Turning Information into Insights

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Management & Business Analytics,
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Today's Topics

Our Smarter Planet and the Information Challenge

....

Accelerating Business Optimization

....

Building an Information Agenda

....

Establishing a Flexible Information Platform

....

Applying Business Analytics

....

Getting Started

Our World is Changing……
Building a Smarter Planet is Producing an explosion of Information

+ **+** **=**

Volume
988 exabytes: The amount of digital information that will exist in 2010, equal to a stack of books from the sun to Pluto and back…

Variety
80% of new data growth is generated largely by email, with increasing contribution by documents, images, and video and audio.

Velocity
77% of executives say they do not have real-time information to make key business decisions.

Source: Various IBM and Public Studies

Yet Organizations are Operating with Blind Spots!!

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

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

$5.7M USD
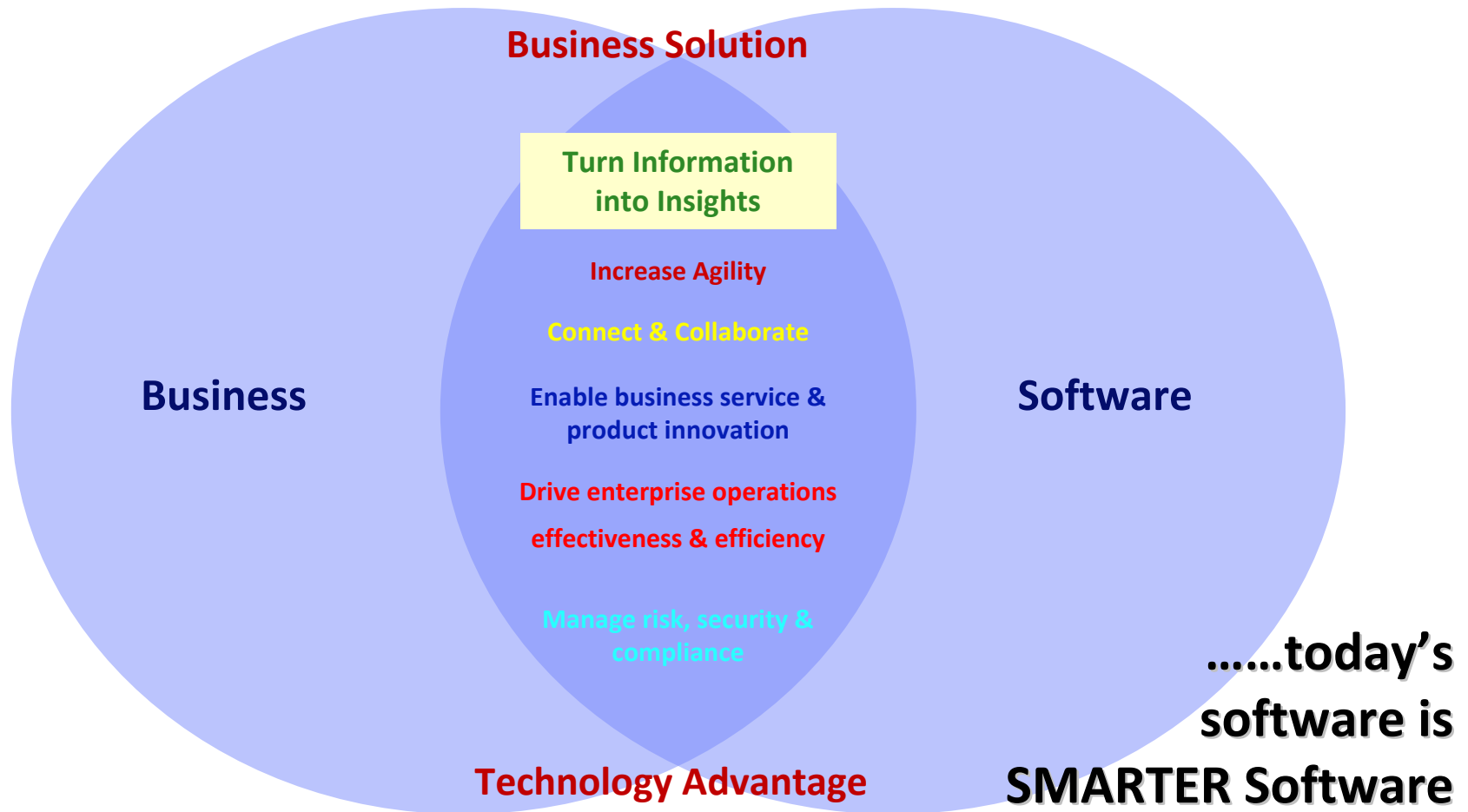Lost time **reformatting information** between applications

$5.3M USD
Lost time **searching for the right information**

Annual cost per 1,000 knowledge workers

Smarter Software helps turn INFORMATION into INSIGHTS

Business Solution

Turn Information into Insights

Increase Agility

Connect & Collaborate

Enable business service & product innovation

Drive enterprise operations effectiveness & efficiency

Manage risk, security & compliance

Business

Software

Technology Advantage

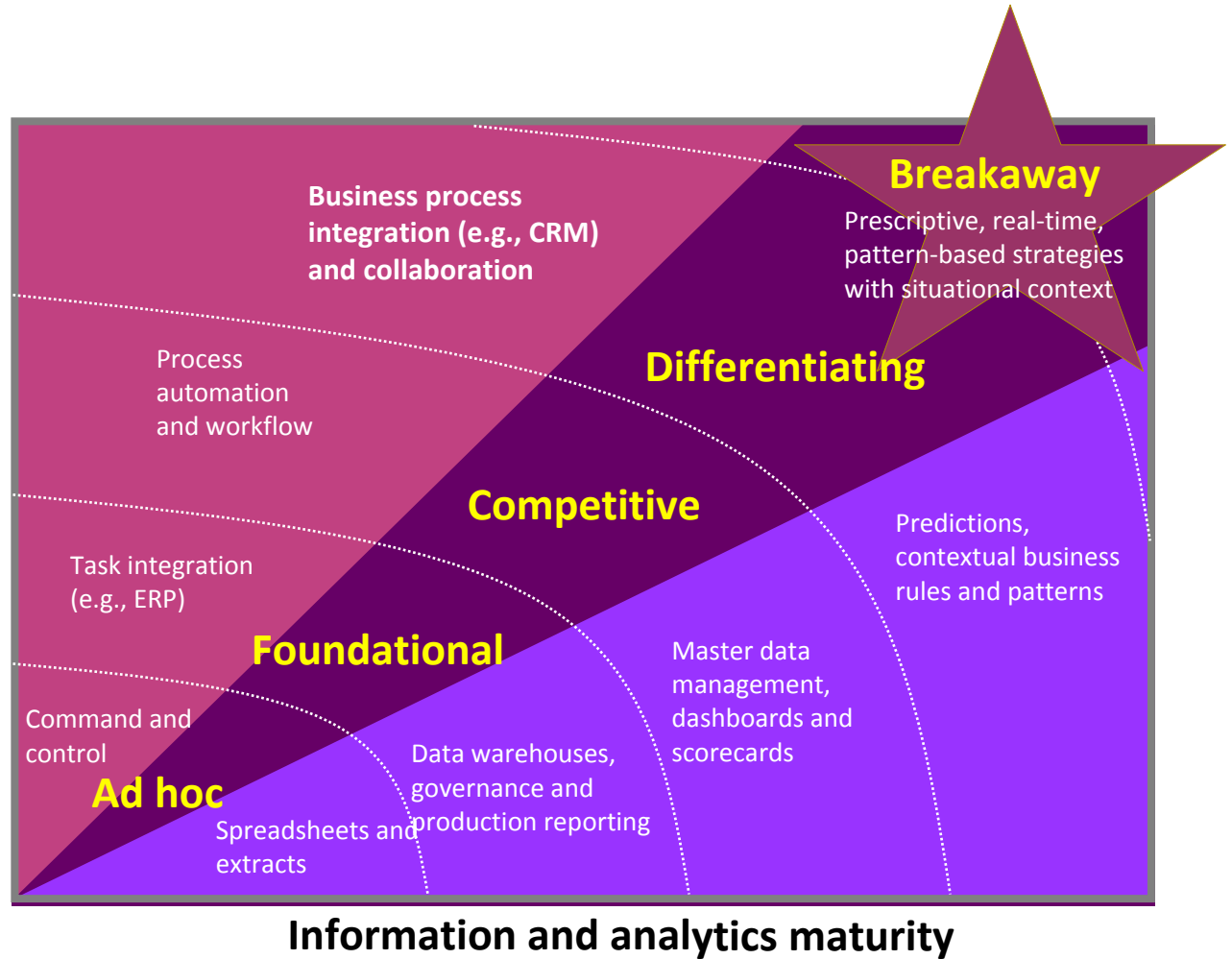**......today's software is SMARTER Software**

Information and Analytics can provide an entirely new way to compete!

Business operations maturity

How the business applies information to achieve its goals
- Policies
- Business Processes
- Organization

Business process integration (e.g., CRM) and collaboration

Breakaway

Prescriptive, real-time, pattern-based strategies with situational context

Process automation and workflow

Differentiating

Competitive

Predictions, contextual business rules and patterns

Task integration (e.g., ERP)

Foundational

Master data management, dashboards and scorecards

Command and control

Data warehouses, governance and production reporting

Ad hoc

Spreadsheets and extracts

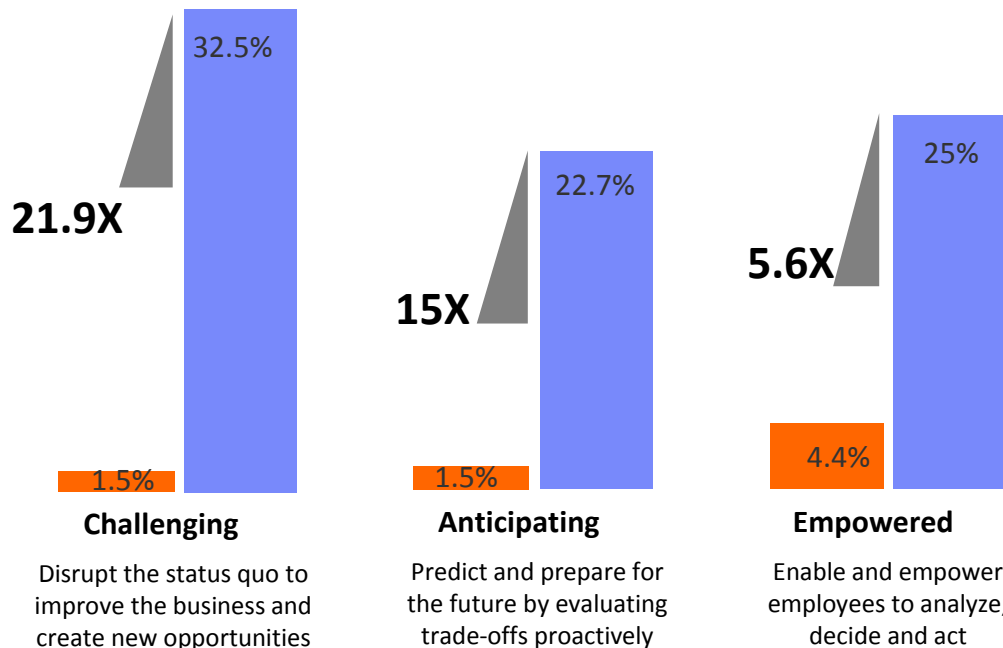**Information and analytics maturity**

How the business manages information and learns from it

Forward-thinking organizations are distancing themselves from competition

Key Advantages

Winning Characteristics

21.9X

32.5%

1.5%

Challenging

Disrupt the status quo to improve the business and create new opportunities

15X

22.7%

1.5%

Anticipating

Predict and prepare for the future by evaluating trade-offs proactively

5.6X

25%

4.4%

Empowered

Enable and empower employees to analyze, decide and act

High quality information

Strong decision support

Keen focus on driving business change
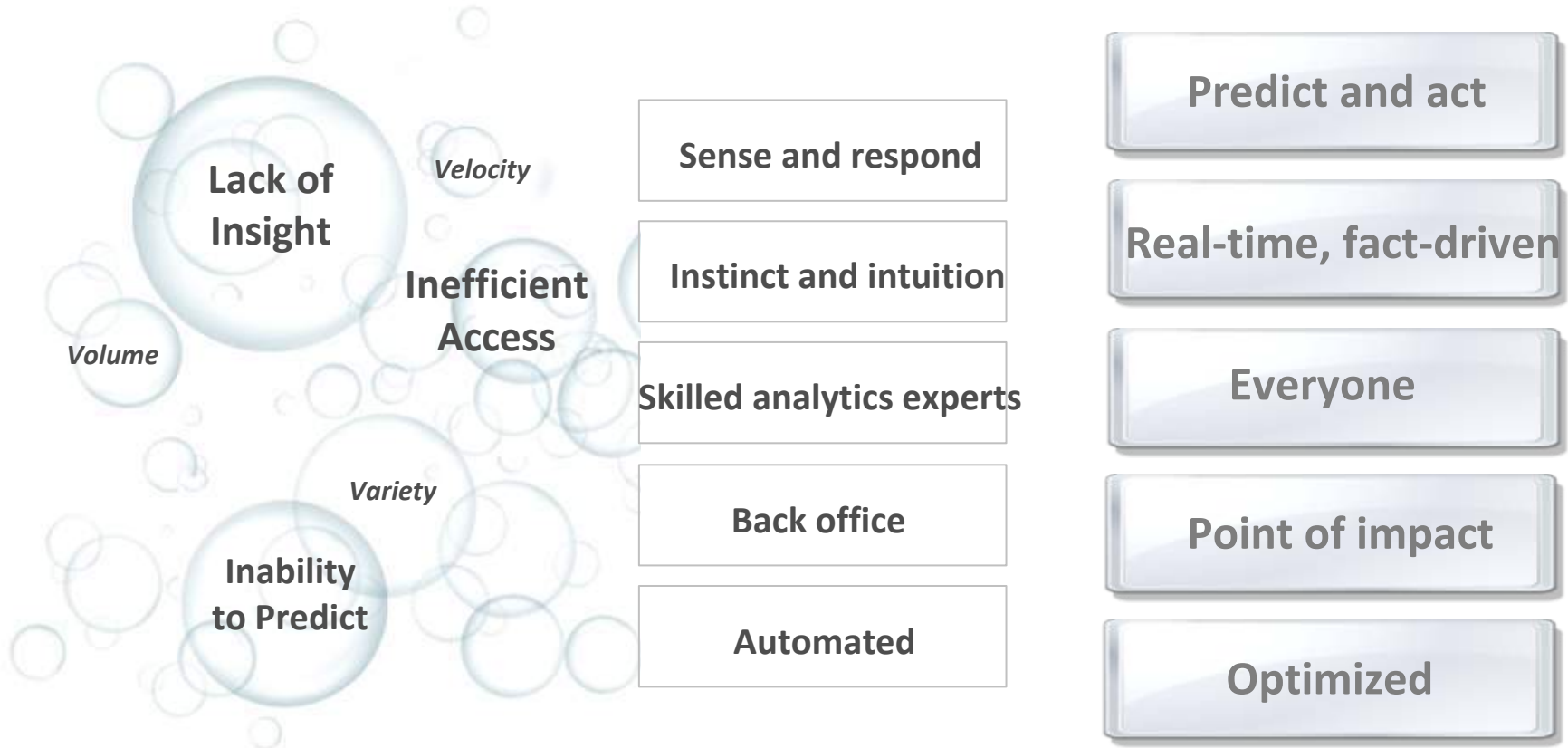
Chart shows differences at the highest achievement levels

Key:
- Top performers (i.e., 1st quintile relative to industry peers)
- Lower performers (i.e., 4th and 5th quintile relative to industry peers)
- Relative difference of top performers to lower performers

Breakaway Approach

Lack of Insight

Velocity

Volume

Inefficient Access

Variety

Inability to Predict

| Sense and respond |
| Instinct and intuition |
| Skilled analytics experts |
| Back office |
| Automated |

| Predict and act |
| Real-time, fact-driven |
| Everyone |
| Point of impact |
| Optimized |

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

Business Optimization Delivers New Opportunities to Create Value and Lower Costs

Create Value…

Can I get just the right information & insight

to the right people in the context of what they are doing?

Executives? Business Analysts?

Call Centers? Customers? Web?

Lower Costs…
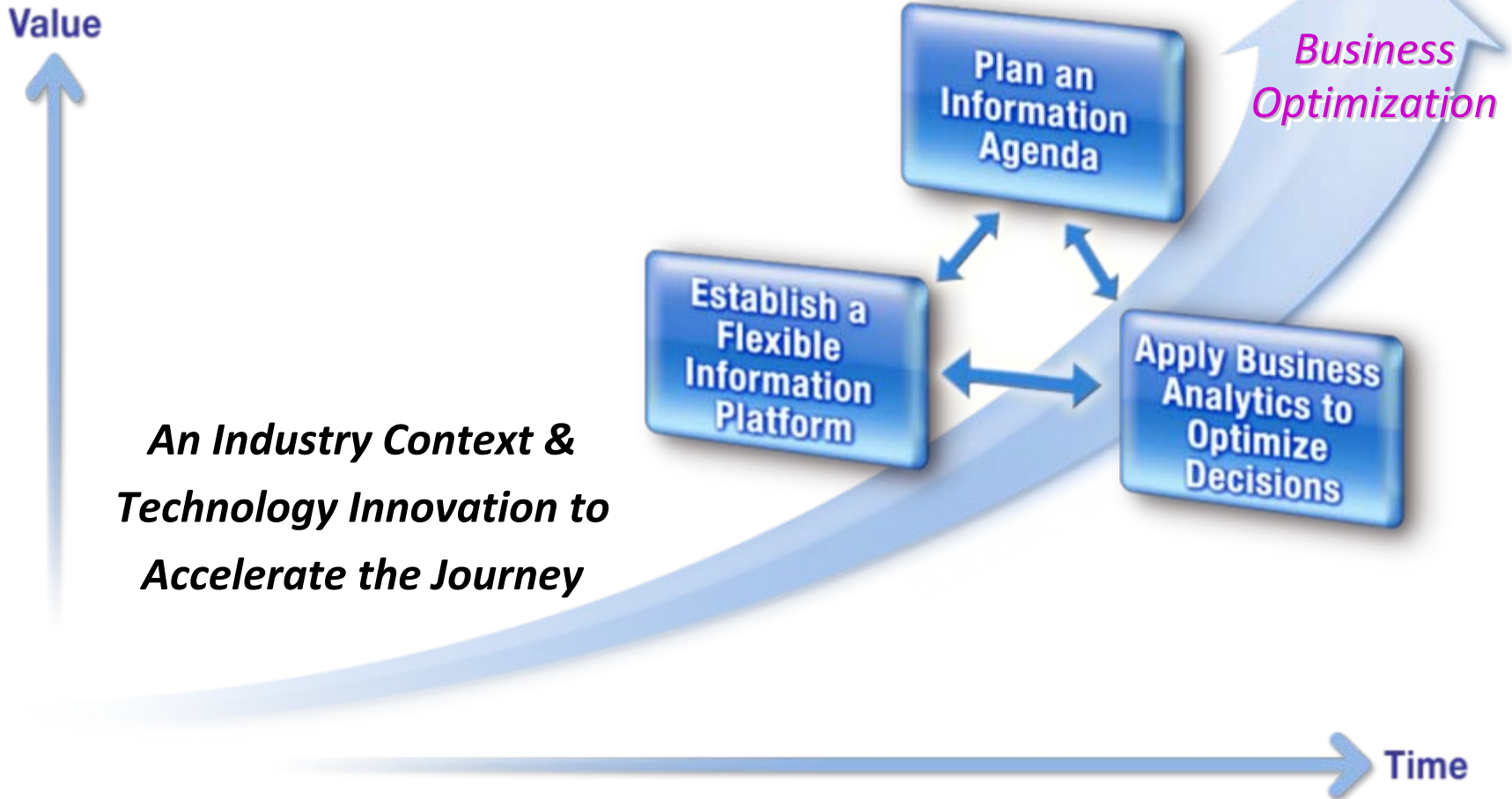
I have thousands of databases and content repositories.

Can I find what I need?

Can I get it all organized?

Can I decommission data?

Accelerating Business Optimization

Value

Business Optimization

Plan an Information Agenda

Establish a Flexible Information Platform

Apply Business Analytics to Optimize Decisions

An Industry Context & Technology Innovation to Accelerate the Journey

Time

Giving Organizations the Insight to Act with Confidence

CenterPoint Energy: First-of-a-kind outage detection and self-healing within the grid of an intelligent utility network

University of Ontario Institute of Technology: Early detection of potentially life-threatening conditions in premature infants

Hitachi Construction Machinery Co: Sensors embedded in all 50,000 products & parts feed analytics system, improving service quality and optimizing inventory

Mobile Service Provider: Analysis of social relationships prevents customer churn and identify new products

Irish Life & Permanent: Single, complete, accurate record of customers leads to improved customer satisfaction and cross-sell, reduced costs

Stockholm, Sweden: Intelligent toll system resulted in 20% less traffic, 40% lower emissions and 40,000 additional users of the public transportation system
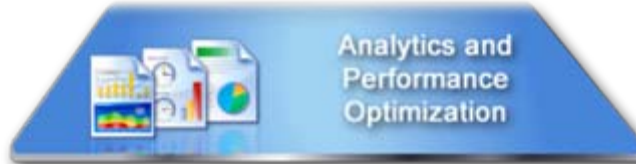
Accelerating Business Optimization
IBM has invested $12B in R&D and Acquisitions

Information On Demand Stack

Cognos SPSS
ILOG

Analytics and Performance Optimization
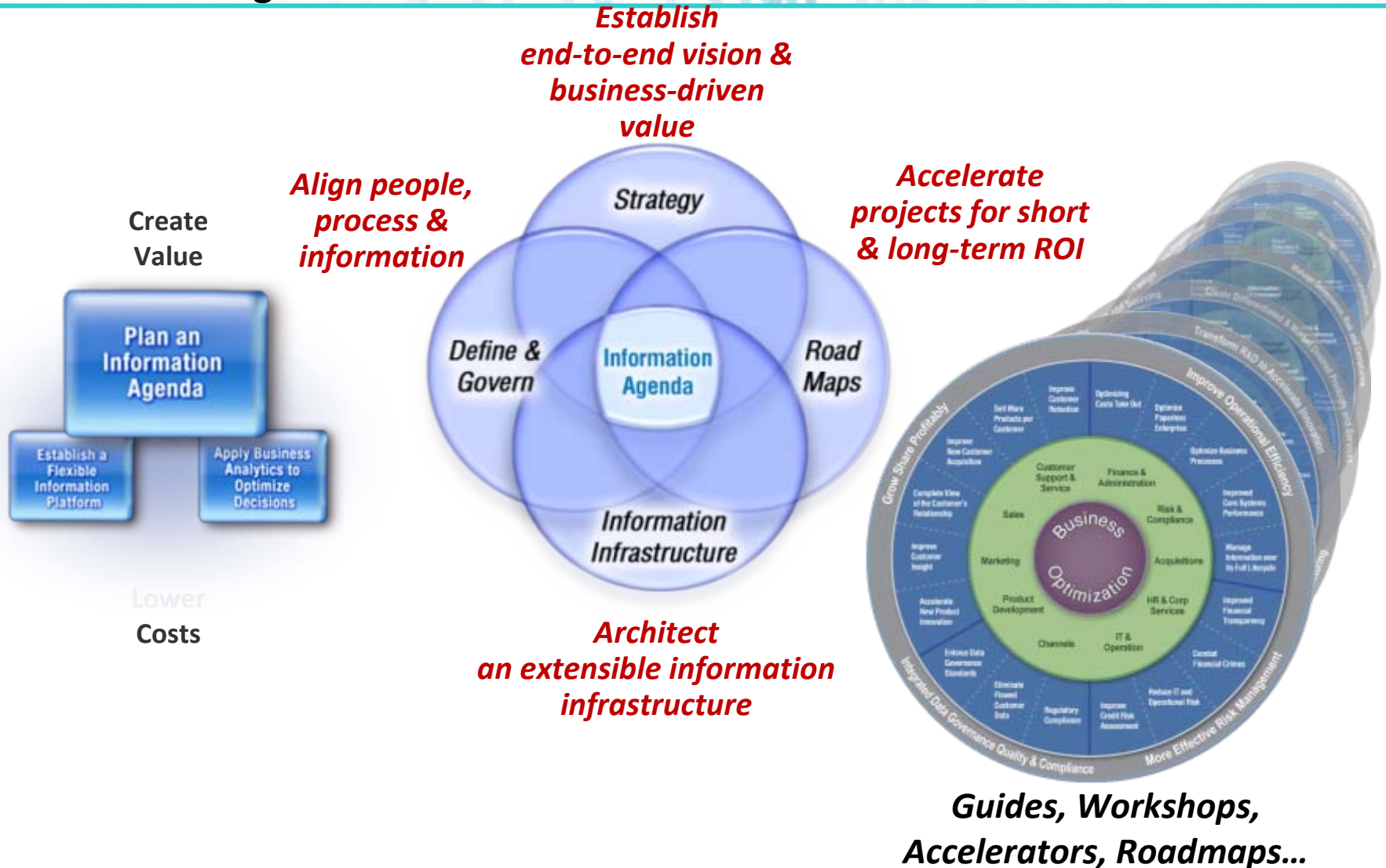
InfoSphere

Trusted Information

DB2 Informix

FileNet Optim

Data Management

Enterprise Content Management

Initiate
Guardium
SPSS
EXEROS
princeton softech
COGNOS
FILENET
solid.
dwl
DataMirror
Ascential
unicorn
Trigo
iphrase
SRD
IAS

Accelerating Business Optimization:
Information Agenda

*Establish
end-to-end vision &
business-driven
value*

*Align people,
process &
information*

*Accelerate
projects for short
& long-term ROI*

Create
Value

Lower

Costs

*Architect
an extensible information
infrastructure*

*Guides, Workshops,
Accelerators, Roadmaps…*

Create Value

Establish a Flexible Information Platform

Lower Costs

Profitable Growth | Cost Takeout & Efficiency | Proactive Risk Management

Business Analytics & Optimization Solutions

Financial Services | Public | Distribution | Industrial | Communications

Analyze and use information at the point of

Financial Performance Management
Human Capital Management | **Cross Industry** | Supply Chain Management
Customer Relationship Management

Business Analytics & Optimization Platform

Optimize processes, manage business performance, and anticipate opportunities and threats

Performance Management & Analysis | Predictive Analytics | Process Optimization

Trusted Information Platform

Create a single, trusted view of information across the organization

Information Integration & Master Data Management
Data Warehousing

Enterprise Content Management | Data Management

Meet new throughput, scalability, reliability and data protection requirements while controlling costs.

Workload Optimized Systems & Services

IBM Data Management
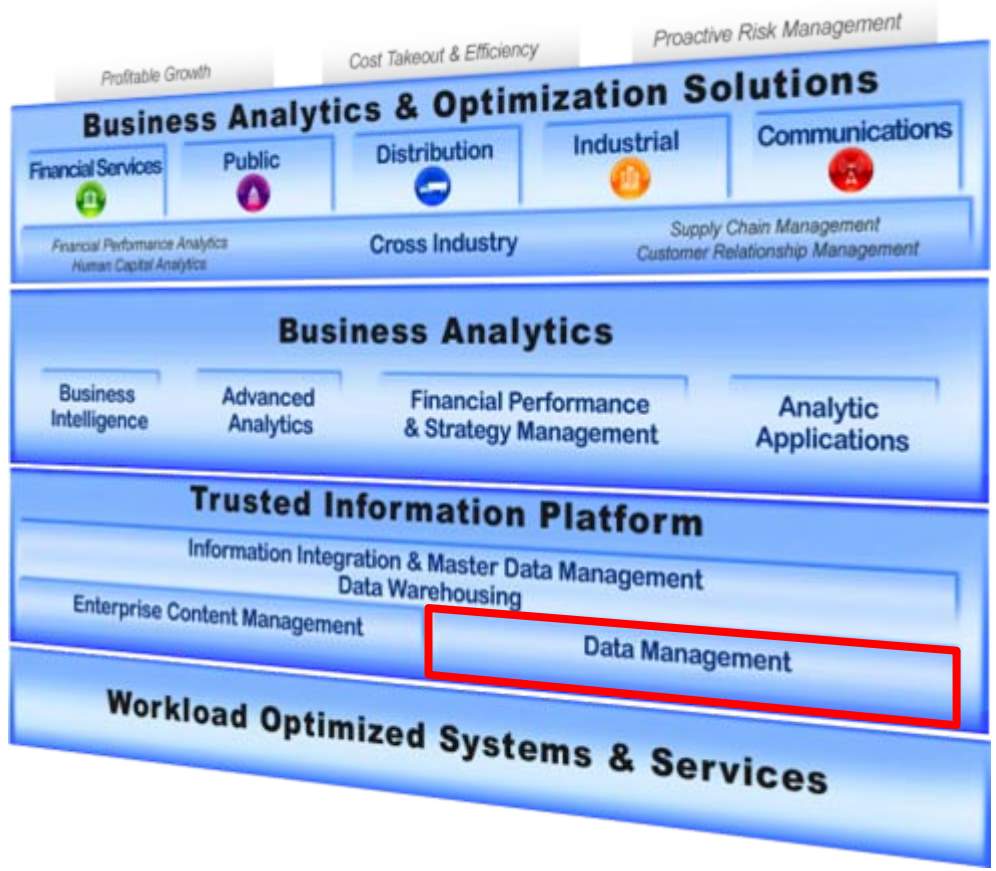## *Manage data over its lifecycle*

Capabilities

- Provides a solid foundation for managing all your data

- An integrated, modular environment to manage enterprise application data and optimize data-driven applications, from requirements to retirement across heterogeneous environments

Business Value

- ✓ **Grow the business** by accelerating solution delivery and maximizing data availability.

- ✓ **Manage Costs** by managing data growth, optimizing performance, streamlining upgrades and retirements and facilitating cross role collaboration.

- ✓ **Govern Information** with data privacy and security solutions to assure compliance.

Proactive Risk Management

Cost Takeout & Efficiency

Profitable Growth

Business Analytics & Optimization Solutions

| Financial Services | Public | Distribution | Industrial | Communications |

Financial Performance Analytics
Human Capital Analytics

Cross Industry

Supply Chain Management
Customer Relationship Management

Business Analytics

Business Intelligence | Advanced Analytics | Financial Performance & Strategy Management | Analytic Applications

Trusted Information Platform

Information Integration & Master Data Management
Data Warehousing

Enterprise Content Management

Data Management

Workload Optimized Systems & Services

DB2, Informix, SolidDB, Optim, Guardium

New Leading Edge Capabilities in DB2

DB2 pureScale
Sets the Bar for System Performance
Unlimited Capacity & Scalability
Application Transparency
Continuous Availability

DB2 Compression
Sets the Bar for System Performance & Savings
DB2 9 Compression cuts storage costs in half
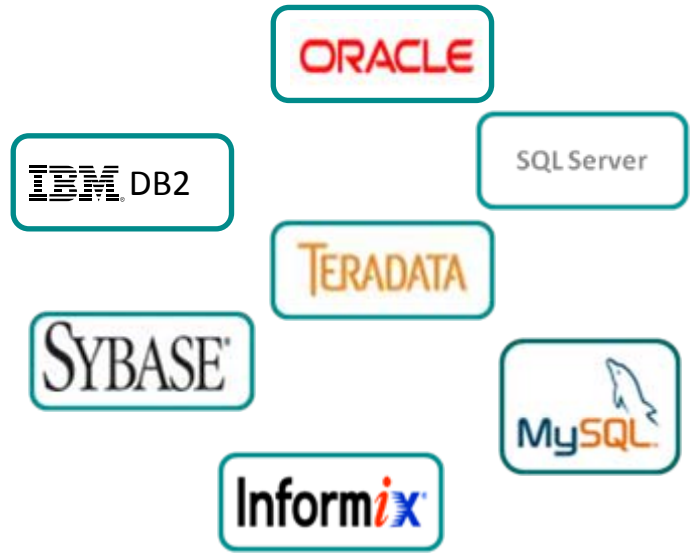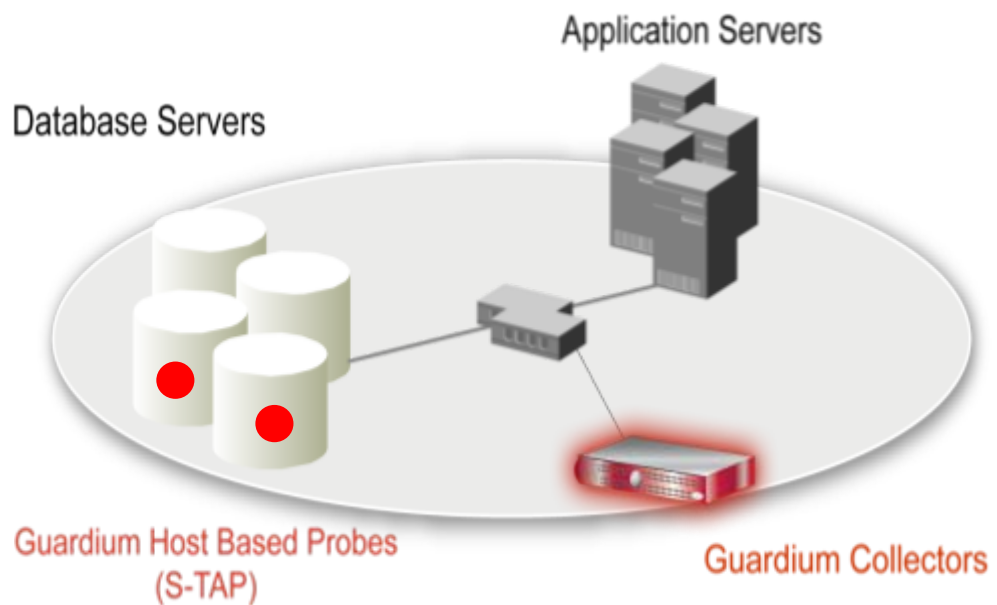DB2 9 Compression boosts performance
DB2 saves them money

Move to DB2 from Oracle Database in weeks

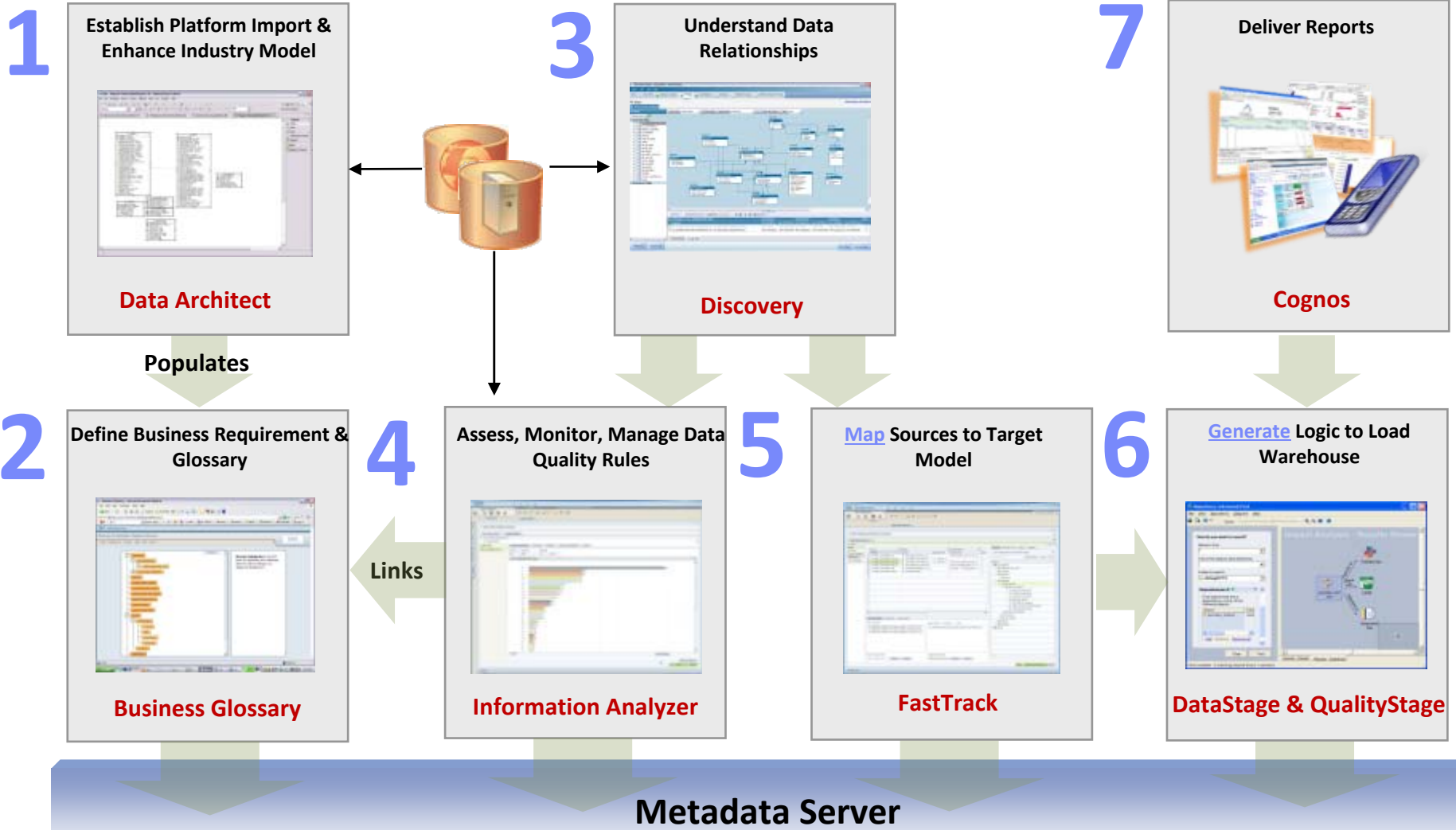Smarter software for a Smarter Planet

Optim Data Growth

- Production Database & its replica environments can put tremendous pressure on the infrastructure

- Simplify integrated data management to accelerate business-critical projects.
- Provide open access to current and archived data.
- Reduce storage management costs
- Superior application performance and availability.

Real-Time Database Security – Guardium

Application Servers

Database Servers

Guardium Host Based Probes
(S-TAP)

Guardium Collectors

ORACLE

IBM DB2

SQL Server

TERADATA

SYBASE

MySQL

Informix

- **Non-invasive architecture**
  - Outside database
  - Minimal performance impact (2-3%)
  - No DBMS or application changes
- **Cross-DBMS solution**
- **100% visibility including local DBA access**

- **Enforces separation of duties (SoD)**
- **Does not rely on DBMS-resident logs** that can easily be erased by attackers, rogue insiders
- **Granular, real-time policies & auditing**
  - *Who, what, when, how*
- **Automated compliance reporting**, sign-offs & escalations (SOX, PCI, NIST, etc.)

Discovery Integrates with the other Foundation Tools & Beyond

1 — Establish Platform Import & Enhance Industry Model

Data Architect

Populates

3 — Understand Data Relationships

Discovery

7 — Deliver Reports

Cognos

2 — Define Business Requirement & Glossary

Business Glossary

4 — Assess, Monitor, Manage Data Quality Rules

Links

Information Analyzer

5 — Map Sources to Target Model

FastTrack

6 — Generate Logic to Load Warehouse

DataStage & QualityStage

Metadata Server

InfoSphere Discovery Data-Driven Approach:

Discovery

Task: How is Table 25 (the target) derived from Table 1 (the source)?:

Table 1

Row	Member	SS #	Age	Phone	Sex
1	595846226	123-45-6789	15	(123) 456-7890	M
2	567472596	138-27-1604	8	(138) 271-6037	F
3	540450091	154-86-4196	22	(154) 864-1961	M
4	514714372	173-44-7900	55	(173) 447-8996	F
5	490204164	194-26-1648	4	(194) 261-6476	F
6	466861109	217-57-3046	66	(217) 573-0453	M
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
987,623	444629628	243-68-1812	25	(243) 681-8107	F
987,624	423456789	272-92-3629	87	(272) 923-6280	M

Table 25

ID	Demo1
514714372	3
444629628	3
540450091	2
567472596	1
423456789	2
490204164	1
•	•
•	•
•	•
595846226	0
466861109	0

InfoSphere Discovery Data-Driven Approach:
Aligns Rows Across Datasets

IBM. Discovery

Step 1: Discovery Engine analyzes the **data values** to **automatically discover** the columns that align rows across data sources:

Member (Table 1) = ID (Table 25)

Table 1

Row	Member	SS #	Age	Phone	Sex
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2	567472596	138-27-1604	8	(138) 271-6037	F
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466861109	0

InfoSphere Discovery Data-Driven Approach: Discovers Business Rules, Overlaps & Lineage

IBM. Discovery

Step 2: With rows now aligned, analyzes the data values to automatically discover complex business rules and transformations:

Table 1

Row	Member	SS #	Age	Phone	Sex		ID	Demo1
1	595846226	123-45-6789	15	(123) 456-7890	M		595846226	0
2	567472596	138-27-1604	8	(138) 271-6037	F		567472596	1
3	540450091	154-86-4196	22	(154) 864-1961	M		540450091	2
4	514714372	173-44-7900	55	(173) 447-8996	F		514714372	3
5	490204164	194-26-1648	4	(194) 261-6476	F		490204164	1
6	466861109	217-57-3046	66	(217) 573-0453	M		466861109	0
●	●	●	●	●	●		●	●
●	●	●	●	●	●		●	●
●	●	●	●	●	●		●	●
987,623	444629628	243-68-1812	25	(243) 681-8107	F		444629628	3
987,624	423456789	272-92-3629	87	(272) 923-6280	M		423456789	2

InfoSphere Discovery Data-Driven Approach: Discovers Business Rules, Overlaps & Lineage

IBM Discovery

Step 2: With rows now aligned, analyzes the data values to automatically discover complex business rules and transformations:

Case:

If age<18 and Sex=M then 0
If age<18 and Sex=F then 1

If age>=18 and Sex=M then 2
If age>=18 and Sex=F then 3

= Demo1

Table 1

Row	Member	SS #	Age	Phone	Sex
1	595846226	123-45-6789	15	(123) 456-7890	M
2	567472596	138-27-1604	8	(138) 271-6037	F
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•	•	•	•	•	•
•	•	•	•	•	•
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987,623	444629628	243-68-1812	25	(243) 681-8107	F
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•	•
444629628	3
423456789	2

InfoSphere Discovery Data-Driven Approach: Discovers Business Rules, Overlaps & Lineage

IBM Discovery

Step 3: With business rules now discovered, analyzes the data values to automate discovery of unknown data inconsistencies
- Moves QA early in the process

Case:

If age<18 and Sex=M then 0
If age<18 and Sex=F then 1

If age>=18 and Sex=M then   2
If age>=18 and Sex=F then   3

= Demo1

Table 1

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•	•
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444629628	3
423456789	2

Hit Rate: 98%

Smarter software for a Smarter Planet

IBM Enterprise Content Management
Optimize content, process and compliance management

Capabilities

- Provides the foundation for managing production volume images, enterprise reports, office documents and consolidating multiple content repositories for the enterprise

Business Value

✓ **Capture, manage and leverage** enterprise content

✓ **Optimize** business processes

✓ **Create insight** from unstructured information

✓ **Manage** regulatory compliance
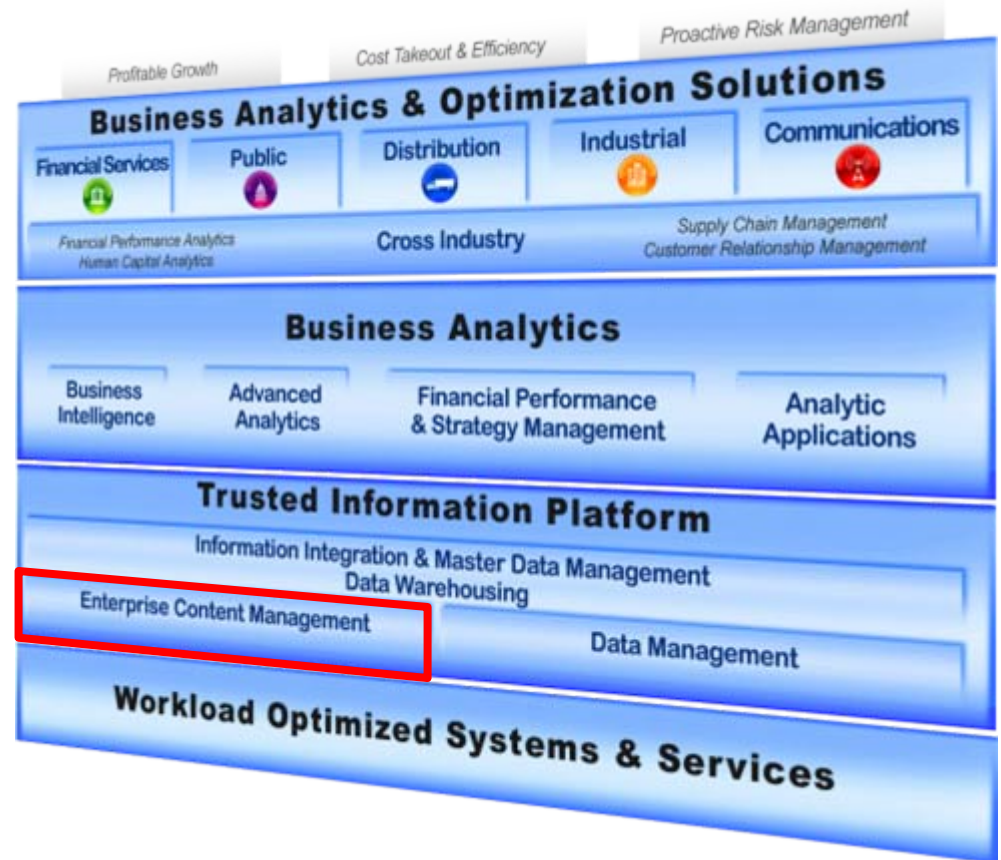
FileNet P8 Platform, IBM Content Manager/CMOD, IBM Content Collector, eDiscovery, OmniFind

Advanced Case Management
Optimizing the business outcome for every given case

Advanced **Case Management** combines process, content, analytics, business rules, and people (through collaboration) to optimize the business outcome for every given case. A case folder combines all the required resources at every stage of the case's lifecycle and is managed as a related set of information – the "case" – throughout that lifecycle.

Advanced Case Management

Content	Process	Analytics	Rules	Collaboration	Social Software

IBM InfoSphere
Create, manage, govern and deliver trusted information

Capabilities

- Master Data Management, Information Integration and Data Warehousing can provide a single, trusted view of information across the enterprise.

- Information Governance can help

Business Value

✓ **Create a single view** of your business

✓ **Deliver** better business intelligence faster

✓ **Consolidate** your application infrastructure

✓ **Get your arms around** your data
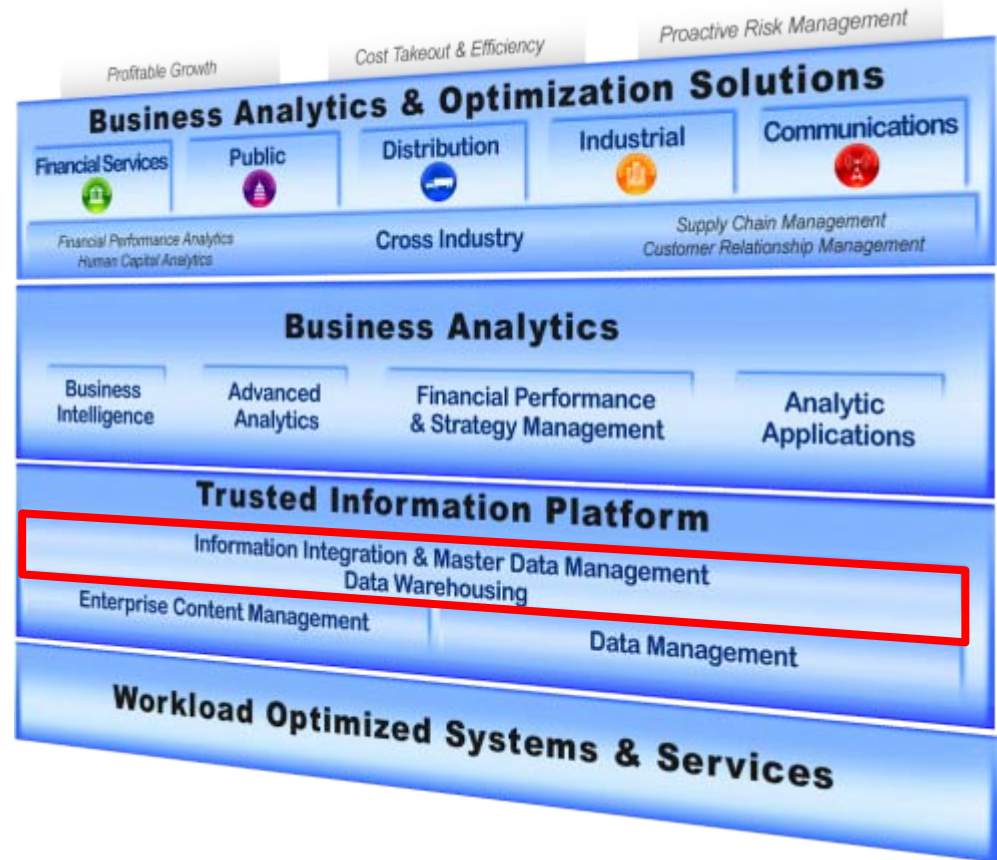
**InfoSphere Master Data Management,
InfoSphere Data Warehouse,
Smart Analytics System**

IBM Smart Analytics System (ISAS)

The industry's most complete high performance capability for transforming information into business insight

The information decision makers need where and when they need it.

Answers When You Need Them

Answers Where You Need Them

A flexible, expandable system that grows based on your business needs.

Accelerate Time To Value

Leverage Existing Investments

Choose the way that your Smart Analytics System is deployed
Add capacity and analytic capabilities as your business requirements evolve

Start with a System that fits your needs	Add capacity for growing data & users	Add analytic capability to meet new business needs
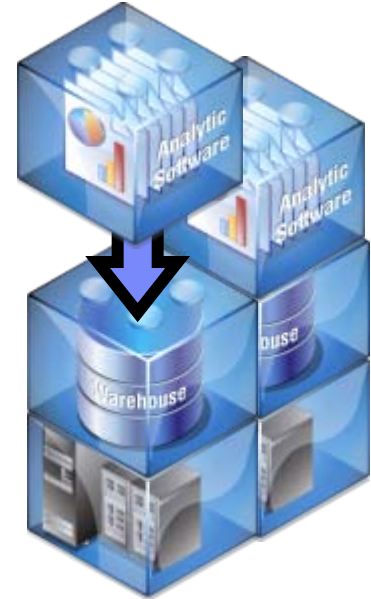
IBM SMART ANALYTICS SYSTEM

Create Value

Lower Costs

Taking it to the Next Level: Predictive Analytics

SPSS Enables New Solution Value for IBM Cognos Customers

How are we doing?	Why are we on/off track?	What should we do next?

DASHBOARDING   SCORECARDING   REPORTING   QUERY   ANALYSIS   PLANNING

Addition of KPPs (Key Performance Predictors)

Broad distribution of statistical results

Time series forecasting

New customer insight through Data Collection

Predictive analytics for deeper understanding of the data

SPSS AN IBM COMPANY

Executive

Business Manager

Casual Business User

Line Manager

Business Analyst

Financial Analyst

Taking it to the Next Level:
With Experts from IBM and Business Partners…

		Banking	Telco	Government	Healthcare	+++
Industry Solutions	**Industry Specific Analytics**					

Function Specific Analytics
- Customer Analytics
- Financial Analytics
- Supply Chain Analytics
- HR Analytics

Cross Enterprise Analytics
- Costs Takeout & Efficiency
- Proactive Risk Management
- Profitable Growth

Cross Industry Solutions

- BAO Strategy
- Analytics & Performance Management
- Advanced Analytics & Optimization
- Enterprise Information Management
- Enterprise Content Management

Start the Transformation Today:

☑ *Sign-up for the Information Agenda Assessment Workshop*

☑ *Go to www.ibm.com/breakfree to know how you can reduce your database management costs*

☑ *Write to nitinsinghal@in.ibm.com to learn more about Information & Analytics*

Business Optimization

Information and Analytics

Plan an Information Agenda

Establish a Flexible Information Platform

Apply Business Analytics to Optimize Decisions