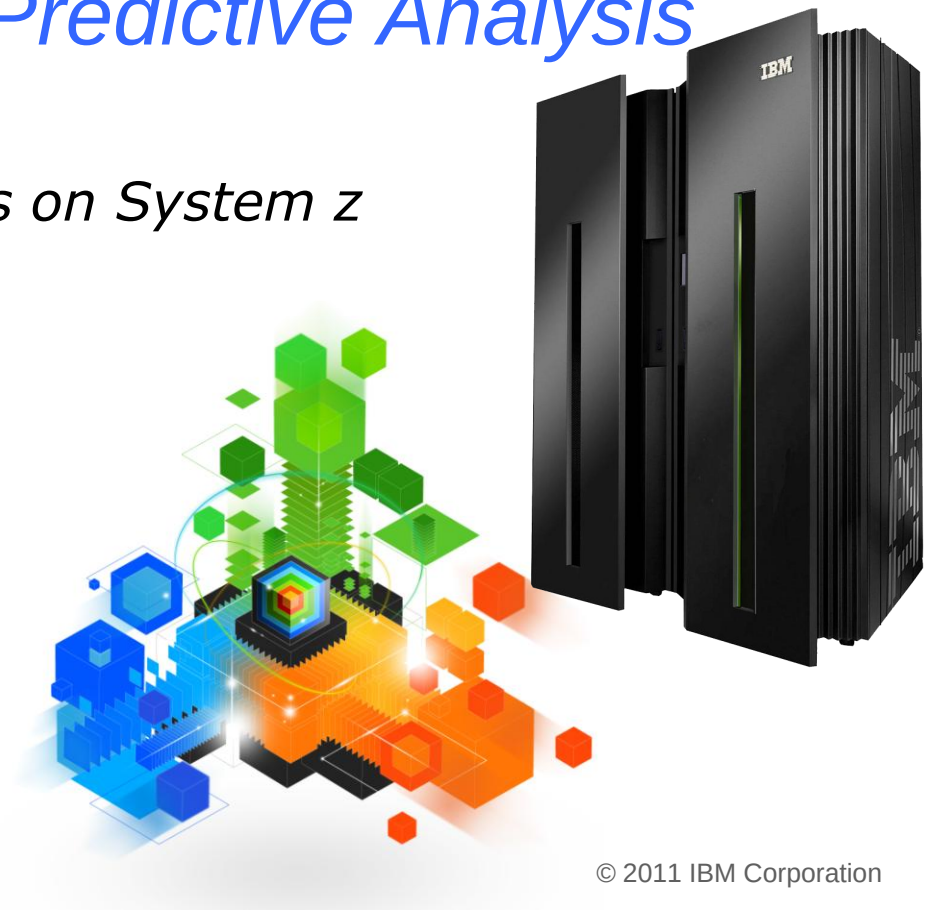
Business Analytics on System z – From Intelligent Reporting to Predictive Analysis

Dave Jeffries – Business Analytics on System z

April 2011



“Insight and foresight are linked with leadership. It's insight that helps to capture opportunity.”

Zhou Ming, Executive Vice President and Secretary General, China Council for Int’l Investment Promotion (Source: IBM Global CEO Study, 2010)

Generate
More Revenue

Reduce Risk

Predict Future Outcomes
with Greater Confidence

Lower Costs

Better Business Outcomes

CERIDIAN

$300 Million

in savings

& fraud reduction

Grupo Bancolombia

80% increase

in productivity

savings

$200 Million

increase in

working capital

$24 Million

in reduced waste

and fraud

FIRST TENNESSEE

600% increase

in cross-sell

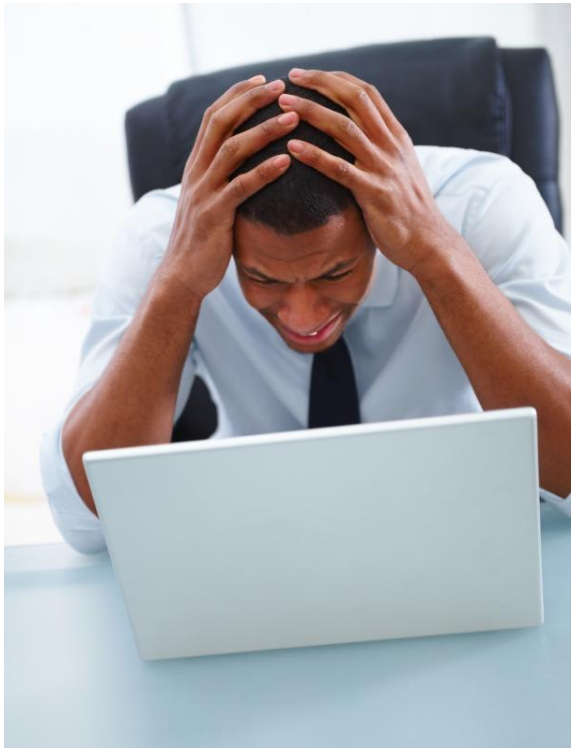
campaign

40% decline

in homicide

rates

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



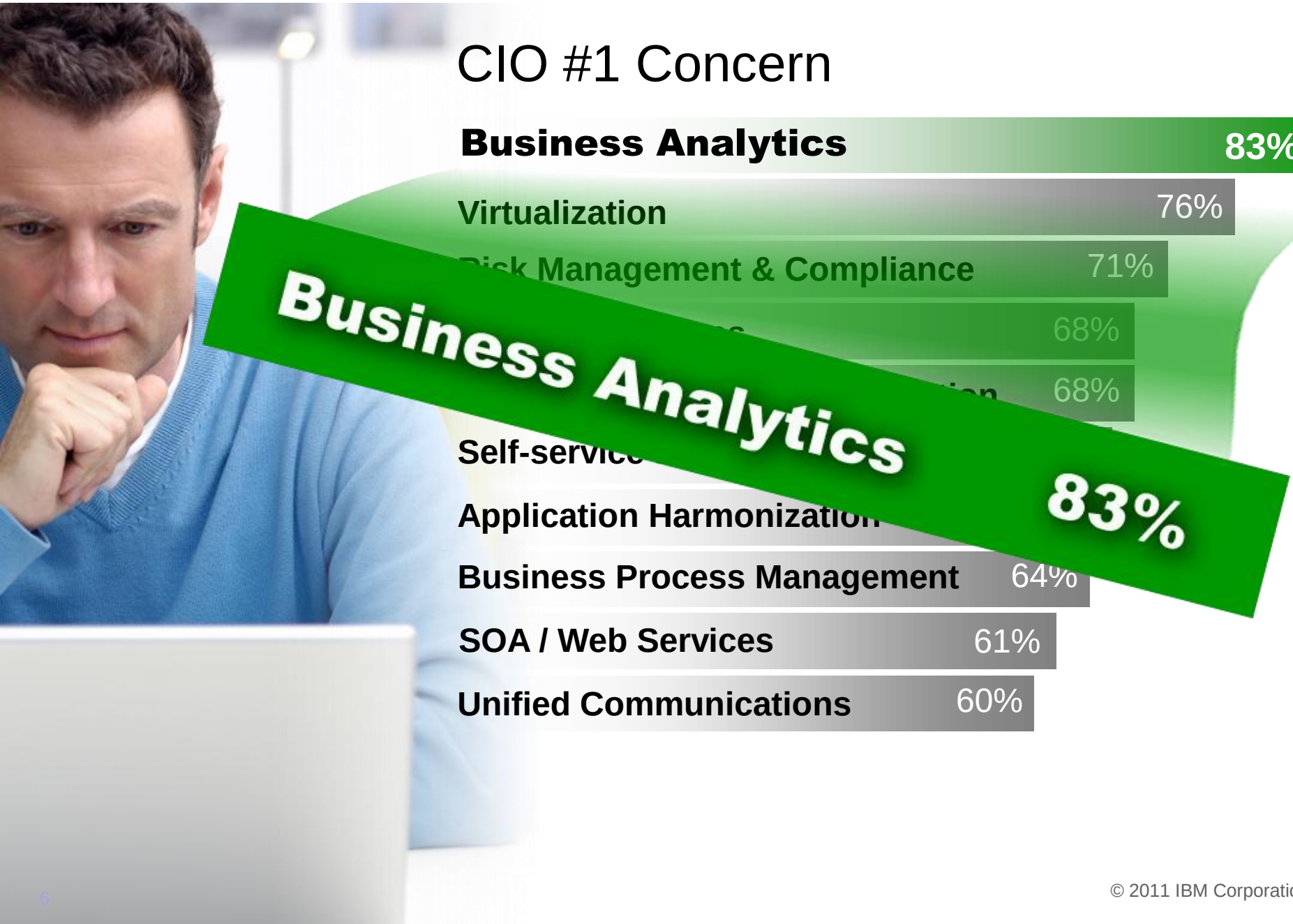
60%+ of CEOs need to do a better job capturing and understanding information rapidly in order to make swift business decisions

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



CIO #1 Concern

Business Analytics 83%

Virtualization 76%

Risk Management & Compliance 71%

68%

68%

Self-service

Application Harmonization

Business Process Management 64%

SOA / Web Services 61%

Unified Communications 60%

Business Analytics 83%

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.

Business Analytics is needed at many levels, in many roles

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

Users need a full range of Business Analytics capabilities to gain business insight

Strategic, Tactical, Operational

Guided or self-service access and exploration…

Foresight using Statistical, and Predictive Analytics…

Common Business Model

Message Sources

Relational Sources

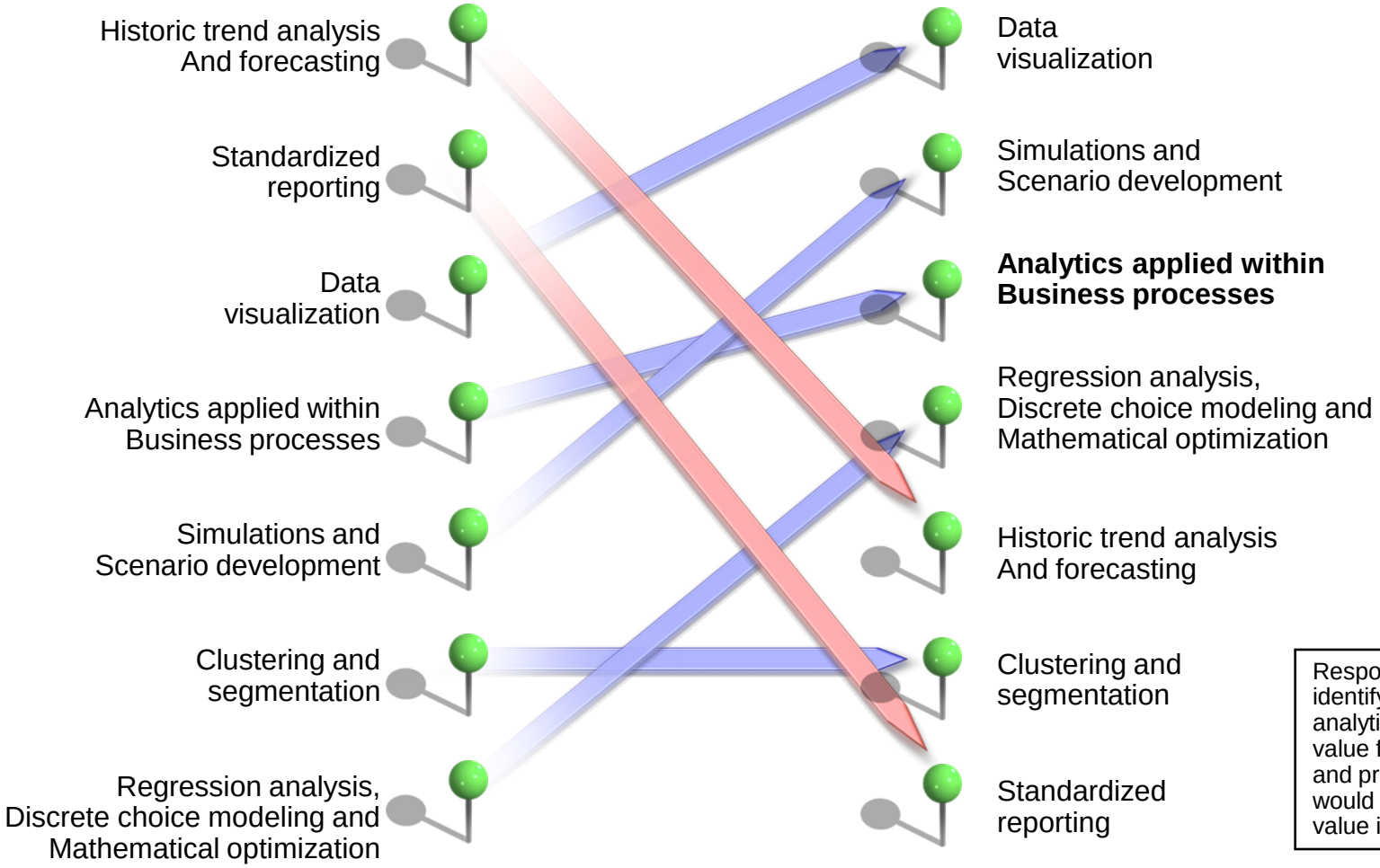
Application Sources

OLAP Sources

Modern and Legacy Sources

What matters is changing

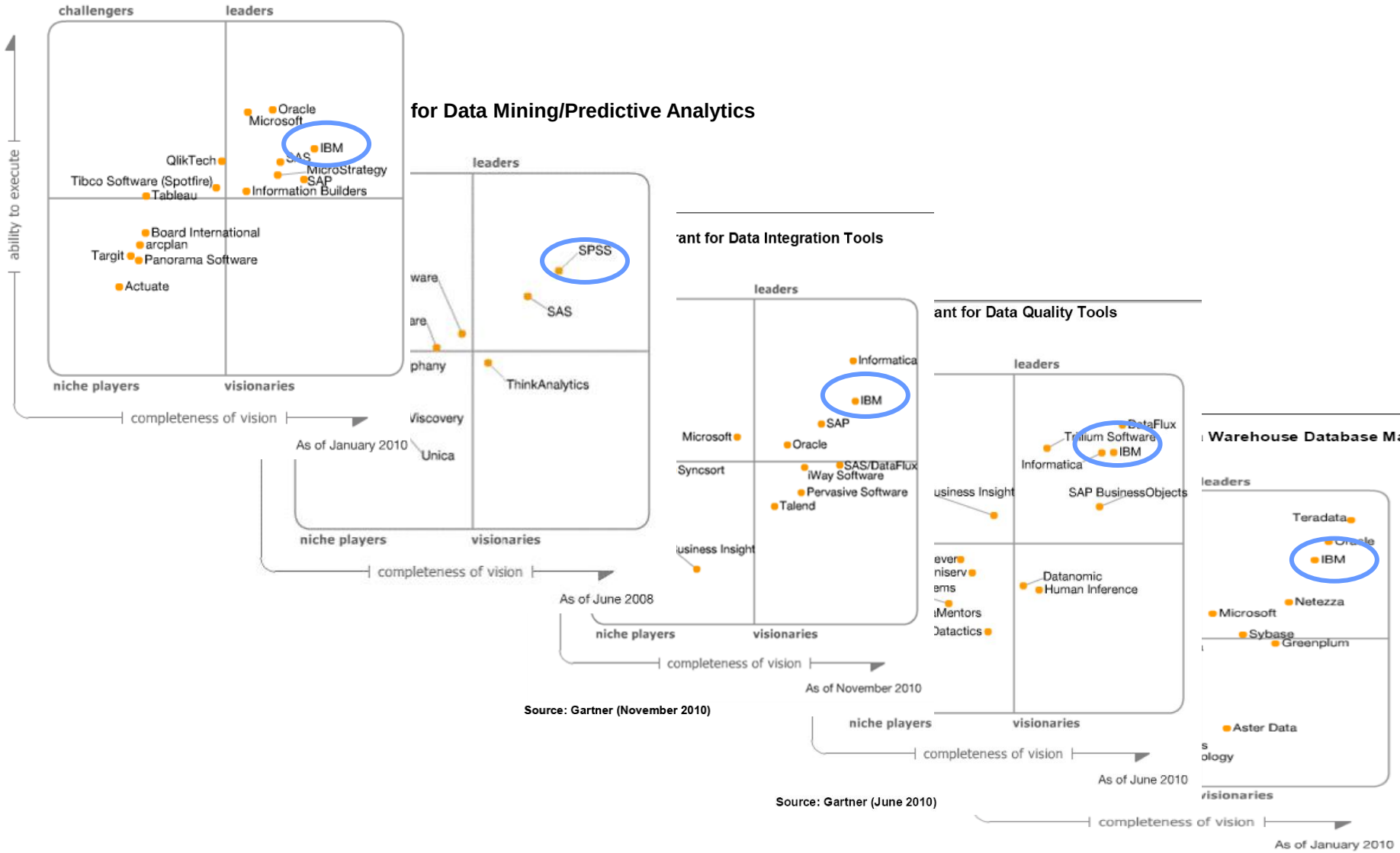
Results of New Intelligence Enterprise Survey of nearly 3,000 executives



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

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

Magic Quadrant for Business Intelligence Platforms



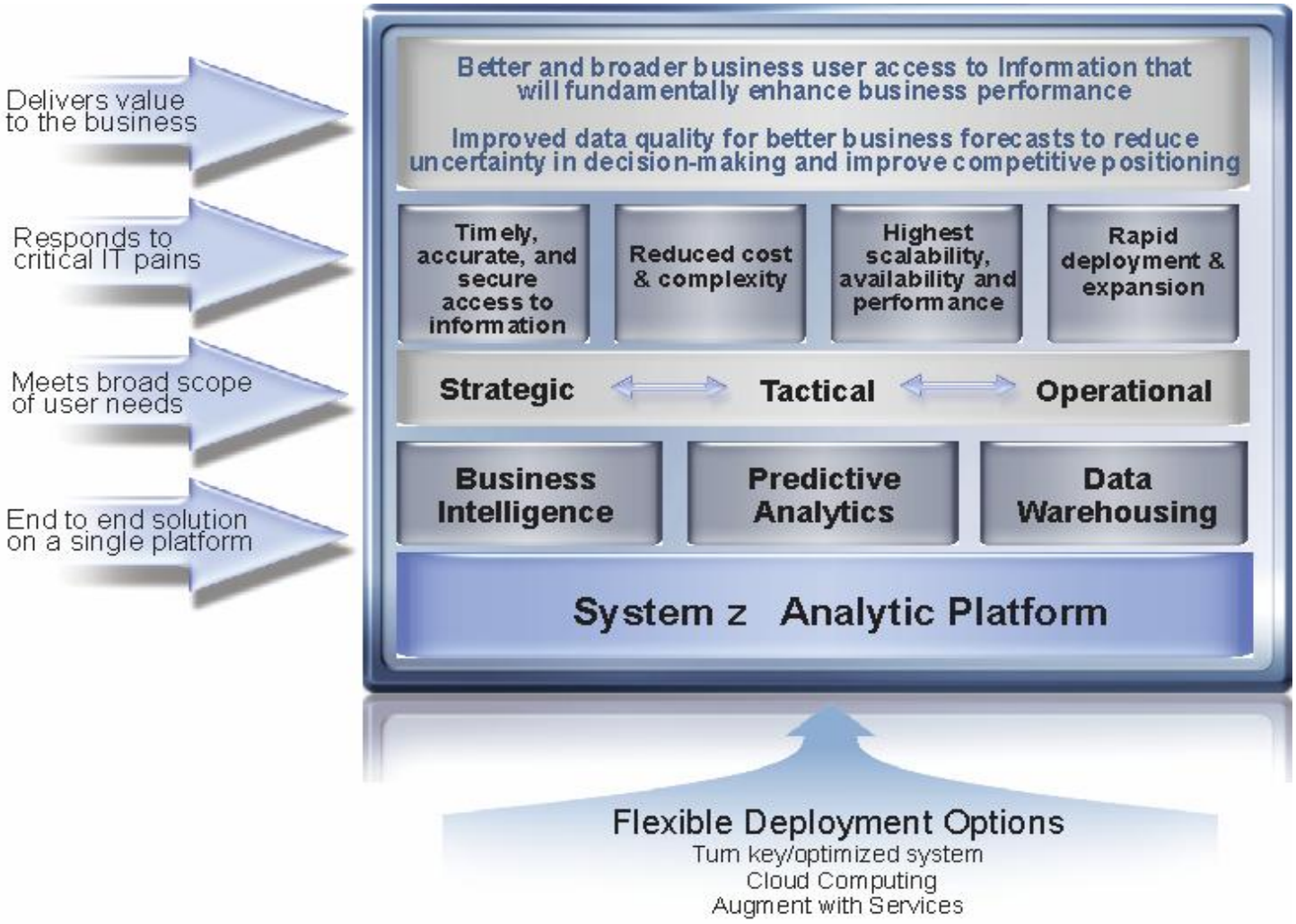
Source: Gartner (November 2010)

Source: Gartner (June 2010)

Source: Gartner (January 2010)

A new option …

IBM Business Analytics and Data Warehousing on System z



Miami-Dade County

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

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

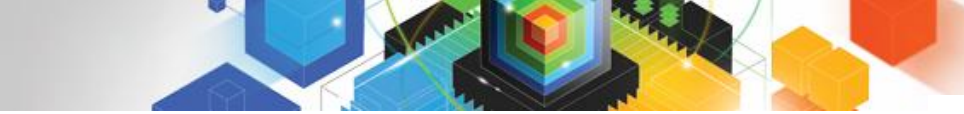
—Jaci Newmark, Project Lead, Enterprise Business Intelligence Architecture, Miami-Dade County

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

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

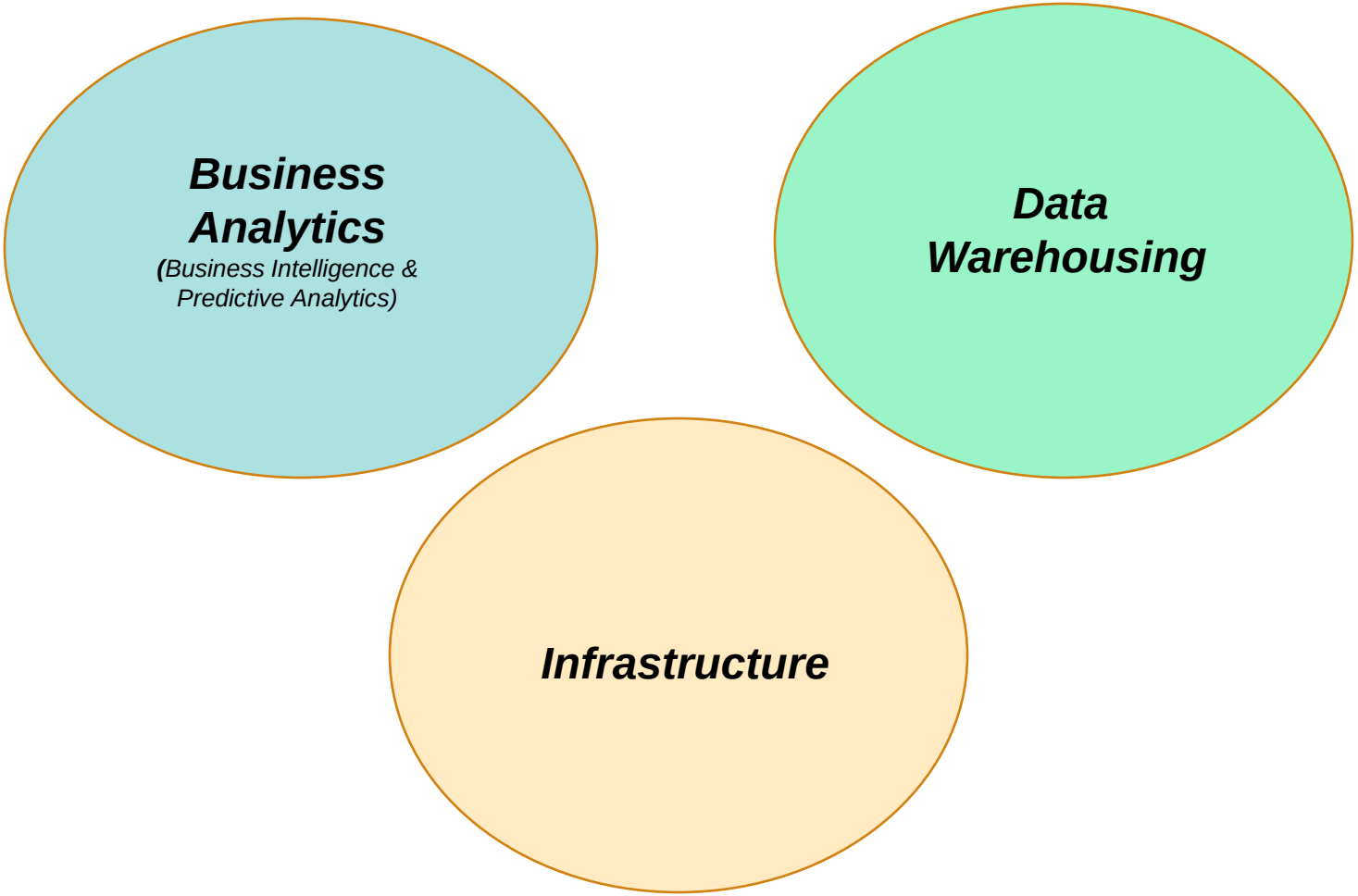


IBM Cognos BI Total Cost of Ownership Study

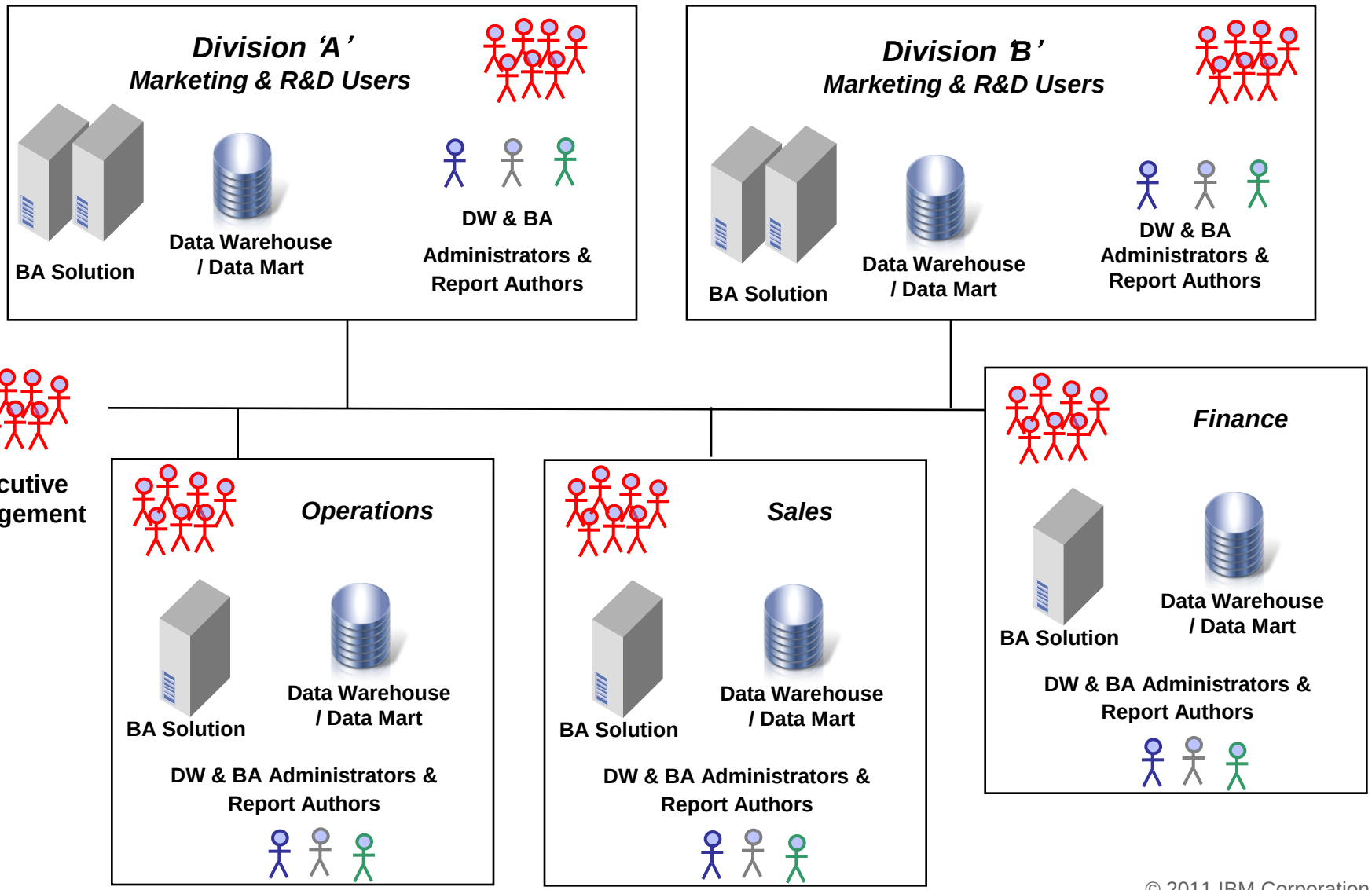
Explores the TCO of choosing an x86 based infrastructure vs. System z for a Cognos 8 BI deployment using proven IBM TCO measurement methodology

- ✓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.

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



Yesterday's Traditional Infrastructure – *a siloed approach*



Business Analytic not keeping pace with changing business requirements

- 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
- System performance and availability not meeting expectation
- Supporting multiple BA tools
- Disparate tools lack functionality
- Information quality/security is in question

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

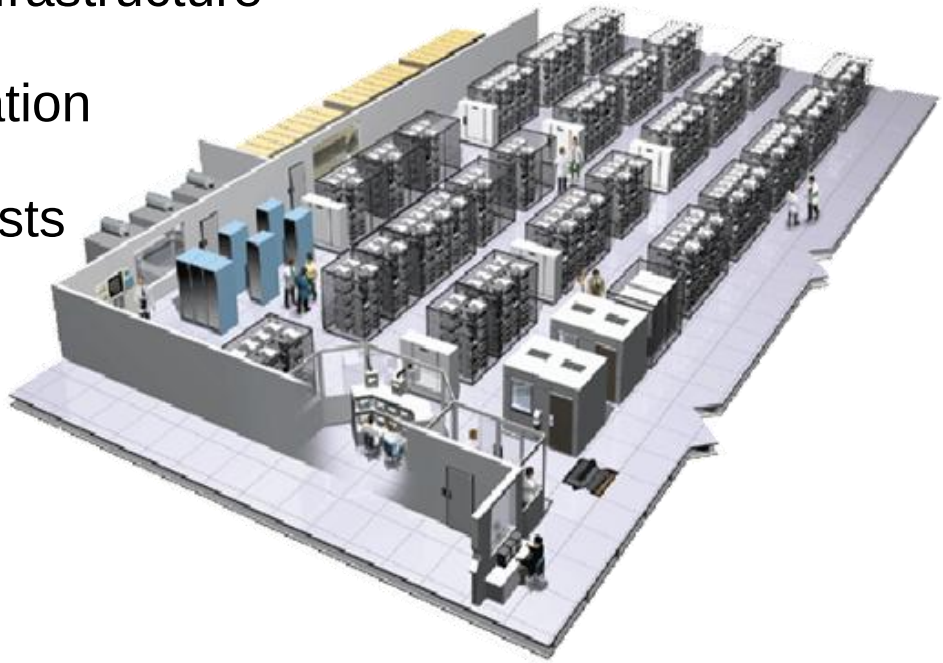
Source: The BI Survey 8, Gartner, 03/09

Data Warehouses have become isolated

- Much of the 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

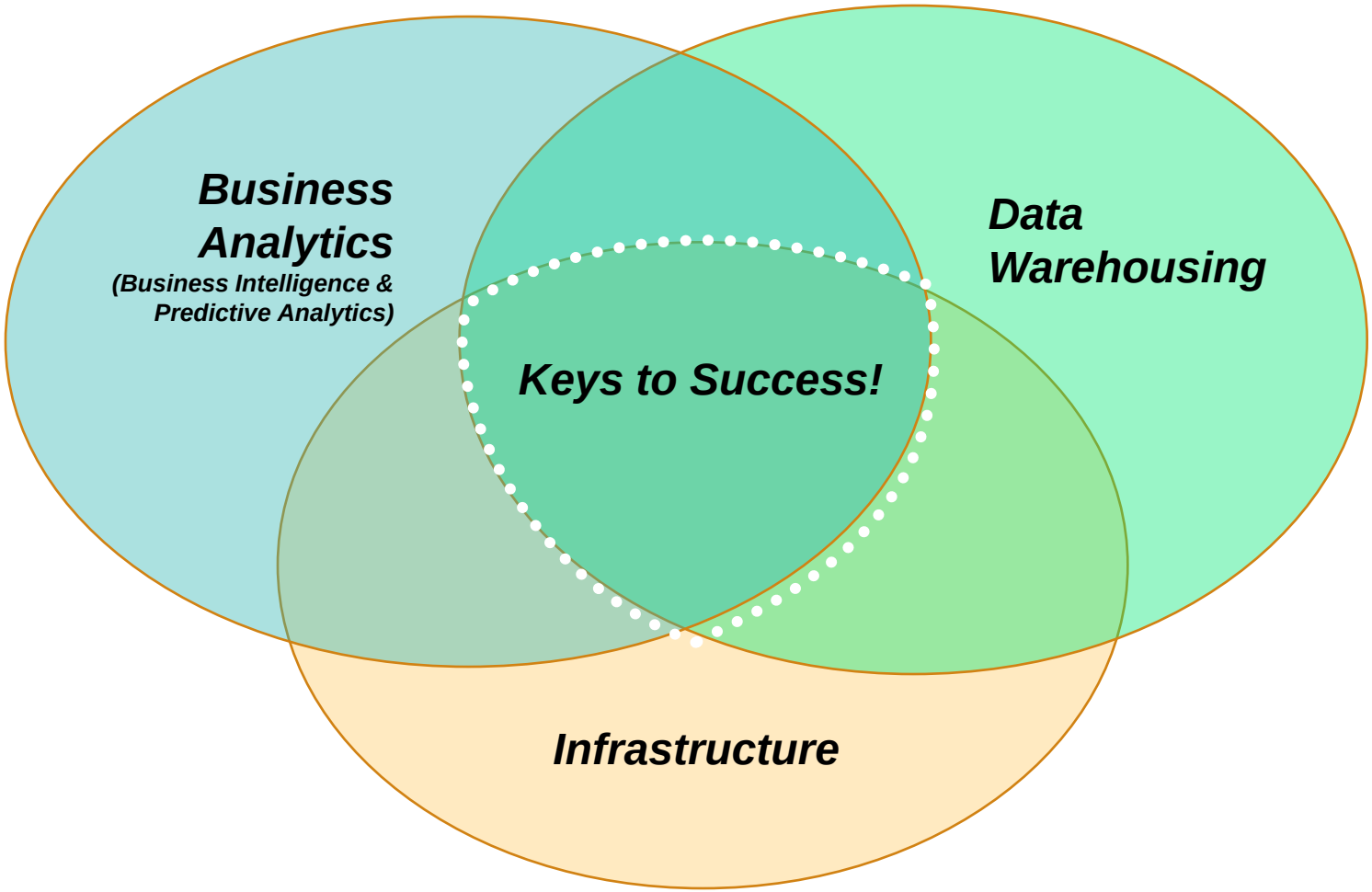
Infrastructure complexity and cost on the rise

- 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



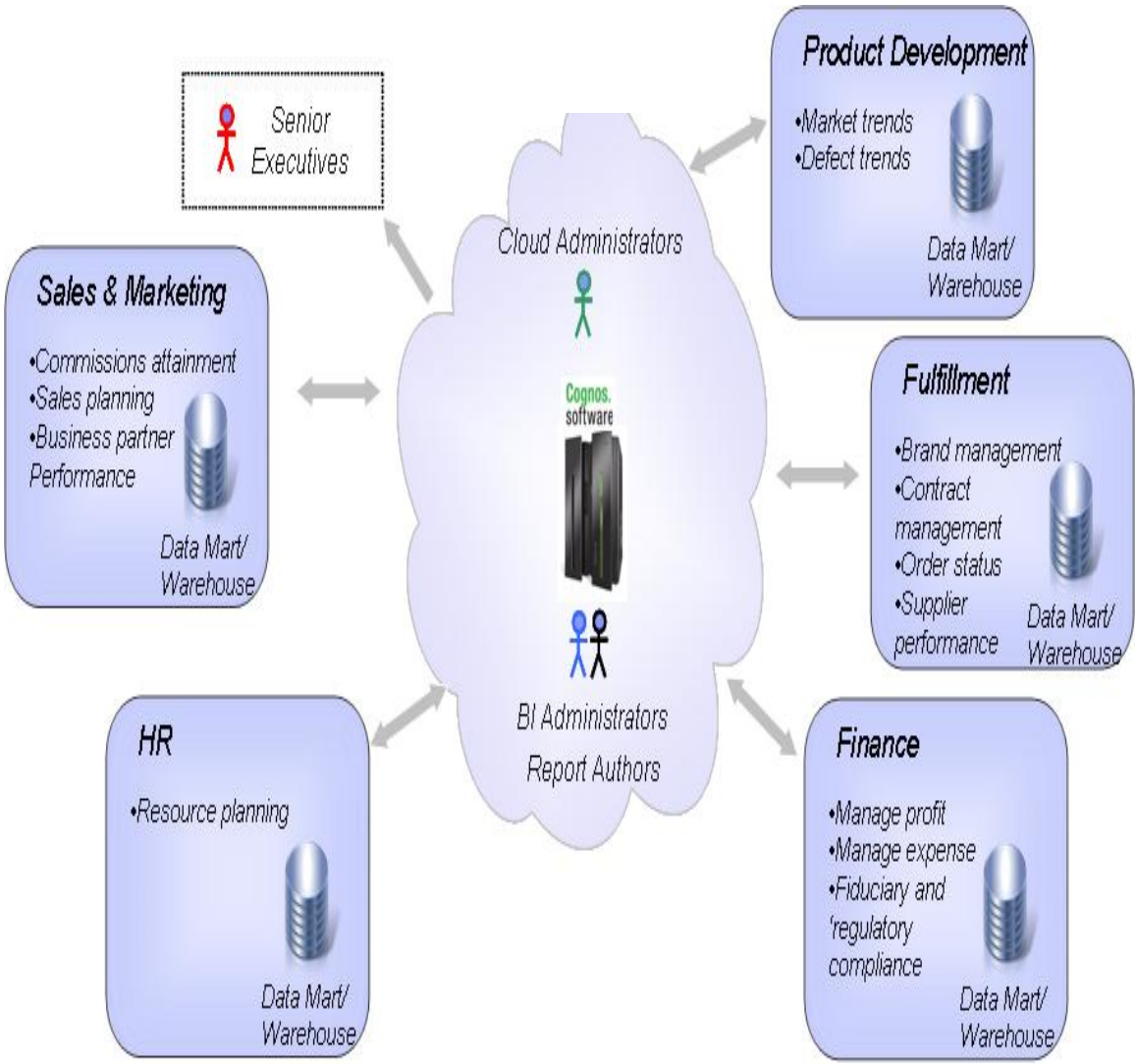
Source: The BI Survey 8, Gartner, 03/09

A successful strategy requires the integration of all key components



Today's Optimized Infrastructure – *a flexible, compliant approach*

- **Deliver centralized defined BI services**
  - Leverage our "Greener planet" strategy and investments
  - Common Boarding process, infrastructure and operations
- **Align solution pattern with adopter usage pattern**
  - Share all available, elastic and reliable BI infrastructure
    - zSeries, WAS, DB2 and Cognos 8 BI
  - Standardizes tooling strategy
  - Enables flexibility of BI delivery skills
- **Delivery pattern allows adopters to maintain solution autonomy**
  - Focus is delivery of a defined service



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

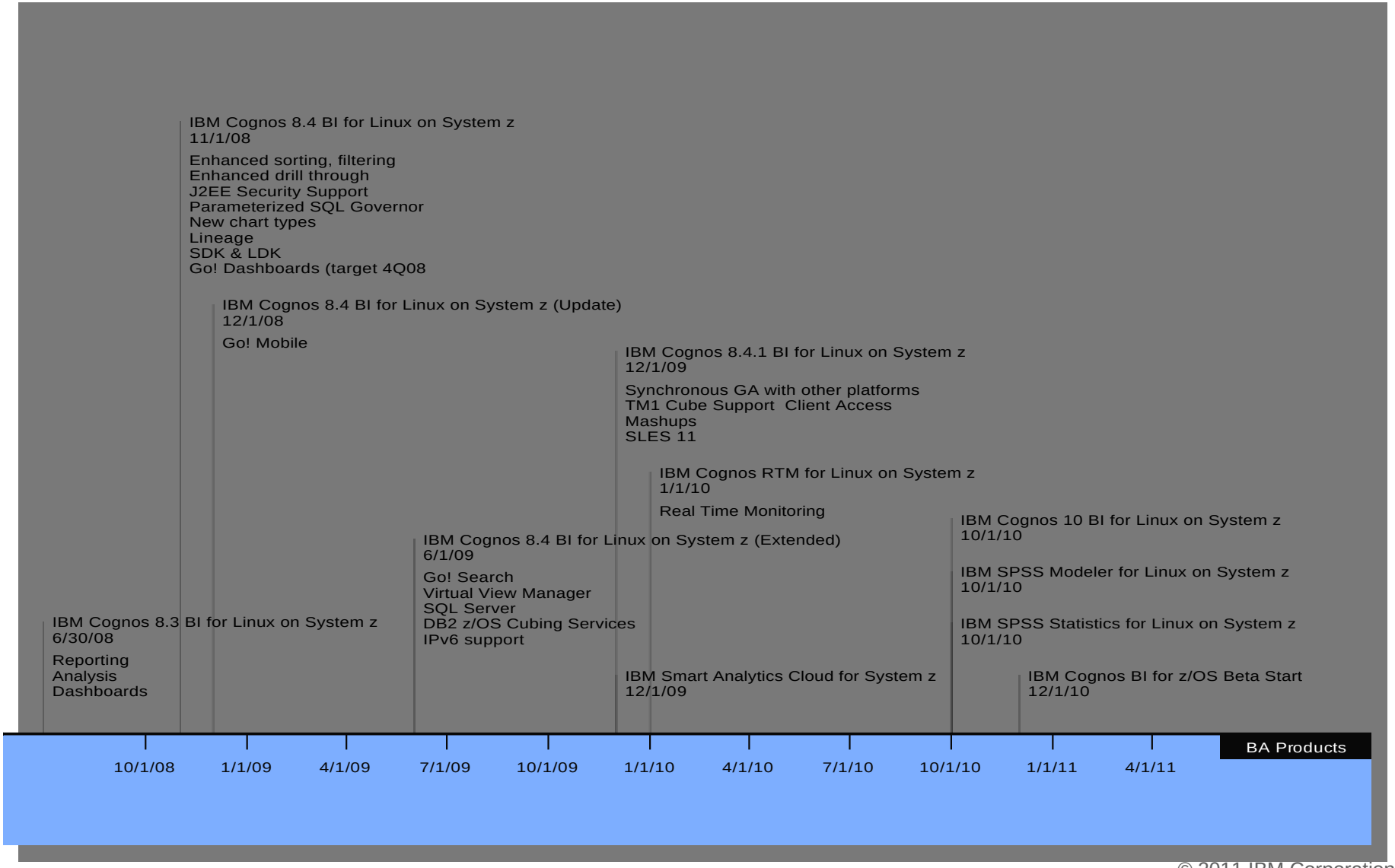
- ✓ *Applies the industry's highest availability to mission critical business information*
- ✓ *Quickly implements cost effective disaster recovery*
- ✓ *Scales up to more users, out to more functionality and data*
- ✓ *Drastically improves query response times up to 1000X*

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*

Product/Platform Delivery

Moving Business Analytics to System z



IBM Cognos Business Intelligence for Linux on System z

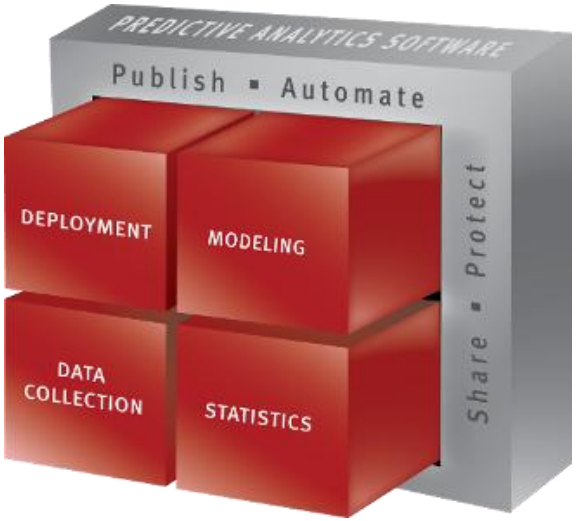
Business Analytics

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

IBM SPSS

Business Analytics

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



Solution Offerings

IBM Smart Analytics Cloud

Flexible Deployment Options

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

The solution components …

IBM software

Cognos 8 BI
A broad range of BI capabilities

Web | Mobile | Search | Office

Reporting | Analysis | Dashboards

Open, enterprise-class BI platform

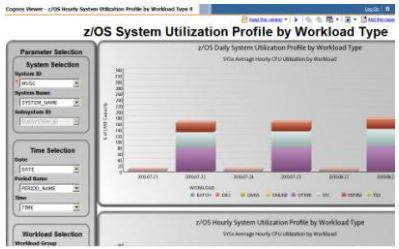
IBM hardware

IBM System z
Centralize, Virtualize & Simplify the BI infrastructure

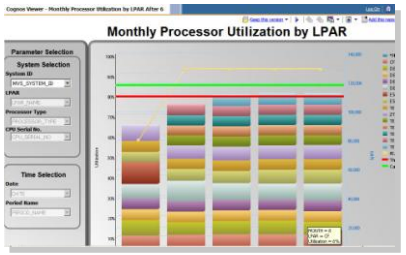
IBM Services

- **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 Capacity Management for System z



z/OS System Utilization



Monthly Processor Utilization

Leading edge infrastructure

The services to get started right away

Industry leading solutions

Complete Investment Protection

Effective Cost Control and Management	Predictable Planning for Growth	Support Emerging Trends
Capacity Management Reports	Forecasting Reports	
IBM Cognos 10 On-demand Reporting	SPSS Statistics 19 Predictive analytics & Modeling	
HIstorical Data Conversions		
Tivoli Decision Support z/OS DB2 z/OS		
Linux for System z System z *z/OS*		

Daily CPU Usage by LPAR

LPAR(s)

- [ ] *PHYSCAL
- [ ] CF14
- [ ] CF5
- [ ] CF8
- [x] LPAR1
- [x] LPAR10
- [ ] LPAR11
- [x] LPAR12
- [ ] LPAR13

Select all Deselect all

Finish

Processor Type:

- [ ] CP
- [ ] ICF
- [ ] IFA
- [ ] IFL
- [x] IIP

Select all Deselect all

Period:

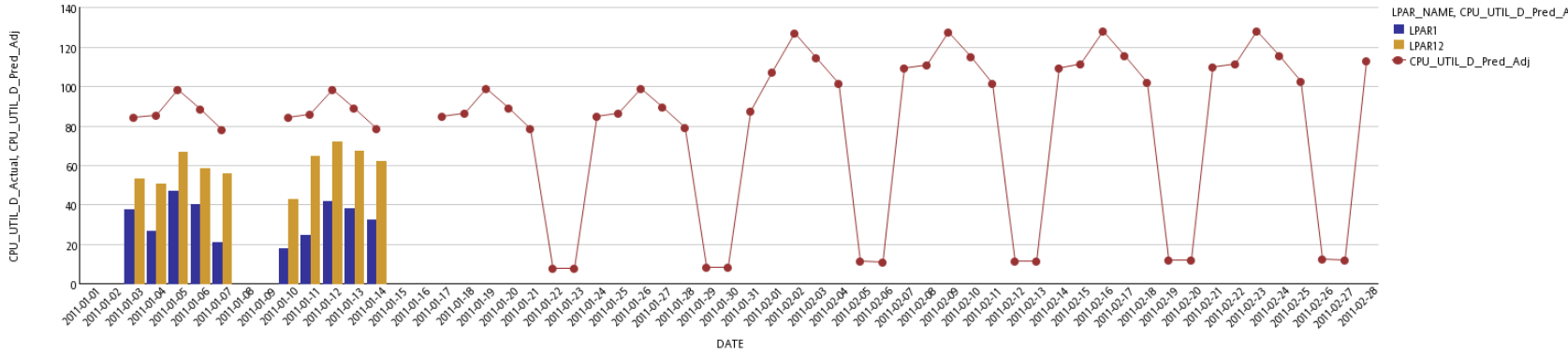
- [ ] OFFPRIME
- [x] PRIME
- [ ] WEEKEND

Select all Deselect all

Date:

From: Jan 1, 2011

To: May 2, 2011



Info:

DATE	LPAR_NAME	PROCESSOR_TYPE	PERIOD_NAME	CPU_UTIL_D_Actual	CPU_UTIL_D_Pred_Adj
Jan 1, 2011	LPAR1	IIP	PRIME		
	LPAR12	IIP	PRIME		
Jan 2, 2011	LPAR1	IIP	PRIME		
	LPAR12	IIP	PRIME		
Jan 3, 2011	LPAR1	IIP	PRIME	37.46005536	31.16419228
	LPAR12	IIP	PRIME	53.36792037	53.06282811
Jan 4, 2011	LPAR1	IIP	PRIME	26.62384307	30.89348105
	LPAR12	IIP	PRIME	50.38359468	54.84470037
Jan 5, 2011	LPAR1	IIP	PRIME	46.88292719	38.63732392
	LPAR12	IIP	PRIME	66.68947941	59.83588516
Jan 6, 2011	LPAR1	IIP	PRIME	40.40820809	33.93882269
	LPAR12	IIP	PRIME	58.42317275	54.76518717

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IBM Cognos BI for z/OS Beta Program

- **Product Capability during the Beta:**
  - BI Reporting and Analysis on z/OS
  - Data Source/Warehouse in DB2 z/OS
- **Duration**: December 2010 to June 2011
- **Customer Focus Areas of particular interest:**
  - Using Information Builders Focus BI software on z/OS and looking for a replacement IBM Business Intelligence solution
  - Using SAS Web and Desktop Reporting software on z/OS and looking for a replacement IBM Business Intelligence solution
  - Using the IBM Smart Analytics Optimizer
  - Without an existing Business Intelligence solution on z/OS
- For more information contact:
  - Your System z Sales Representative

Typical Utilization for Servers

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

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

Thank You

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

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

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

IBM Product List for Business Analytics and Data Warehousing on System z

Business Intelligence

- Cognos 10 Business Intelligence

Predictive Analytics

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

Data Warehousing

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

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

Data Integration and Movement

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

Master Data Management

- InfoSphere Master Data Management Server

InfoSphere Industry Models

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

Flexible Deployment Options

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

University of North Carolina Health Care

Challenge

- ***UNCHC was looking for a solution to increase the speed of the development of new treatments for diseases such as diabetes, cystic fibrosis and cancer.***

Solution

- ***The customer has deployed a hybrid data warehouse solution combining the strengths of InfoSphere and DB2 software on System z and System p platforms.***

Benefits

- *"With the deployment of the Carolina Data Warehouse for Health, we have been able to increase the timeliness of the information available to our researchers, staff and physicians," said Donald Spencer, MD, MBA, Associate Director of Medical Informatics, UNC Health Care. "Because the system can also support general queries that relate to the diagnosis and treatment of a wide array of patients, we are now able to make more intelligent decisions leading to improved patient care."*