell level
- Apply administrative authorities without allowing data access
- Use legendary built-in security and trace features for end-to-end auditing capabilities
- Define user access down to the cell level