Break Free From High Database Costs

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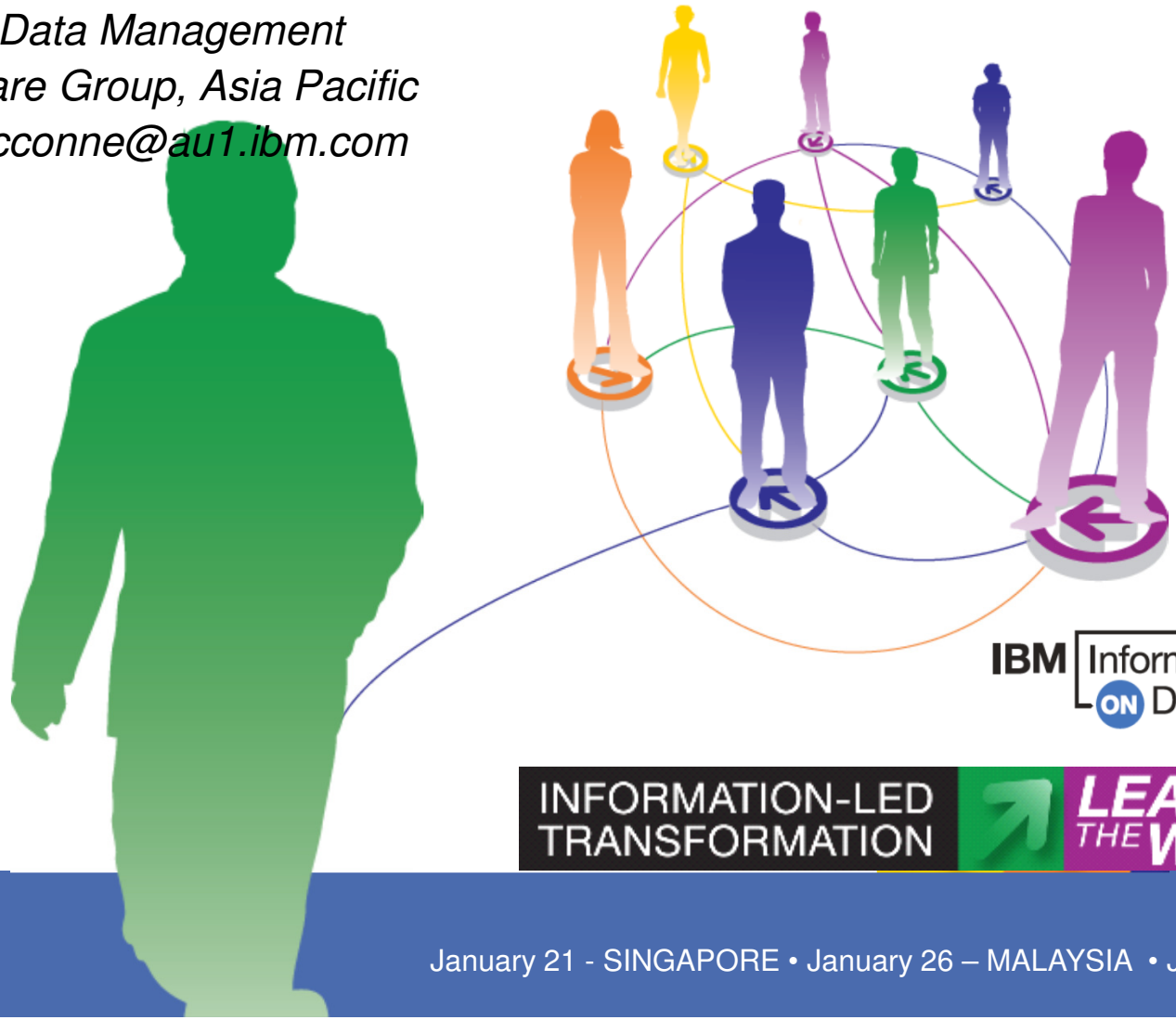


IBM Information ON Demand 2010

INFORMATION-LED TRANSFORMATION LEAD THE WAY

Explosion in Data Volume & Velocity

New Data → New Information!

Volume of Digital Data

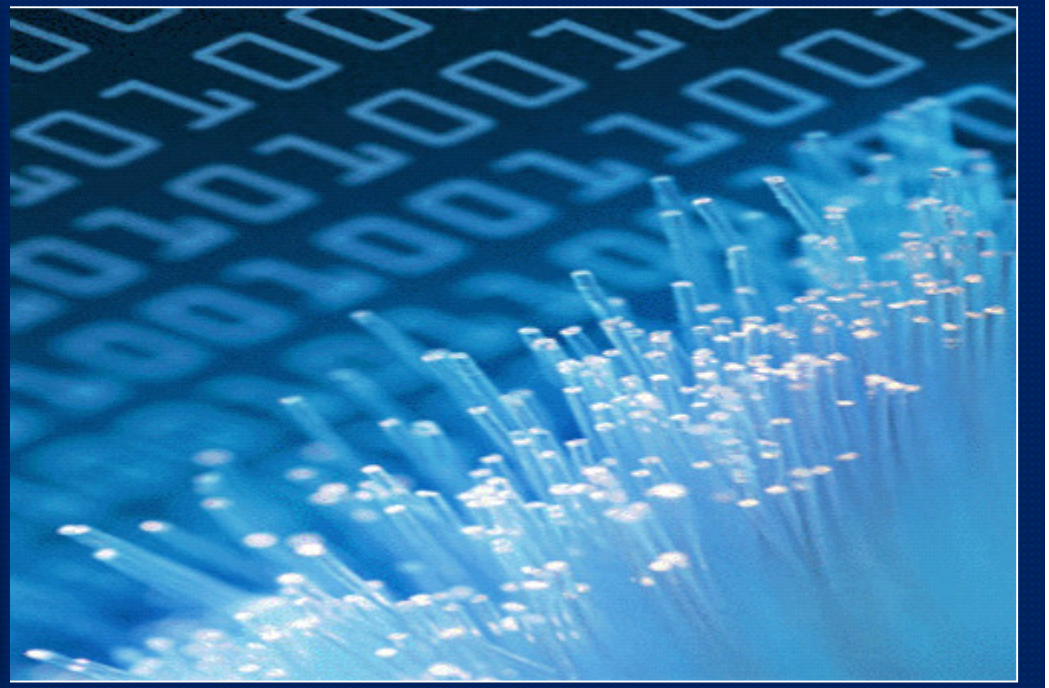
- 57% CAGR for enterprise data through 2010
- Machine generated data : Sensors, RFID, GPS..

Variety of Information

- 80% of new data growth is unstructured content
- Emails, images, audio, video..

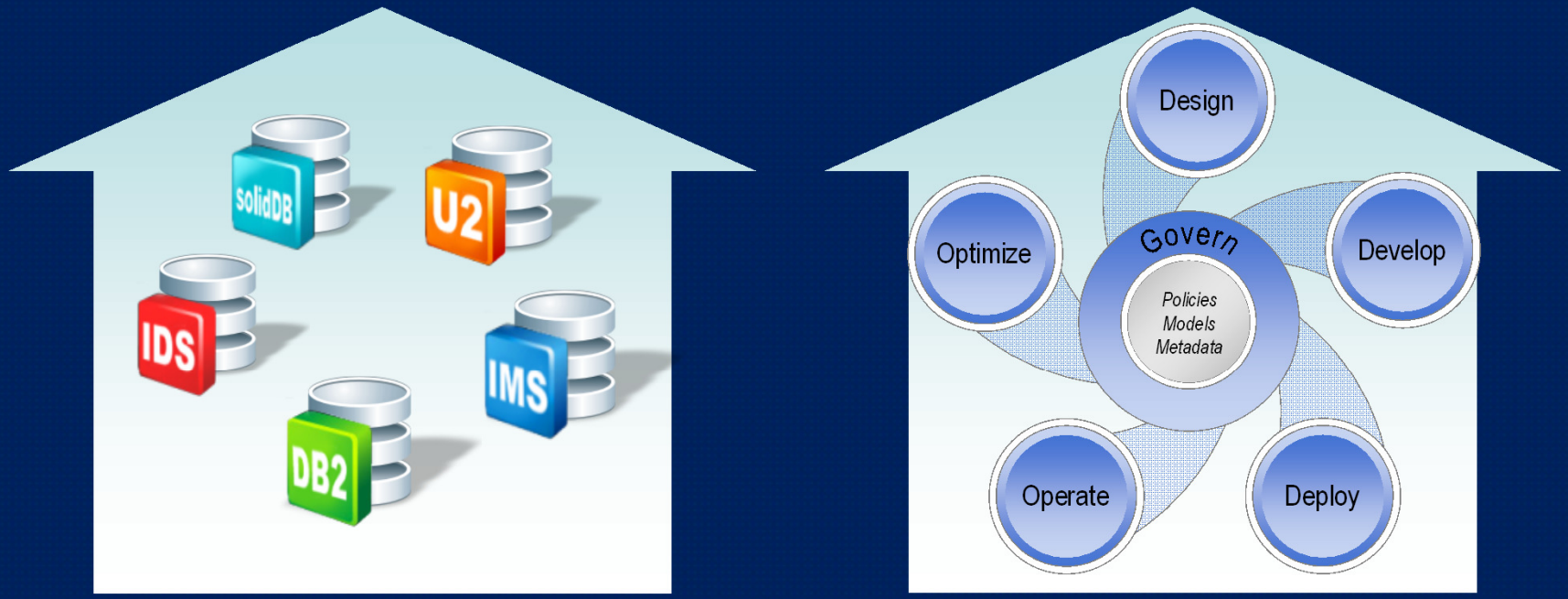
Velocity of Decision Making

- Rapidly changing business climate
- Need to get ahead of the curve : predict issues and fix them



IBM Data Management Software

Smarter **Faster** **Leaner**



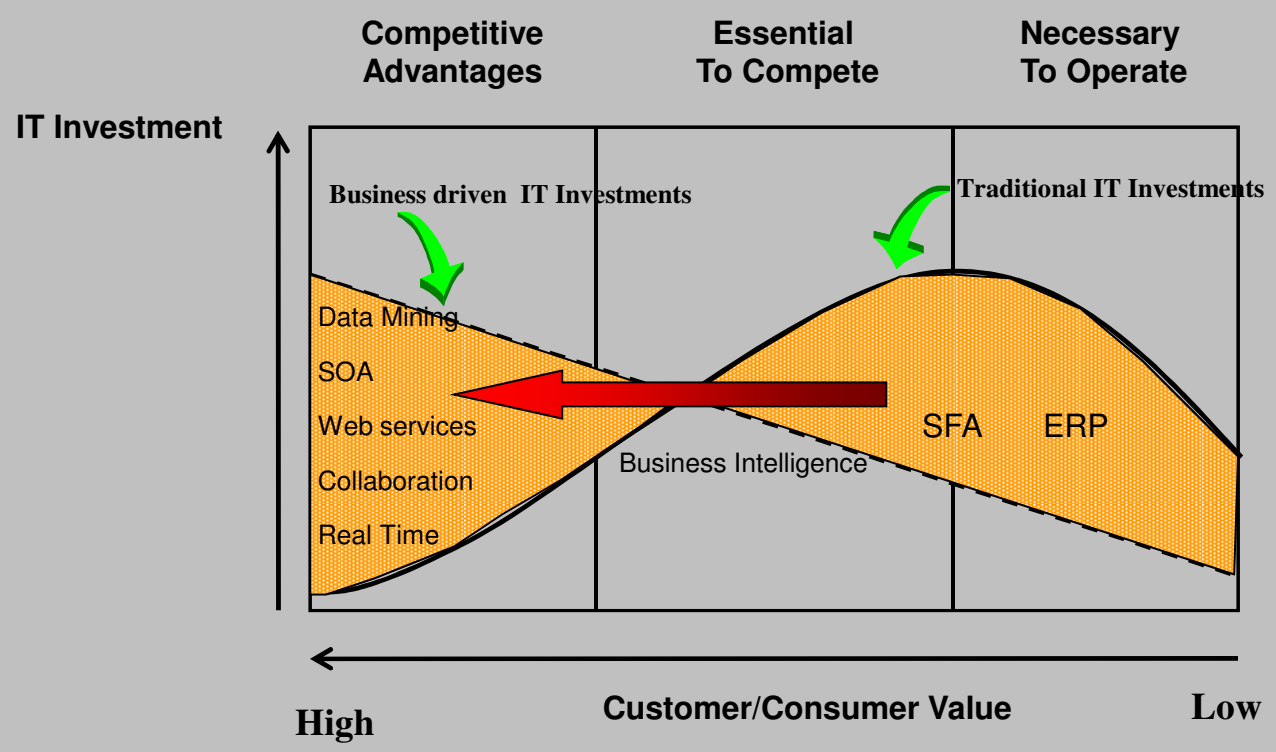
Database Innovations

Integrated Data Management

DB2 9.7 for Linux, Unix & Windows

Break free from higher cost DBMS

The IT Expense Curve



Gartner

April 29, 2009

"IBM DB2 9.7 Shakes Up the DBMS Market With Oracle Compatibility"

"The Oracle compatibility feature will enable Oracle applications to run natively on DB2. In discussions with Gartner, reference customers tell us that DB2 runs 95% or more of Oracle specific functionality found in SQL statements and natively runs PL/SQL, Oracle's stored procedure language. This native functionality is not an emulator, nor does it require changes to the application code (other than the 5%, which is mostly minor functionality, not found in many applications). Any provider offering applications that run with the Oracle DBMS can easily port it's application to IBM's DB2…"

– Donald Feinberg, Gartner VP Distinguished Analyst

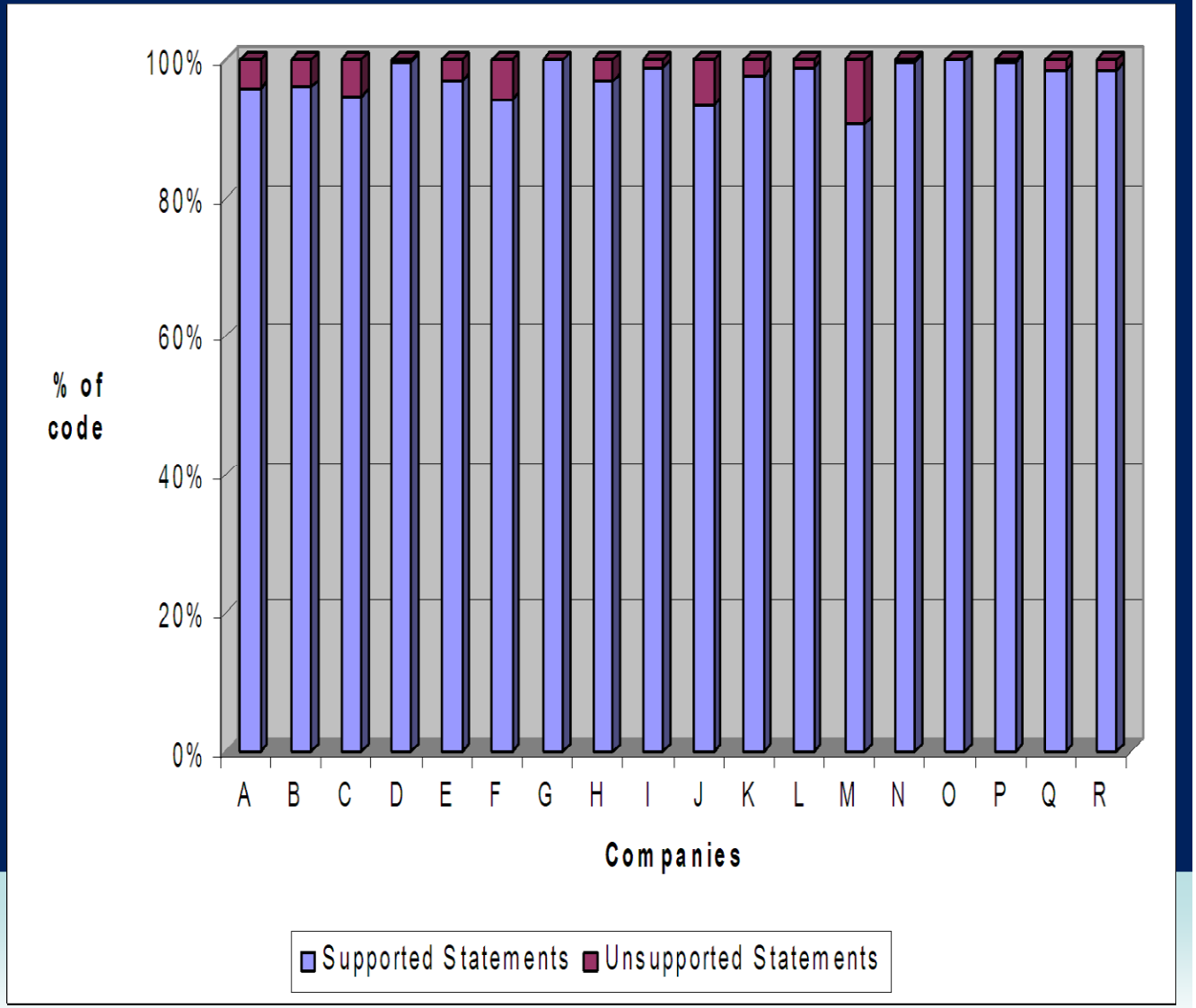
Use Oracle SQL Skills with DB2

- DB2 supports PL/SQL syntax
- Easy for developers to use DB2
- Easy for applications to use DB2

- DB2 supports:
  - SQL PL
  - SQL/PSM
  - PL/SQL
  - Packages
  - Built-in packages
  - JDBC

Percentage of Supported PL/SQL Statements

- **Variety of participants:**
  - Different industries
  - Different solutions
  - Different app sizes
  - Different countries
- **PL/SQL supported:**
  - > 750,000 lines of code
  - Average: 98.43%



What This Means…

- Oracle Database developers enjoy:
  - Being able to use their Oracle Database skills with DB2
  - Being able to easily enable their applications and solutions to work with DB2
- Existing DB2 developers enjoy:
  - Being able to use the packages and built-in packages that Oracle Database developers have traditionally enjoyed
  - Being able to use ‘weak typing’ if they so choose
  - Being able to write code that uses the new locking behavior

Low Operational Costs

Unparalleled Automation

→ **Lower administration costs**

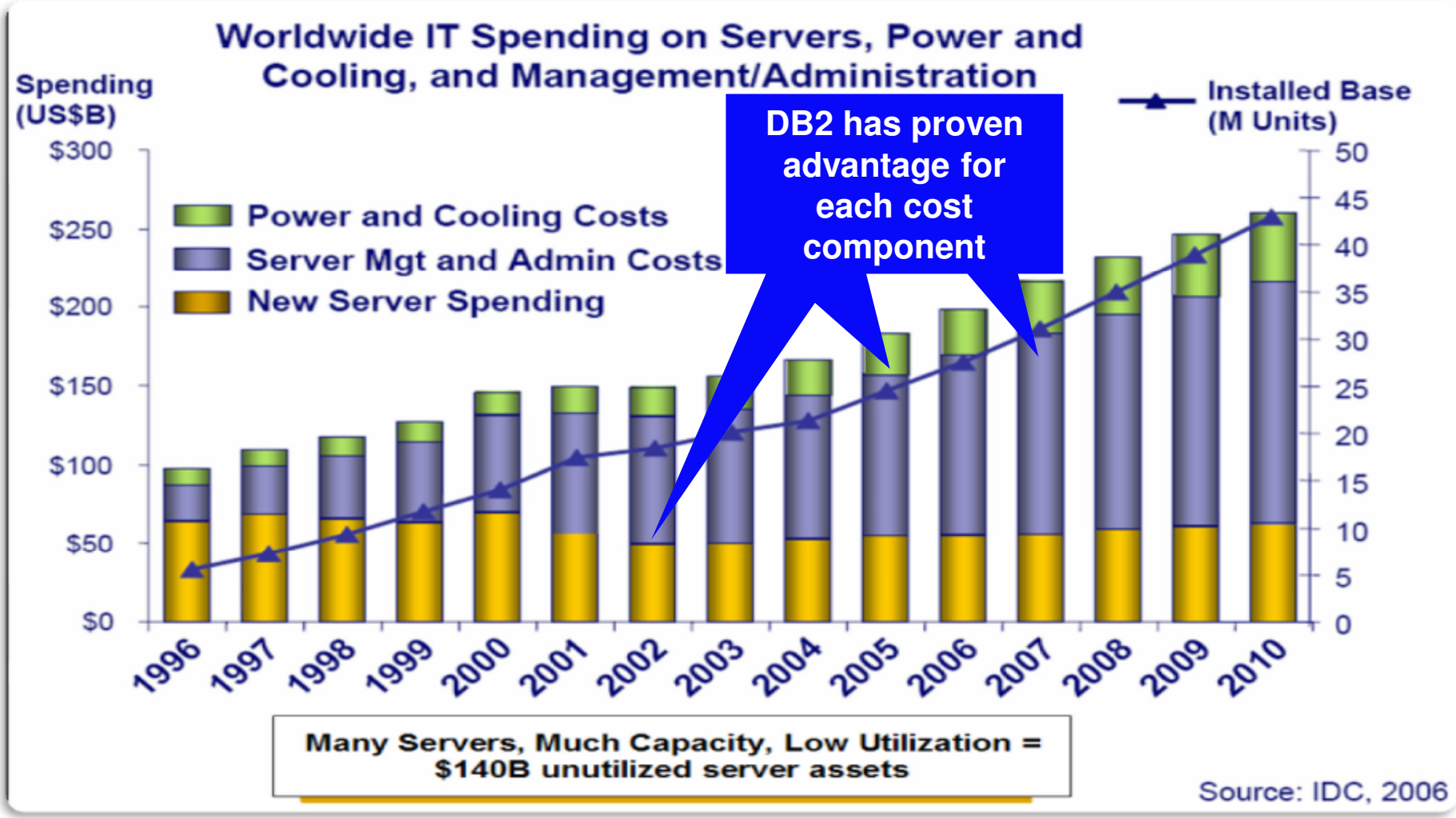
Deep Compression

→ **Lower storage costs**

Industry-leading performance

→ **Lower server costs**

Where is DB2 Focused? Cost Reductions



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The Current IT Storage Climate

*"**Storage hardware is steadily increasing as a percentage of IT budgets.** Backup and recovery was the second most important driver of spending…and is **the No. 1 issue** keeping CIOs awake at night"*

IDC
Analyze the Future

*Global spending on the data center **power and cooling** in 2007 was roughly **equivalent to spending on servers***

Gartner

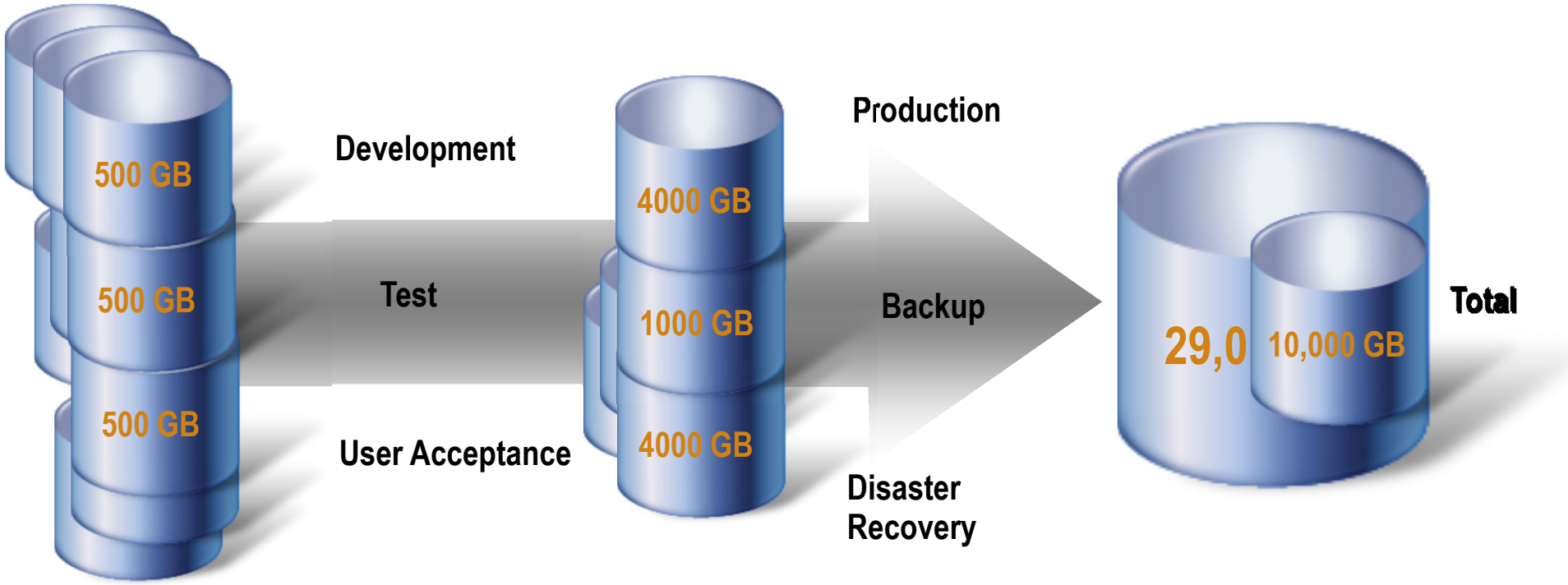
*Half of the world's data centers will face an **acute power shortage** by the end of 2008*

facebook

Facebook: $1 Million A Month in Power Costs

© 2009 IBM Corporation

DB2 Dramatically Slashes the Database Burden Rate



Total Storage for 4TB DB

Without compression = 29TB

With 65% compression ≅ 10TB

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What Customers are Saying About DB2 Compression?

AutoZone

"With the new compression technology in DB2 Viper, we realized an ***80% improvement in space savings*** *for our most critical tables in our data warehouse. We were even more pleased with this technology when we found that Viper's compression capability helped us* ***process queries to the database an average of 40% faster then before.****"*
- Donny Ledbetter, Senior DBA

DOWJONES

"We are ***saving anywhere between 60 to 65% in storage and we've actually found the performance has improved.****"*
- Bashir Khan, Director Business Intelligence

SunTrust

"We're seeing ***compression rates up to 83%*** *on the Data Warehouse. The projected* ***cost savings are more than $2 million initially with ongoing savings of $500,000 a year.****"*
- Michael Henson, Database Delivery Services

tellabs®

"We needed a database that represented the future and DB2 9 is the future. DB2 9 compression capabilities are key in helping ***reduce the size of our databases—in one case by up to 83%****. This ultimately helps us* ***minimize storage costs and increase performance.****"*
- Jean Holley, CIO

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How Does Archiving Impact Cost?

Makes production databases more efficient and lowers cost

"Moving inactive data to another instance or archive system not only makes production databases more efficient, but it also lowers cost."

"Large databases also drive up hardware cost, database license cost, and general administration effort."

Noel Yuhanna, Forrester Research

"Database Archiving Remains An Important Part Of Enterprise DBMS Strategy", 8/13/07

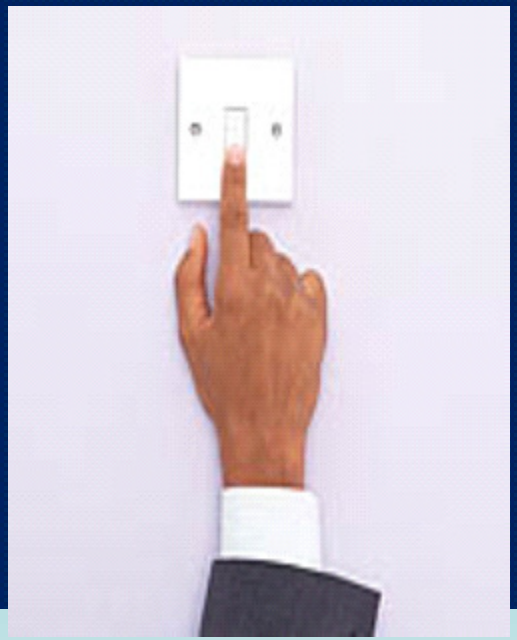
FORRESTER®

Lower Costs with Smart Administration

LITHONIA LIGHTING
An AcuityBrands Company

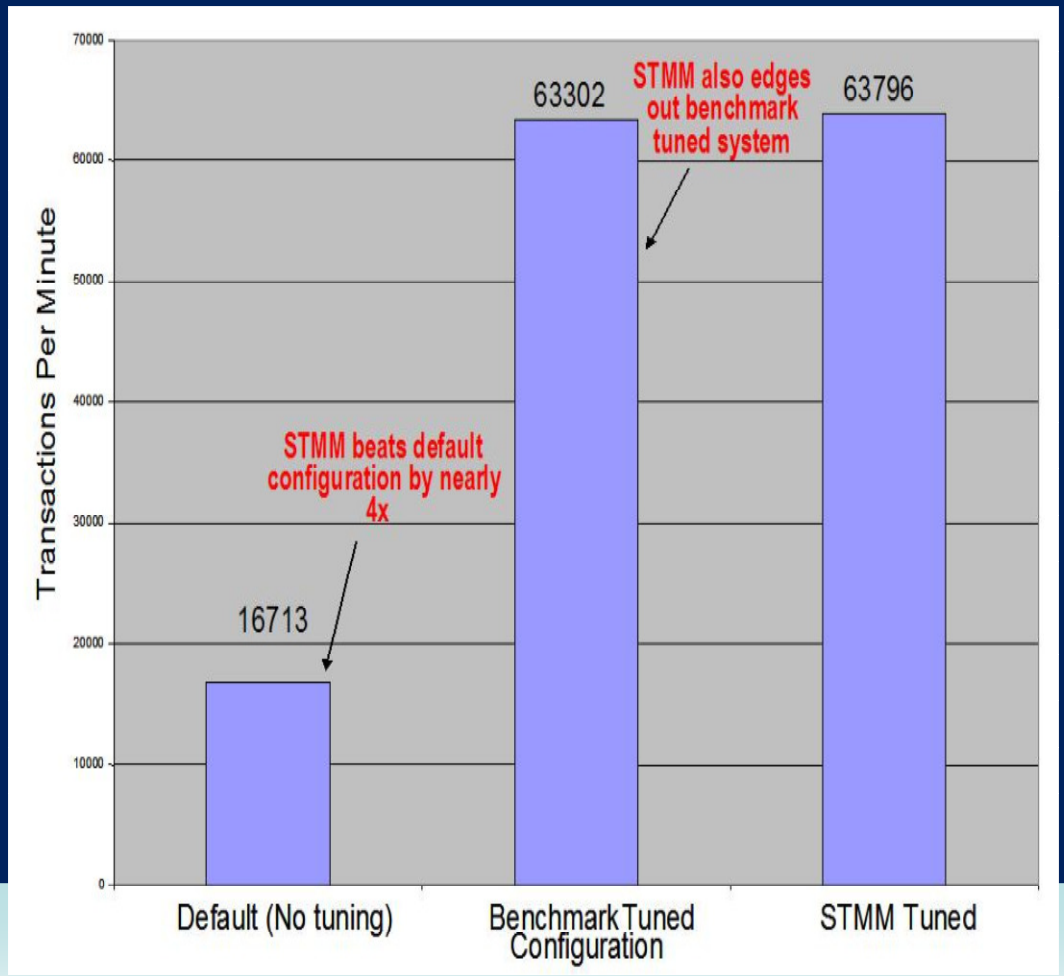
It's hard to believe, but we only have 3 DBAs supporting over 100 instances of DB2."
—Phil Kilgore, Director of Technical Services

- Automatic features:
  - DBA-free statistics collection
  - DBA-free health monitoring
  - And more
- This means that DBA shifts to:
  - Focus on higher-value projects
  - Respond quickly to new needs
  - Deliver new capabilities faster



Let DB2 Tune Itself, Focus on Your Business

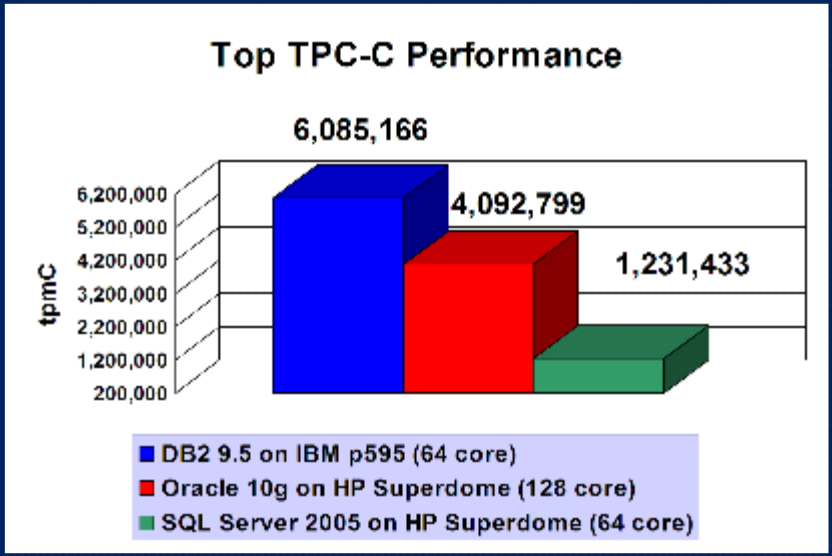
- Self Tuning Memory Manager
  - Configures DB2 without needing a DBA
  - Get your system running quickly in minutes with little skills or training
- Let DB2 tune itself
  - Focus on your business, not database management
- Easy configuration
  - Configuration Assistant
  - Automatic Storage
  - Wizards and advisors

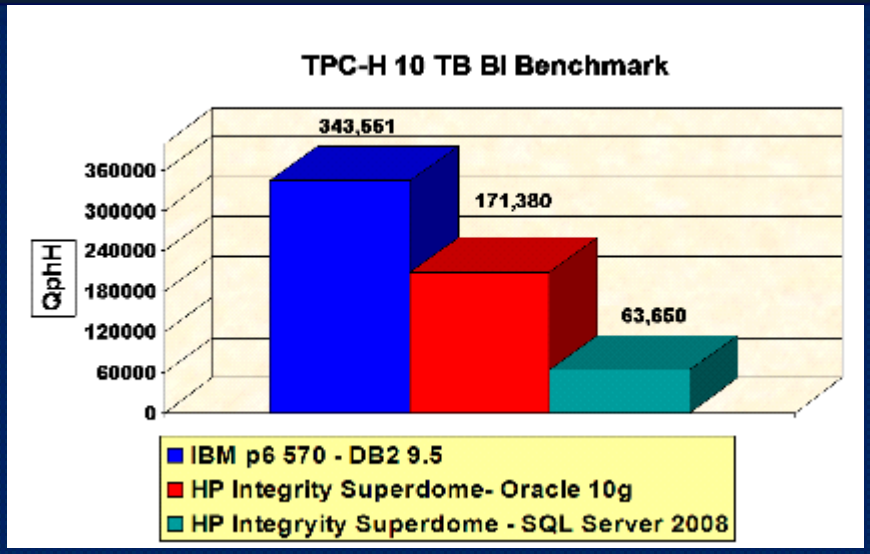


Proven Performance Maximizes your Investments

ZURICH

"In comparison tests with both Oracle Database and Microsoft SQL Server, IBM DB2 continually demonstrated a better price-to-performance ratio."
—Benjamin Simmen, Zurich Financial Services





- **50% Faster than Oracle Database**
- **5X Faster than SQL Server**
- **Lower server costs for transactional systems**
- **solidDB available for extreme speed**

- **65% Faster than Oracle Database**
- **5X Faster than SQL Server**
- **Lower server costs for BI systems**
- **DB2 powers InfoSphere Warehouse**

Lower server costs → Lower software license costs → Lower software maintenance costs

DB2 is THE Database for SAP

National Defence / Défense nationale

"DND is a large and dynamic SAP implementation that is in a constant state of enhancement and expansion. We have **two DBAs that currently manage 100 SAP instances (and growing)**. We are often called upon to create a new instance to support our project and deliver in less than 24 hours. **This level of productivity and quick response would not be possible without the automated features of DB2 LUW** and the very tight integration with the SAP Cockpit, which we use extensively."
– Carm Germano, Manager IM/IT Operations

Reduce Risk with Improved Security and Audit Features

- ❑ 44% of IT staff cited authorized access as key security challenge
- ❑ Top challenge for 43% of CFOs is governance, controls, and risk management

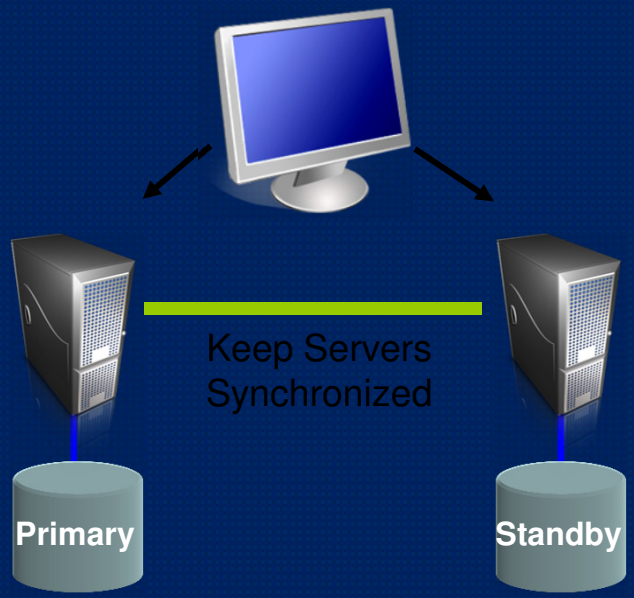
- Understand risks and security issues
  - Auditing redesigned for fast performance
  - Easily find out Who, What, Where, When, and How you may have a breach
- Reduce risk of unauthorized access
  - Precise Control
  - Encryption
  - Label-Based Access Control (LBAC)

MELBOURNE HEALTH

"IBM is a definite leader in heterogeneous data integration..."
—Naomi Rafael, Melbourne Health

Robust Operation with High Availability

- Ultra-fast (seconds)
- Manage planned and unplanned outages
- Easy to add
  - No rewrite of your application
  - No specialized hardware
  - Setup in only minutes with graphical wizard
  - Systems can be in different locations



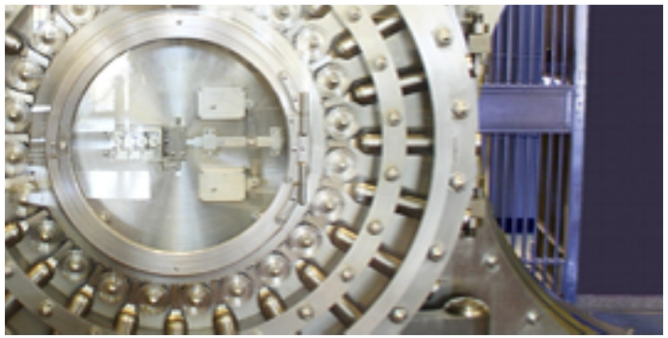
ÖBB

"One of the major advantages of DB2 is that we get a disaster recovery solution for our SAP system with HADR at no extra cost."
—Gustav Elias, Austrian Railways

Introducing DB2 pureScale

Critical IT Applications Need Reliability and Scalability

- **Local Databases are Becoming Global**
  - Successful global businesses must deal with exploding data and server needs
  - Handling change is a competitive advantage in today's IT landscape



Customers need a highly scalable, flexible solution for the growth of their information with the ability to easily grow existing applications

- **Down-time is Not Acceptable**
  - Any outage means lost revenue and permanent customer loss
  - Today's distributed systems need reliability

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IT Needs to Adapt in Hours…Not Months

- **Dynamic Capacity is not the Exception**
  - Over-provisioning to handle critical business spikes is inefficient
  - IT must respond to changing capacity demand in days, not months

Businesses need to be able grow their infrastructure without adding risk

- **Application Changes are Expensive**
  - Changes to handle more workload volume can be costly and risky
  - Developers rarely design with scaling in mind
  - Adding capacity should be stress free

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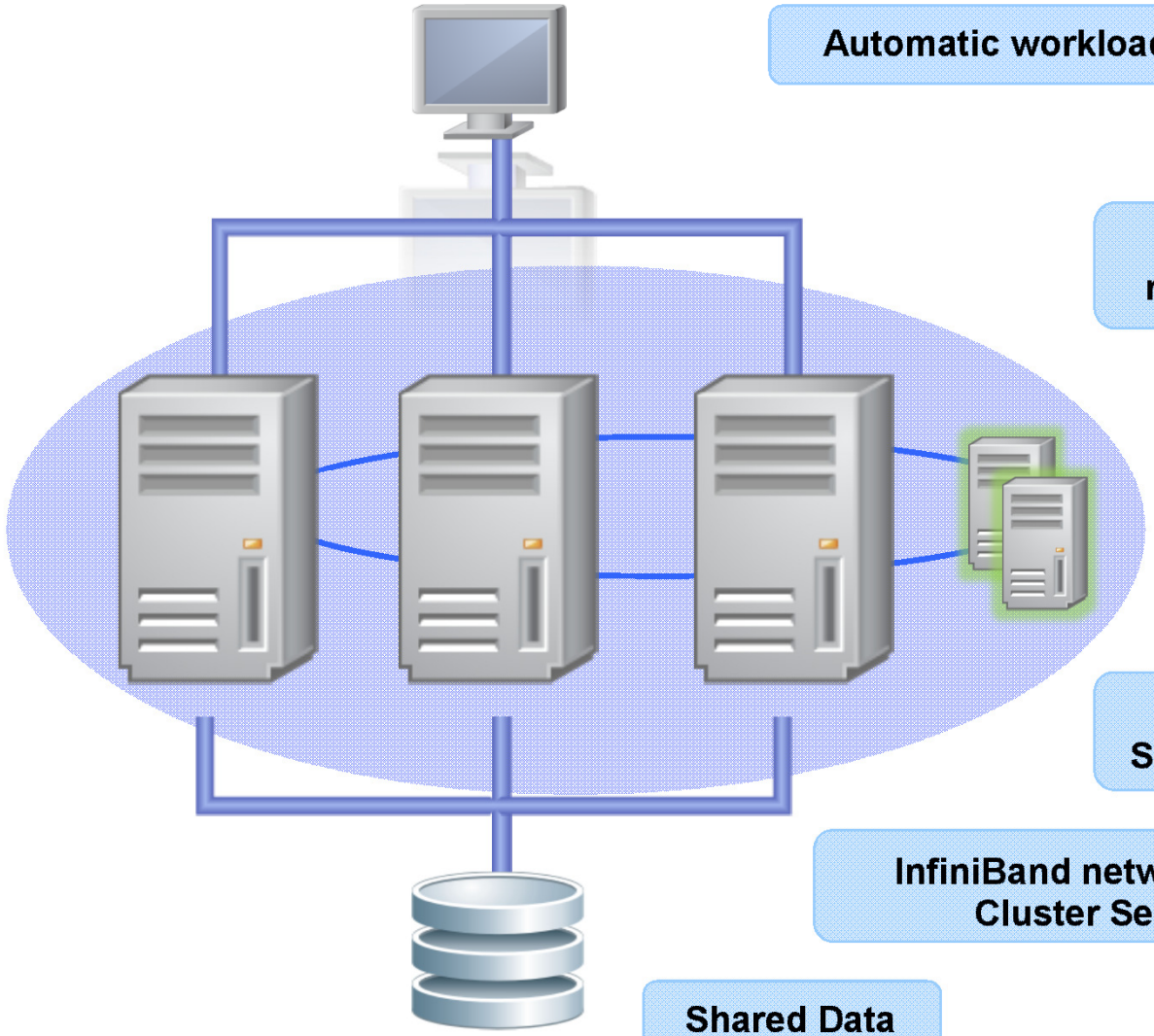
DB2 pureScale Architecture



Automatic workload balancing

Cluster of DB2 members running on Power servers

Leverages the global lock and memory manager technology from z/OS

Integrated Tivoli System Automation

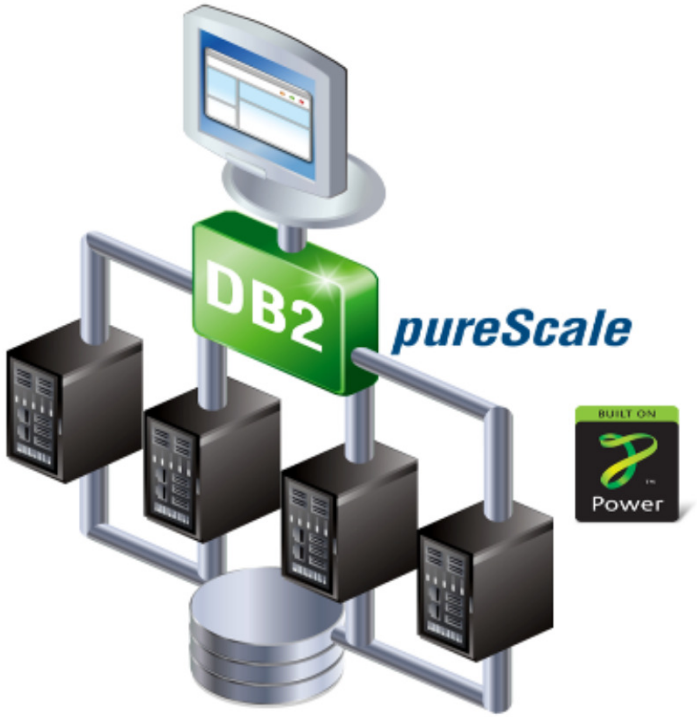
InfiniBand network & DB2 Cluster Services

Shared Data

© 2009 IBM Corporation

DB2 pureScale

- **Unlimited Capacity**
  - Buy only what you need, add capacity as your needs grow
- **Application Transparency**
  - Avoid the risk and cost of application changes
- **Continuous Availability**
  - Deliver uninterrupted access to your data with consistent performance



Learn how DB2 pureScale can help you reduce the risk and cost of meeting changing business demands

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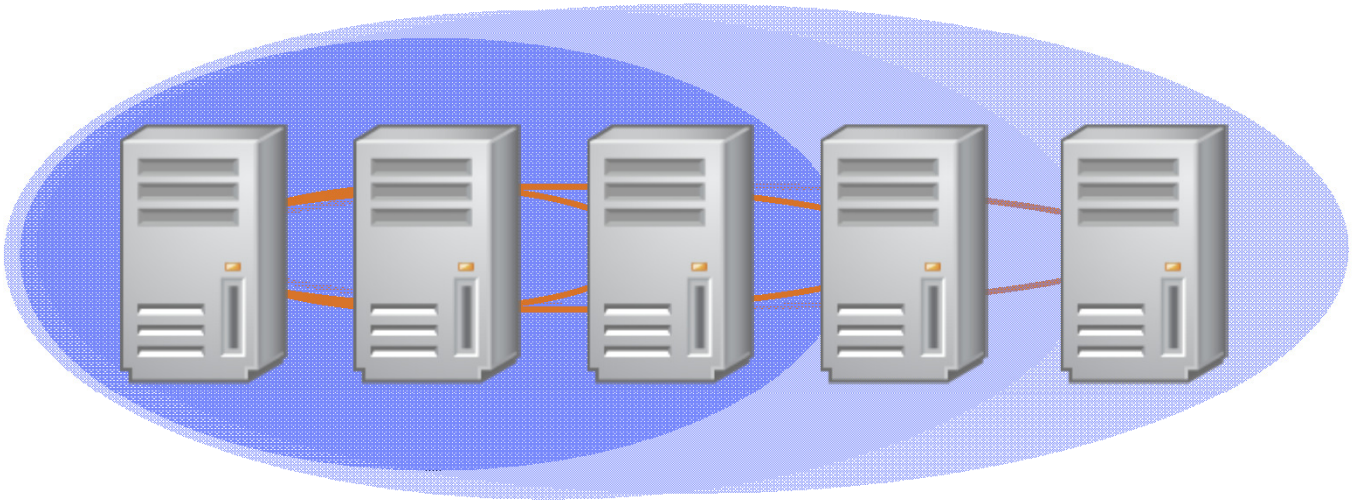
Unlimited Capacity

- **DB2 pureScale has been designed to grow to whatever capacity your business requires**
- **Flexible licensing designed for minimizing costs of peak times**
- **Only pay for additional capacity when you use it even if for only a single day**

Solution:
Use DB2 pureScale and add another server for those two days, and only pay sw license fees for the days you use it.



Over 100+ node architecture validation has been run by IBM

© 2009 IBM Corporation

DB2 pureScale is Easy to Deploy

Single installation for all components

Monitoring integrated into Optim tools

Single installation for fixpaks and updates

Simple commands to add and remove members

© 2009 IBM Corporation

Summary

- Understand where the REAL Costs of managing your information are.
- IBM continues to develop a portfolio of products that allow you to manage the cost, performance, availability and reliability
- With pureScale IBM introduces the first Mainframe class cluster solution for Unix
- With DB2 9.7 - You have real choice.

Break Free Now !

Thank you!

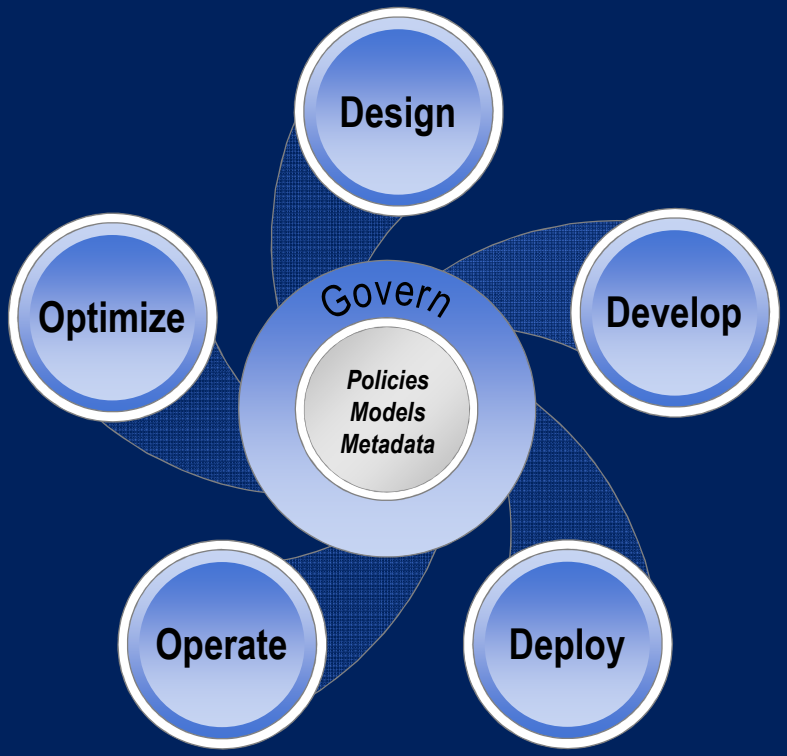
IBM Information
› › › On Demand
2009

BACK UP

INNOVATE,
OPTIMISE
AND PERFORM
FOR SMARTER
BUSINESS
OUTCOMES

Integrated Data Management

Managing data throughout the lifecycle



- Deliver Value Across the Data Lifecycle
- Facilitate Collaboration & Efficiency
- Improve Service Levels
- Comply with Data Security, Privacy, & Retention Policies

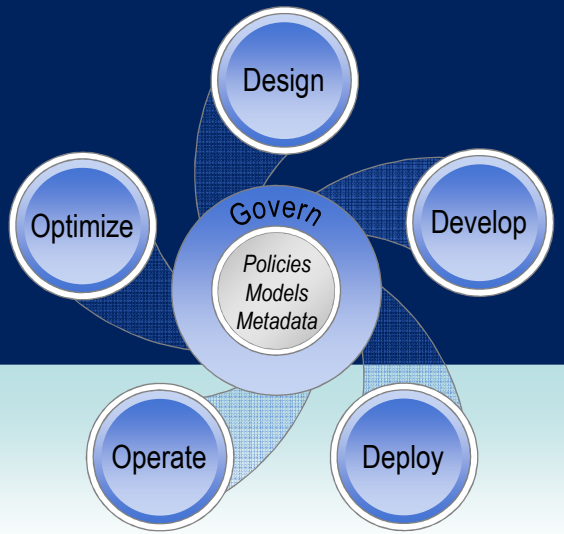
Listen to What Business Partners Said…

Fast Return on Investment, Faster Development

Easy to Learn and Use

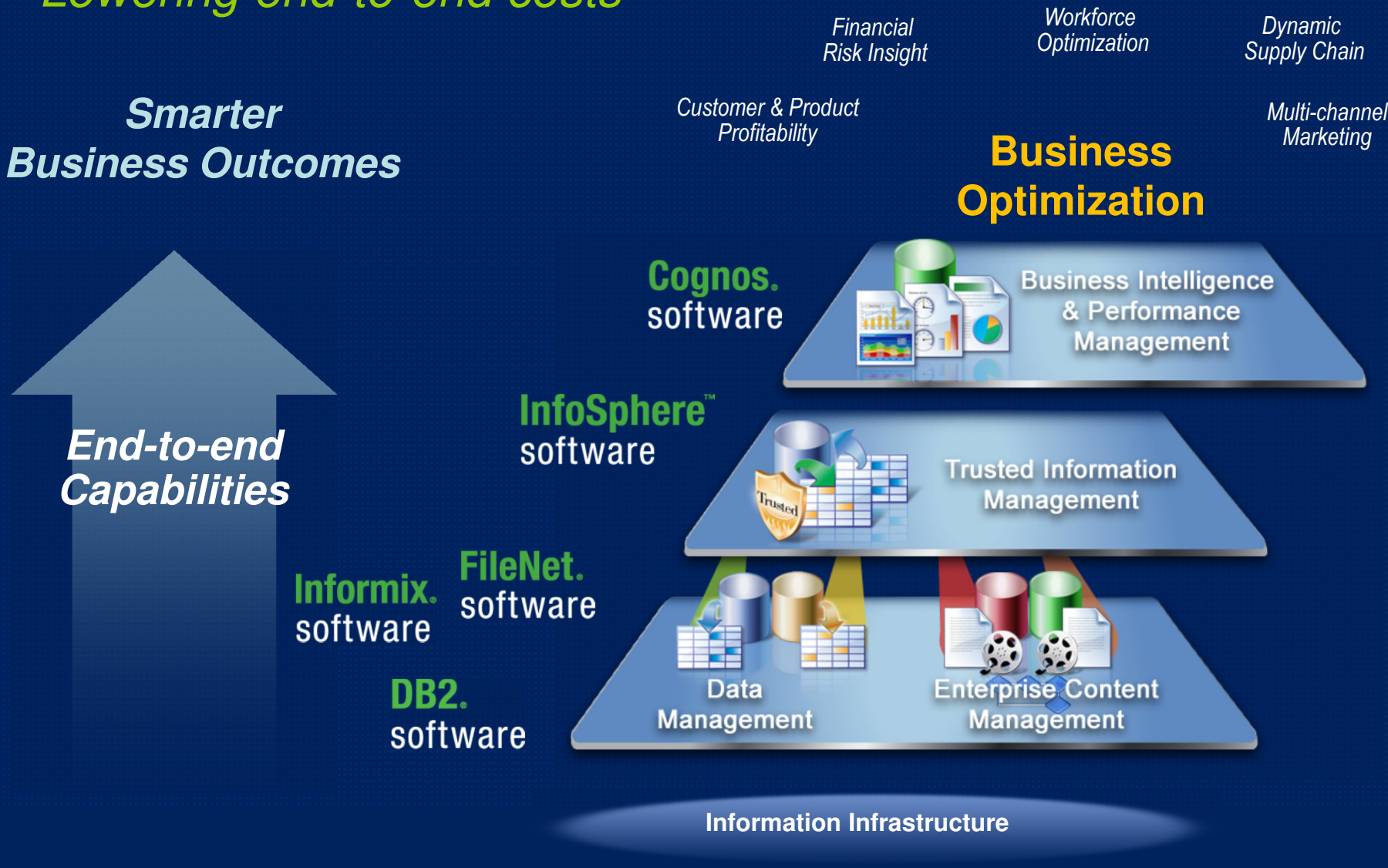
"It took us about a week to migrate the code to the new environment. The money we've invested we got back in about one to two months, and our development will operate up to 20 to 50% faster than before."

- Janick Bernet, Developer, Swiss ASP



Portfolio Investments

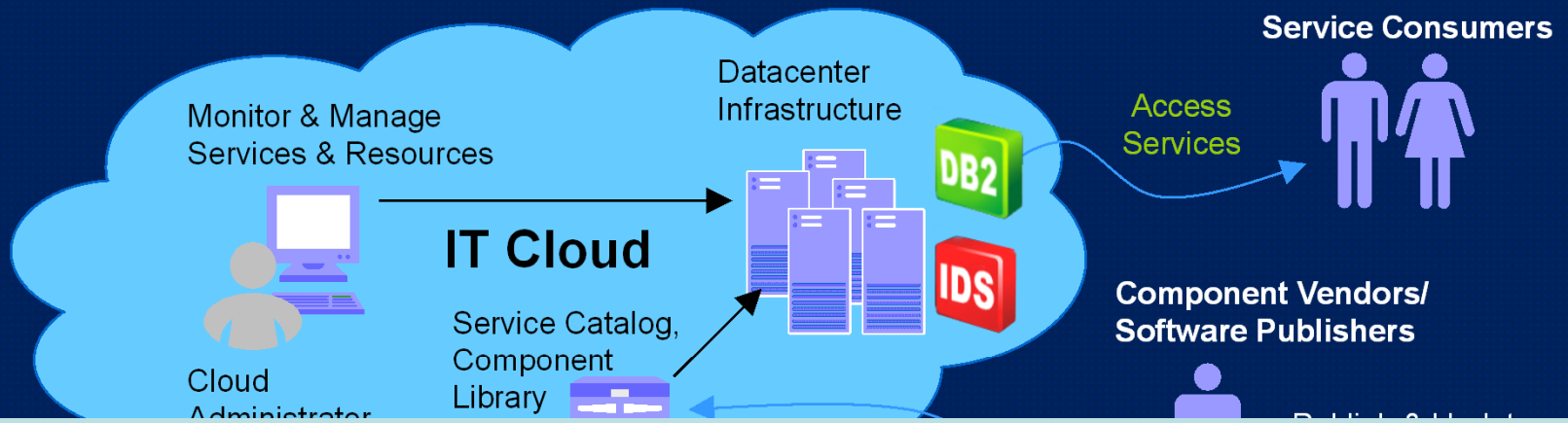
Lowering end-to-end costs



DB2 and IDS in the Cloud

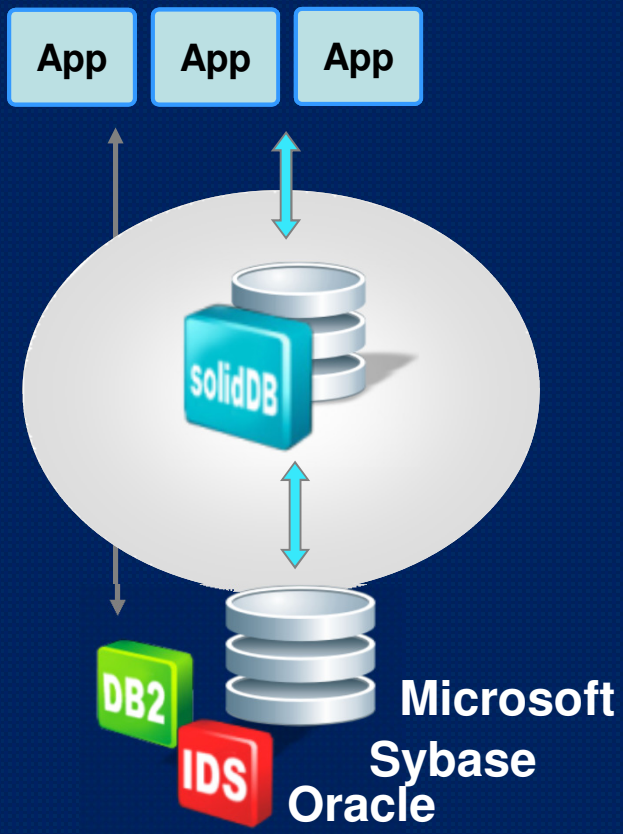
Ease and speed of deployment

- Partnership with Amazon Web Services
- Quickly get started using DB2 or IDS
- Pay as you go licensing model



solidDB Universal Cache

Accelerates virtually all leading RDBMs for extreme speed



The New York Times

IBM Announces Industry's First Universal Database Cache

*"An industry first, **solidDB Universal Cache** relies on relational, in-memory database software to accelerate IBM's own DB2 and Informix Dynamic Server, as well as…"*

FORRESTER®

Forrester Research

"Caching will be critical over the next 3-4 years with huge applications needing high performance."

Noel Yuhanna Forrester Research
August 2008

InfoSphere Warehouse 9.7

New Departmental Editions Lower Cost

✓ Save Money

Greater storage savings with enhanced Deep Compression

✓ Uncover Opportunities

Simplified analytics and expanded support for XML data

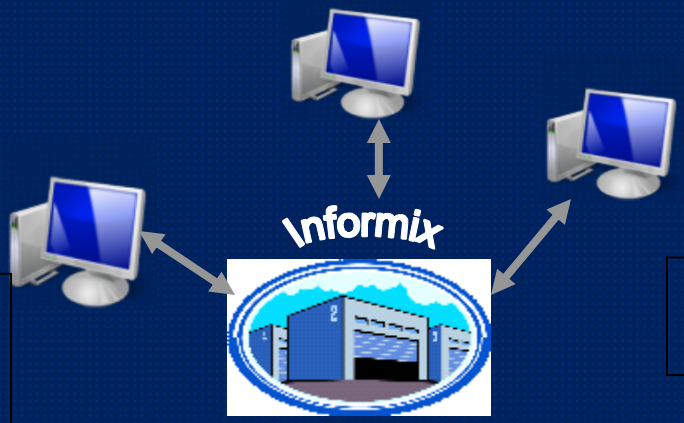
✓ Move Now

New technology for rapidly deploying applications, including applications written for other database software

Informix Warehouse

Delivering more value from existing IDS data assets

- Optimized for Informix
- Create a warehouse in a day
- Utilize existing infrastructure
- Drag and drop design and deployment tools



Tools:
- Design Studio
- Data Architect
- Admin Console
- OpenAdmin GUI

Storage Optimization

Business Analytics
(e.g. IBM Cognos)

SAP on DB2 – Long-term Joint Roadmap

Tight integration lowers costs for customers

DB2 Optimized for SAP Software

Partnership

Joint SAP + IBM teams and cooperation on all levels

Product Integration

One Product, one maintenance strategy and all services

Technology Innovation

Joint Technology plan with focus on SAP

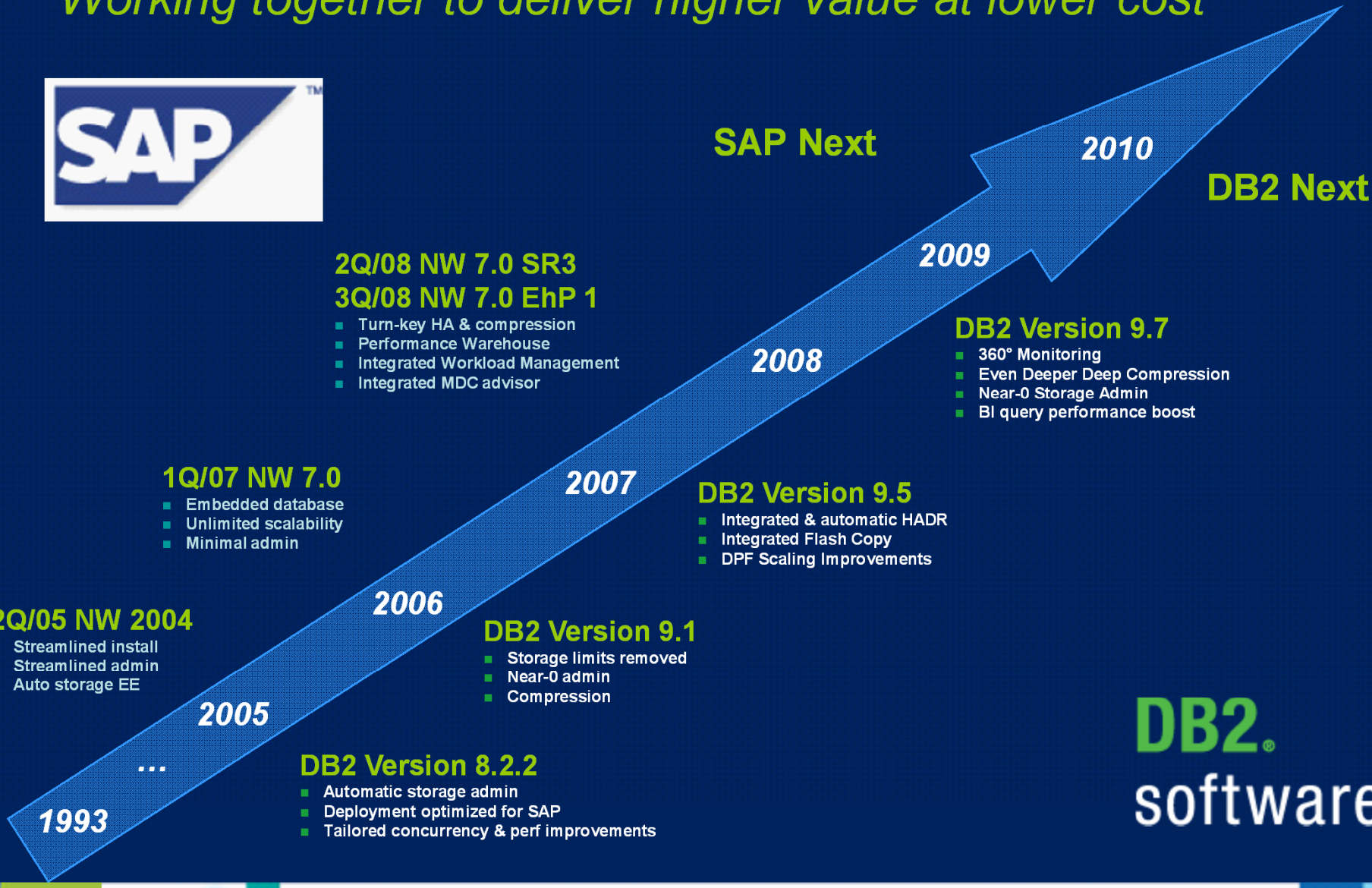
SAP runs DB2

> 1200 internal SAP systems on DB2 LUW

SAP and IBM DB2 – A Unique Partnership!

DB2 Optimized for SAP – The Roadmap

Working together to deliver higher value at lower cost



DB2 software

SAP video

- Cue SAP / IT video
  - http://ibm.cppinfo.net/IBM-DB2_SAP/files/IBM_SAP_DB2_short_small.wmv

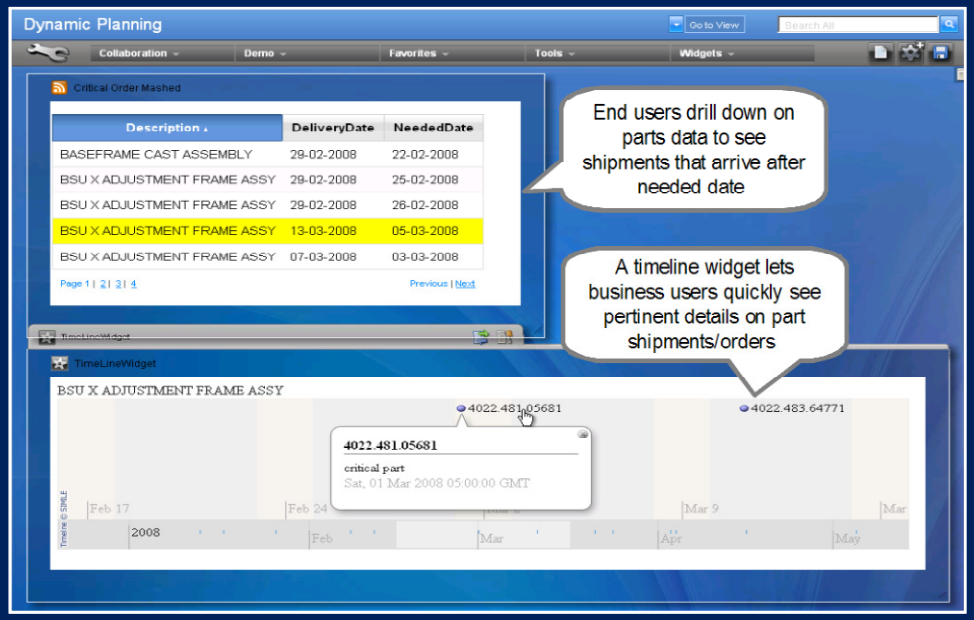
Mashups: Immediate ROI

Innovation to advance new technologies to simplify data access

$400,000+ hard annual cost savings from first deployed Mashup

Solution:

Provided real-time manufacturing information for semiconductor supplier, mixing enterprise data and external data



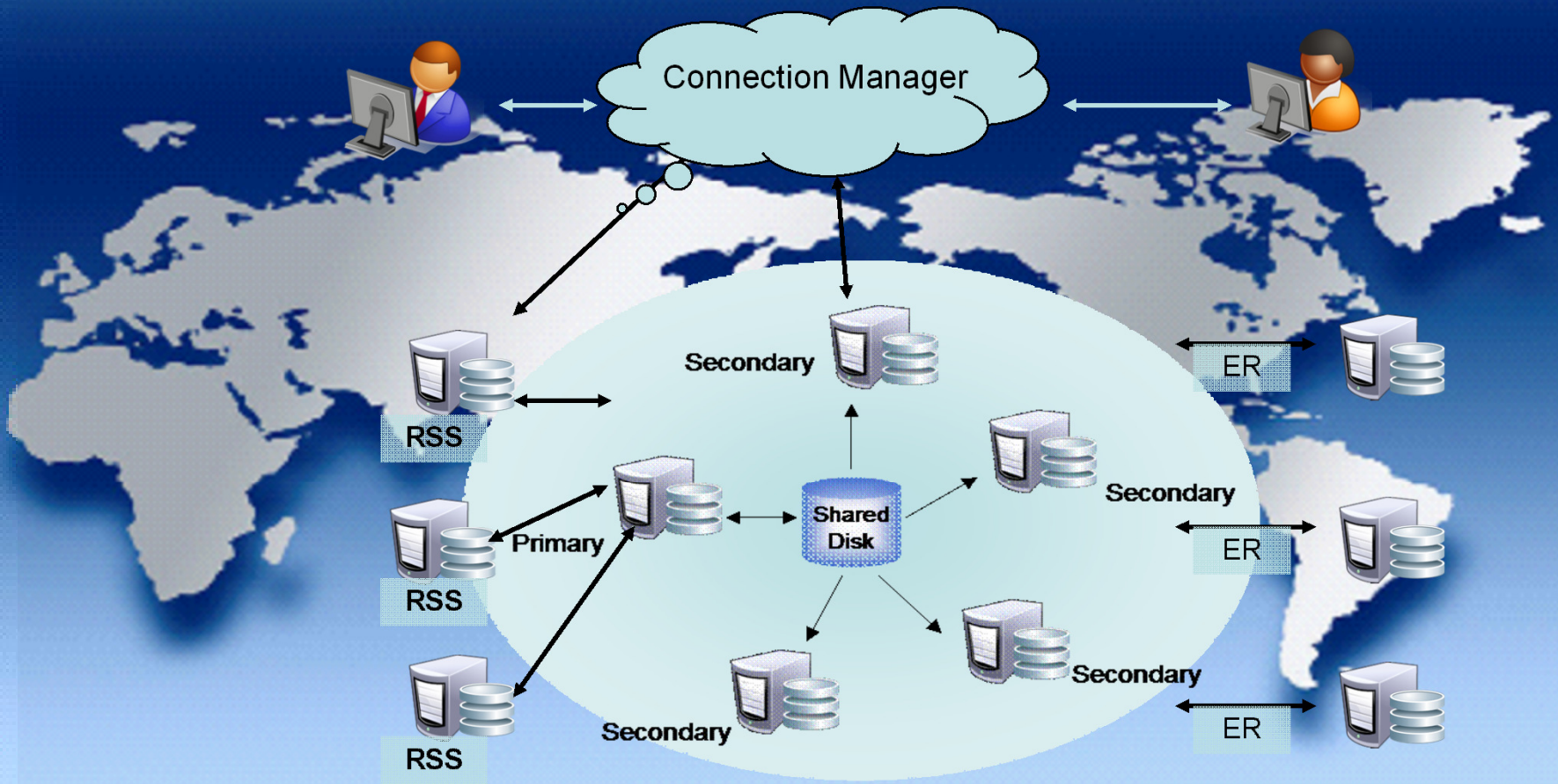
Enterprise Mashups of information from supplier's ERP system and semiconductor manufacturer's portal

Aalberts Industries

MACH 11: Active Data Clusters

Innovation for affordable and reliable scale up or scale out

- ✓ **Scale Up or Scale Out**
- ✓ **Change dynamically**
- ✓ **Shared disk or remote replicas**

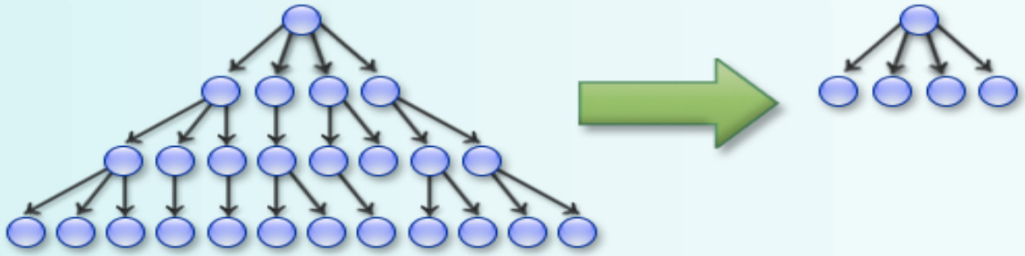


Compression

Innovation to Reduce Costs and Improve Performance

Index Compression

Automatic, Multiple Algorithms

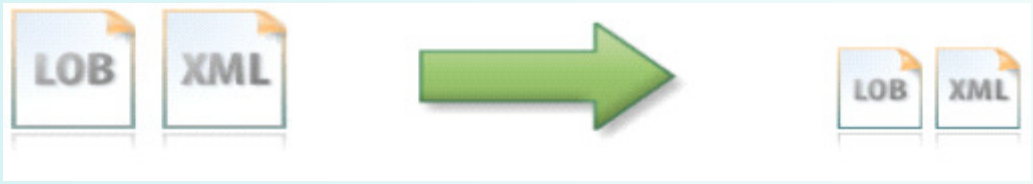


Temp Table Compression

Automatic

LOB & XML Compression

Intelligent

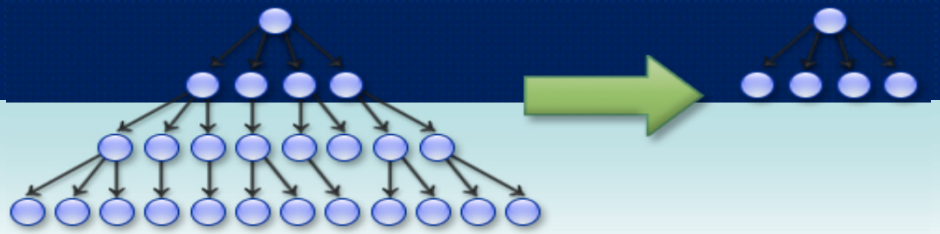


SunTrust Saves $2M with Compression

Innovation with real results - spend less on storage

"We're seeing compression rates up to 83% on the data warehouse tables. The projected cost savings are more than $2 million initially with ongoing savings of $500,000 a year"

— Michael Henson, SunTrust Bank, Inc.



SUNTRUST

Cobra customer Video

- ftp://dvsftp.atlanta.ibm.com/Gordon_Green/IDUG 2009/IDUG 2_4x3_Review.wmv
- Reaction to Cobra
  - "It's great!"
  - "Makes life simple"
  - "We can use all of our DBAs"
  - "This will allow us to Break Free …"
  - Etc.

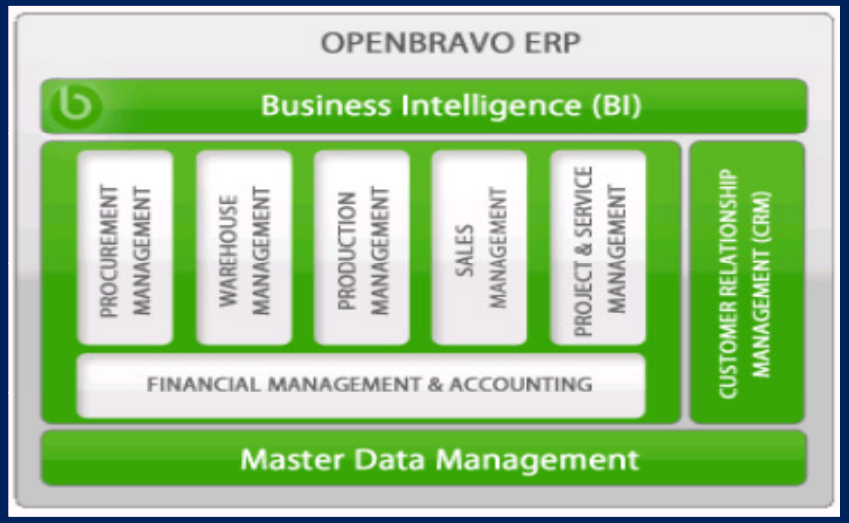
Openbravo

- Customer on stage
- Angle – migration of PL/SQL code
  - Ease of migration
  - Impact on their development
  - Easy

Openbravo ERP

Open source web-based ERP system

- Developed by Openbravo
- Millions of downloads
- Used in over 50 countries



Currently supported RDBMS

- Oracle & PostgreSQL

Database Size

- 520 tables
- 400+ PL/SQL routines / triggers

Migration to DB2 Cobra

~ 6+ MONTHS

1. Map schema and data
2. Translate PL/SQL
   Missing built-in functions & packages
3. Translate SQL in application code
   ***1000's** of untyped expressions*
4. Concurrency problems
5. Test and Tuning

1 WEEK

1. Map schema, data and SQL
   - **Native support**
   - **99% of SQL compatible**
   - **156 of 158 procedures natively supported**
2. Run your shared code
   - **Native support**
3. Test and Tuning

With DB2 Cobra, no porting required for new releases

IBM Data Management Community

- User group momentum
  - Lively community activity at worldwide events in April and May
  - 240 informative sessions

International DB2 User Group

International Informix User Group

- XML Challenge
  - 20 countries / 50 workshops / 300 colleges
  - Global winners from six countries

- Academic Initiative
  - Growing DB2 footprint in universities
  - Informix on Campus introduction

IBM Academic Initiative
ibm.com/academicinitiative

The World is Getting Smarter

Our world
is becoming
Instrumented

Our world
is becoming
Intelligent

Our world
is becoming
Interconnected

The Opportunity for Progress is Clear

10%

REDUCTION IN ENERGY COSTS

Utility Networks

Pacific Northwest National Lab

20%

LESS TRAFFIC

Traffic System

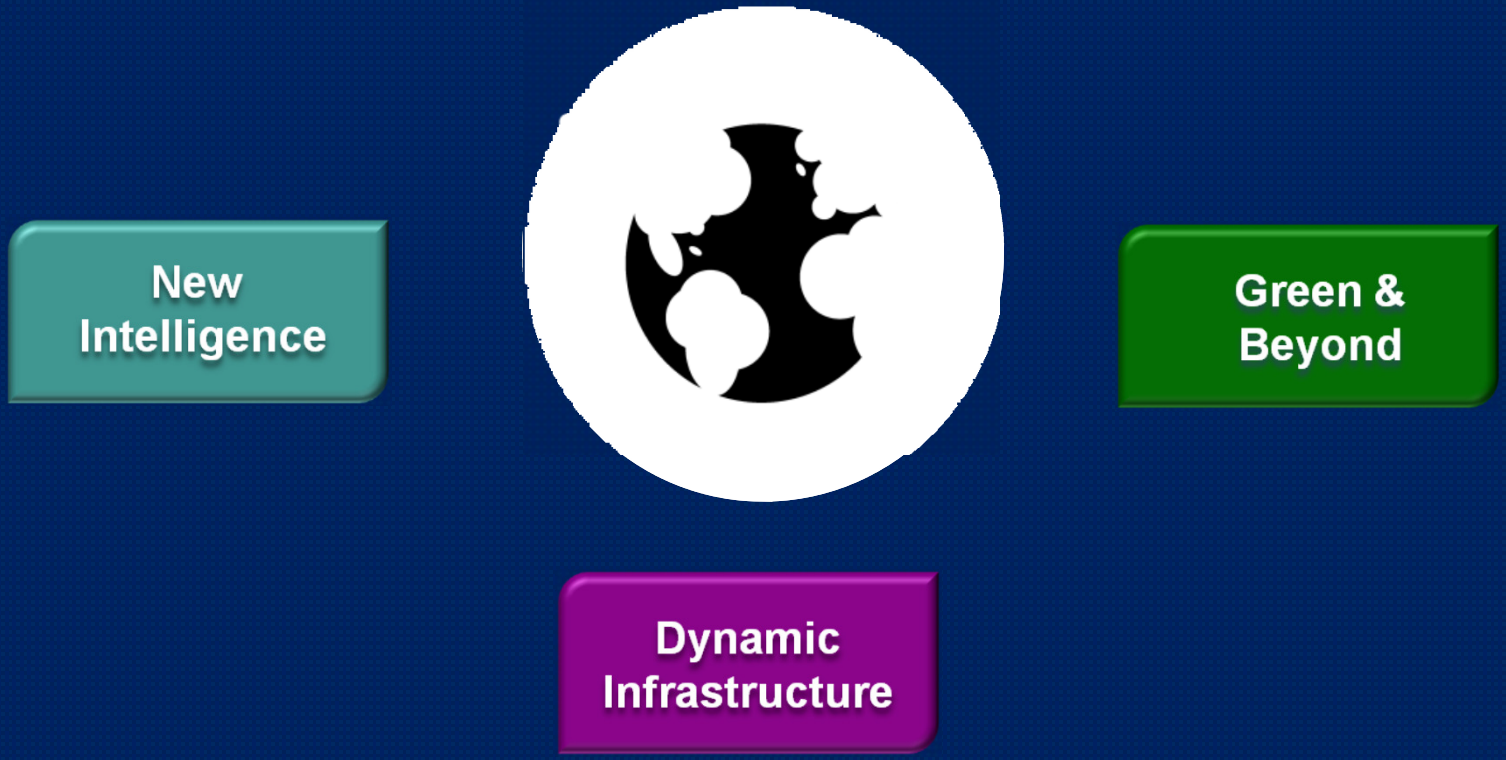
Stockholm, Sweden

90%

LOWER COST OF THERAPY

Smart Healthcare

ActiveCare Network

IBM Data Management

Powering a Smarter Planet