



Meeting the Business Analytics and Data Warehousing needs of your users

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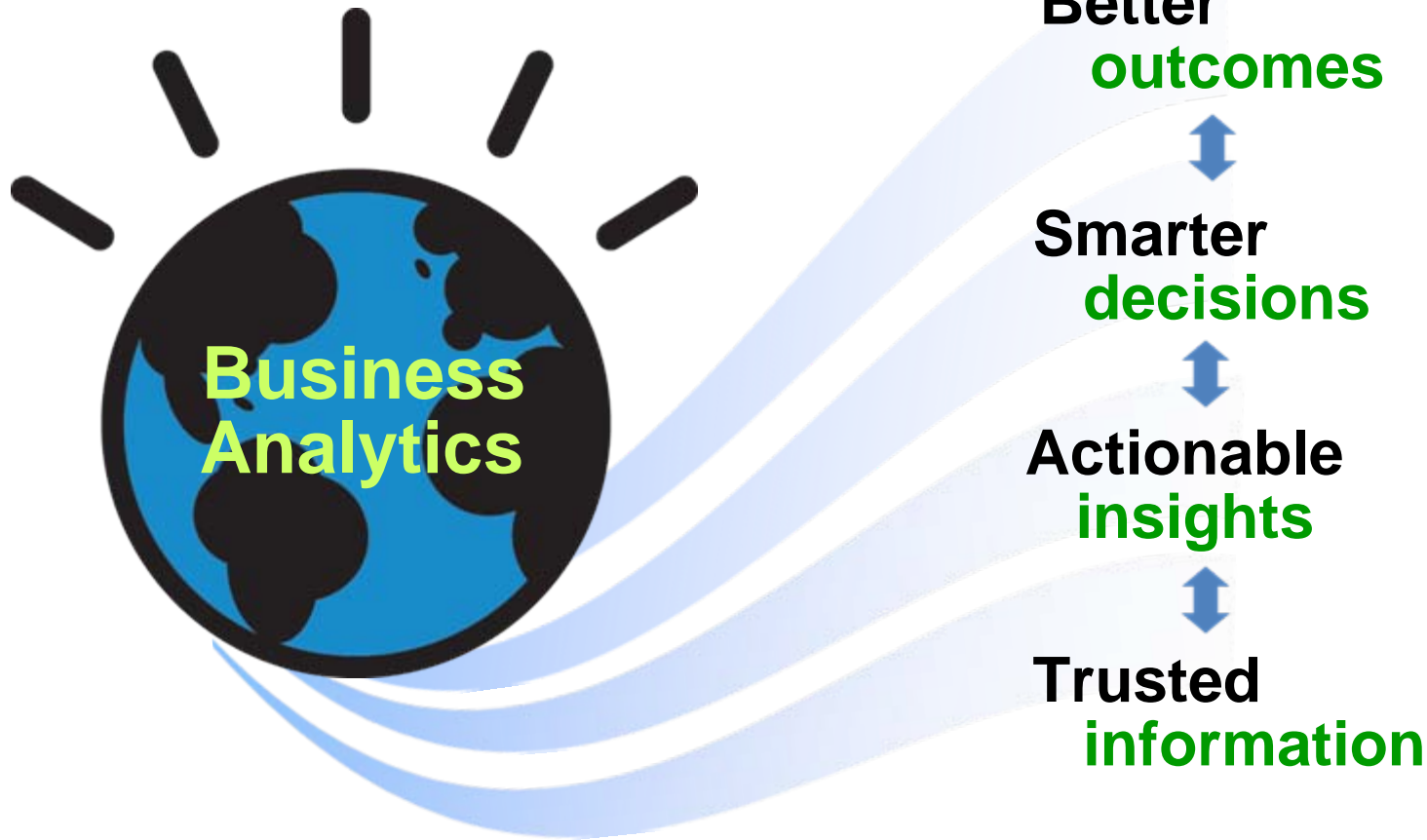
**Generate
More Revenue**

Reduce Risk

**Predict Future Outcomes
with Greater Confidence**

Lower Costs

IBM Business Analytics: Driving better outcomes



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 mission critical**
 - 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 and 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**



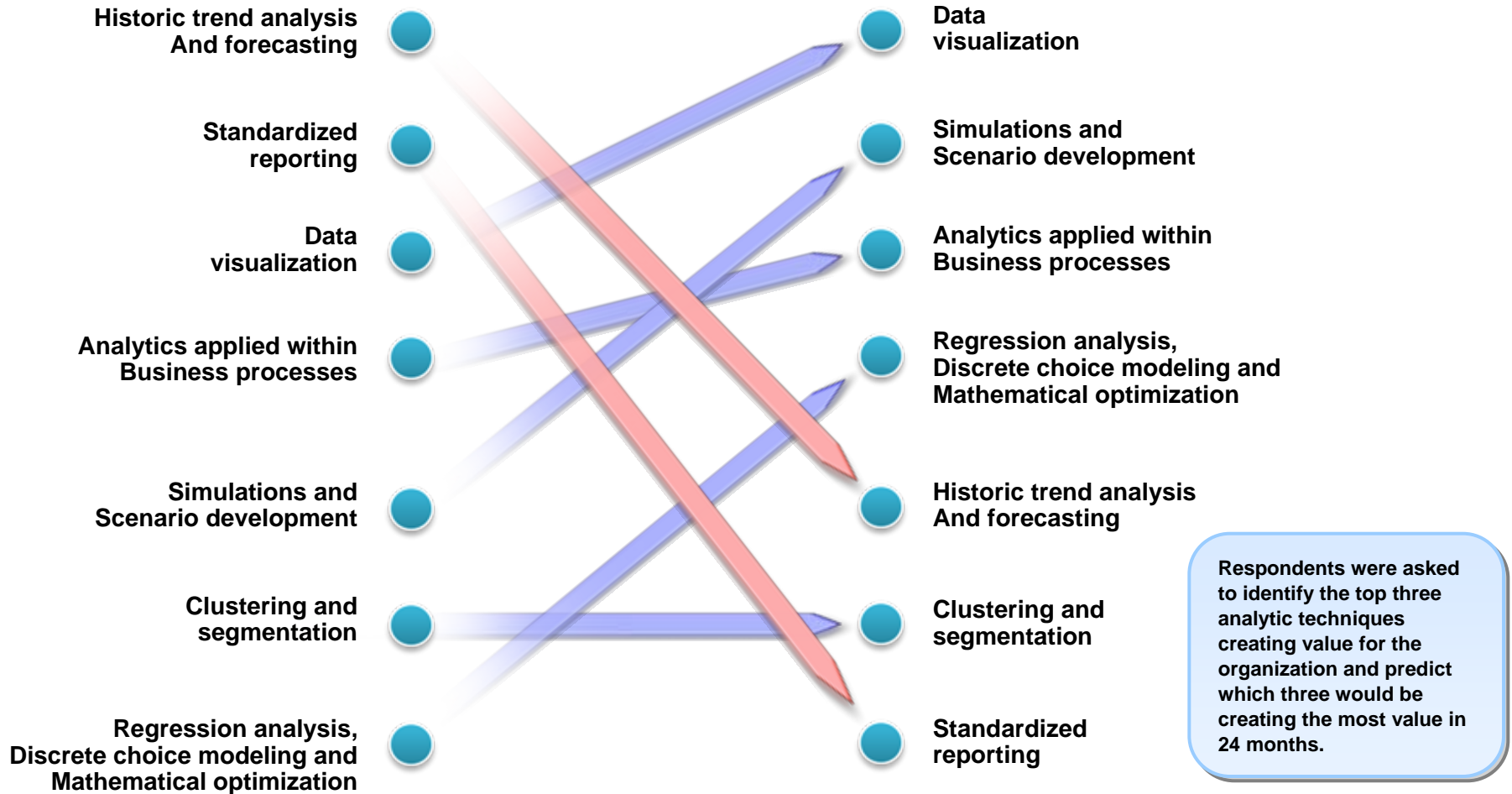
By 2014, externalizing BI will increasingly become an expected aspect of most companies' relationships with customers and partners.

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



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



Executives



Business Managers



Line of Business Manager



Business Users



Business Analyst



Financial Analyst

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

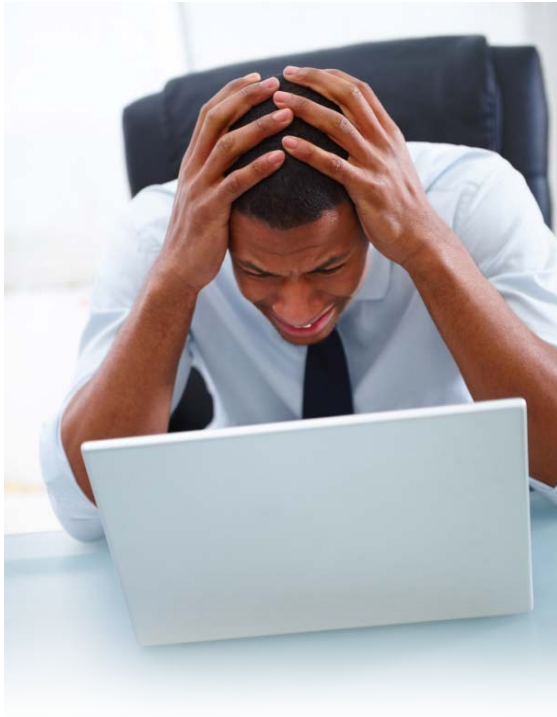


OLAP Sources



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

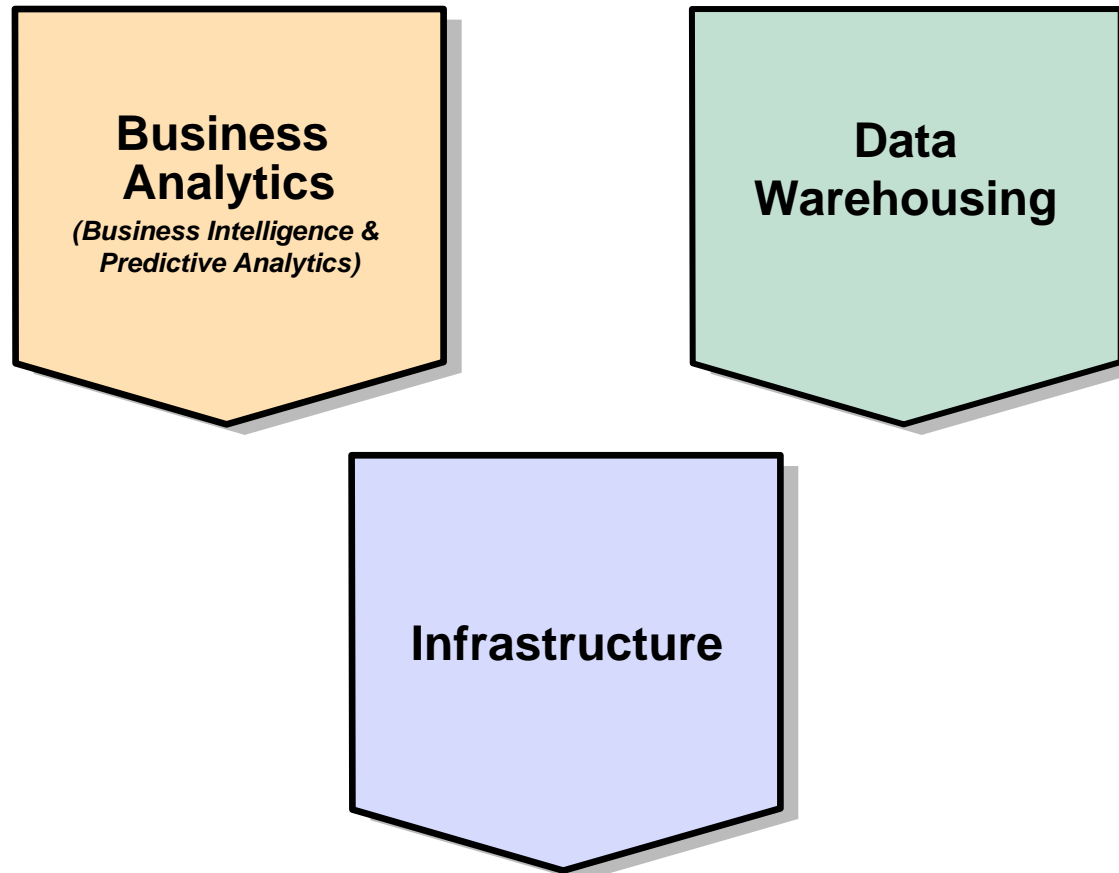
Forrester said: “delivering successful BI capabilities goes far beyond just the tools and enabling technologies”

“BI is a set of methodologies, processes, architectures, and technologies”

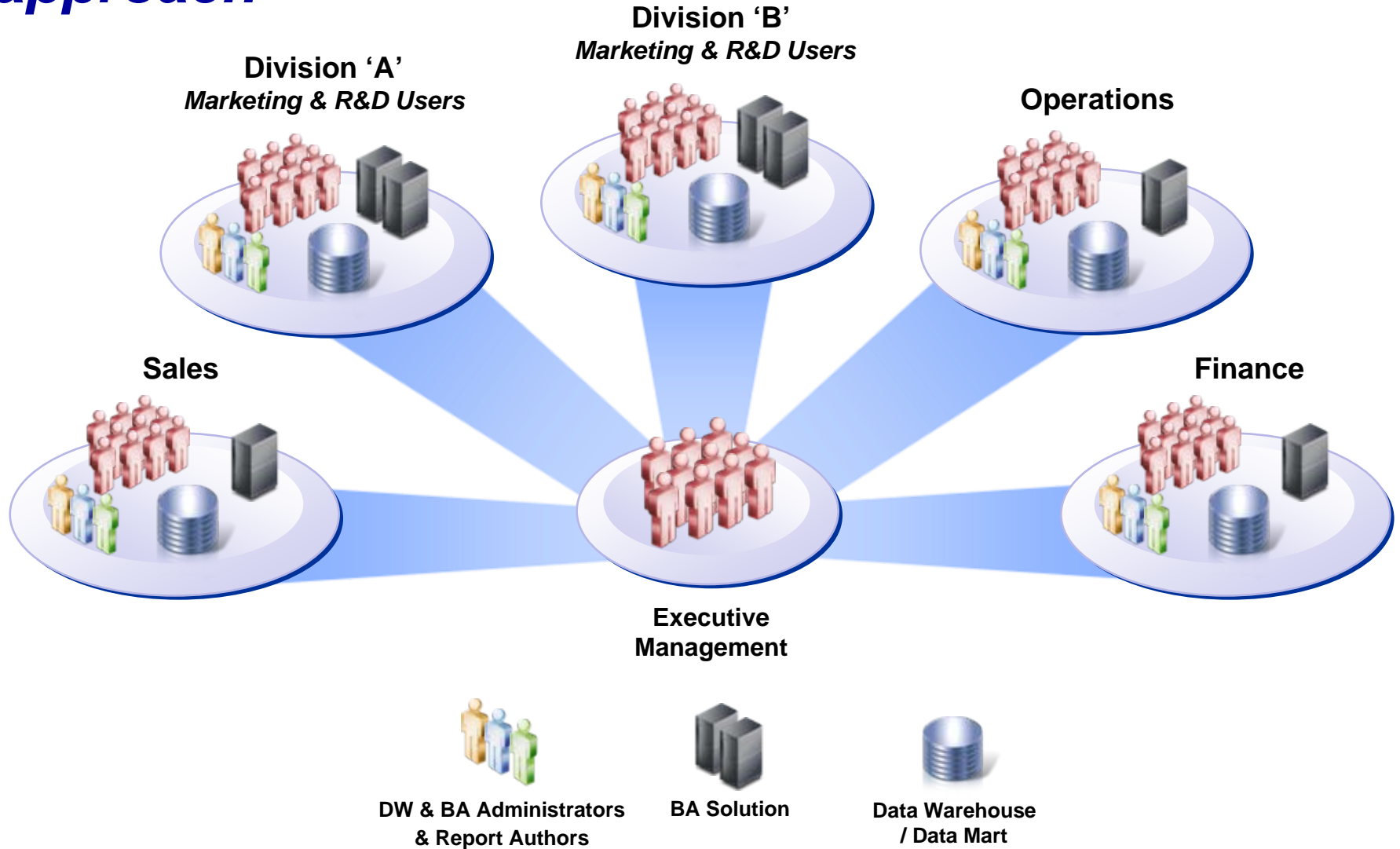
Forrester : Enterprise BI Survey Q&A: BI Professionals Recognize The Need To Focus Beyond Tools, March 17, 2009



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



Today's traditional infrastructure – a *siloes* approach



Business Analytics 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

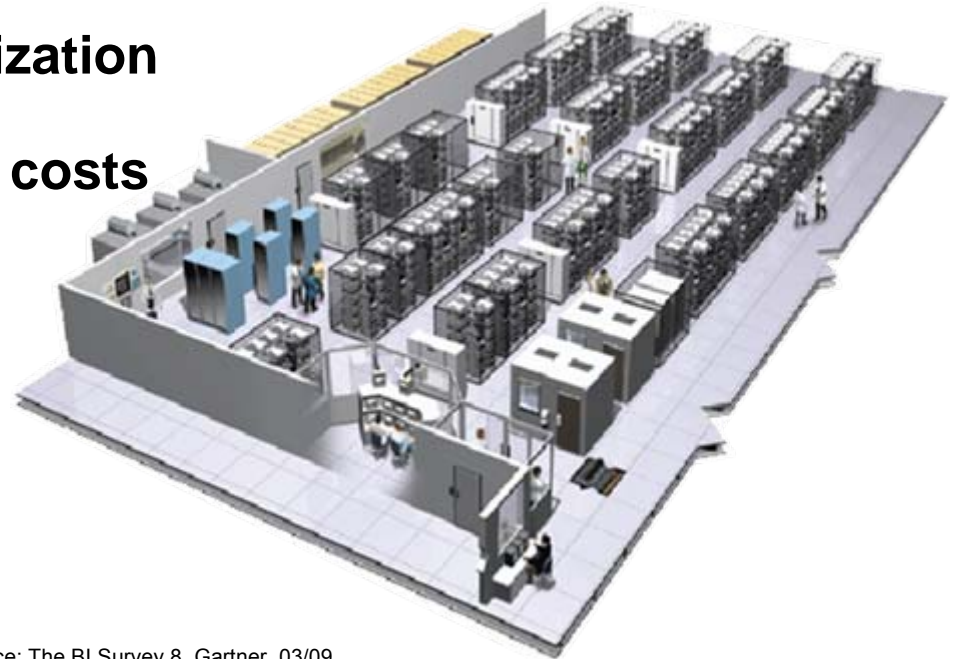
“Nearly 70% of data warehouses experience performance-constrained issues of various types.”

- Gartner 2010 Magic Quadrant



Infrastructure complexity and cost on the rise

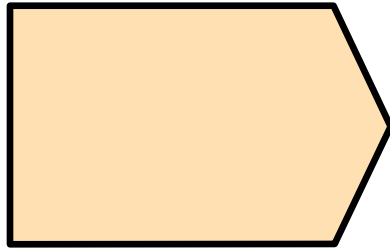
- Growing physical servers and network gear
- Excessive energy usage and heating problems
- Inadequate power and cooling infrastructure
- Data Silos and Data Synchronization
- Linear per processor software costs
- Linear Staffing Costs
- Frequent outages



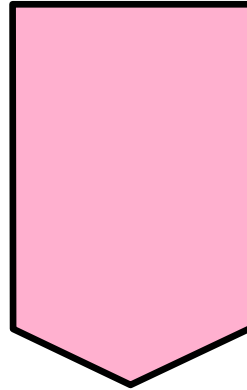
Source: The BI Survey 8, Gartner, 03/09

A successful strategy requires the integration of all key components

Business Analytics
(Business Intelligence & Predictive Analytics)



Community of Excellence



Keys to Success!



Data Warehousing



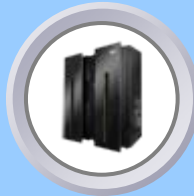
Infrastructure



IBM System z: A premier analytic platform

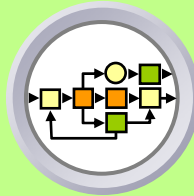
- Supports strategic, tactical and operational users
- Enhances business performance
- Helps reduce uncertainty in decision making
- Helps improve competitive positioning

Delivers an end-to-end solution on a single platform



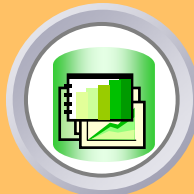
Business intelligence
Predictive analytics
Data warehousing

Solves key barriers to success



Timely, accurate and secure information
Reduced costs and complexity
Superior availability, scalability and performance
Rapid deployment and expansion

Evolves with your business



Start with what you need

- Functionality
- Application
- Department
- Enterprise

Deploy the *way you need*

- Turnkey optimized
- Private cloud
- Services and education

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

Visualize DB2 10 Data with QMF 10 Enterprise Edition

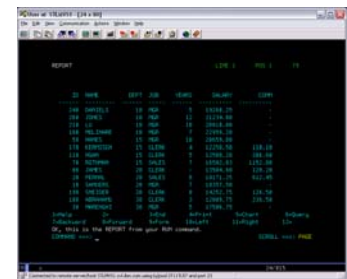
Enhanced to meet the challenges of today's Business Analytics requirements

**Business
Analytics**

- **Business Analytics with QMF for Workstation & QMF for WebSphere**

- 150 additional analytic functions (new)
- Executive dashboards & graphical reports (new)
- Enhanced metadata layer (new)
- Entity Relationship Diagrams (ERDs) make query creation simple (new)
- Easy mapping of data across the enterprise with new data source environments
- JDBC support access to any database (new)
- OLAP (MDX) support (new)
- Embed QMF content into 3rd party or in-house developed BI solutions (new)

.. then



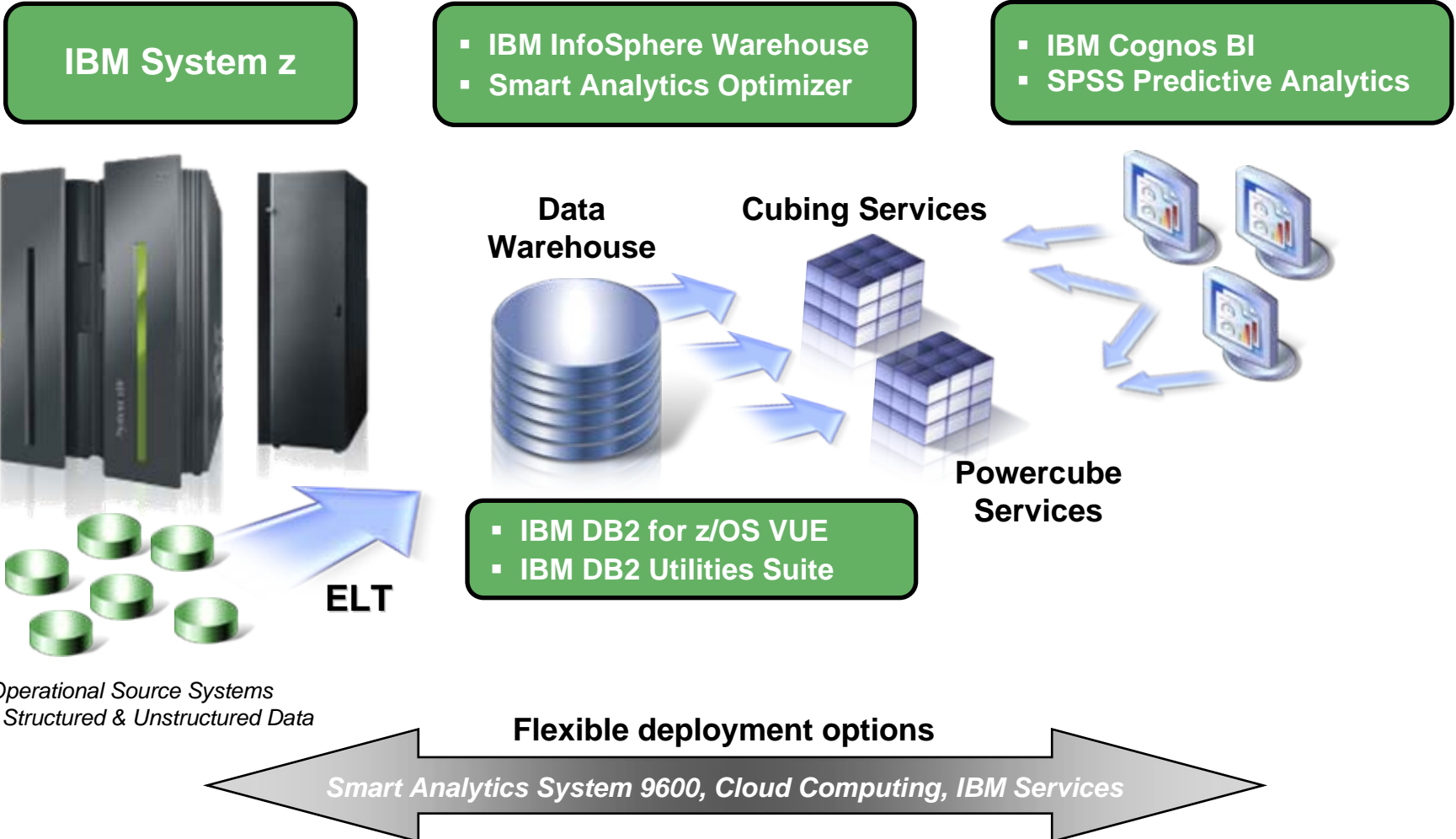
- **Key benefits:**

- Rapid development/easy deployment of enterprise Business Analytics solutions
- Lightweight installation and administration
- Minimal learning curve - zero coding, drag-drop authoring model
- New QMF content remains fully compatible with existing QMF objects
- Embeddable BI – can be integrated into web and Java apps
- Database-based licensing model – not user or application server-based
- **Now available as QMF-VUE, a feature of DB2 VUE 9 and 10**

.. Now!



End-to-end Business Analytics and Data Warehousing solution on a single platform



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

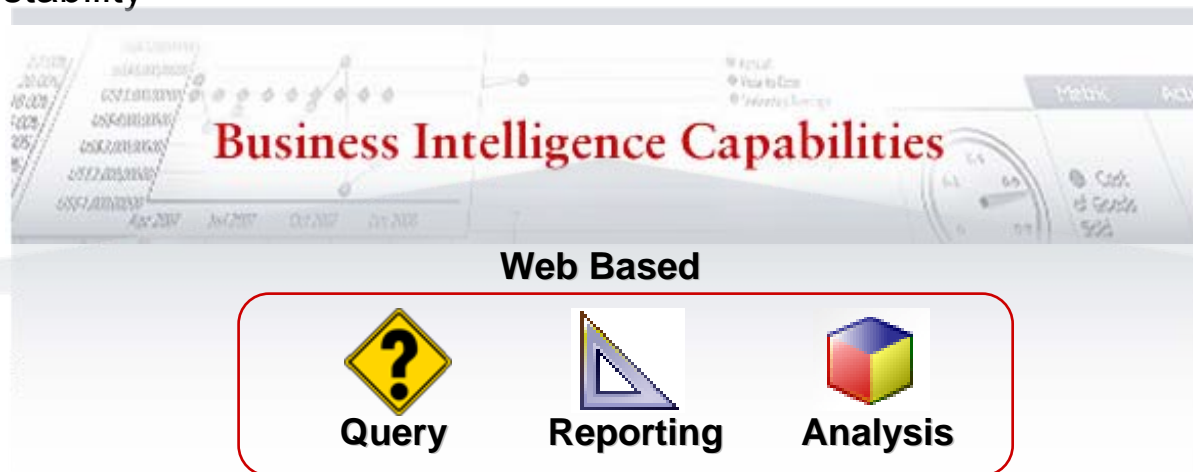
that fits client environments and scales easily

IBM Cognos 8 Business Intelligence for z/OS

Business Analytics

Enables more users to make better, faster decisions

- **The BI capabilities** for all user communities to receive relevant information how, when and where it is needed
- **Open enterprise-class platform** for IT to cost-effectively scale to meet growing user demands
- **Leverages the power of z/OS** for continuous, high-volume operation with high security and stability



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

- 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

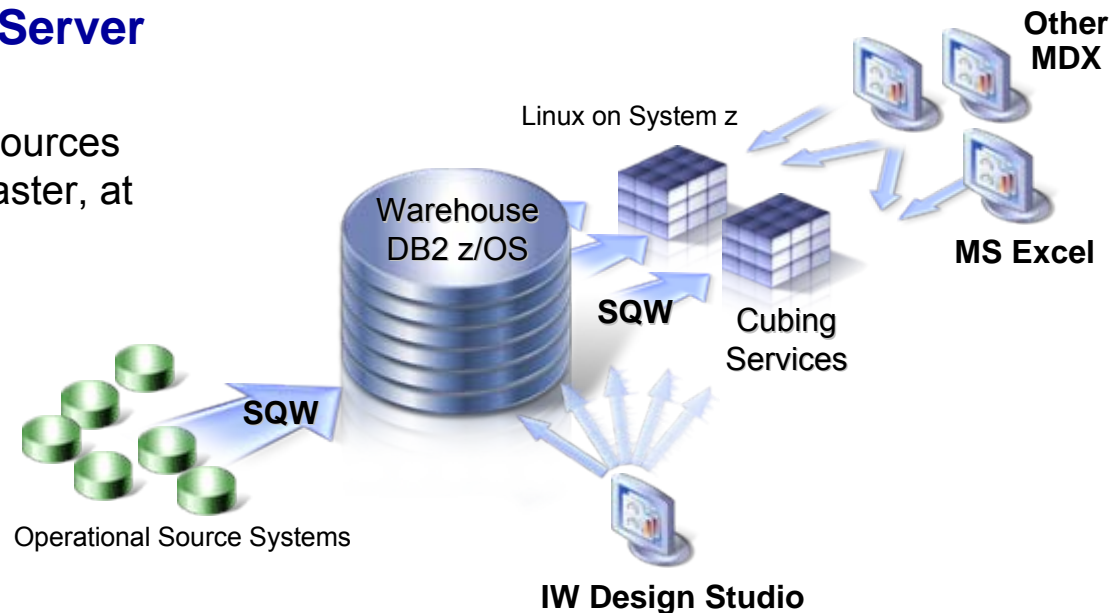
Data
Warehousing

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 and workloads on 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 both worlds - System z and Netezza

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

Capitalizing on Netezza Technology

Data
Warehousing

- The Netezza TwinFin® system is the fourth generation Netezza appliance that once again sets the standard for price/performance for [data warehousing and business intelligence](#) (BI).
- Blade-based streaming architecture – commodity blades and storage combined with Netezza’s patented data filtering using Field Programmable Gate Arrays (FPGAs)
- Appliance simplicity – Easy to deploy and manage; dramatically simplifies your data warehouse and analytics infrastructure
- Delivers high performance out of the box, with no indexing or tuning required. With integrated hardware, software and storage leading to shorter deployment cycles and faster time to value for BI and analytic initiatives.

Extending Smart Analytics Optimizer with Netezza technology

Data
Warehousing

- Still is a Smart Analytics Optimizer
- Uses Netezza technology to perform high speed query
- Access to data in terms of authorization and privileges (security aspects) is controlled by DB2 and z/OS (Security Server).
- Uses DB2 for z/OS for updates, logging, fast single record look-ups
- DB2 for z/OS does backup and recovery and
- DB2 for z/OS remains the system of record
- There is no external communication to the Smart Analytics Optimizer beyond DB2 for z/OS

Key Enhancements in V2 Release



- Extending acceleration to significantly larger number of queries
- Expanded size of the data to be accelerated
- Improved concurrent query execution
- Incremental update by partition
- DB2 9 and DB2 10 for z/OS support
- Supported only connected to z196 or z114

IBM zEnterprise System

A new dimension in computing



**Unified management for a smarter system:
zEnterprise Unified Resource Manager**

**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)

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

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

- Selected IBM POWER7® blades and IBM System x® Blades¹ 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

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



*Delivers business results
in days, not months*

IBM Smart Analytics Cloud

*Flexible
Deployment
Options*

Creates...

**Smart
Analytics
Cloud**

**A private cloud within
the enterprise**

That delivers...

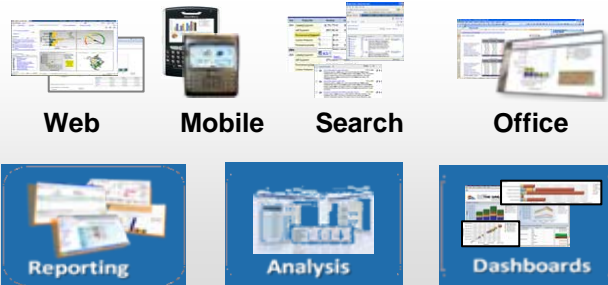
**A solution for delivering business intelligence to
the entire organization**

The solution components...

IBM Software

Cognos 8 BI

A broad range of BI capabilities



Open, enterprise-class BI platform

IBM hardware

IBM System z

Centralize, Virtualize & Simplify the BI infrastructure



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 and 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



Banamex – Fast ROI & Skills Reuse for DW

Challenges:

- Banamex/Citi sought a solution for its growing workloads on its consumer banking data warehousing systems

Solution:

- z196 4600 MIPS
- 20TB DS8800
- InfoSphere Warehouse on System z
- DB2 for z/OS Value Unit Edition

Benefits:

- Fastest Return on Investment
- Reuse of DB2 skills
- Least consumption of floor space, power, and cooling.
- Re-use of existing skills, with modernization at clients pace.
- Banamex ultimately found that the IBM Smart Analytics System 9600 met its needs as far as price, deployment time and fastest return on investment.



- *1,200 businesses needed a more robust solution for their demanding consumer data warehousing workload in Mexico.*
- *Existing solution was based on Teradata, their corporate standard.*
- *IBM demonstrated how the 9600 solution could surpass what they were achieving with Teradata*
- *IBM was also able to implement faster and at a lower cost than Teradata*



Florida Hospital Strengthens data warehousing strategy with IBM DB2 for z/OS

“

We are **very agile on System z** and we have been **able to respond to ad-hoc request for the warehouse in an incredibly fast manner** we have got a **platform that will scale**, the best DASD in the world...it's just not fair to the other platforms...**that's where you want to be if you want to respond in the warehouse space**....

...Transitioning into having **source data as well as warehouse data on System z** is going to be very strategic for us...because of speed, because of scalability, because of dependability...

...Our goal is to **move into the Smart Analytics Optimizer** because it can give us the ability to query amounts of data that we really couldn't touch before...

”

*Robert Goodman, Senior DBA, DR Coordinator,
Florida Hospital*





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
- Consolidated multiple, disparate data sources onto a single platform
- Ensured 99.999% availability & complete disaster recovery plan





numius
PERFORMANCE
MANAGEMENT

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)

Real Value...Real ROI...Real Impact!

IBM SPSS Predictive Analytic Projects

- 94% of customers achieved a positive ROI, average payback in 10.7 months
- Over 90% of users attributed an increase in productivity to SPSS
- 81% of projects were deployed on time, 75% on or under budget

“This is one of the highest ROI scores Nucleus has ever seen in its Real ROI series of research reports.”

*Rebecca Wettemann
VP of Research
Nucleus Research*





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



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



Thank you

For additional information please visit

<http://www.ibm.com/software/data/businessintelligence/systemz/>

IBM Product Portfolio Business Analytics and Data Warehousing on System z

Business Intelligence

- **Cognos 10 Business Intelligence**
- **Cognos 8 BI for z/OS**

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, Health Payor, Health Provider, Financial Markets

Flexible deployment options

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

Information protection and 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

