IBM

IBM Business Analytics on System z

Delivering timely, accurate business information quicker with less resources & expense.

Cognos. software

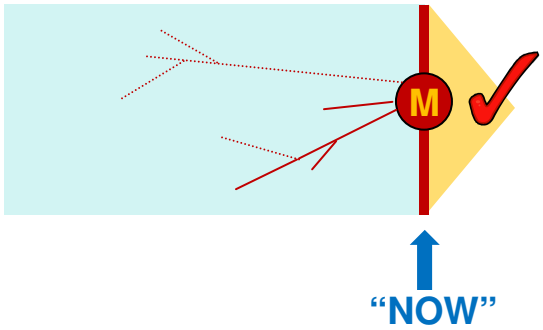
What is Business Analytics

Predict & Act

Sense & Respond

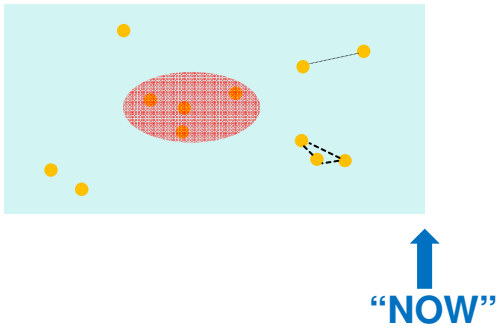
Deploying Predictive Models

- Leverage current and historical data
- Make robust predictions on current and future cases
- Embed in business processes to transform decision making and drive better outcomes



Predictive Analytics:

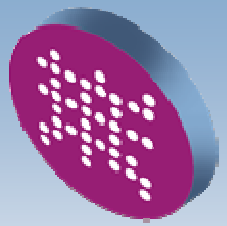
- Algorithms automatically discover significant patterns
- Deliver deep insights to improve strategic and operational decision making
- "Learn" from historical data – create *predictive models*



Business Intelligence:

- Insight, metrics, etc. up to this point in time
- User initiative to explore aggregate data

Customers are using Business Analytics to:



Discover insights by capturing and synthesizing information from a variety of sources.

Predict outcomes by consolidating systems to establish an integrated view of the business.

Act faster with real-time business insight to better understand customer preferences.

The Real Value of Business Intelligence

Selling fish while still at sea

Fishermen selling their catch before they arrive in port, evaluating the market for each type of catch and focusing their efforts on the best return

Rescheduling passengers still in the air

Airline rebooking passengers onto new flights based upon business impact, that will not be able to connect because of a late flight

…more pervasive BI and analytics have a direct impact on competitiveness

Source: IDC *Dan Vesset,* **The Road to BI Success, Jan 2010**

The Real Value of Predictive Analytics

Center for Disease Control

Improve Health Care and Patient Outcomes

- Quickly capture and analyze vast amounts of data on critical public health issues found through interviews, email and the Internet in real time
- Better characterize diseases, identify risk factors and quickly assess medical needs of specific populations
- Predict the expected course of outbreaks and plan the response for improved public safety

Cablecom GmbH

Reducing Customer Churn

- Analyze customer demographic data, customer survey data, transactional information in databases to predict early indicators of customer churn
- 100% improvement in churn detection and an initial reduction in actual churn from 19% to 2%
- 53% of its unsatisfied customers became company promoters

Richmond Police Department

Predict and Prevent Criminal Activity

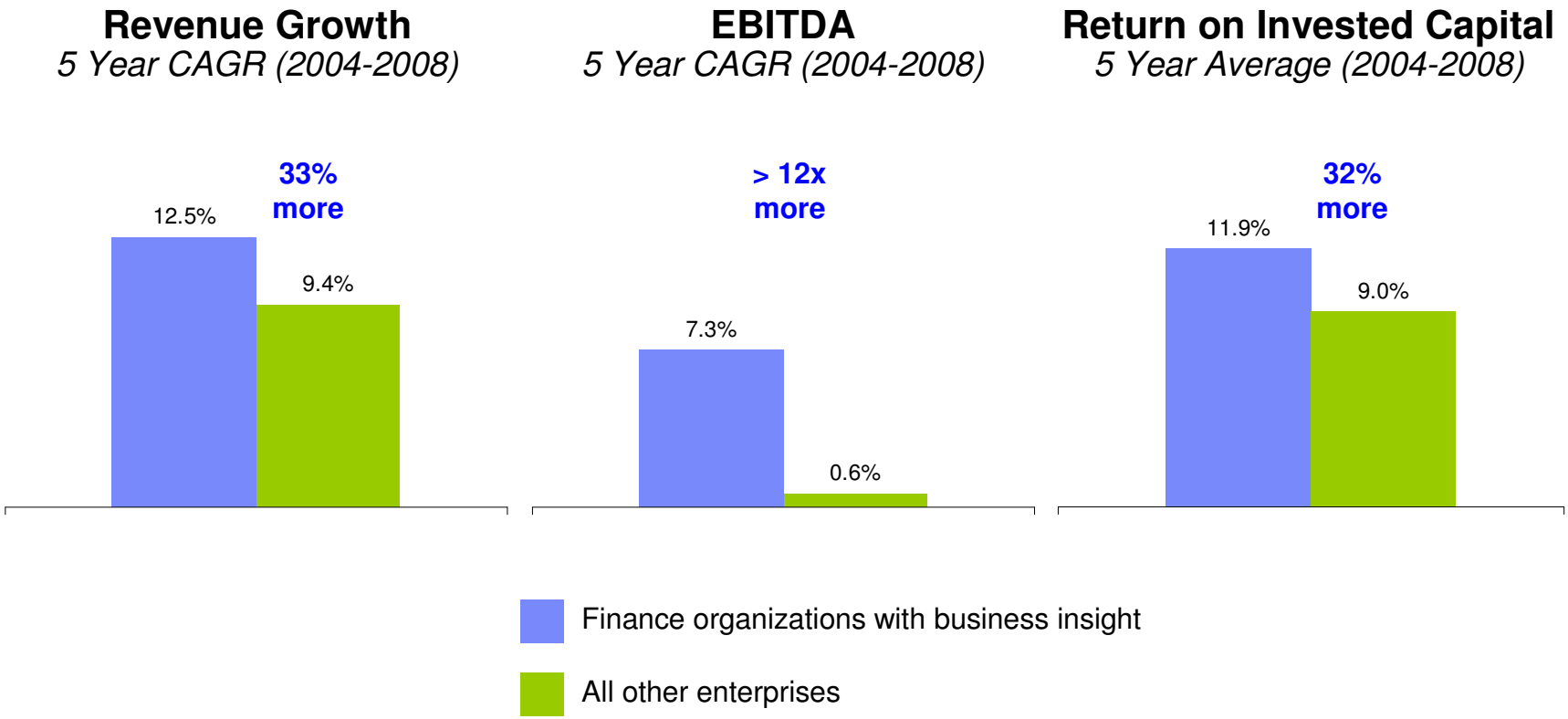
- Analyse incident reports, tips and service calls and Identify and predict crime patterns
- Pinpoint “hot spots” and place tactical units where they are needed most
- 20-30 % decrease in violent crime and homicides in a 12-month period

Infinity Property and Casualty Corporation

Reducing Fraud

- Real-time claims scoring to determine whether claims are legitimate
- Cut referral time from 14 days to less than 24 hours on Special Investigation claims
- Identified and addressed subrogation claims at twice the speed – from 26 to 10 days

Companies that invest in business insight consistently outperform

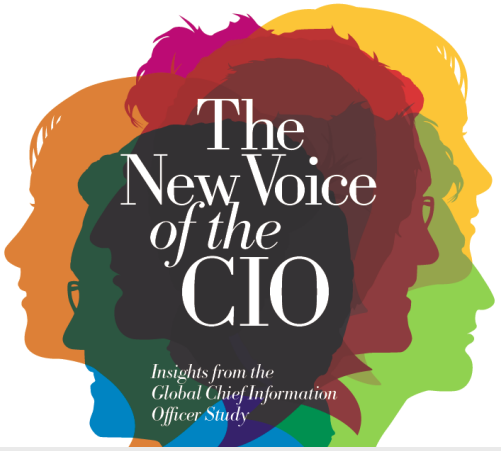


Revenue Growth: N = 580; EBITDA: N = 435; ROIC: N = 606
Source: IBM Global Business Services, The Global CFO Study 2010

Shifting Market Dynamics

Will your Infrastructure be able to Support the shift?

- Business Analytics: Strategic Asset/Mission Critical
  - Broader, more intense users
  - High availability & performance expectations
  - Access to more data
- Troubled economy
  - Do more with less – business & IT
  - Economies of scale/consolidation
- Corporate regulatory compliance driving security
- Environmental concerns



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 ….The Business Needs it!

Executive Management
Are we driving revenue growth effectively?

Marketing
Are we creating enough interest to ensure our success?

Product Management
Are our products meeting our customers needs?

Sales
What is driving sales performance and pipeline?

Operations
Who is the best supplier – based on price, quality and delivery timelines?

Customer Service
Are we meeting our customers service level objectives, to ensure they keep coming back?

Human Resources
What are the talent and succession gaps we must address to ensure sustained performance?

Business Analytics ….The Users Want it!

EXECUTIVE

At-a-glance view of financial and operational performance

BUSINESS MANAGER

Fast access to relevant information to make better operational decisions

FINANCIAL & BUSINESS ANALYST

Free to explore and analyze, and assemble insight for others

LINE MANAGER

Real-time monitoring to continuously adjust operations activities

EMPLOYEES

Receive scheduled, personalized content and subscribe to most relevant for their role

CUSTOMER & PARTNERS

Secure access to information over the web with no training

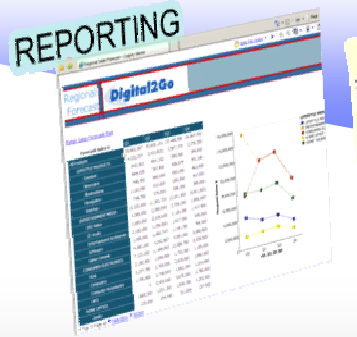
Business Analytics

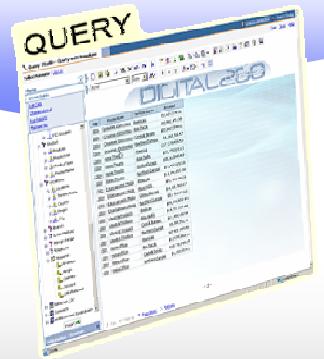
Full range of capabilities needed to inform the business

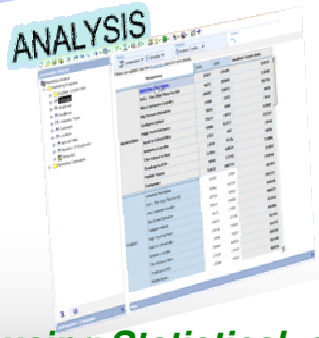
How are we doing?

Why are we on/off track?

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…


Executive


Business Manager


Casual Business User


Line Manager


Business Analyst


Financial Analyst

The Journey to Smart Business Decisions

Optimize it!

Leverage it!

Transform the Business

Analyze it!

Expose it!

Provide access to the data to ensure smart business decisions

Business Analytics

Organize it!

Store it!

Standardize it!

Transform it!

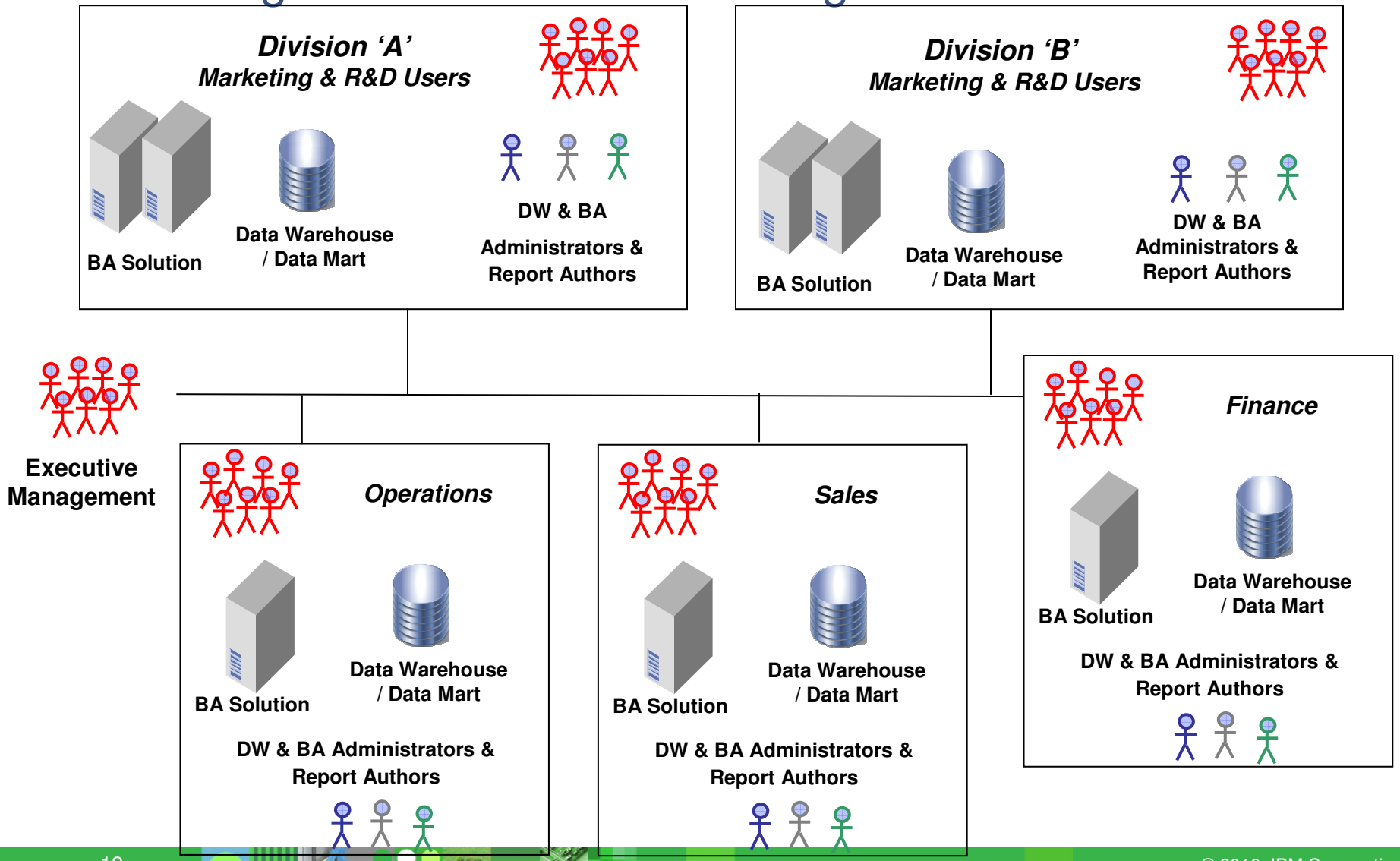
Manage your Data and **s**implify the delivery, access & management of expanding data infrastructures

Data Warehouse

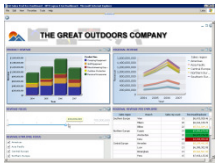
Create it!

Business Operations

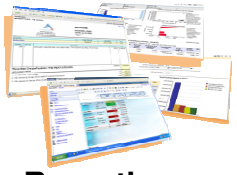
Today's Traditional Business Analytics Infrastructure …Making it Difficult to Meet Shifting Demands



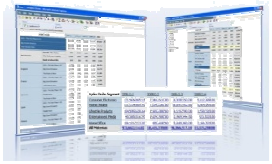
Business Analytics ….Conflicting Demands!



Dashboards



Reporting



Analysis

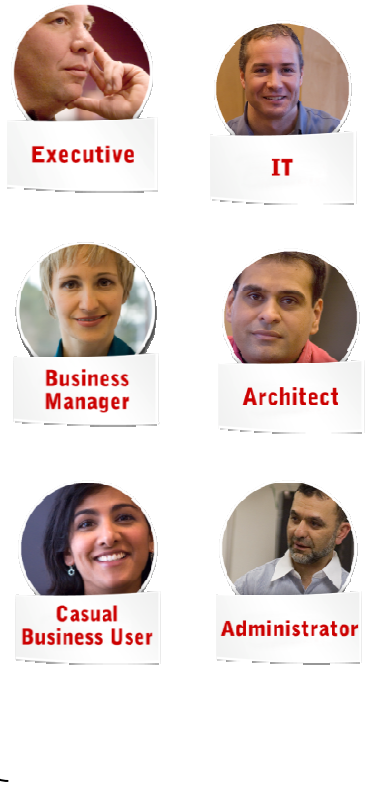
Real-time Monitoring

The Voice of the Business

- Need to ensure smart business decisions

With…

- Support for more users
- More/faster access to business data
- Less tools
- More functionality
- Ability to work the way we work
  - How
  - What
  - When
  - Where



The Voice of IT

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

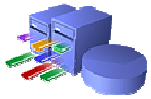
While….

- Reducing costs
- Reducing complexity
- Reducing the time to value
- Meeting SLA objectives
  - Performance
  - Availability/ Reliability
- Ensuring security

Application & Web Servers

Data Integration & Data Quality Tools

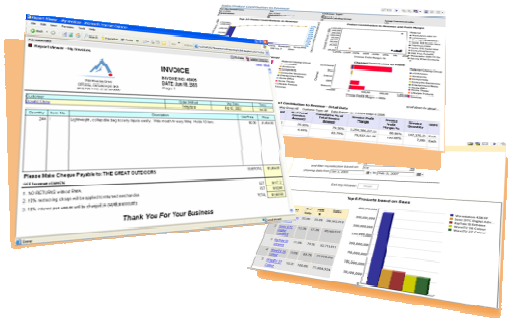
Security Providers & Firewalls



Platforms & Databases

Challenges to deliver Enterprise Business Analytics

- *Growth in disparate / disconnected tools*
- *Infrastructure costs are getting out of control with multiple BI deployments*
- *Data quality is in question*
- *Business needs access to more data*
- *BA infrastructure can't scale to meet growing business needs*
- *Departmental compliance in question to meet corporate and regulatory requirements*
- *No visibility of user access to sensitive data and varying levels of security*
- *Disaster recover plans are too costly to implement for mission critical BA*



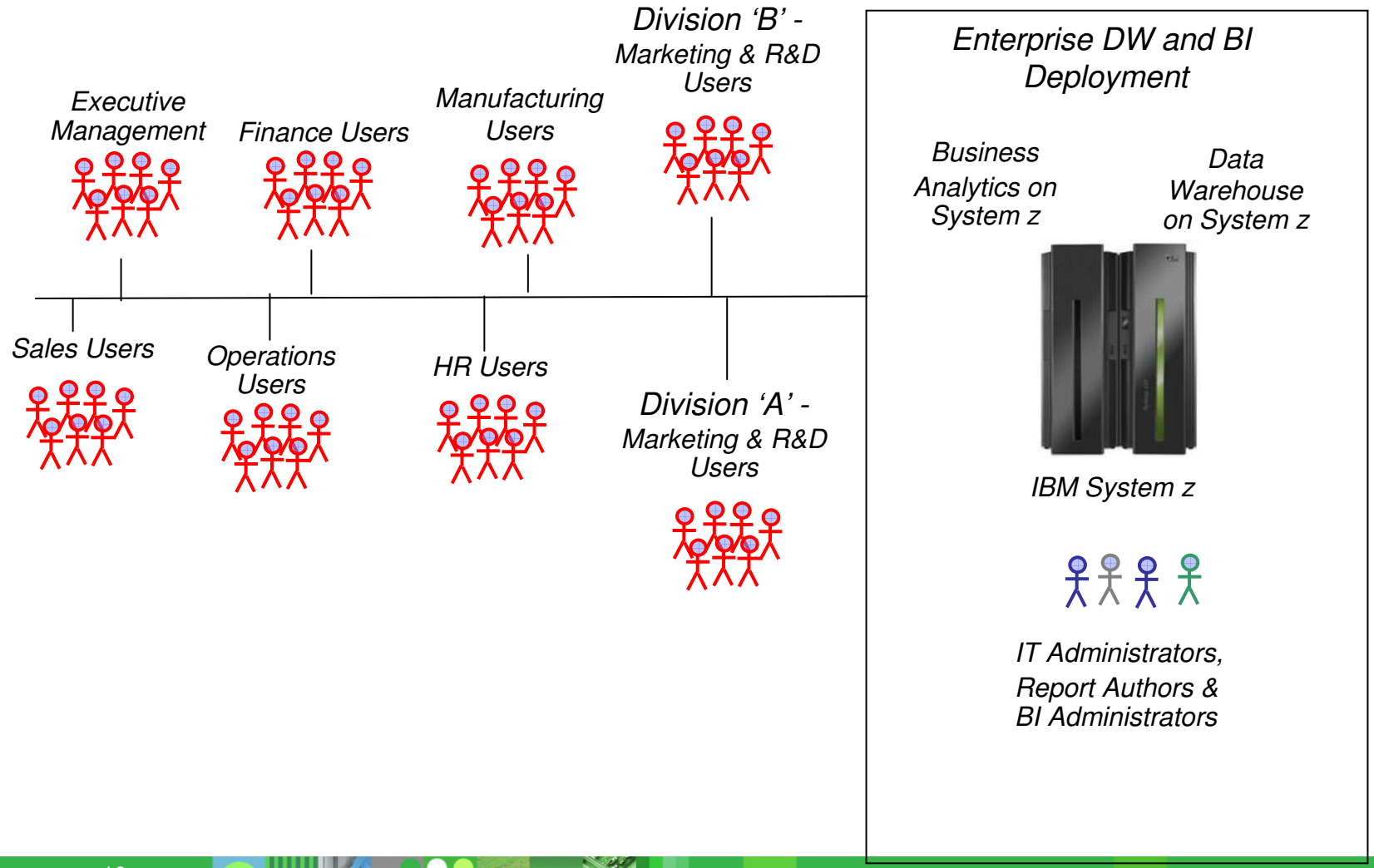
Challenges to deliver Enterprise Data Warehousing

- *Difficult to manage, maintain and update data warehouses due to growing and expanding data sources*
- *Growing complexity and cost of managing expanding server farms make it difficult to ensure availability & security of DW infrastructure.*
- *Unable to maximize existing server capacity to gain full advantage*
- *Time it takes to add new data servers is not aligning with the demands of the business*
- *Need to simplify the cost, complexity and process of providing access to near real-time transactional data*
- *Need easier and faster way for more users to drill down into the large volumes of company data*
- *Information in the DW needs to be consistently available and reliable*

According to Gartner:

- *Fewer than 15% of data warehouses in 2007 have been designed to provide high availability, failover, disaster recovery and the remaining components of mission-critical systems.*
- *The mixed workload performance will become the single most important performance issue in Data Warehousing*
- *Over 60% of current data warehouses fail when attempting to deliver in-line operational BI and Analytics*
  - *Resulting in lost revenue or increased costs.*

But what if YOU had Another Option?
Data Warehousing & Business Analytics on System z



IBM System z…the platform for the future

"you cannot think seriously about your longer-term IT architecture without thinking equally seriously about what today's mainframe environment has to offer“

CIO Magazine: Mainframe computing is set for a rebirth – September 29, 2009

Why is System z the Right Platform Choice for BA & DW?

Because we are Moving from Multiple Interconnected Infrastructure Components to the Entire Infrastructure on a Single Machine…….

- Provide all decision-makers with complete, consistent, timely and relevant information
  - Easily scale
  - Deliver the breadth of capabilities
  - Federated Data Access to multiple disparate data sources
  - Provides an end to end business analytics infrastructure
- Reduce the cost and complexity of providing Business Analytics to your organization
  - Centralizes resources and reduces the hardware, software, and facilities costs
  - Significantly reduces the time & resources for BA system administration
  - Delivers greater economies of scale
  - Makes high availability of BA infrastructure a viable option
  - Allows the Business to focus on the business rather than being concerned about the infrastructure
- Increase user satisfaction and ROI
  - Offers guaranteed system performance and availability to meet or exceed SLAs
  - Provides faster query and response time
  - Eliminates bottlenecks
- Make Business Analytics deployment easier
  - Deploy in days/weeks
  - Reduces the time, resources and cost to roll out changes and new capabilities
  - Allows the capacity to grow automatically top meet the varying demands
  - Eliminate cost related barriers of entry
  - Automates and facilitates self service provisioning
- Simplify enforcement of corporate regulations and standards
  - Ensure corporate security policies are followed
  - Ensure disaster recovery plans are in place
  - Maintain control over business processes

What Can We Offer You?

Business Analytics and Data Warehousing on System z

Business Analytics OPTIONS

IBM Cognos Business Intelligence for Linux on System z

IBM Cognos Now! for Linux on System z

IBM SPSS for Linux on System z

Optimized Decision Making


Executive


Business Manager


Line Manager


Casual Business User


Business Analyst


Financial Analyst

Intuitive and tightly integrated capabilities accommodate decision makers with different needs and skill sets

Easy access to a consistent, trusted and relevant view of information where, when and how it is needed

Common Business Model


Message Sources


Relational Sources


Application Sources

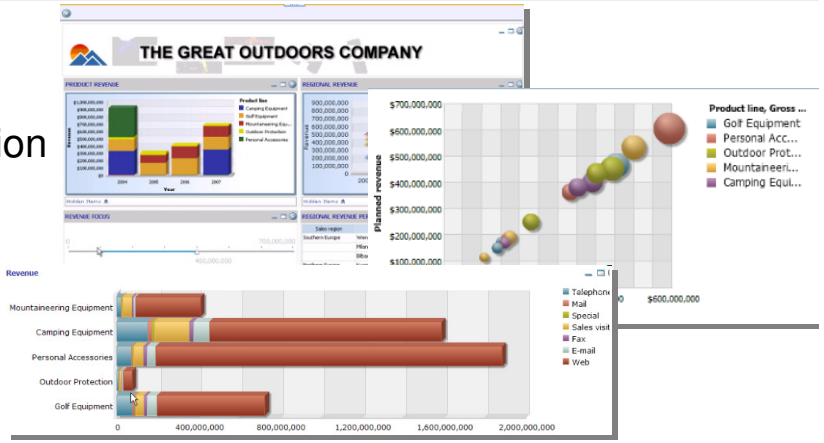

OLAP Sources


Modern and Legacy Sources

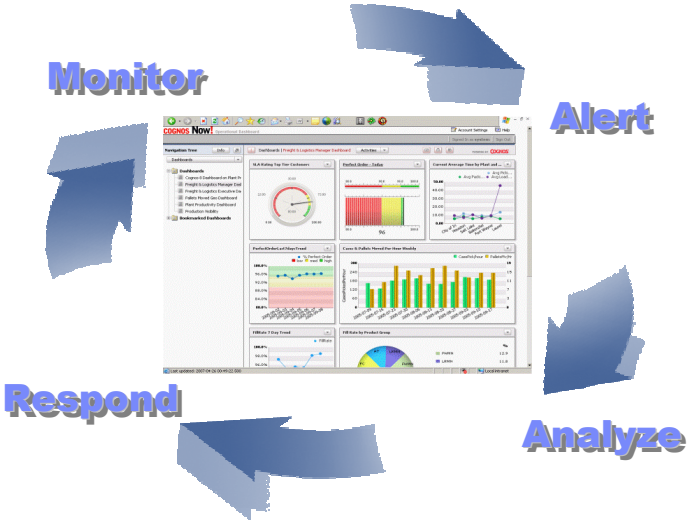
Measure and Monitor to See "How" You're Doing

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



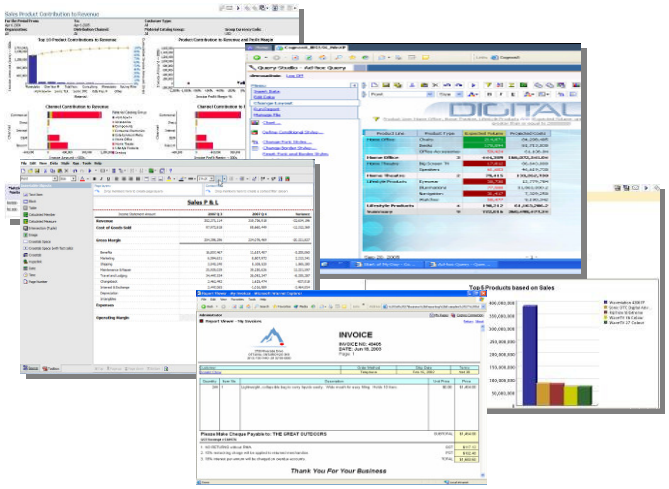
Real-time Monitor Business Operations



- 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

Start to Understand the "Why" Behind Business Performance

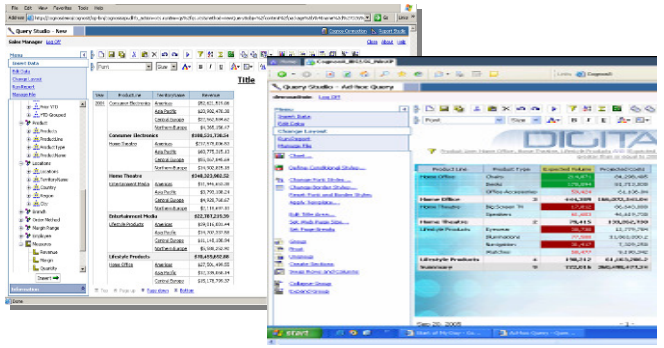
Reporting



- 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

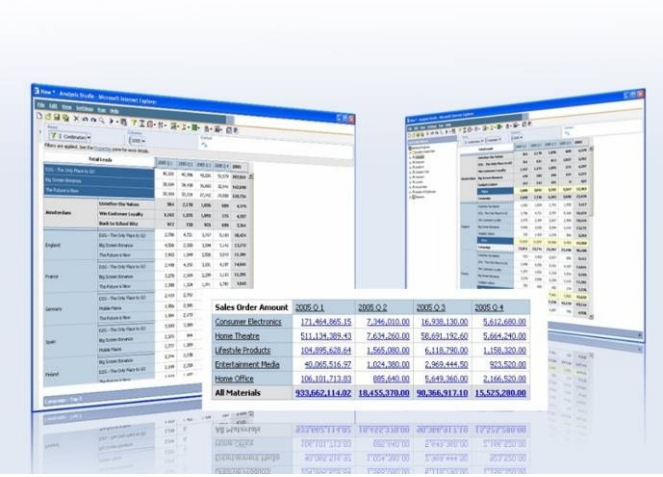
- Intuitive, self-service reporting
- Access to all data; drag and drop query creation
- Easy sorting and filtering
- Corporate templates for consistency
- Share ad-hoc or promote for professional distribution



Dig Deeper into “Why” and Investigate Possible Better Outcomes

Analysis

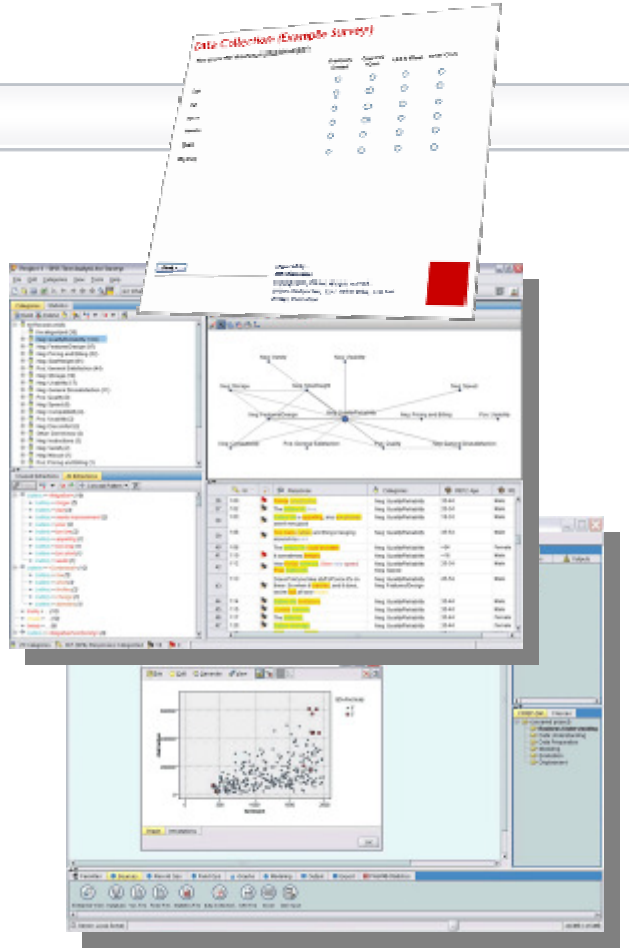
- **Compare and contrast to reveal symptoms and causes behind trends**
- **Gain same analysis experience on Web or in Excel interfaces**
- **Perform personal exploration across multiple dimensions of information**
- **Move from summary level to detail effortlessly**



Inform 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
- **Uses natural language processing heuristic rules and statistical techniques to reveal conceptual meaning in text**
  - Extracts concepts from text and categorizes them
  - Makes unstructured qualitative data more quantifiable, enabling the discovery of key insights from sources such as survey responses, documents, emails, call center notes, web pages, blogs, forums and more
- **Flexible enterprise foundation for managing and deploying analytics throughout the organization**



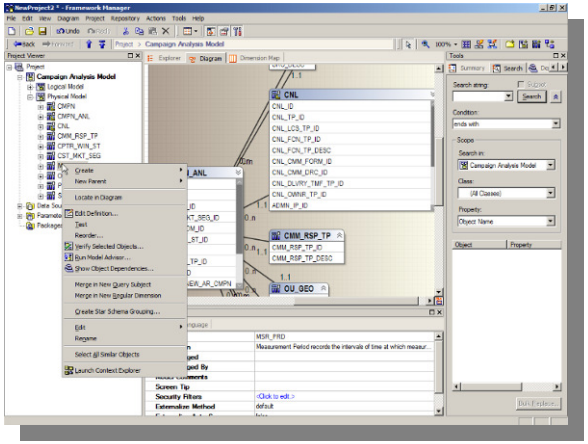
Gain Flexible Access Wherever and Whenever Needed

BI 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**

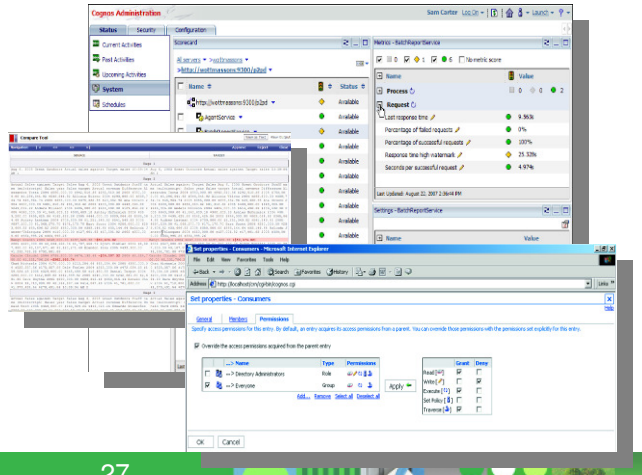
Deploy and Manage the BI Environment

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**

INFORMATION INFRASTRUCTURE OPTIONS

IBM InfoSphere Warehouse for Linux on System z

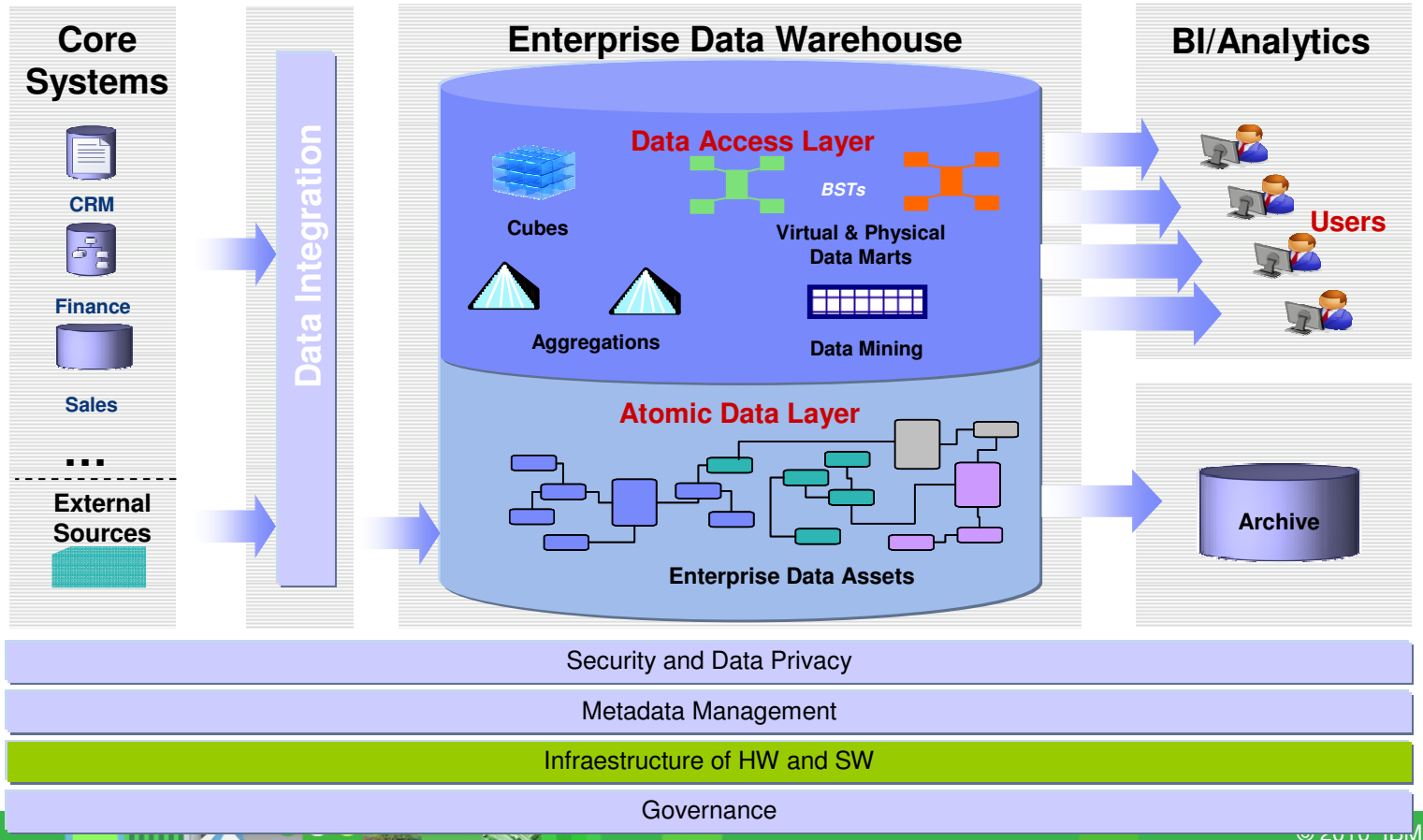
IBM Smart Analytics Optimizer for Linux on System z

IBM Information Server for Linux on System z

Enterprise Data Warehouse & Business Analytics
Single Source of Information

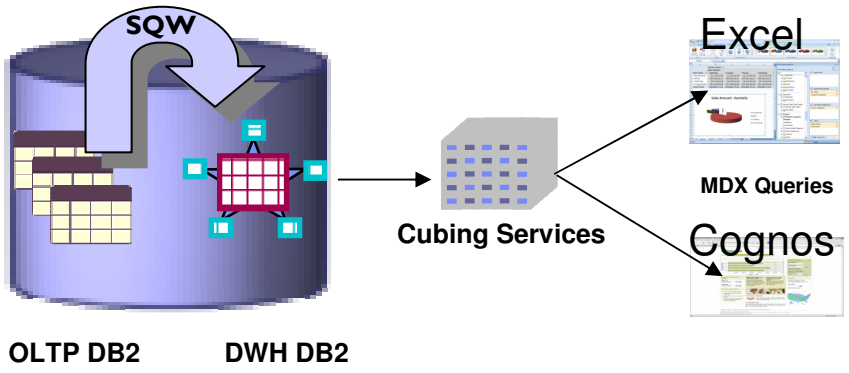
Delivering Trusted Information

How can I put together a solution that will deliver trusted information and scale to meet my business needs ?

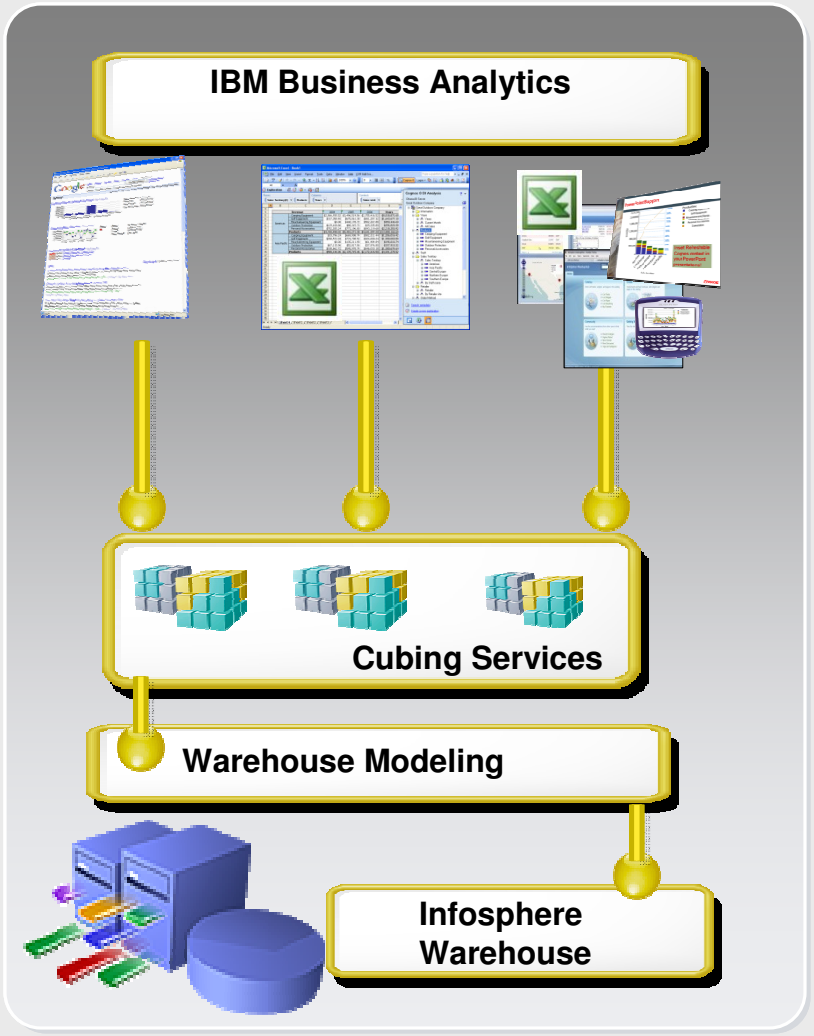


InfoSphere Warehouse on System z

- Provides a highly scalable, 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 InfoSphere Warehouse Cubing Services



Primary OLAP Use:
Large enterprise IT deployments

Operational Planning, Financial analytics, business reporting

Ideal for:

- Very large data sets with very large dimensions
- Enterprise rollouts requiring near real time data

Because of its unique:

- Scalable, low latency OLAP
- Standard, Open APIs
- Integrated IT tooling

For IT departments

IBM Smart Analytics Optimizer

What is it?

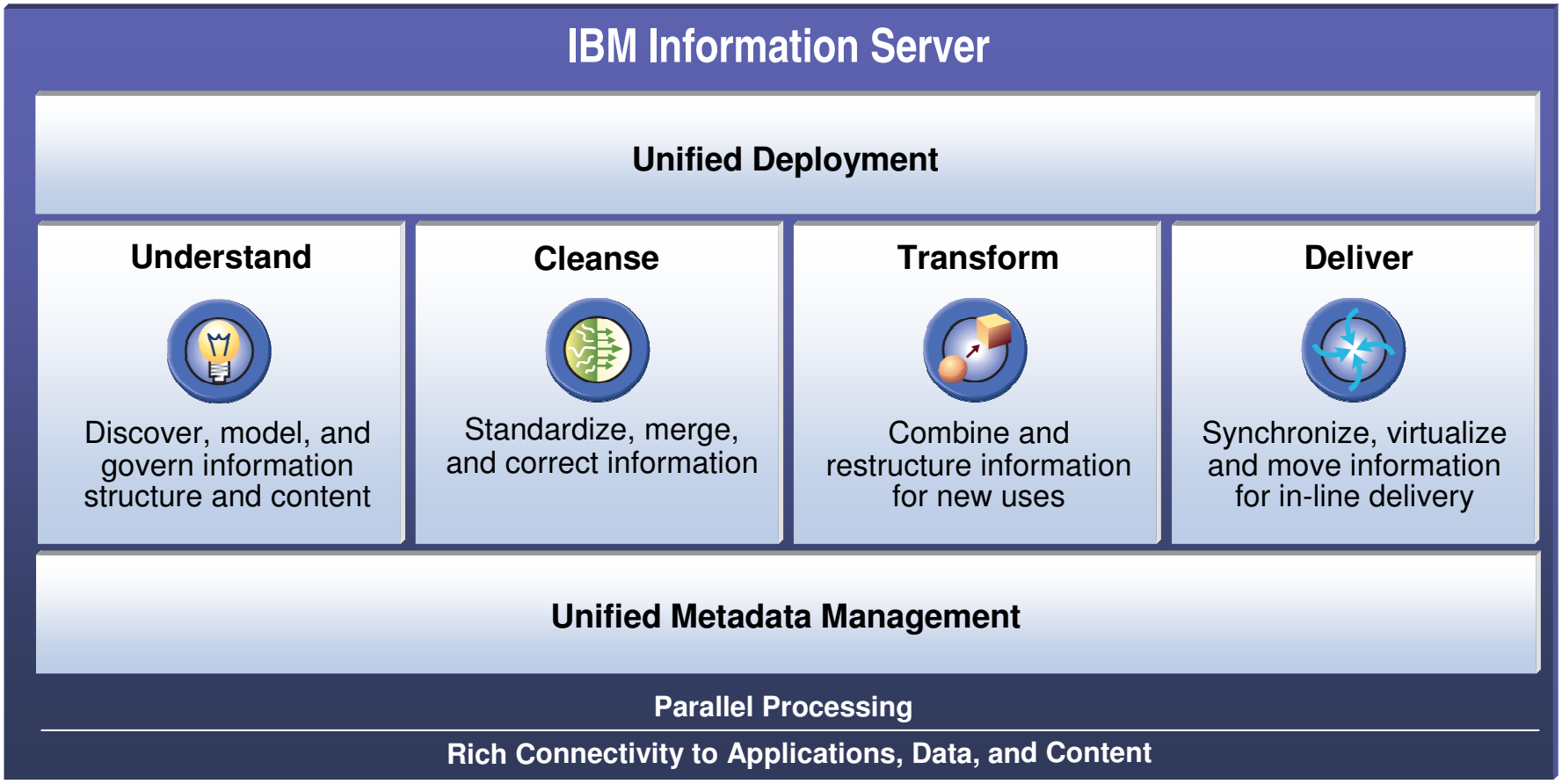
- ✓ A high performance extension that easily integrates with IBM data systems, delivering predictable, order-of-magnitude faster, analytic query response times, while lowering operating costs

How is it different

- ✓ Deep integration with IBM data management systems
- ✓ High performance query software, based on advanced data in-memory technologies
- ✓ Leveraging existing data system investment and values without any changes to applications
- ✓ For System z, extends gold-standard manageability, security, and availability to high-performance analytic applications

The IBM Solution: IBM Information Server

Delivering information you can trust



DEPLOYMENT OPTIONS

IBM Smart Analytics System 9600

IBM Smart Analytics Cloud

IBM Professional Services

Flexible Deployment Options

Enterprise Software

Do it Yourself

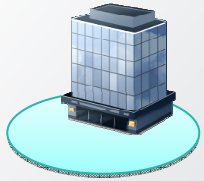
Services

Augment your IT Team

Optimized System

Turn Key

Private Cloud



Standardize & share costs

Flexibility and Control ⟷ **Fast Time to Value**

Business Analytics on System z	IBM Professional Services	IBM Smart Analytics System 9600	IBM Smart Analytics Cloud

IBM Smart Analytics System 9600

Overcoming the obstacles to business transformation

- ✓ **An integrated, high-performance analytics solution for accelerating delivery of insights for faster, smarter action**
- ✓ **Able to adjust and grow based on your company's ever changing business needs**
  - ❑ *broad analytic capabilities*
  - ❑ *powerful warehouse capabilities*
  - ❑ *scalable and fully-integrated IBM hardware*
  - ❑ *set-up services and single point of premium support*
- ✓ **Delivering results in days instead of months**

IBM Smart Analytics System 9600

Competitive solution pricing includes:

Hardware

- *Appliance-Like delivery built on System z10 technology*
- *DS8000 enterprise class storage*
- *Pre-packaged in multiple scale factors to meet any requirement.*

Software

- *Optimized Software*
  - *InfoSphere Warehouse on System z*
  - *Cognos 8 BI for Linux on System z*
  - *DB2 for z/OS Value Unit Edition (MLC Option)*
  - *DB2 Utilities Suite*
  - *z/OS Operating System Stack*
- *Enhance the solution with addition software add-ons*

Services

- *Installed and ready to use*

Maintenance

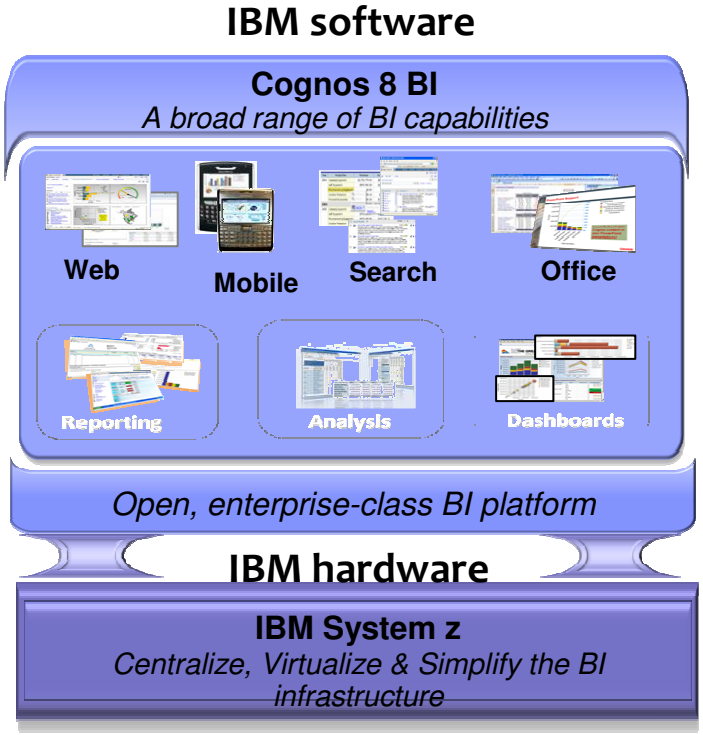
- *Up to 5 years hardware maintenance*

The Smart Analytics Cloud solution offering

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

Smart Analytics Cloud

Includes:

Base offering

Cloud optimization configuration

- *Boarding application*

Business Intelligence configurations

- *Cognos 8BI w/middleware*
  - *Includes supporting MW*

Solution Edition for Enterprise Linux

Full systems (built on sizing)
- *System z10*

Incremental capacity:
- *IFLs*
- *16GB memory per IFL*

3-5 yrs HW Maintenance

Virtual platform:
- *z/VM 5.4 (base & all features)*
- *Linux*

Connectivity
- *3 4-port FICON*
- *2 4-port OSA*

Customization packages

Monitoring components

- *ITCAM for WebSphere*
- *ITCAM for Applications*
- *OMEGAMON XE for z/VM*

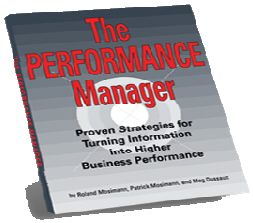
Metering and accounting components

- *IBM Tivoli Usage & Accounting Manager (ITUAM) for System z*

Security components

- *IBM Tivoli Directory Server*

Accelerated Success

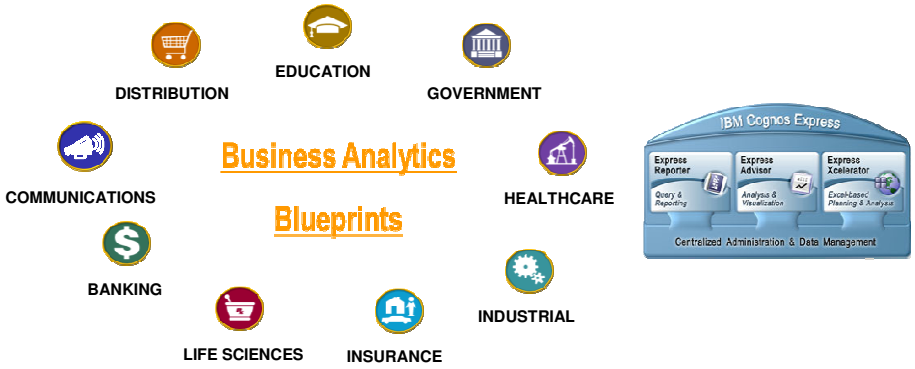


Planning the Journey

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

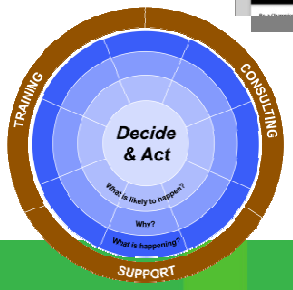
Getting a Fast Start

- 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

Scalability Testing

IBM Blue Insight

Miami Dade County Success Story – Why Leverage Cognos 8 BI for Linux on System z

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

Requirements:

- Demand for BI has really taken off
  - New regulatory reporting requirements
  - Every new system, every new solution, every new application is having a business intelligence component
- Multiple Cognos 8 BI deployments - 6+
- Wanted an enterprise BI standardized solution, but
  - Needed higher capacity – grow from approx 400 to 1000 users
  - Do more with less - less researchers, less software, less hardware, same staff
  - Had available IFL's on System z

Results:

- 11 days to move from distributed to System z deployment model for Cognos 8 BI
  - Quickly and easily meet new requirements
- Consolidate multiple BI deployments on to a single platform
- Single point for BI administration
- Consolidate multiple disparate data sources
- Ensure 99.999% availability
- Offer a complete disaster recovery plan
- Additional green savings

IBM Cognos 8 BI TCO Study x86 Distributed vs System z

The Study:

- **Sizes:**
  - Various IBM Cognos 8 BI Named User deployment sizes (100, 1,000, 10,000, 20,000, 50,000)
- **Scenarios:**
  - All scenarios are based on net new H/W & S/W
  - The TCO of a standard deployment based on Cognos 8 BI best practices
  - Build on that deployment with the ability to provide high availability
  - Continue to build that model to account for the need to upgrade hardware every 3 to 5 years.
  - Finally look at the impact of building an infrastructure that meets the needs of today but can grow into the future
  - All acquisition, management and maintenance costs for a Cognos 8 BI infrastructure over 5 years were included

Key Results:

- Average savings over 5 years of choosing System z: 36%
  - Average savings in CPUs: 87%
  - Average savings in servers: 96%
- Total cost of acquisition:
  - Is less expensive for 100/1000 users
  - Nominally more expensive for 10,000 – 50,000 users
- Regardless of the size administrative and facilities costs are always less
- The savings from the System Administration costs for 10,000 to 50,000 user is equal to the TCO over 5 years for Cognos 8 BI for Linux on System z
- % of total costs over 5 years holds steady regardless size and does not offer the any volume discounts with x86
- With high availability it is approximately 50% less expensive with System z
- System z makes it faster and more cost effective to meet the growing demand of the business.
- Existing System z customers only stand to further reduce there TCO.

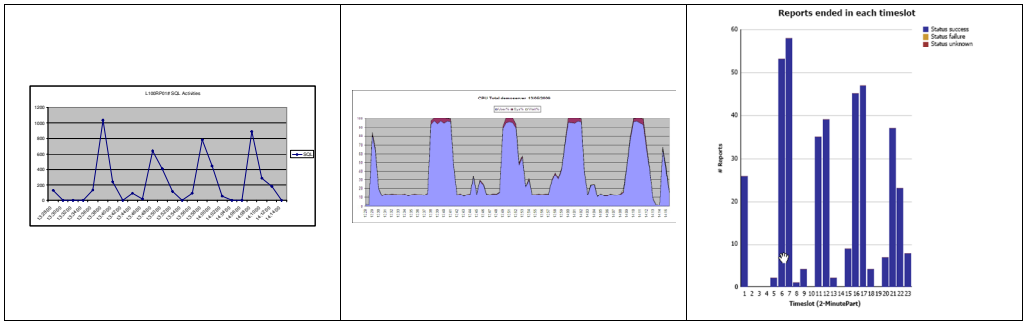
Cognos 8 BI for Linux on System z
….Performance Testing

- **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 zLinux 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 zLinux)
    - MS-IIS on Wintel to WebSphere on zLinux).
- **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

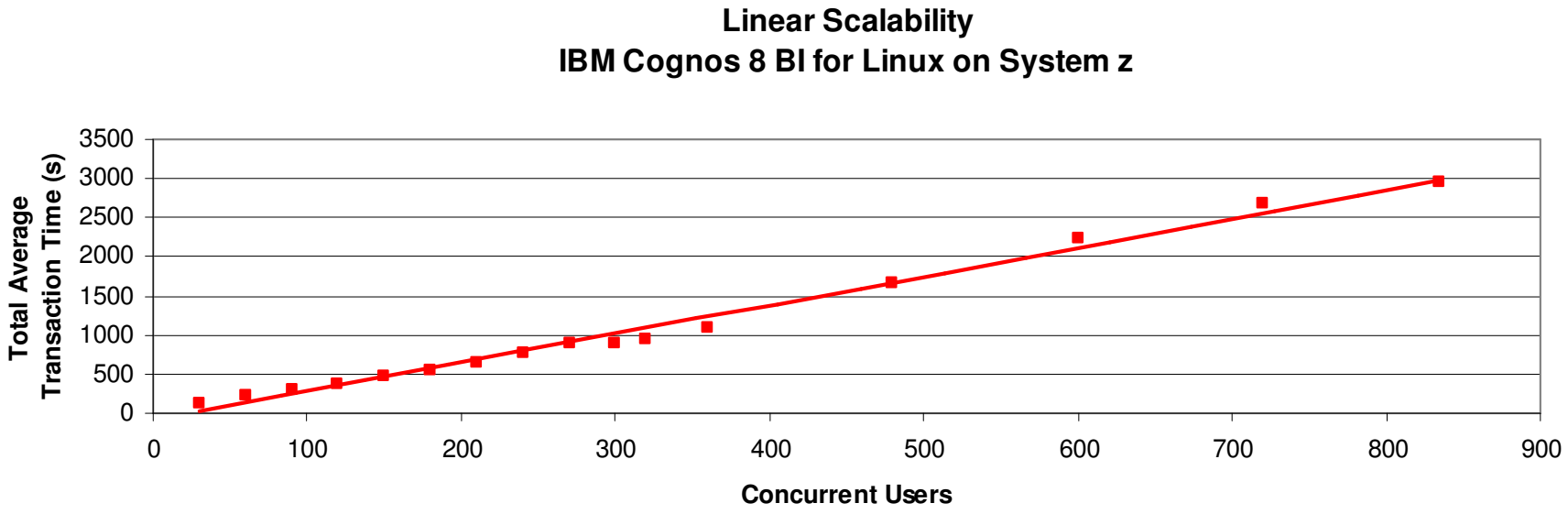
- By adhering to our best practises could support more users and deliver faster performance.
- There was no change in functionality at the Cognos 8 BI level, so no impact whatsoever for the end-user.
- Not one report timed out, not one user was rejected. Even when the system slowed down, it remained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



Proven that Cognos 8 BI for Linux for System z can: Scale Across the Enterprise

IBM System z

Testing demonstrated IBM Cognos 8 BI for Linux on System z** scales linearly **to large user groups.



- Testing was conducted on up to **90,000 named users**

50TB Summary – adding demonstrable proof

- **System z and Cognos BI can respond to operational BI requirements**
  - Successfully ran **400 active users** simulating call center agents accessing a prompted operational BI report
  - Average **1.75 seconds** response time for query and report creation per user over a 15 min run (steady state), at **56% Linux CPU** utilization
  - DB2 for z/OS provides **very efficient access** to operational BI data
- **Cognos configuration options for Linux on System z**
  - Multiple 31Bit WebSphere Application Servers on a single system
  - Varied resources assigned to Linux on System z and Cognos
- **Load testing techniques using Rational Performance Tester**
  - Strategic IBM tool for performance/load tests also recommended for customer tests
- **Collateral**
  - Best practices and results in Redbook
  - Collected detailed performance measurement data

… and there is a 10TB study!!

IBM's *Blue Insight*

In the spotlight

IBM

*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:

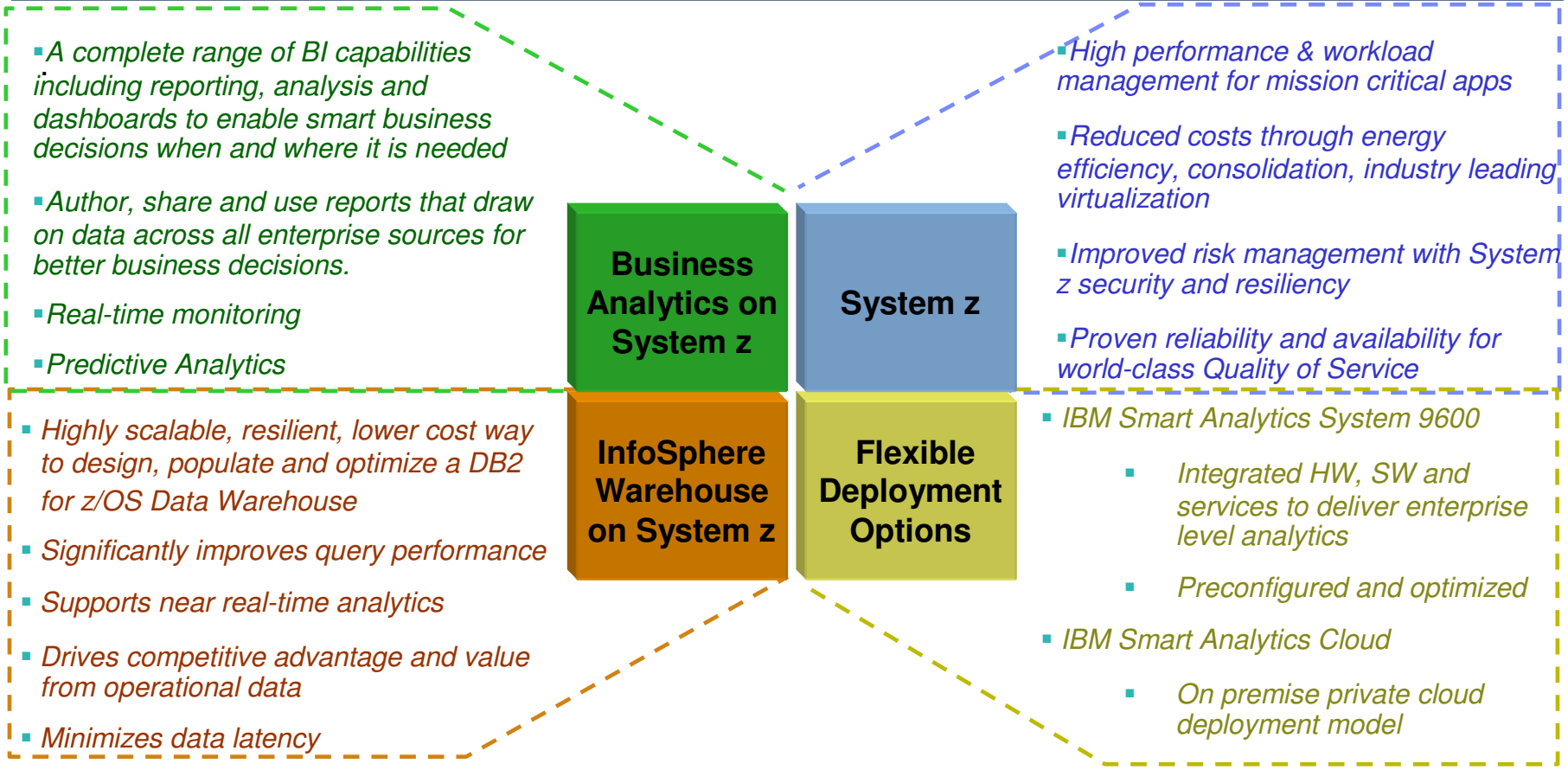
- Consolidating 115 multi-product, departmental BI deployments to 1 Cognos 8 BI on System z
- Support for our global workforce
  - 2009 – 72K
  - 2010 – 130K
  - 2011 – 200K
- Realizing value from +60 data sources across IBM
- Projected $25M in savings
  - 60% Consolidation
  - 35% Standardization
 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

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

IBM Business Analytics and Data Warehousing on System z

Value Creation for the Enterprise

Leverage System z to enable the delivery of timely, accurate business information quicker to facilitate proactive decision making with less resource and expense



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

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