

IBM System z Technology Summit



Meeting the Data Warehousing and Business Analytics Needs of Your Users

IBM Data Warehousing and Business Analytics on System z

January 2011



Market Dynamics are Shifting

- As Data Professionals you know that ...
 - Data Warehousing and Business Analytics is now more strategic/mission critical
 - Need to support broader more intense users
 - Users require increased access to more data
 - Greater demand for high scalability, availability & performance
 - Business & IT being asked to do more with less
 - Need economies of scale / consolidation
 - Stronger focus on corporate regulatory compliance
 - Driving intense scrutiny of data security policies
 - Environmental concerns continue to be top of mind



IBM: 2009 CIO survey results

CIOs select their ten most important visionary plan elements

- 3/4 of CIOs anticipate moving to a strongly centralized, shared infrastructure to improve economies of scale
- 83% say Business Intelligence & Analytics is their top focus area

Business Analytics benefits all users across the organization



MARKETING



FINANCE



SALES



HR

How are we doing?

Why?

What should we be doing?



CUSTOMER SERVICE



IT



PRODUCT DEVELOPMENT



OPERATIONS

Business Analytics needs to support many different roles across the organization



Business users need a full range of Business Analytics capabilities for optimized decisions



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*

Few are satisfied...



Dashboards



Reporting



Analysis



Real-time Monitoring

The Voice of the Business
 “Need to ensure smart business decisions”



Executive



IT



Business Manager



Architect



Casual Business User



Administrator

The Voice of the Data Center

“Need to simplify the delivery, access & management of our expanding data infrastructure”



Application & Web Servers



Data Integration & Data Quality Tools



Security Providers & Firewalls



Platforms & Databases

Data Center Professionals and Business Analytics Teams share many challenges

Data Center Professionals

- Faster access to transactional data
- Information not available to decision makers at the time of event
- Too many copies of data / cannot be tracked
- Conflicting data coming from different sources at different times
- Data is inaccurate – not fit for purpose
- System availability and performance impacting user productivity
- Poor response times impacting ability to run business critical queries
- Disaster recovery plan inadequate or non-existent due to cost
- Cannot sufficiently control who has access to the data
- Infrastructure costs and complexity impacting ability to deliver BA to the business

Business Analytics Teams

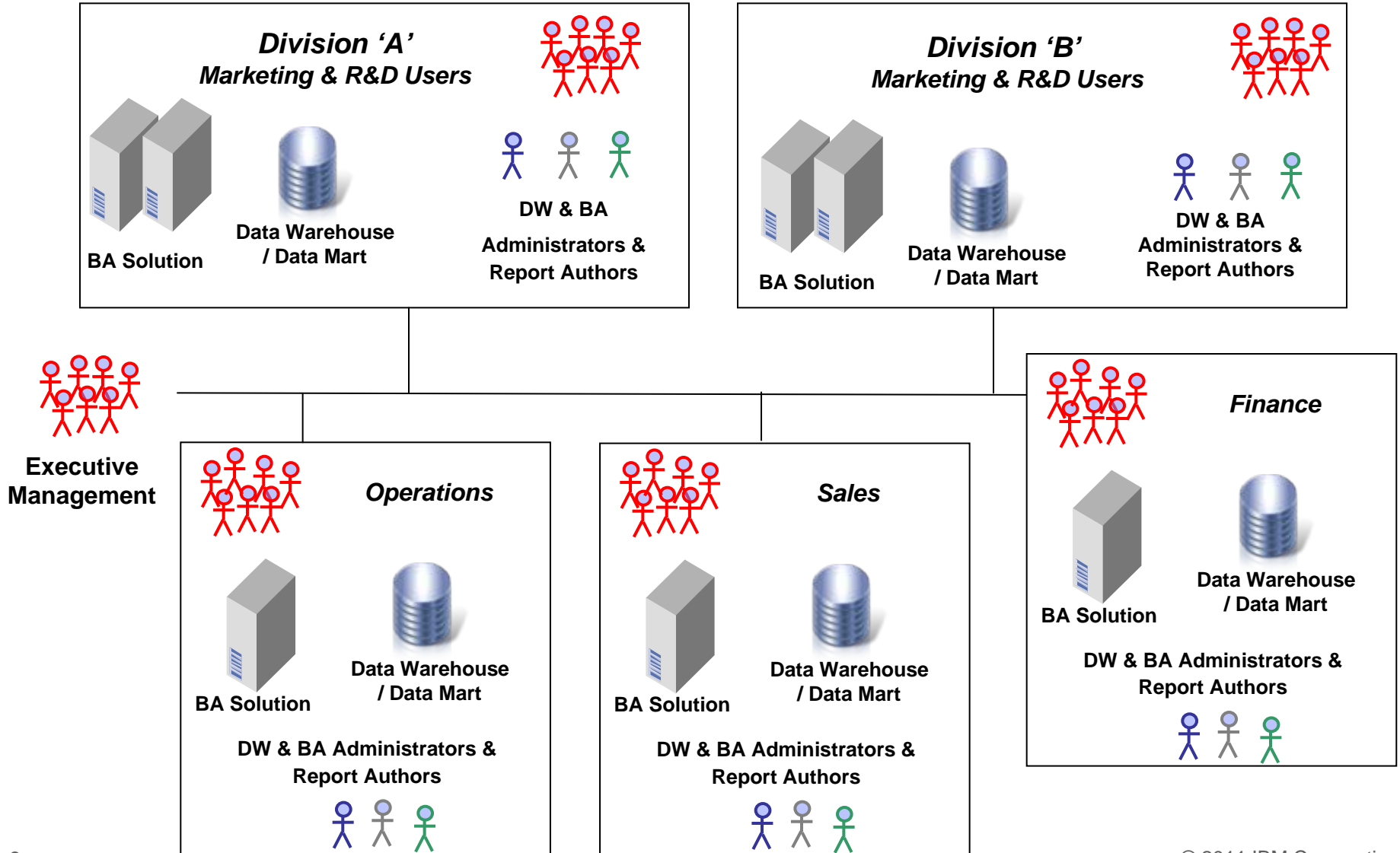
- Too many BA tools
- Disparate tools lack functionality
- Users need access to more data and different kinds of data (transactional & historical)
- Infrastructure costs are a barrier to entry
- System performance and availability not meeting expectation
- Information quality/security is in question
- Takes too long to deploy, access, and grow Business Analytics

The hidden costs of disappointed business users....

Disappointment = Reduced Usage =

Underutilization of software investment & Unattained Business Advantages

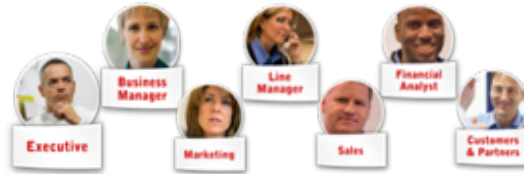
Today's Traditional Infrastructure - *a distributed approach*



The Journey to Smart Business Decisions.....the whole story

Optimize it!

Leverage it!



Transform the Business



Business Analytics

Provides everyone in your organization with the ability to spot and analyze trends, patterns and anomalies to predict potential threats and opportunities, and change course to improve outcomes.

Expose it!
Analyze it!
Spot it!



Data Warehousing

Optimizes data for analysis - - ensuring that the data is stored in a form and format that Business Analytics tools can deliver to provide timely results with optimal performance and security

Organize it!
Store it!
Standardize it!
Transform it!

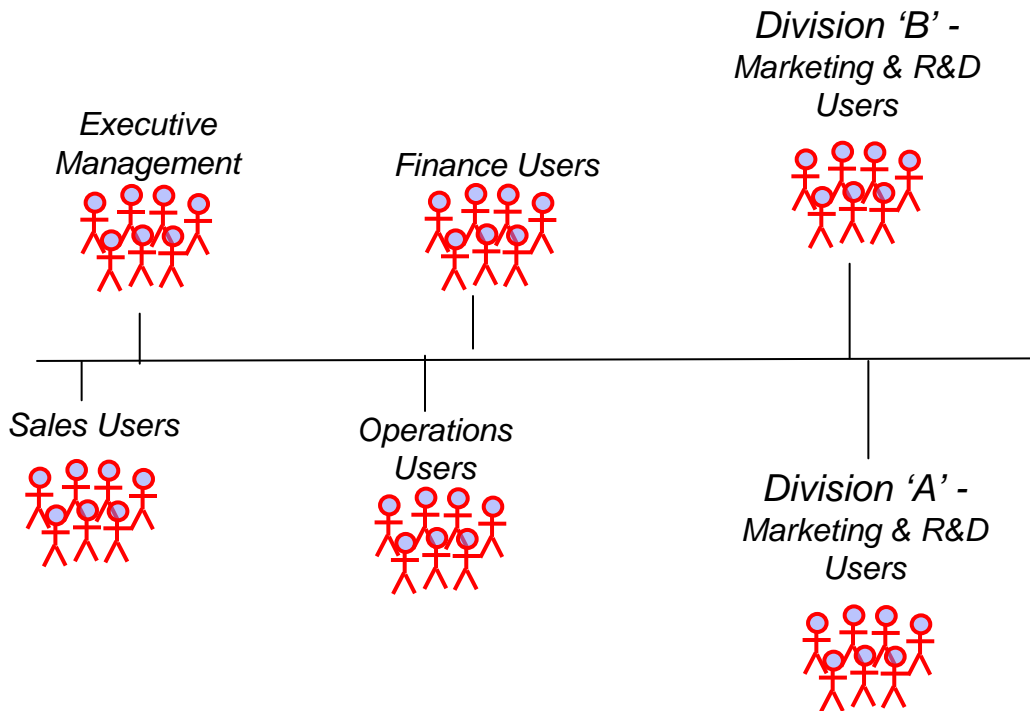
Create it!



Business Operations


But YOU have another option...

Data Warehousing & Business Analytics on System z




When lines of business are pleased with BA applications, not only is your project a success, but a domino effect kicks in, with more and more users utilizing BI applications — thereby further growing the return on investment (ROI) of the BI investment.

Enterprise Data Warehousing and Business Analytics on System z



IBM System z



IT Administrators,
Report Authors &
BI Administrators

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

What the Analysts Are Saying...

“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

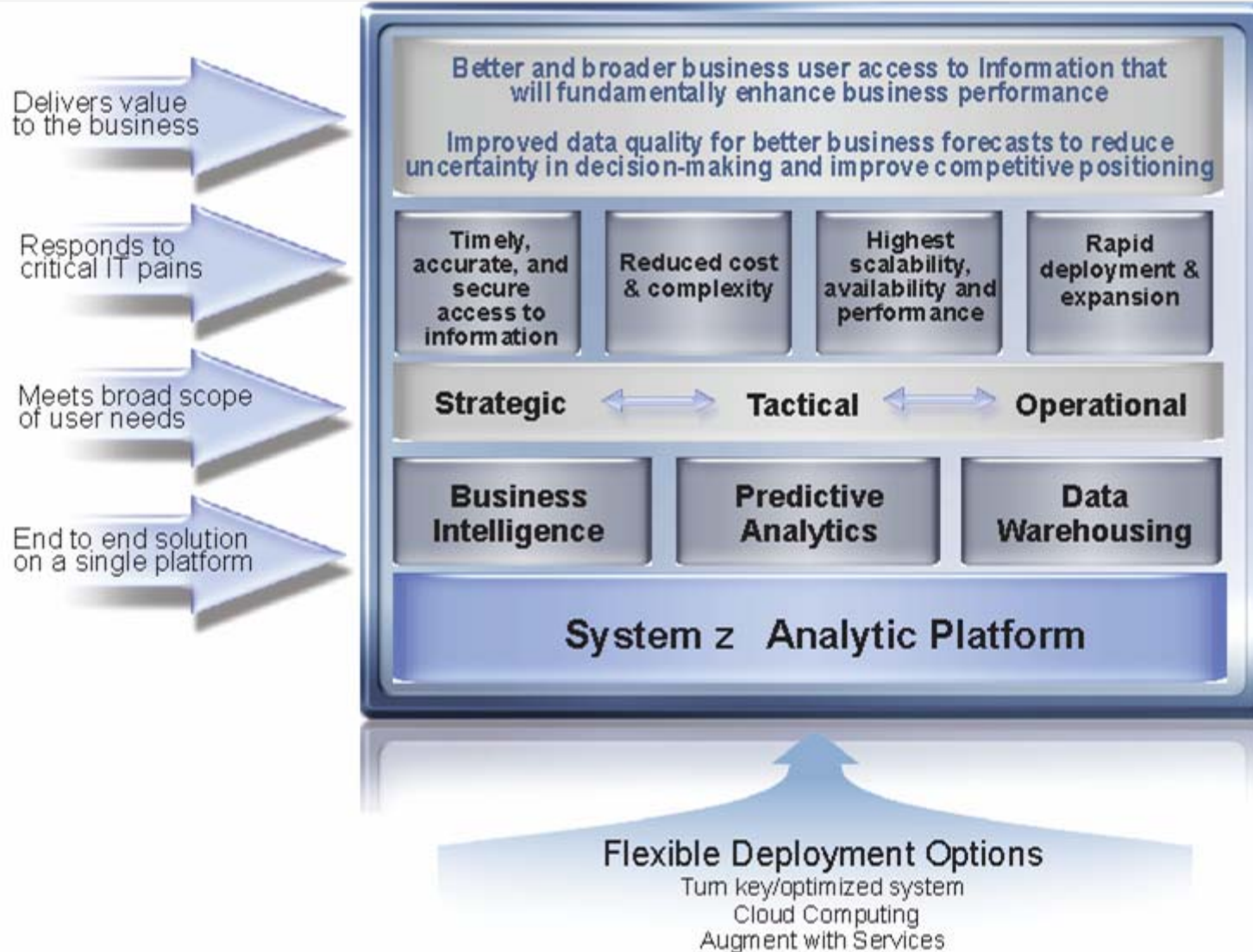
“Clients wishing to evolve their legacy application portfolios into more-modern technologies and architectures can do so on the IBM mainframe.”

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

IBM Business Analytics and Data Warehousing Solution on System z



IBM Product Portfolio on System z

Business Intelligence

- Cognos 10 Business Intelligence
 - Reporting, Analysis, Dashboarding, Real-time Monitoring

Predictive Analytics

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

Data Warehousing

- DB2 for z/OS VUE (Value Unit Edition)
- InfoSphere Warehouse
 - Tooling, SQW, Cubing Services
- 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

Business Analytics on System z

Business Intelligence
Predictive Analytics

IBM Business Analytics on System z

DASHBOARDING



REPORTING



ANALYSIS



*Real-time or historical;
operational or strategic*

*Guided or self-service
access and exploration...*

*Foresight using Statistical, Content,
and Predictive Analytics...*



Executive



Business Manager



Casual Business User



Line Manager



Business Analyst



Financial Analyst

*Just in Time
Capacity*



*Fast Time
to Value*



*Mission
Critical*



*Reduced
Cost*



*Security &
Governance*



*Fast Access
to Data*



IBM Business Analytics on System z

Measure and Monitor to See “How” You’re Doing

Dashboards

- Provide at-a-glance, high impact views of complex information
- Help quick focus on issues that need attention and action
- Combine information across disparate sources
- Benefit from range of highly visual personalized, managed, or self-assembled dashboards
- Gain personalized views of operations with continuous monitoring



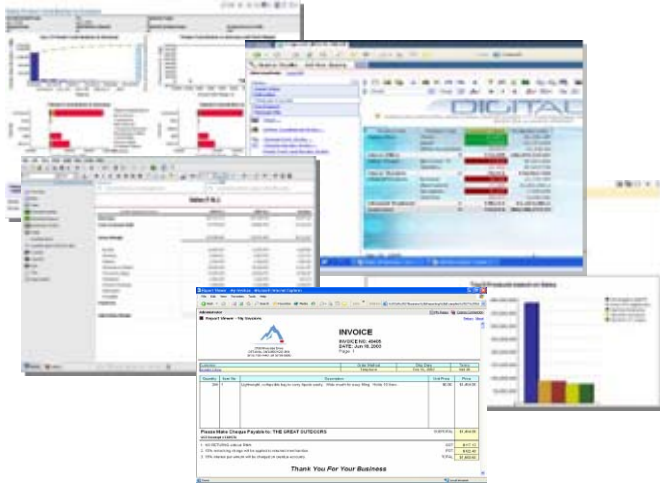
Real-time Monitor Business Operations



- Continuously monitor and alert when exceptions occur to take immediate action
- Detect events, anomalies and trends in data streams flowing through transactional and messaging systems
- Aggregate data streams across multiple transactional systems and data sources
- Enable self-service with user-defined dashboards, operational KPIs, and alerts
- Address full operational decision cycle from detection to action

IBM Business Analytics on System z

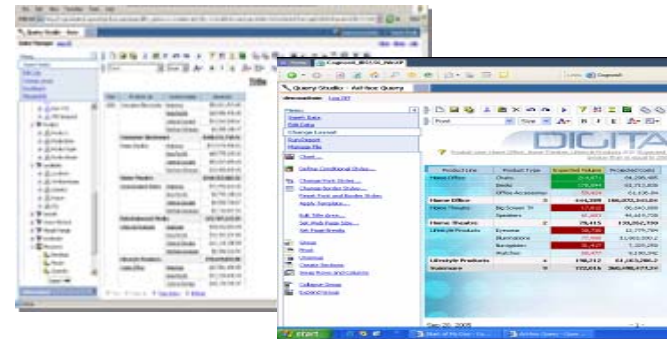
Start to Understand the “Why” Behind Business Performance



- Address full breadth of report needs (personalized, transactional, management, statutory, production...)
- Deliver consistent information across all types of output
- Personalize and target to each department/individual without having to re-author
- Re-use queries, analyses, express author reports in business and collaborate on design with IT
- Easy access to data lineage, definitions of terms, and annotations

Ad-hoc Query

- Intuitive, self-service reporting
- Access to all data; drag and drop query creation
- Easy sorting and filtering
- Corporate templates for consistency
- Share ad-hoc or promote for professional distribution

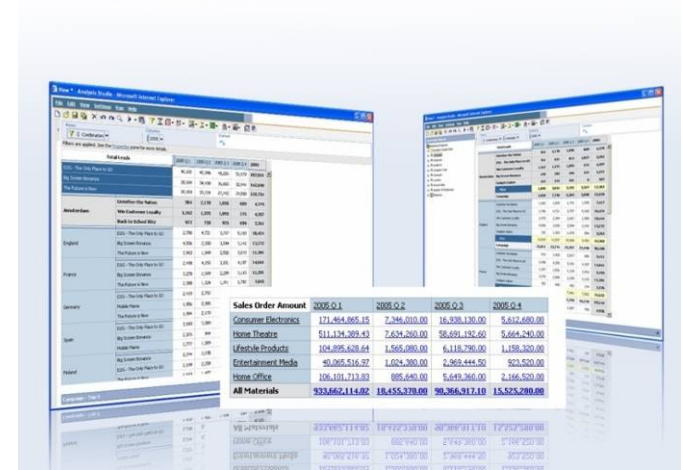


IBM Business Analytics on System z

Dig Deeper into “Why” and Investigate Possible Better Outcomes

Analysis

- Compare and contrast to reveal symptoms and causes behind trends
- Gain same analysis experience on Web or in Excel interfaces
- Perform personal exploration across multiple dimensions of information
- Move from summary level to detail effortlessly

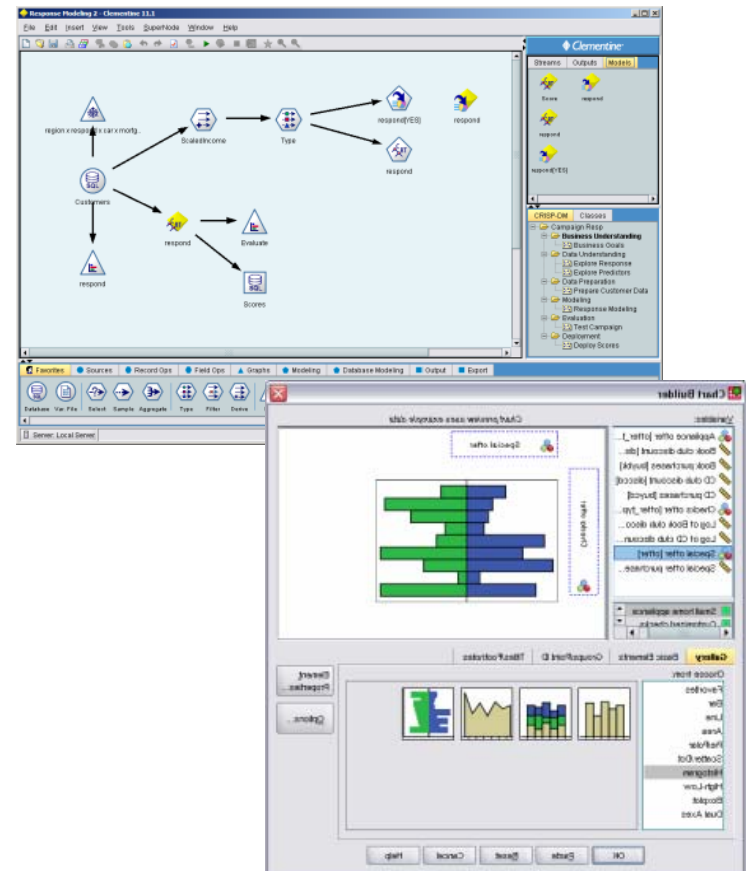


IBM Business Analytics on System z

Informed Decisions with Statistics and Predictors of “What Might Happen”

Predictive Analytics

- **High-performance data mining and text analytics workbench**
- Quickly delivers positive ROI by creating the predictive intelligence
- Set of mining algorithms that provide insight and prediction
- Enables the discovery of key insights, patterns and trends in data that can be used to optimize business decisions
- **Advanced statistics and data management for analysts researching business problems**
 - Analysis, interpretation, explanation and presentation of data
 - Provides insight into a sample of data and tools for prediction and forecasting based on the data
- **Flexible enterprise foundation for managing and deploying analytics throughout the organization**



IBM Business Analytics on System z

Gain Flexible Access Wherever and Whenever Needed

Business Analytics Anywhere

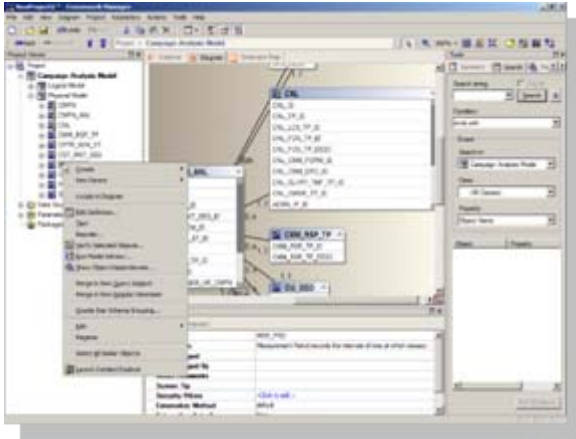
- Receive in any format (PDF, HTML, Excel, XML...)
- Deliver in any language with robust Unicode support
- Access refreshable BI content in any location that best serves the individual (Excel, PowerPoint, Word, Enterprise Search, Portal)
- Search to find instant answers, related content and to author based on search terms
- Browse BI content on mobile devices including BlackBerry, Windows Mobile and Symbian devices
- Automate personal alerts, email bursting, scheduled report production
- Mashup within applications and in processes



IBM Business Analytics on System z

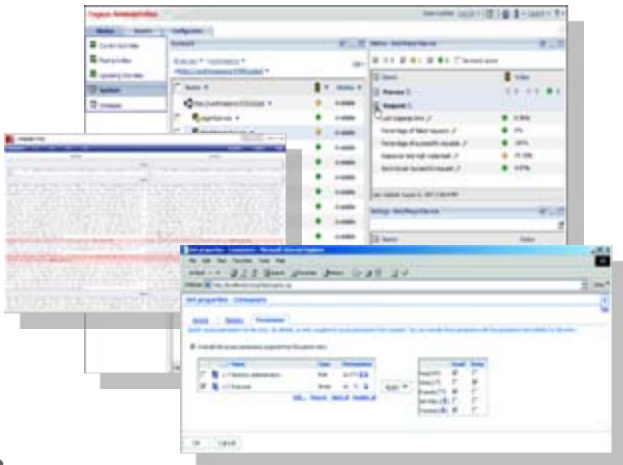
Deploy and Manage the BA Environment

Model Information Sources



- Deliver information in terms business understands
- Combine data into a single view across multiple disparate sources, including OLAP and relational
- Optimize models with built-in advisor, impact analysis, and integration with 3rd party metadata
- Easily manage multi-lingual, multi-tier models with reusable objects, versioning and retargeting
- Flexibly deploy model packages to deliver relevant views securely to different communities

Administer the Deployment



- Complete view of system activity
- Task-oriented system monitoring
- Integration with 3rd party EMS
- Proactive administration before business impact
- Comprehensive security down to data layer
- Visual upgrade with automated environment validation

Cognos 10: Intelligence Unleashed

Smarter Decisions. Better Results.

Freedom to **Think**

- Unified workspace
- All time horizons
- Progressive interaction

Connect with Others

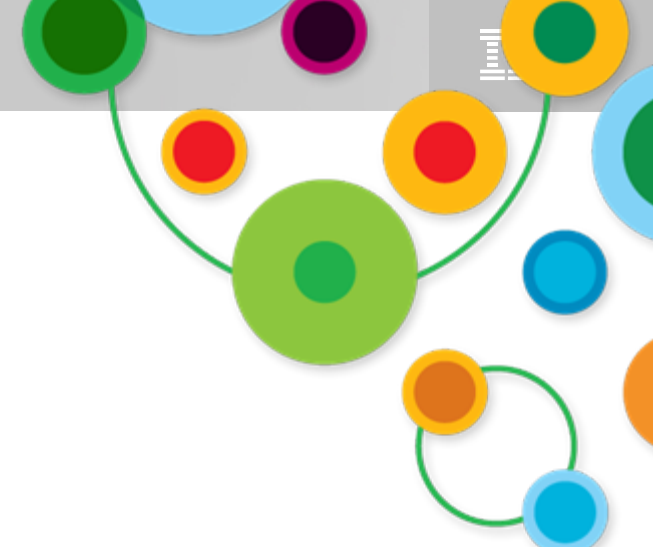
- Decision networks
- Business context
- Accountability

and Simply **Do**

- Mobile and Disconnected
- Integrated
- Real-time



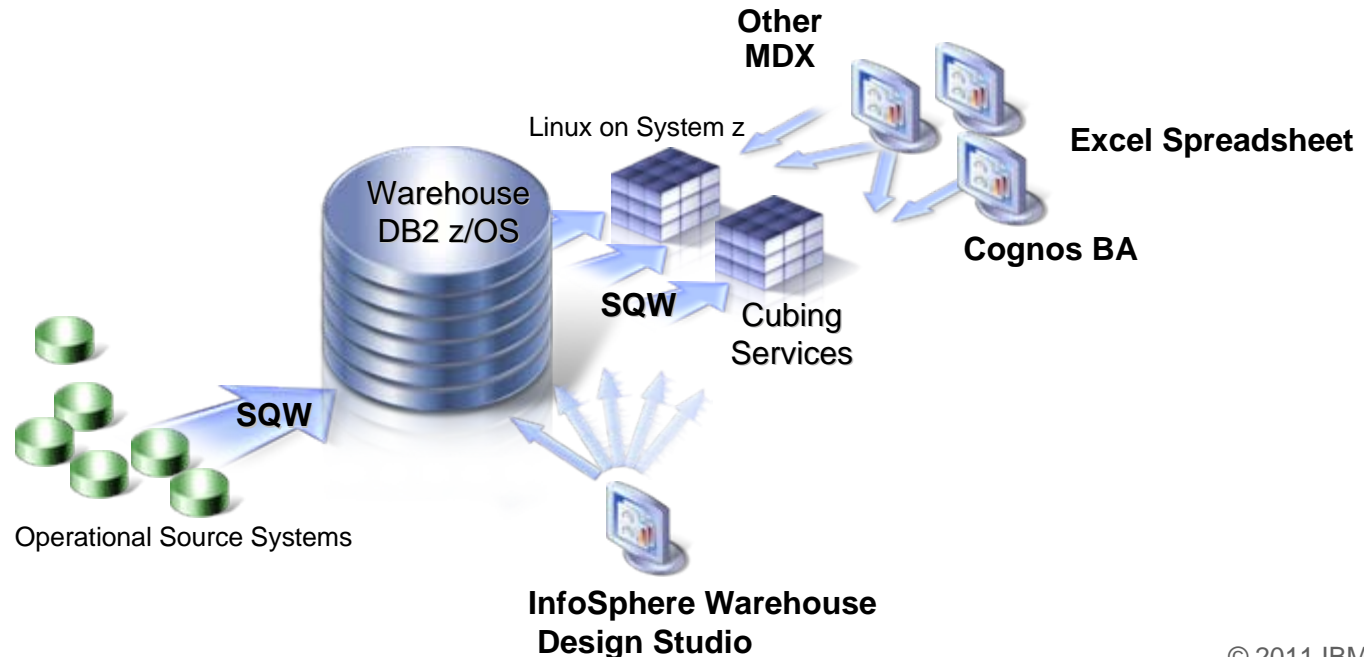
**A revolutionary BA workspace
delivered on a proven platform
with seamless upgrade**



IBM Data Warehousing on System z

InfoSphere Warehouse on System z

- **Highly scalable, highly resilient, lower cost way to design, populate and optimize a DB2 for z/OS data warehouse**
- **Adds core data warehouse and analytics capability to DB2 for z/OS**
 - Advanced physical database modeling and design
 - in-database data movement and manipulation capabilities of SQL Warehouse Tool (SQW)
 - Optimize multidimensional reporting and analysis of data with Cubing Service



IBM Smart Analytics Optimizer

Capitalizing on the best of relational and the best of columnar databases

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

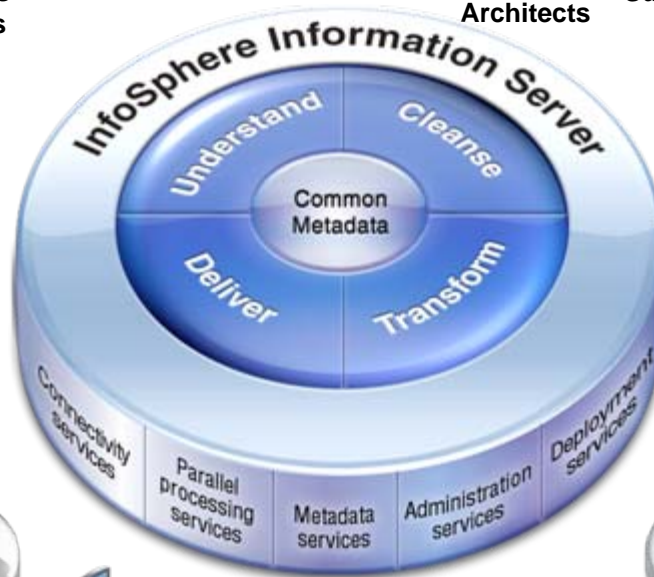
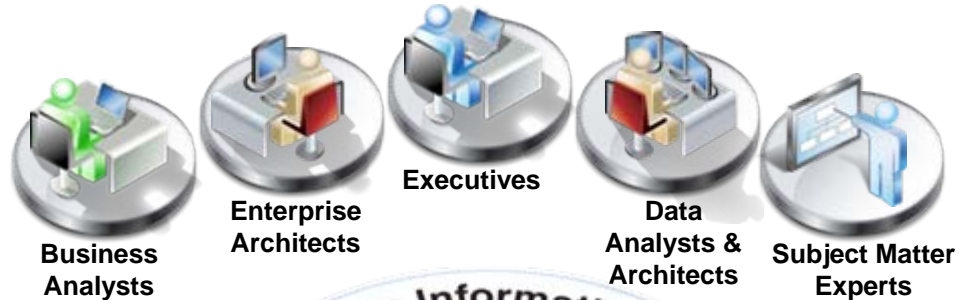
- **Performance:** Unprecedented response times to enable 'train of thought' analyses frequently blocked by poor query performance.
- **Integration:** Connects to DB2 through deep integration, providing transparency to all applications.
- **Self-managed workloads:** queries are executed in the most efficient 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

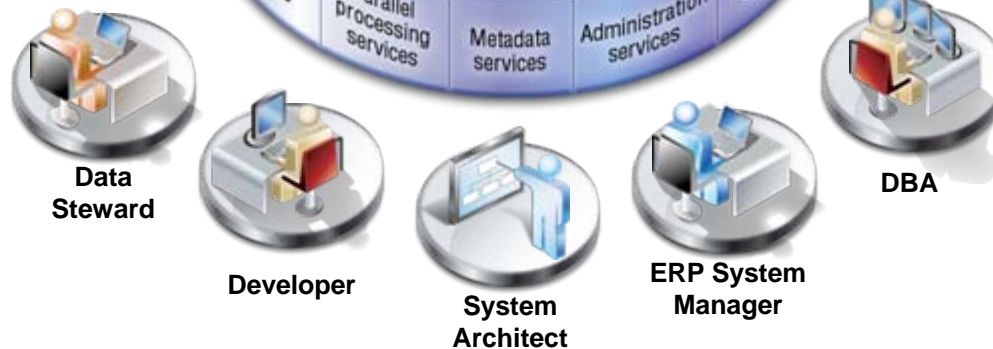
InfoSphere Information Server

Use a single platform that creates trusted information

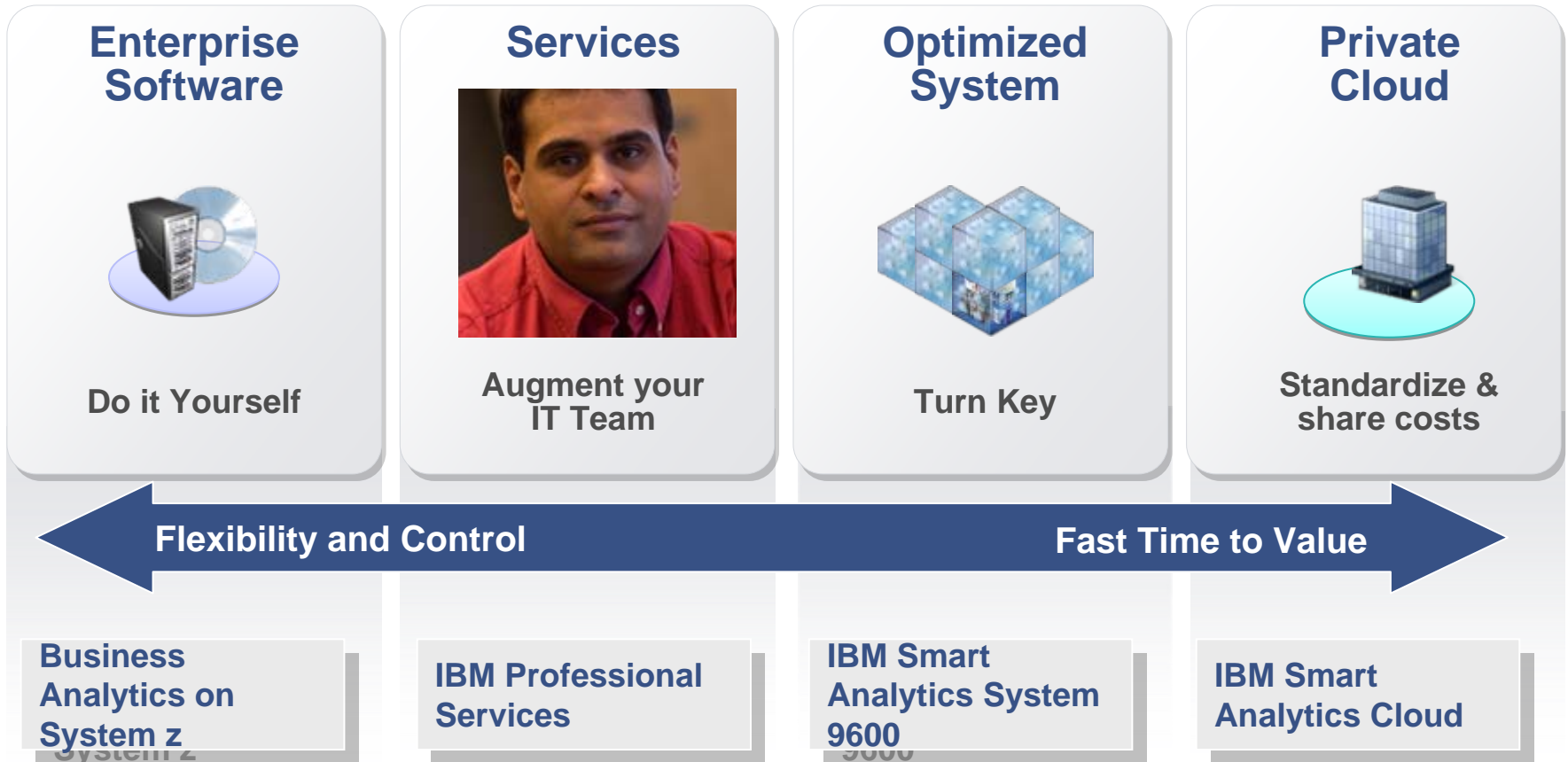
Sources



Business Initiatives



Flexible Deployment Options



IBM Smart Analytics System 9600

Unprecedented Value in Deploying New Business Analytics

What is it?

The IBM Smart Analytics System 9600 is 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



How is it different?

- *Secure, Available Business Analytics*
 - Rapidly delivers analytic information to decision makers at the time of decision.
 - New environment for the availability, reliability and scalability necessary to stay aligned with the operational systems
- *Simplified administration*
 - Appliance-like delivery
 - Faster deployment at lower cost.
 - Leverages customers existing disaster recovery, and backup processes
- *Proven Operational Characteristics*
 - Extends the qualities of service of System z.
 - Reduces risk through extending System z manageability and security across the entire system.
- *High Value Operational BI*
 - Cost effective way to drive daily operational decisions

***Delivering business results in days,
not months***

The Smart Analytics Cloud

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 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

Planning the Journey

- C-Level Studies (IBM Research)
- The Performance Manager Book
- Product and Solution Demonstrations



2010
CHIEF FINANCIAL OFFICER STUDY



Getting a Fast Start

- Industry Blueprints
- Analytic Applications
- Mid-Market Application



Extending the Value

- Innovation Center
- Champion's Kit
- Performance Management Workshops
- Education, Training & Services





The Proof

Miami Dade

TCO/TCA Study

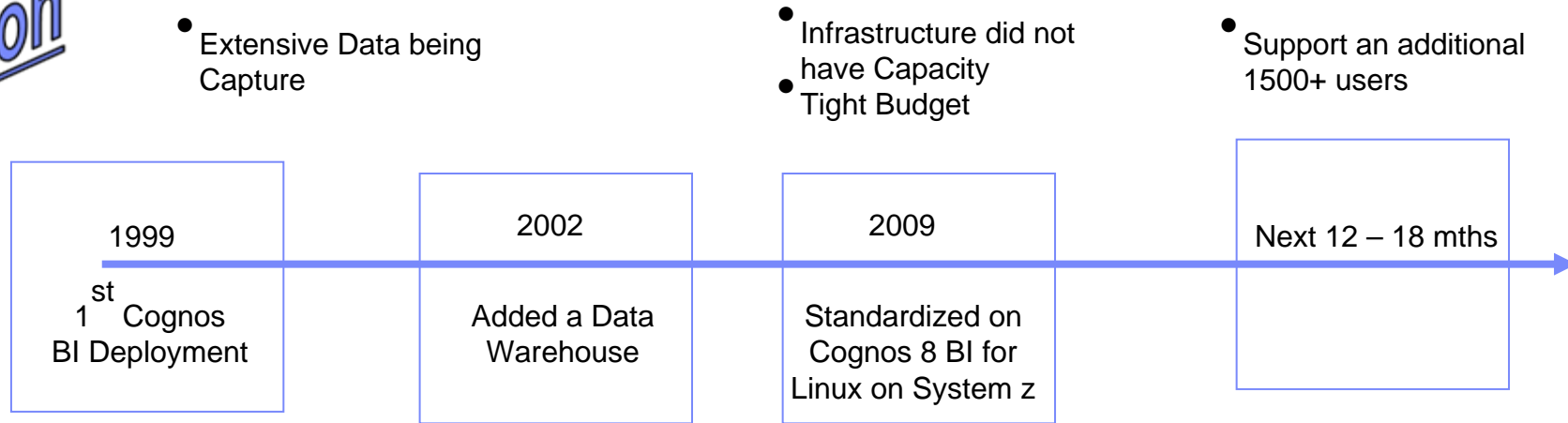
Performance Testing

IBM Blue Insight

Success Story – Leveraging Cognos 8 BI for Linux on System z

Customer Objective: Using System z to standardize on a single BI solution

Situation



Value

- Increase in Exchange of Information
- BI Grew in Strategic Importance
- Support Existing and Future needs on a single platform
- Expand Usage
- Increased speed, reliability & scale
- Within budget
- Disaster Recovery Plan built in
- Faster Access to Data

Cognos BI TCO/TCO Study: Deployed on System z vs x86

- Product Focus: **IBM Cognos 8 BI**
- Objective: **Explored the TCO of choosing an x86 based infrastructure vs System z for a Cognos 8 BI deployment**
- Scenarios studied:
 - Multiple deployment sizes (100, 1,000, 10,000, 20,000, 50,000)
 - For each size of deployment sizes we then evaluated:
 - The TCO of a standard deployment based on Cognos 8 BI best practices
 - + High availability
 - + Technology Refresh.
 - + Scalability
 - Explored all the acquisition, management and maintenance costs for a Cognos 8 BI infrastructure over 5 years were included
 - All 1st year costs included the acquisition costs of the hardware.

The Results

- **Average savings over 5 years of choosing System z: 36%**
- **Total cost of acquisition is the same across both platforms**
- **System Administration cost savings with System z is equal to the TCO over 5 years for Cognos 8 BI for Linux on System z**
- **x86 infrastructure and does not offer the any volume discounts from a facilities/administrative perspective**
- **High availability is approximately 50% cheaper with System z**
- **Existing System z customers only stand to further reduce there TCO.**

Learn more: ibm.com/software/systemz/telecon/15jun

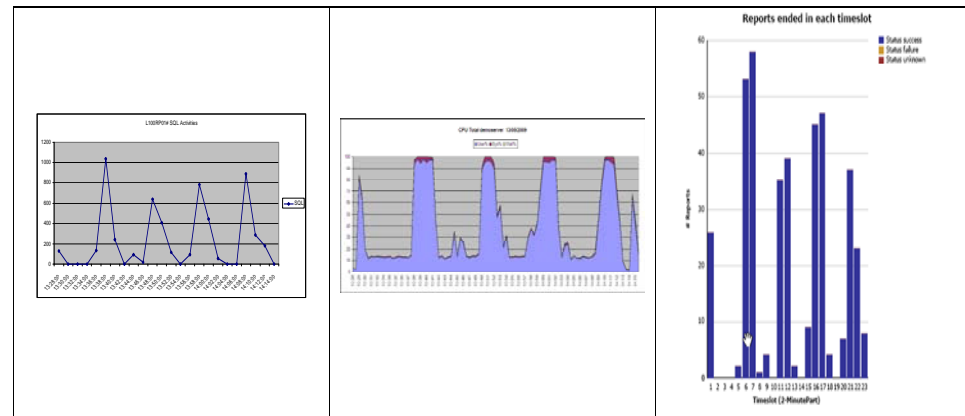
Cognos 8 BI for Linux on System z....Performance Testing

- **Customer provided the need**
 - Processes operational and financial data for 10.000 other companies and exchanges info with 250 B2B partners.
 - Faced with performance & stability issues and could not expand it's BI any further.
- **IBM Provided the Test Infrastructure**
 - Cognos 8 BI v3 and Websphere set-up on a Linux on System z and a DB2 instance on z/OS.
- **Numius Provided the Expertise**
 - Ported existing application from the distributed to System z:
 - Cognos 8 BI
 - Oracle on HP-UX to DB2 on z/OS
 - MS-SQL on Wintel to DB2 on Linux on System z)
 - MS-IIS on Wintel to WebSphere on Linux on System z).
- **Cognos Provided the Flexibility**
 - Cognos 8 BI - open to Operating Systems and Database Systems, no redevelopment was required

The Results

Cognos 8 BI for Linux on System z

- By adhering to our best practises could support more users and deliver faster performance.
- There was no change in functionality at the Cognos 8 BI level, so no impact whatsoever for the end-user.
- Not one report timed out, not one user was rejected. Even when the system slowed down, it remained stable.
- No redesign was needed to achieve his objective of reaching out to a large community.



IBM Blue Insight

In the spotlight



*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

IBM's Pains:

- Segmented investments in BI tooling and infrastructure
- Silo'd development, redundant and possibly competing
- Lack of tooling standardization
- Limited visibility to the total cost of business intelligence costs for the enterprise
- Organizational reluctance to a centralized service

IBM's Strategy:

- Common BI “appliance like” service for delivering BI to IBM
- Common service definition and boarding process
- Business intelligence experts to assist adopters
- Start with BI, grow to:
 - Predictive Analytics
 - Data Warehouse

IBM's Results:

- Consolidating 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

Learn more: ibm.com/software/systemz/telecon/1jun

System z delivers on the promise of Enterprise DW and BA

Timely, Accurate & Secure Access to Information

- ✓ Provides agility with analytics based upon the most current information
- ✓ Drastically improves query response times up to 1000X
- ✓ Speeds up business decisions with faster access to broader, more detailed data
- ✓ Protects against unauthorized access to data
- ✓ Minimizes data duplication to increase user confidence in the data
- ✓ Responds to auditing requests more rapidly and accurately

Reduced Cost & Complexity

- ✓ Reduces total cost of computing through consolidation
- ✓ Reduces complexity through a simple, flexible architecture
- ✓ Leverages ground breaking licensing and pricing models

Highest Scalability, Availability & Performance

- ✓ Applies the industry's highest availability to critical business information
- ✓ Quickly implements cost effective disaster recovery
- ✓ Scales to support big data without delay

Rapid Deployment & Expansion

- ✓ Quickly orders and deploys decision systems and accelerators
- ✓ Provides agility to realign strategy with minimal expense and disruption to the business
- ✓ Offers cost effective enterprise solution that can grow incrementally
- ✓ Delivers staged implementation that demonstrates immediate value to the business



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

