IBM Smarter Business and Technology Series

Lotusphere and **Information**OnDemand
Come to You

Get Social. Do Business. Gain Insight. Optimize Results.

Gain Insight.
Optimize Results.

Edward Orange

Vice President, Information Management
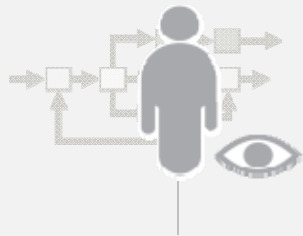
IBM Software Group, Growth Markets Unit

IBM

Imagine if you could…

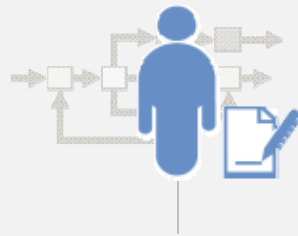*…predict infection in premature newborns 24 hours earlier?*

…apply social relationships of customers to prevent churn?

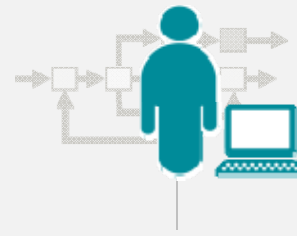*…adjust credit lines as transactions are occurring to account for risk fluctuations?*

…determine who to offer discounts at time of sale instead of offering to all?

Physician

Telco Call Center Rep

Loan Officer
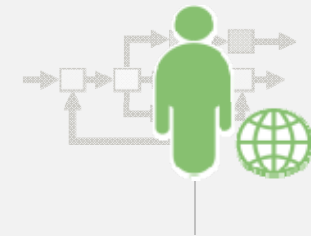
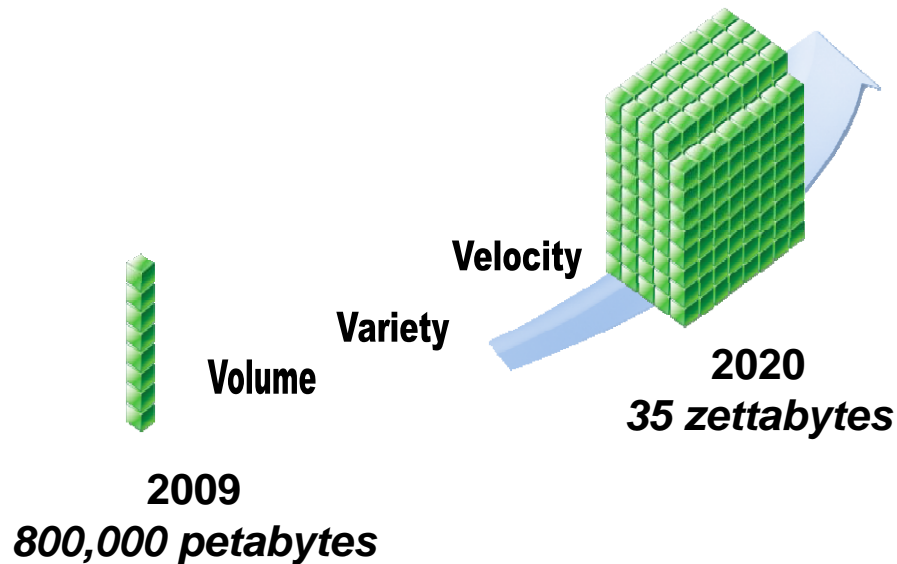**Retail Sales Associate**

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An Explosion in Volume and Variety of Information…

44x as much Data and Content Over Coming Decade

Velocity

Variety

Volume

2020
35 zettabytes

2009
800,000 petabytes

30 Billion **RFID tags by 2010**

4.6 Billon **Mobile Phones**

10 terabytes **of data every day**

Capital market data volumes grew *1,750%,* **2003-06**

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… Yet Organizations Are Still Starved For Insight

1 in 3
Business leaders frequently make decisions based on information they don't trust, or don't have

83%
of CIOs cited "Business intelligence and analytics" as part of their visionary plans to enhance competitiveness

1 in 2
Business leaders say they don't have access to the information they need to do their jobs

35%
of organizations will look to replace their current warehouse with a pre-integrated Warehouse solution in the next 3 years, only 14% have today

Sources:
- **IBM Institute for Business Value, 2009**
- **IBM CIO Study 2010**
- **TDWI: Next Generation Data Warehouse Platforms Q4 2009**

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The Gap between Information and Outcomes

Information Explosion

Optimized Outcomes
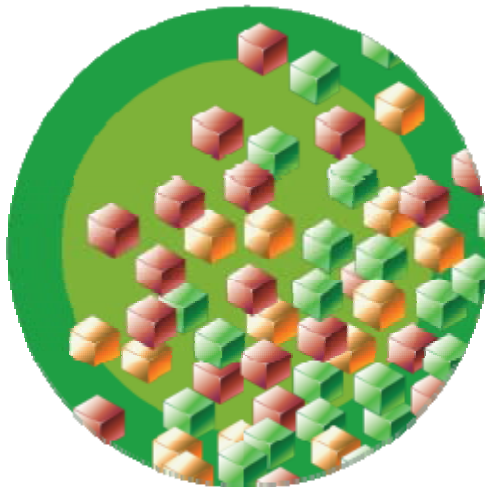
How do I align my information with my business?

How do I make the right information available when and where it's needed?

How do I support better decision making throughout my organization?

Enhance Customer Understanding

Optimize Real-Time Decisions

Foster Collaborative Decisions

Enable Enterprise Visibility

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Bridging the Gap with
Business Analytics and Optimization

Is the
#1 Priority for CIOs

Business Analytics

Information Management

Has doubled in Importance for CFOs

IBM
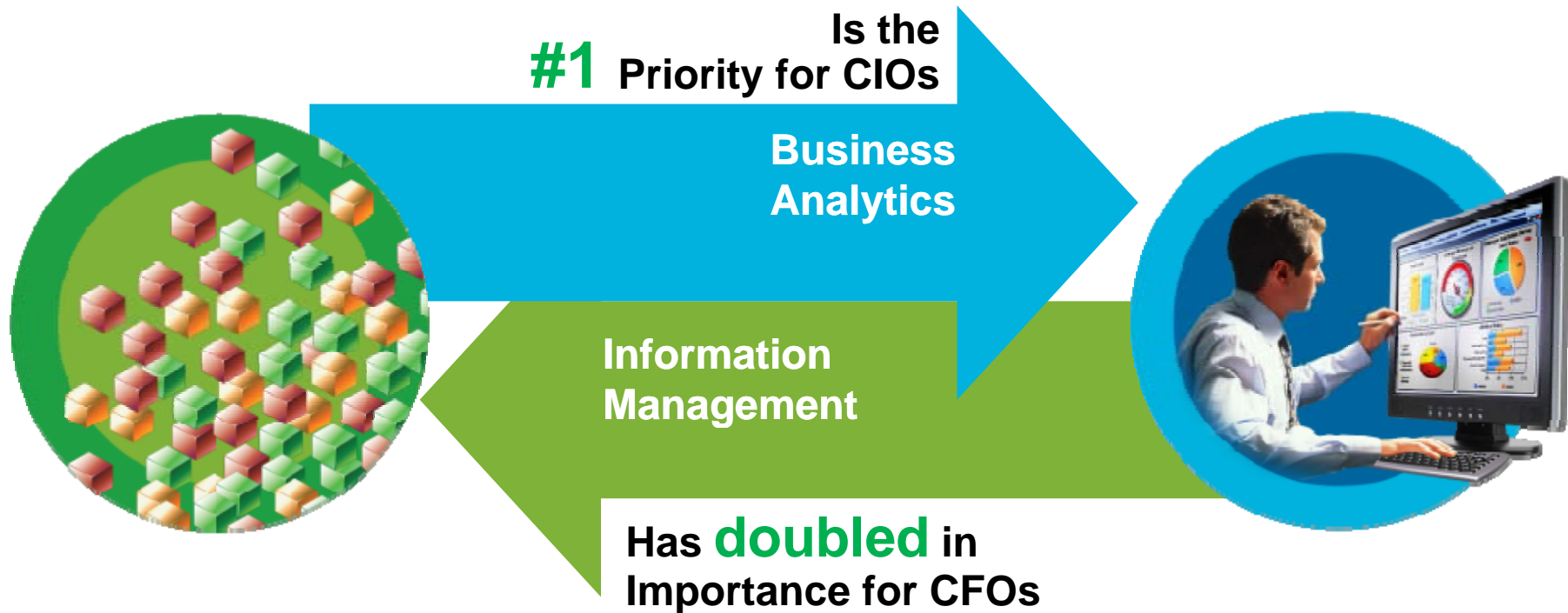
Imagine How Gaining Insight
Could Enable You to Optimize Your Business

AVIS *Europe*

50% Reduction in marketing costs through better targeting

New York State
Department of Taxation and Finance

$1.2B Questionable tax refunds avoided since 2004

SE Asian Government Agency

75% 128-day investment licensing approvals reduced to 30 days

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An Analytics-Driven Organization
Gains Insight & Optimizes Results

Plan an Information Agenda…	**Master Your Information…**	**Apply Business Analytics…**
…to align with your business strategy	…to ensure it is accurate, relevant and governed	…to anticipate and shape business outcomes
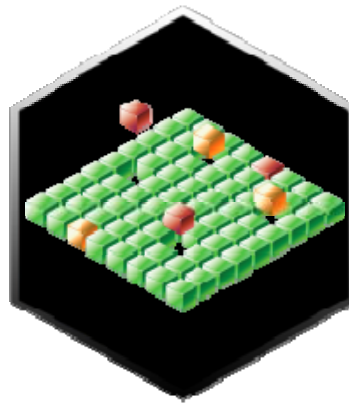
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Delivering Trusted Information for Smarter Business Decisions Across Your Entire Information Supply Chain

Transactional & Collaborative Applications

Analyze

Business Analytics Applications

Integrate

Content

Manage

Master Data

Big Data

Cubes

External Information Sources

Data

Transform & Cleanse

Data Warehouses

Streams

Content

Streaming Information

Govern

Quality

Lifecycle

Security & Privacy

Standards

IBM
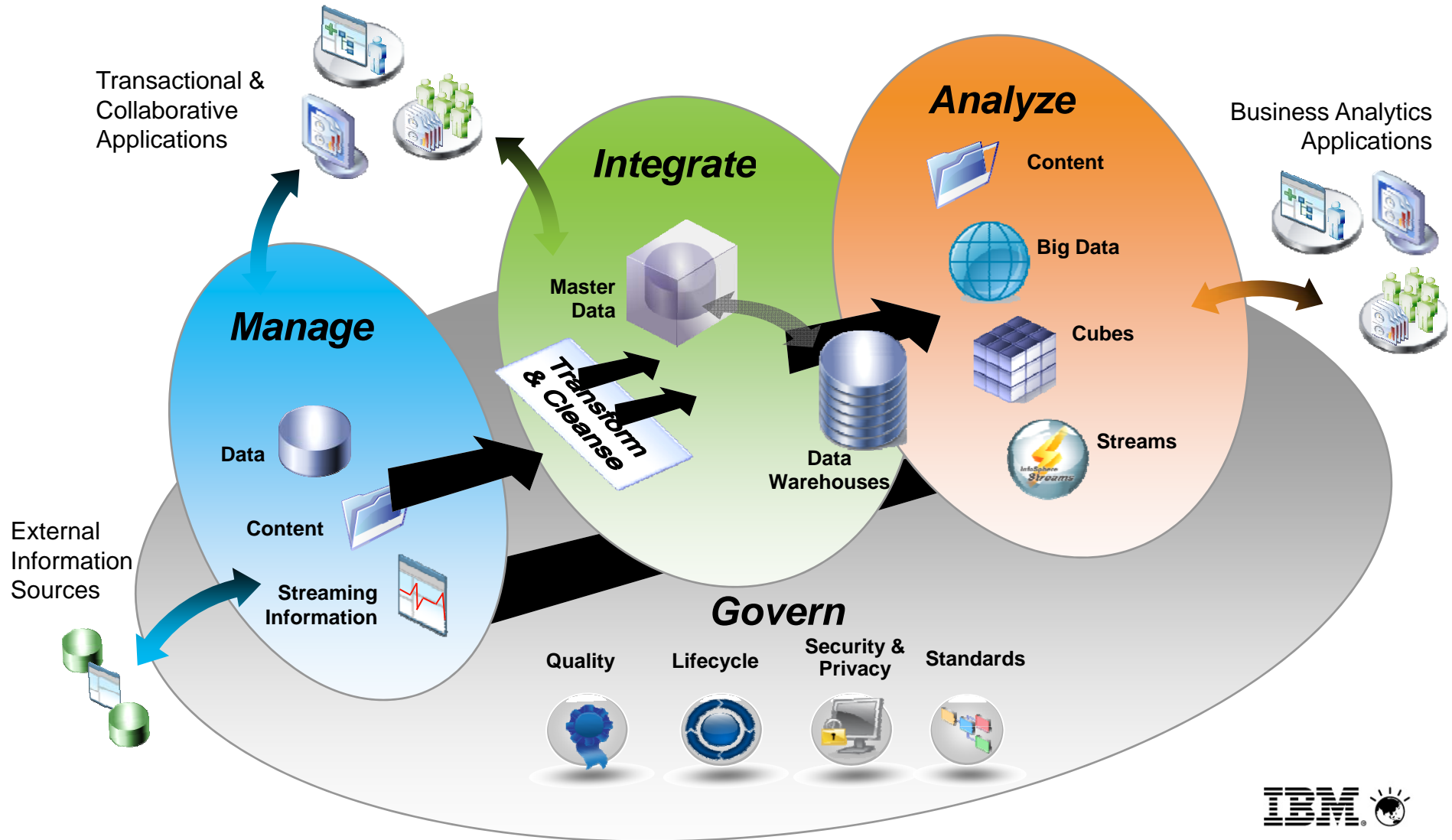
Where Organizations are Focusing Business Analytics and Optimization

Enhance
Customer Understanding

- Customer Churn
- Marketing Spend
- Sales Productivity

Optimize
Real-Time Decisions

- Trading Advantage
- Fraud Protection
- Health Monitoring

Foster
Collaborative Decisions

- Customer Service
- Channel Management
- Loan Origination

Enable
Enterprise Visibility

- Risk Management
- Demand Visibility
- Strategy Alignment

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Enhance Customer Understanding: Customer Churn

Why do people leave and how can you intervene before it's too late?

7x
Improvement in XML Processing Time

20%
Reduction in Churn

Key Technologies
- Customer Analytics
- Predictive Analytics
- Data integration with Common Metadata
- Warehouse Scalability
- Compression and Archiving
- Timely Analytics for Business Intelligence (TABI)

Dropped Calls

Calling Patterns

Rate Plans

Integrate/Cleanse/Deduplicate

Data Warehouse

Predictive Modeling

Customers Most Likely To Leave (and Why)

IBM

Optimize Real-Time Decisions: Fraud Protection

How can you detect fraud before transactions are ac

Batch

Real-Time

Attempted
Collection

Batch Fraud
Identification

Transaction
Accepted

Transaction
Processed

Incoming
Transaction

Transaction
Accepted

Transaction
Processed

Incoming
Transaction

Transaction
Rejected

Real-Time Fraud
Identification

11.4M
Messages
per second

$1.2B
savings

Key Technologies
- Finance Analytics
- Real-Time Analytics
- Stream Processing
- Pattern Detection
- Self-Learning
- Industry Models

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Foster Collaborative Decisions: Loan Origination

How can you maximize customer service while min

Key Technologies
- Content Analytics
- Advanced Case Management
- Business Rules
- Integrated Collaboration

External Policies

Fast Track

Real-Time Data Gathering

Automated Scoring/Pricing

Credit Monitoring

Approval

Existing Customer Details

Credit Monitoring

Collaboration

Denial

6 Days
to
5 seconds
new loan processing

IBM
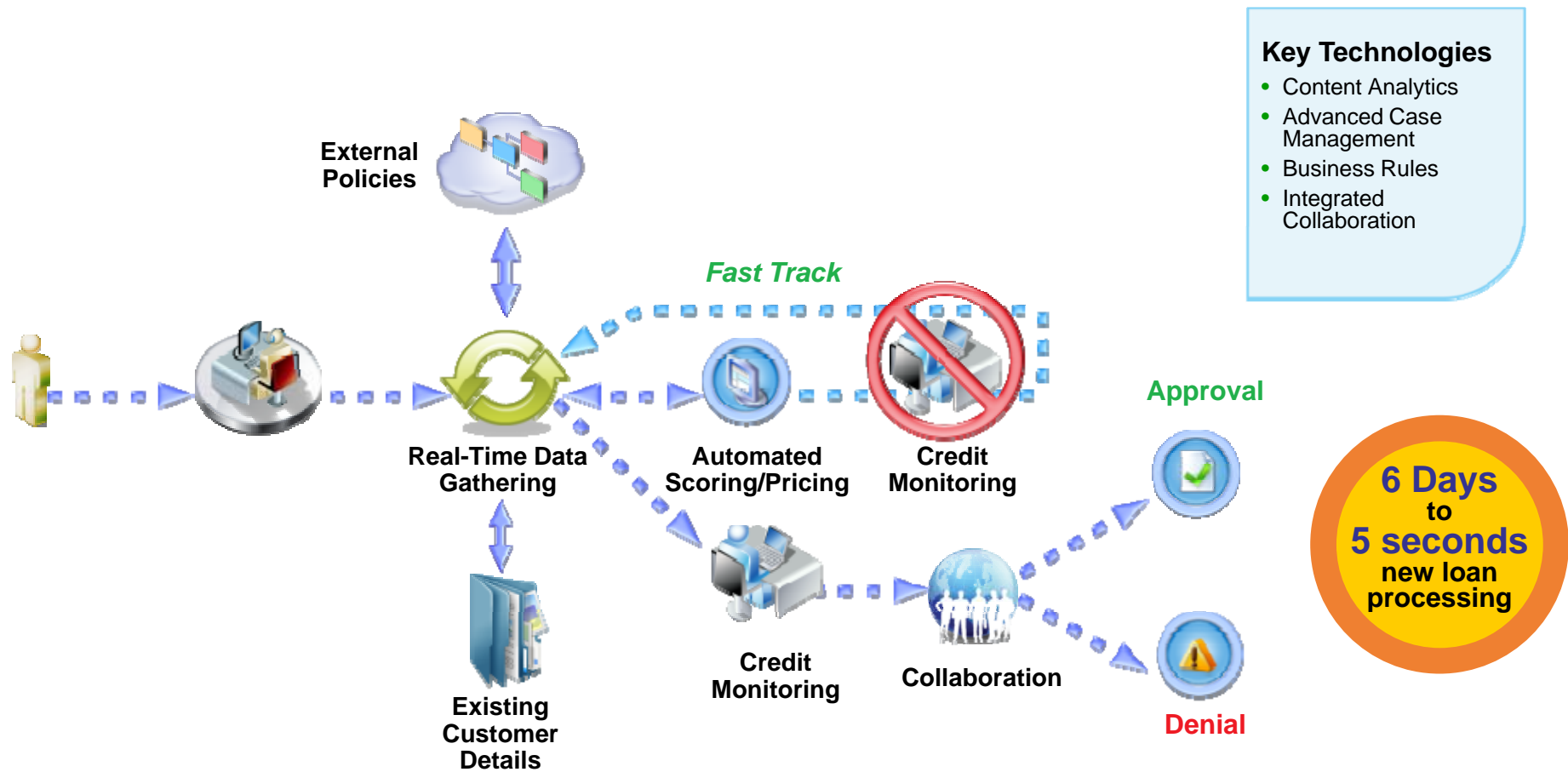
All Workloads Are Not the Same

TRANSACTION PROCESSING AND DATABASE

BUSINESS PROCESS MANAGEMENT

Integrated, Optimized …by Workload

BUSINESS INTELLIGENCE AND ANALYTICS

WEB AND COLLABORATION

A "one size fits all" view does not match reality

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IBM Extensive Portfolio of Workload Optimized Offerings

Netezza

IBM Smart Analytics System

IBM InfoSphere Warehouse

True Appliance

Flexible Integrated System

Custom Solution

Warehouse Accelerators

Information Management Portfolio
(Information Server, MDM, Streams, etc)

Simplicity — *The right mix of simplicity and flexibility* — **Flexibility**

IBM®

Netezza's Revolutionary Approach

The Appliance
Simpler, faster, more accessible analytics

> "This is what Netezza has done in the data warehousing market: It has **totally changed the way we think** about data warehousing."
>
> - Philip Howard, Bloor Research

IBM

The TwinFin™ Appliance – Revolutionizing Analytics

- Purpose-built analytics engine

- Integrated database, server & storage

- Standard interfaces

- Low total cost of ownership

Speed: 10-100x faster than traditional systems

Simplicity: Minimal administration and tuning

Scalability: Peta-scale user data capacity

Smart: High-performance advanced analytics

IBM Smart Analytics System

Everything You Need for Business Analytics…
…More Than Just a Data Warehouse Appliance

Analytics Software
- Business Intelligence
- Cubing Services
- Text Analytics & Data Mining

Powerful Data Warehouse
- Warehousing Platform
- Advanced Workload Management
- System Automation

Hardware & Services
- Flexible Server Platform Options
- Modular Storage Capacity
- Build, Deploy, Health Check and Premium Support Services

Transforming information into business insight

3x *Faster -* *Workload optimized analytics run business intelligence 3x faster*

50% *less floor space* *Data compression reduces storage cost*

World record performance

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IBM pureScale Application System

Workload Optimized System for Transactional Workloads
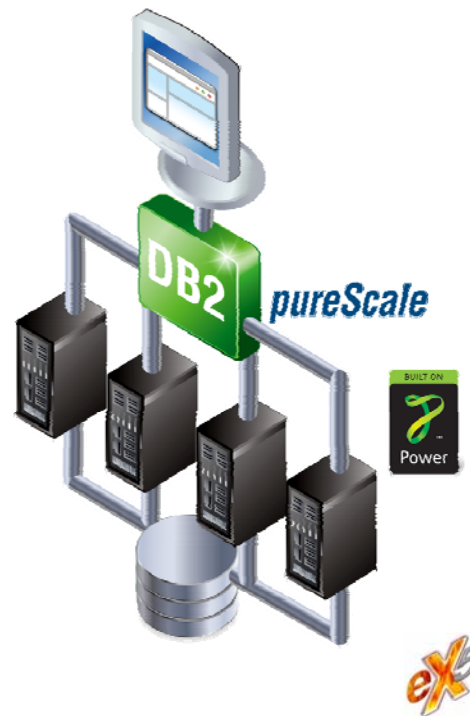
Unlimited Capacity
- Buy what you need today, add capacity over time
- Superior performance and scale-out efficiency

Application Transparency
- Avoid the risk and cost of application changes

Continuous Availability
- Uninterrupted access to data with consistent performance

Automatic workload balancing

Cluster of DB2 members

Leverages the global lock and memory manager technology from System z

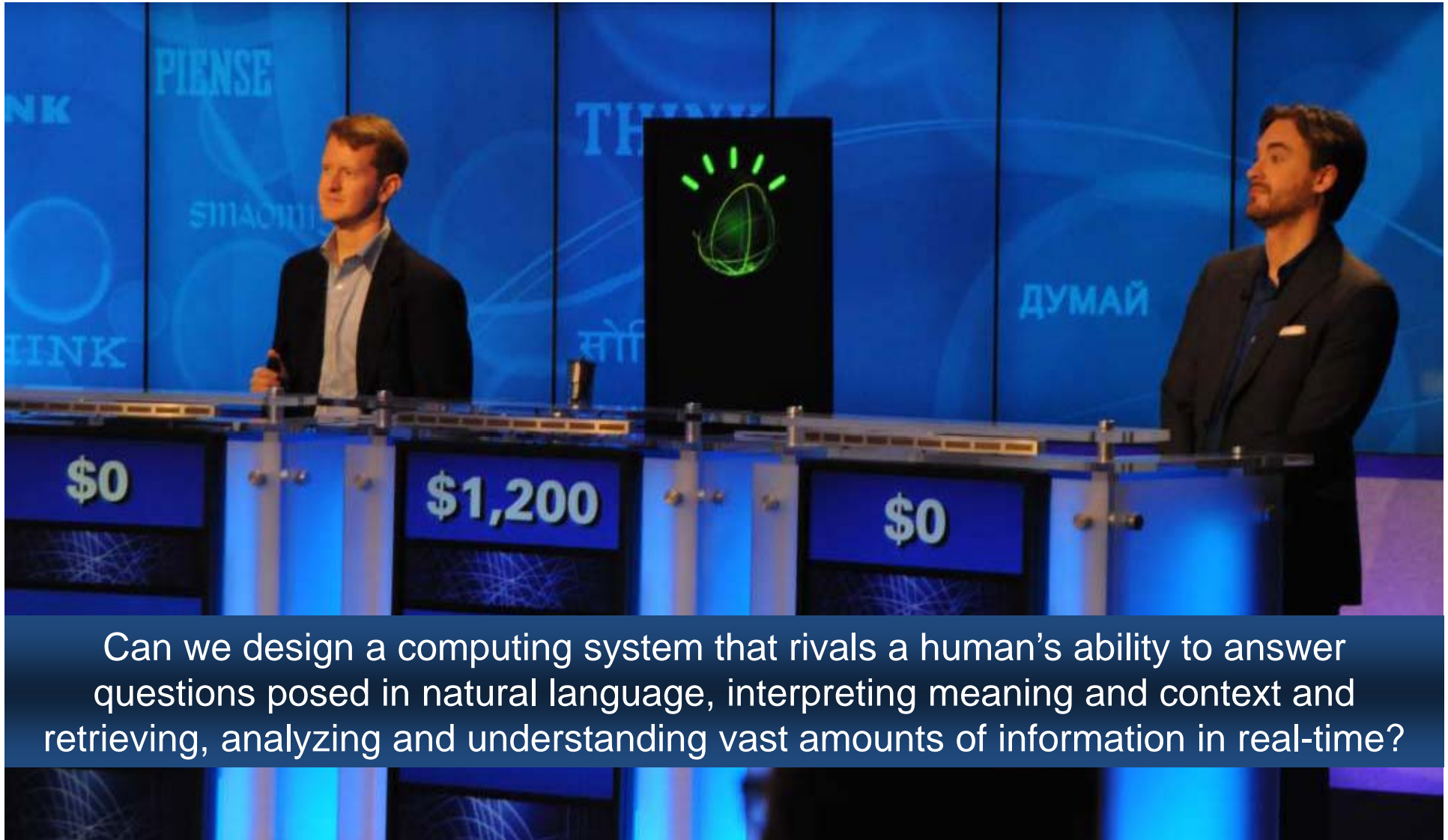**Integrated Tivoli System Automation**

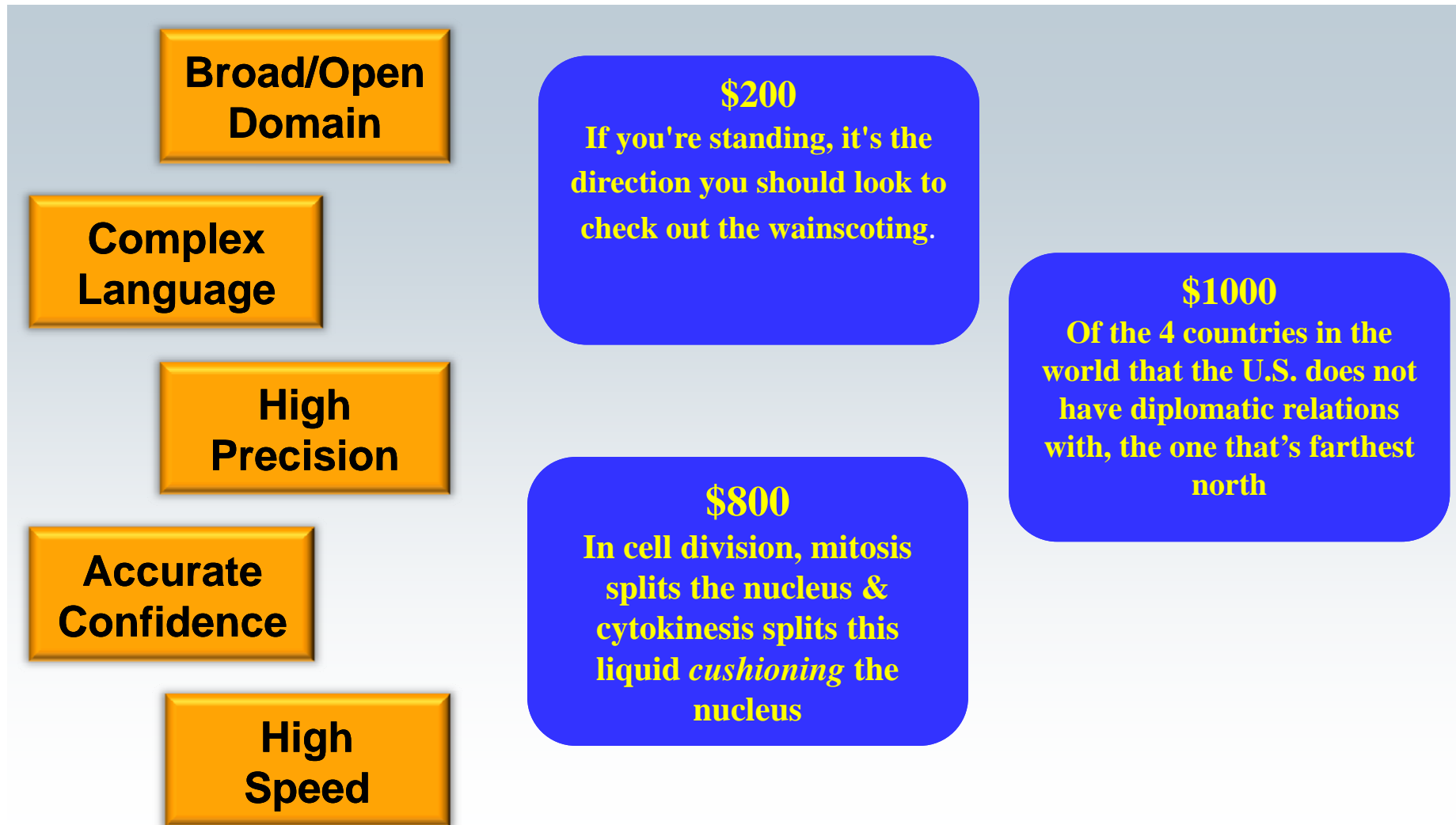**InfiniBand network & DB2 Cluster Services**

Shared Data

IBM

IBM Watson… Answering a Grand Challenge

Can we design a computing system that rivals a human's ability to answer questions posed in natural language, interpreting meaning and context and retrieving, analyzing and understanding vast amounts of information in real-time?

The Challenge: Question Answering along 5 Dimensions

Broad/Open Domain

Complex Language

High Precision

Accurate Confidence

High Speed

$200
If you're standing, it's the direction you should look to check out the wainscoting.

$1000
Of the 4 countries in the world that the U.S. does not have diplomatic relations with, the one that's farthest north

$800
In cell division, mitosis splits the nucleus & cytokinesis splits this liquid *cushioning* the nucleus
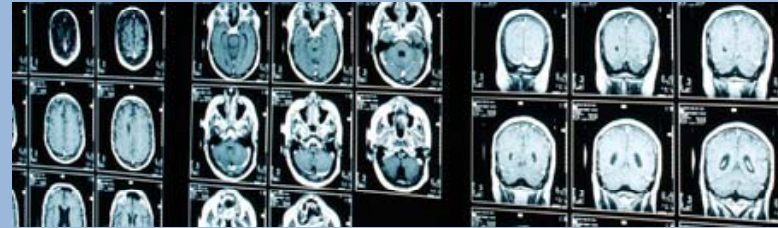
Beyond *Jeopardy!...* Delivering Innovations that Matter

Healthcare
What illness presents the following symptoms ....?

Technical Support and Contact Centers
Automatic analysis of natural language content will help technicians identify the best information to assist customers efficiently and effectively

Enterprise Knowledge Management
Reduce complexity of information requests by providing for and even anticipating citizen or customer's information needs

IBM

The Big Data Opportunity
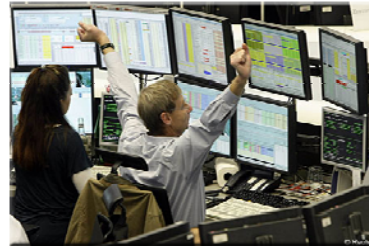
- Manage and benefit from massive and growing amounts of data
- Handle uncertainty around format variability and velocity of data
- Handle unstructured data
- Exploit *Big Data* in a timely and cost effective fashion

Applications for Big Data Analytics are Virtually Endless

Neonatal Care

Trading Advantage

Telecom

Law Enforcement

Manufacturing

Traffic Control

IBM Offers a Comprehensive Set of Solutions for Big Data

Non-Traditional Data

InfoSphere Big Insights

hadoop

Streams filters incoming data

InfoSphere Streams

Traditional Data

InfoSphere Warehouse

Optimize

Design · Workload Optimized · Discover

Grow

Platform Services

InfoSphere Streams reuses InfoSphere Warehouse Analytic models

Persistent Data

In-Motion Data

IBM.
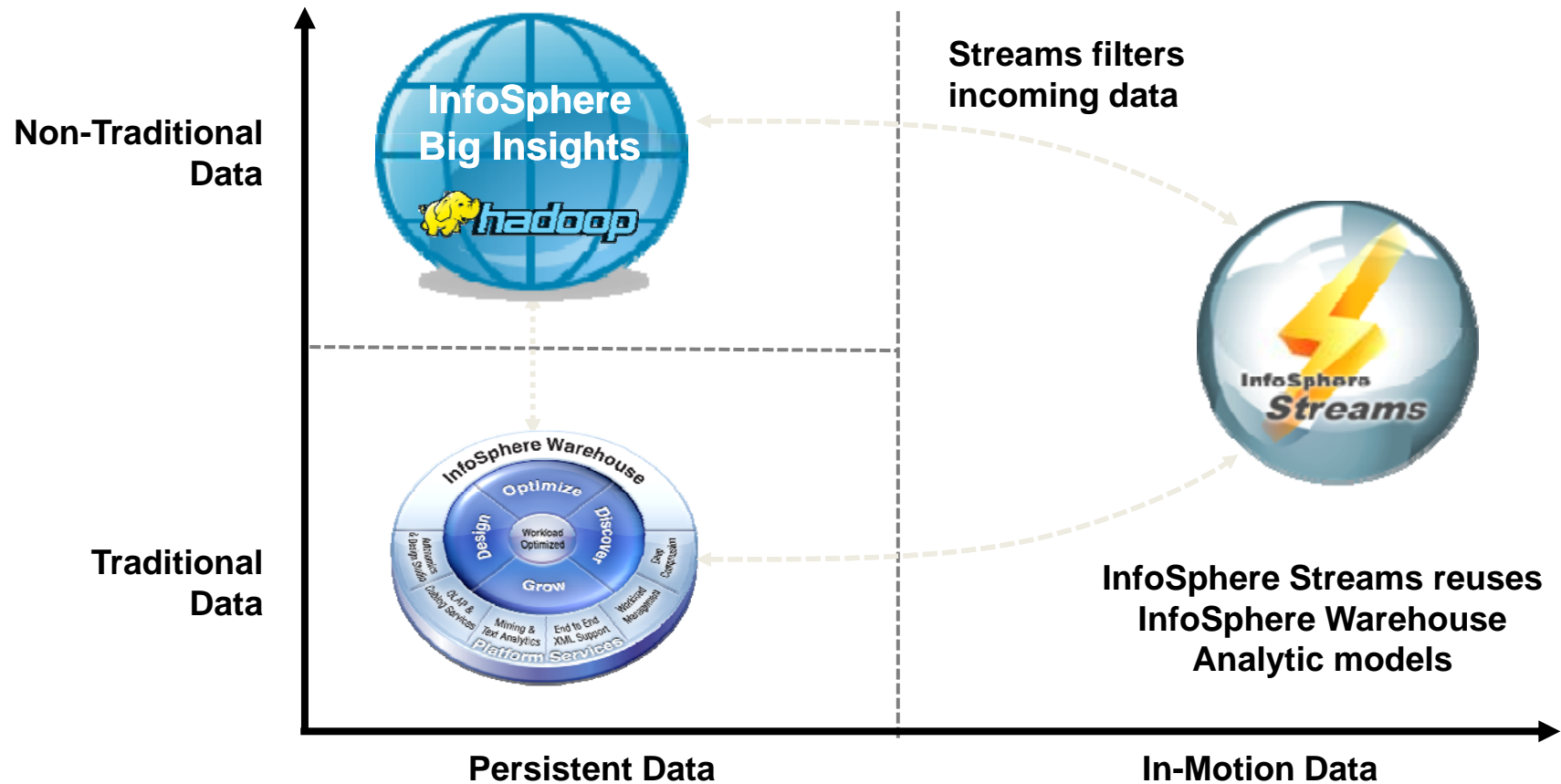
IBM InfoSphere Streams

A Platform to Run In-Motion Analytics on Big Data

Volume — Handles up to Petabytes of data per second

Variety — Supports traditional as well as non-traditional data (Audio, Video etc.)

Velocity — Delivers insights with microsecond latencies

Complex Analytics — Supports custom analytics written in C++/Java and warehouse analytic models

Agility — Single instance can support multiple applications

Real time delivery

ICU Monitoring   Environment Monitoring

Algo Trading   *Powerful Analytics*   Telco churn predict

Cyber Security   Smart Grid

Government / Law enforcement

Millions of events per second   *Microsecond Latency*

InfoSphere Streams

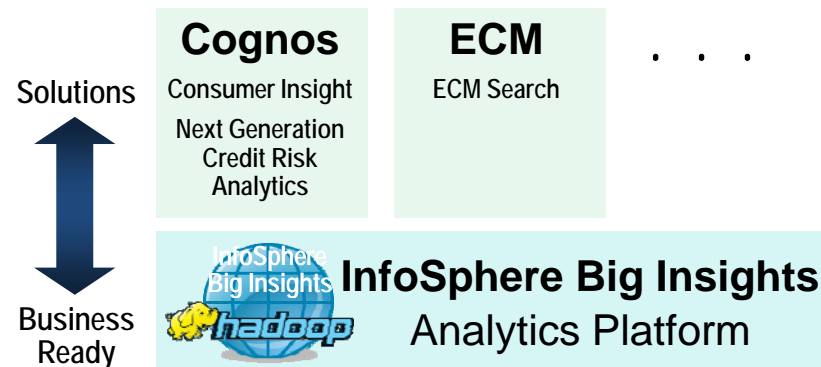*Traditional / Non-traditional data sources*

IBM InfoSphere Big Insights

A Business Ready Platform to Collect, Store and Analyze Big Data

Enables solutions for *Big Data*, cost effectively

- Linearly scalable on commodity hardware, terabytes to petabytes
- Supports unstructured and structured information
- Based on Hadoop Open Source framework, fully supported by IBM

Business Ready
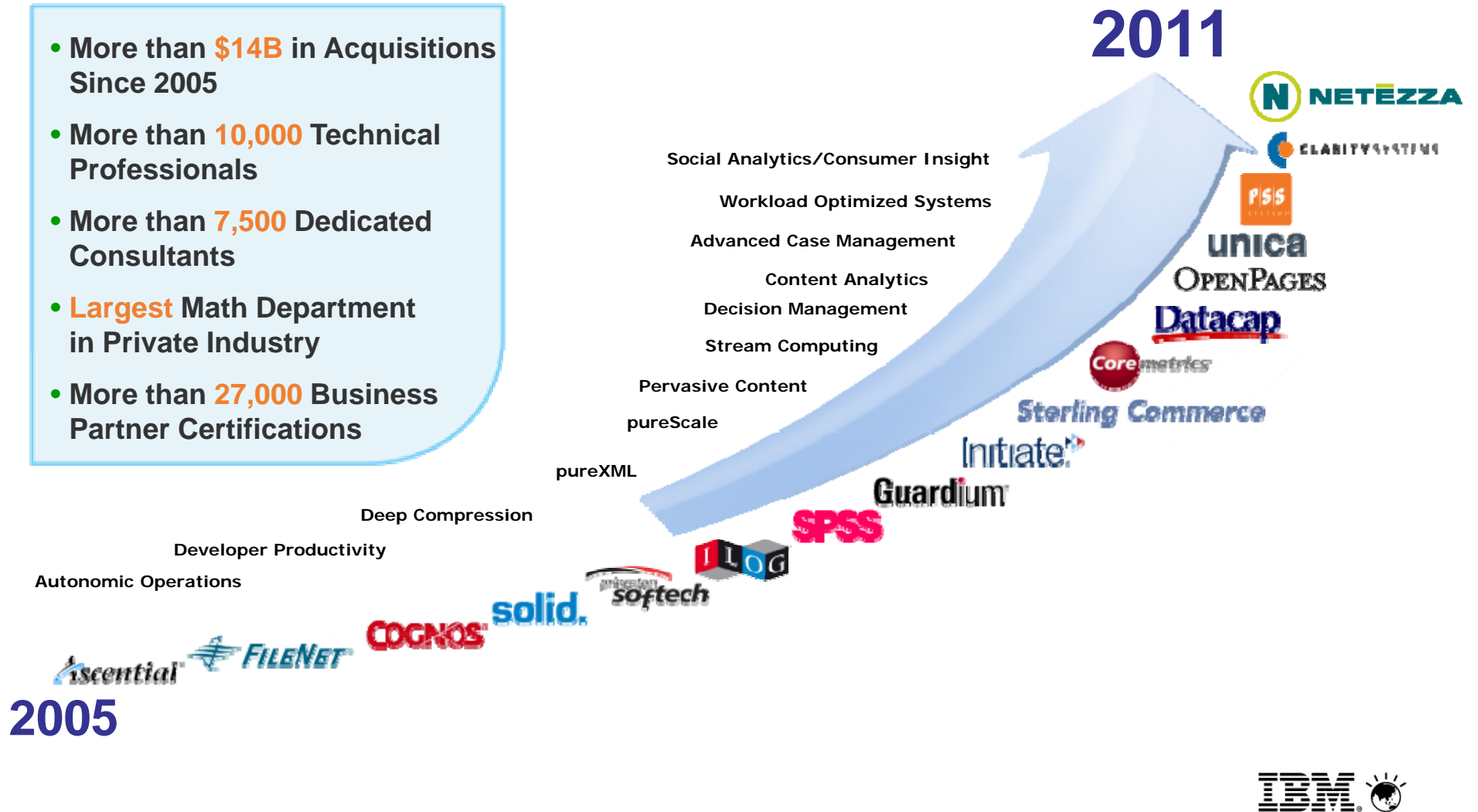
- *InfoSphere BigSheets* – General purpose solution environment to gather, explore and visualize

- *Advanced Analytics* – Integrates with Cognos, SPSS, LanguageWare

Solutions

Cognos
Consumer Insight
Next Generation
Credit Risk
Analytics

ECM
ECM Search

. . .

Business
Ready

InfoSphere
Big Insights
hadoop

InfoSphere Big Insights
Analytics Platform

IBM

Building the Most Comprehensive Business Analytics and Optimization Portfolio

- More than **$14B** in Acquisitions Since 2005
- More than **10,000** Technical Professionals
- More than **7,500** Dedicated Consultants
- **Largest** Math Department in Private Industry
- More than **27,000** Business Partner Certifications

2011

NETEZZA

CLARITYSYSTEMS

PSS

unica

OPENPAGES

Datacap

Coremetrics

Sterling Commerce

Initiate

Guardium

SPSS

ILOG

Social Analytics/Consumer Insight

Workload Optimized Systems

Advanced Case Management

Content Analytics

Decision Management

Stream Computing

Pervasive Content

pureScale

pureXML

Deep Compression

Developer Productivity

Autonomic Operations

solid.

softech

COGNOS

FileNet

Ascential

2005

IBM

You can Take the Lead

C-Suite Executives
Clarify business objectives and priority outcomes

Business Analysts
Demand the information you need to make better decisions

IT Managers
Identify and address barriers to delivering information that business users need

IBM

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Gain Insight.
Optimize Results.

Edward Orange

Vice President, Information Management

IBM Software Group, Growth Markets Unit