Information Integration & Governance
*How trusted information
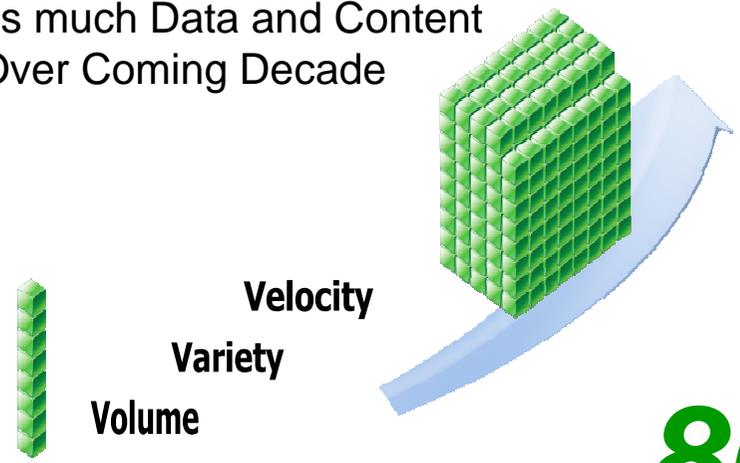can deliver smarter decisions*

We're all information businesses now
From the largest F500 companies to the shop on the corner

44x
as much Data and Content Over Coming Decade

Velocity
Variety
Volume

2009
800,000 petabytes

2020
*35 zettabytes*

80%
Of world's data is unstructured

… And Organizations Need reliable information …

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

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

60% of CEOs need to do a better job capturing and understanding information rapidly in order to make swift business decisions
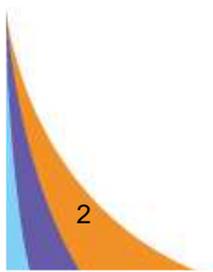
Optimize capital investments based on **6 Petabytes** of information

- Model the weather to optimize placement of turbines, maximizing power generation and longevity
- Build models to cover forecasting and real-time operation of power generation units
- Incorporate 6 PB of structured and semi-structured information flows

Analyze **100k records/ second** to address customer satisfaction in real time

bharti

- Analytic data mining model identifies patterns in customer churn across 270 TB of data
- Churn model is applied to each call, allowing immediate detection of events (ex: dropped calls) that may lead to customer attrition
- End goal: Personalizing model to each individual

30% increase in coupon redemption rates

70x more queries on **5x** data

CATALINA MARKETING

- Delivering personalized coupons to shoppers in real time
- Store and access 400B market basket records to provide personalized experience
- 600 predictive models per year, **10X** as many as before

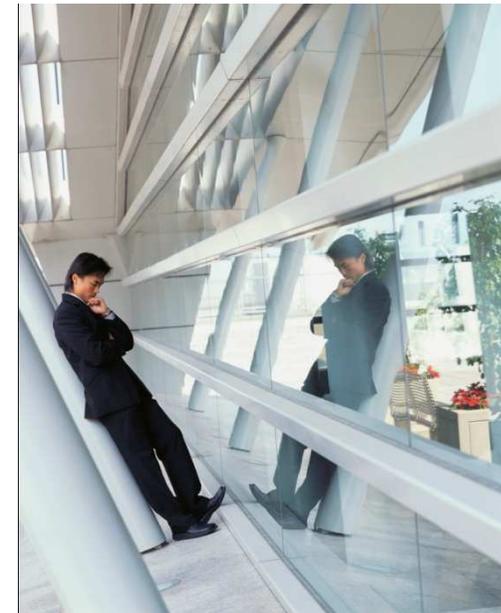# Goal: Instrument **12M** vehicles to reduce road congestion while providing visibility into driving habits

- Onboard vehicle tracking monitors length, distance and pollution generated
- Dashboard-mounted device allows drivers to monitor trip costs
- Appropriate taxes and fees automatically generated and published to public Web site

Information is a vital resource to today's businesses …
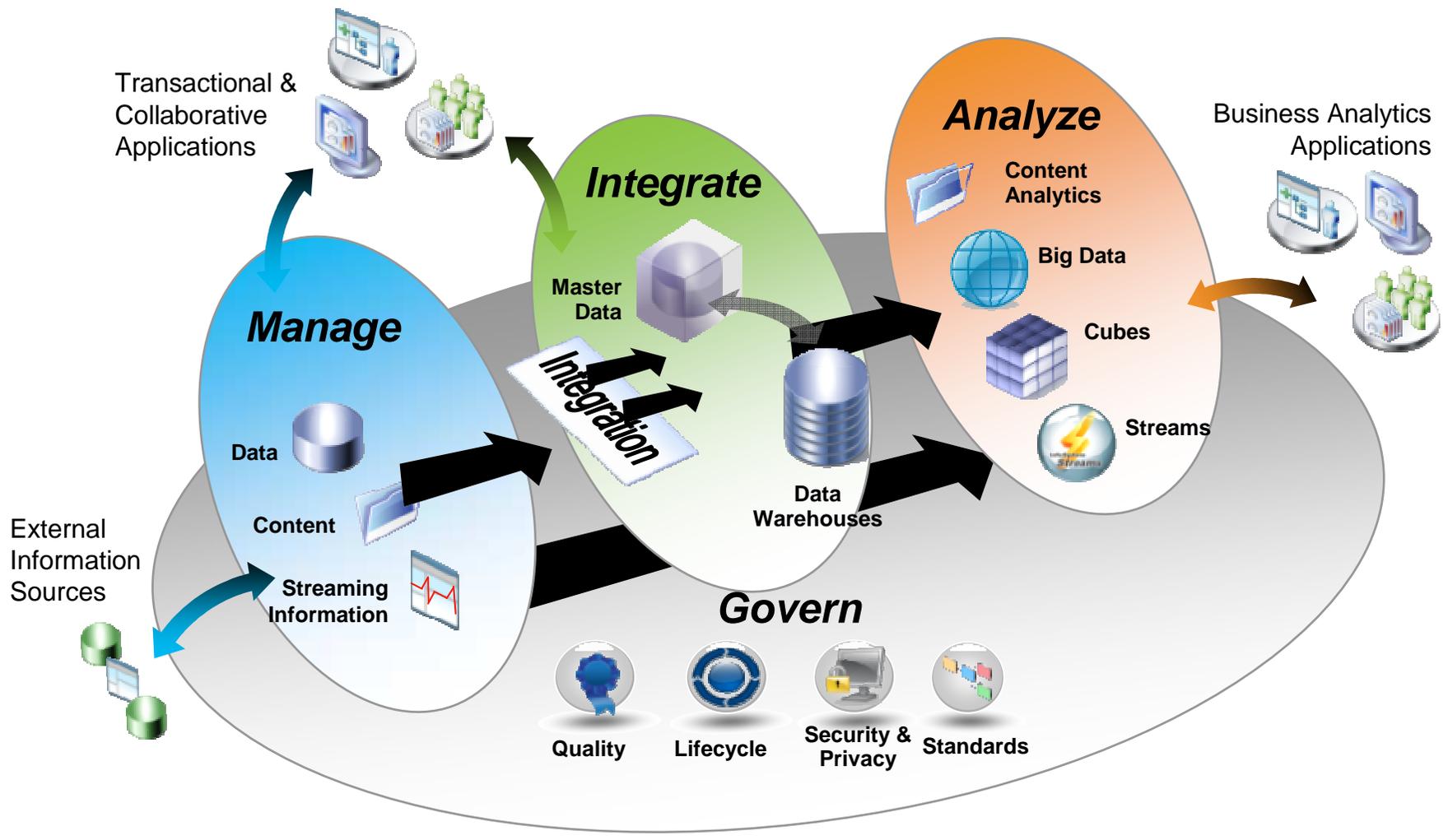## But do you treat it as a vital resource?

Can you deliver information …

- – Consistently ?
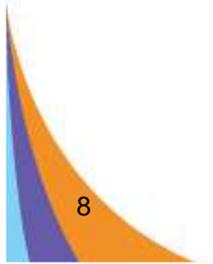- – Reliably ?
- – Cost effectively ?

- What would happen if the flow of information was disrupted?

- Are you leveraging the best and latest innovations to increase your return on investment in Information ?

Mastering Information Across the Information Supply Chain

Transactional & Collaborative Applications

Integrate

Analyze

Business Analytics Applications

Content Analytics

Big Data

Manage

Master Data

Cubes

Streams

Integration

Data

External Information Sources

Content

Data Warehouses

Streaming Information

Govern

Quality   Lifecycle   Security & Privacy   Standards

Trusted ◆ Relevant ◆ Governed

Automating data management improves IT efficiency
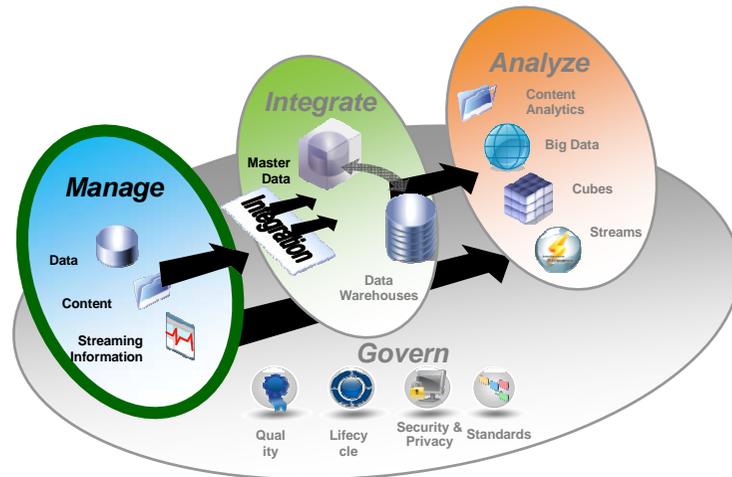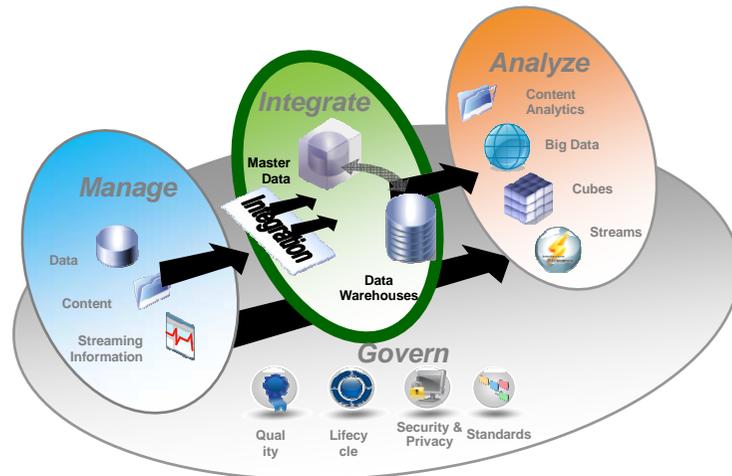

Managing information challenges:

- Consolidate database environments, e.g. 20 SAP databases into one

- Deliver transparent scalability, e.g. scaling retail systems data 100x for 6 weeks a year to meet demand

- Reduce data and content administration, updating e-forms in 2 hours vs. 2 weeks

> *Borçelik cut software licensing and maintenance costs by 25% by moving their SAP applications to IBM DB2 and Power systems.*
>
> *-- Borçelik*

Delivering trusted information through integration increases business confidence


Information integration challenges:

- Discover and interpret sources of information, reducing 5x manual data mapping and analysis

- Integrate and transform data and content, spending 10x less time on custom coding for every source

- Master a single version of the truth across all information maintained in 50 applications, without rip & replace

> " *Yum! Brands is using DataStage to make the most-up-to-date data from their 9,500+ US company and franchise stores across 5 brands available in a Netezza EDW to increase service value and service excellence to their customers.*
>
> *-- Yum! Brands*

Analyzing information from more places enables better business outcomes
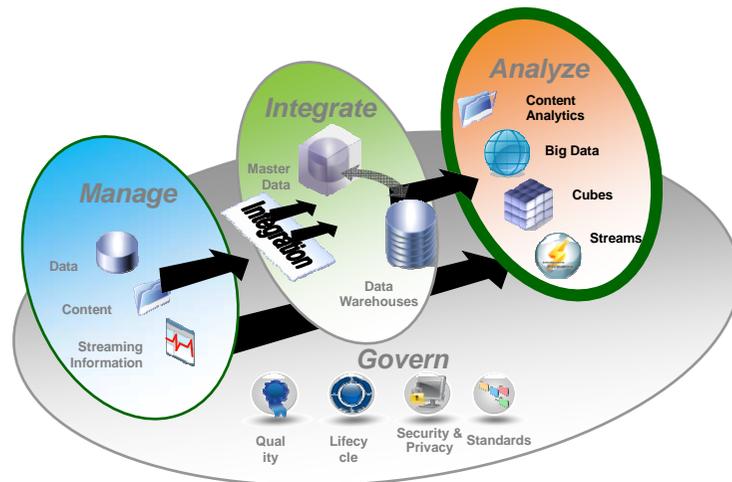
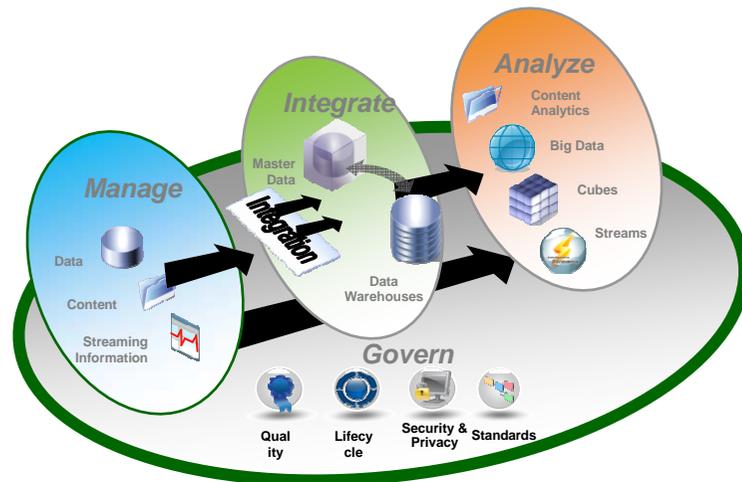## Information analysis challenges:

- Accelerate and simplify the complexities of enterprise analytics while facing 50% YtY growth in data warehouse size

- Tap into new sources such as streaming data and social media, at rates of 11M messages per second

- Handle uncertainty around format variability and velocity of data

" *Using IBM InfoSphere Streams to open up new ways of doing e-Science where there is lots of data coming in from external sources and sensors, streaming at such high data rates you can't handle it with conventional technology.*

-- European research institute

Efficient Information Security and Governance Improve Business Confidence

Analyze
- Content Analytics
- Big Data
- Cubes
- Streams

Integrate
- Master Data
- Data Warehouses

Manage
- Data
- Content
- Streaming Information

Govern
- Quality
- Lifecycle
- Security & Privacy
- Standards

Information governance challenges:

- Spend 5x less time on cross-application compliance with data privacy laws

- Continuously improve and monitor data quality, saving $2M per year

- Manage the lifecycle of data from creation to retirement, reducing 48% of total storage costs

> " *Passed SOX audit with financial record retention that is consistent, repeatable and unalterable using InfoSphere Optim.*
>
> -- *American Electric Power*

Business Performance is tightly linked to strong information governance discipline

Information Governance Levels

Lower performers	Top performers
14%	42%
32%	25%
54%	33%

3X
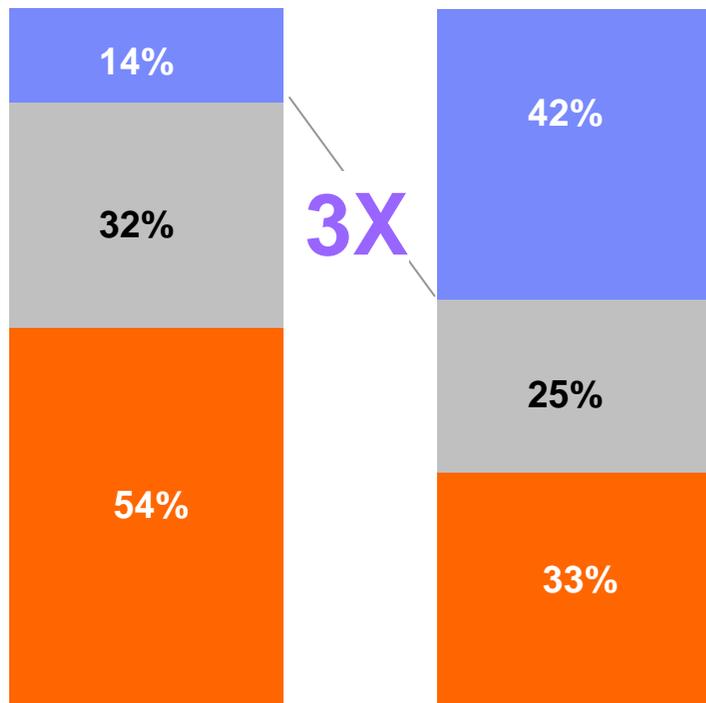
Lower performers
(i.e., 4th and 5th quintiles relative to industry peers)

Top performers
(i.e., 1st quintile relative to industry peers)
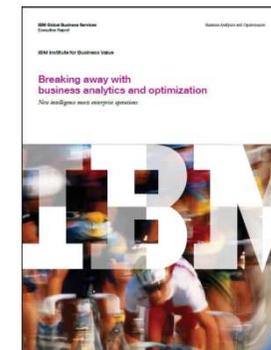
Sophisticated
Processes and management systems that are strong with some supporting automation in place

Competitive
Defined processes and management systems that are understood and adopted by most people

Rudimentary
A few basic processes and the beginnings of a management system

Source: *Breaking Away with Business Analytics and Optimization: New intelligence meets enterprise operations* at www.ibm.com/gbs/intelligent-enterprise.

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Information Governance is Key to Proactively Driving Better Outcomes

1   **Understand your information and its landscape**

2   **Provide high quality information for all uses**

**3**   **Reduce time and cost of managing information**

4   **Protect security and privacy while reducing risk**

**5**   **Comply with regulatory and legal obligations**

The Big Data Challenge

- 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
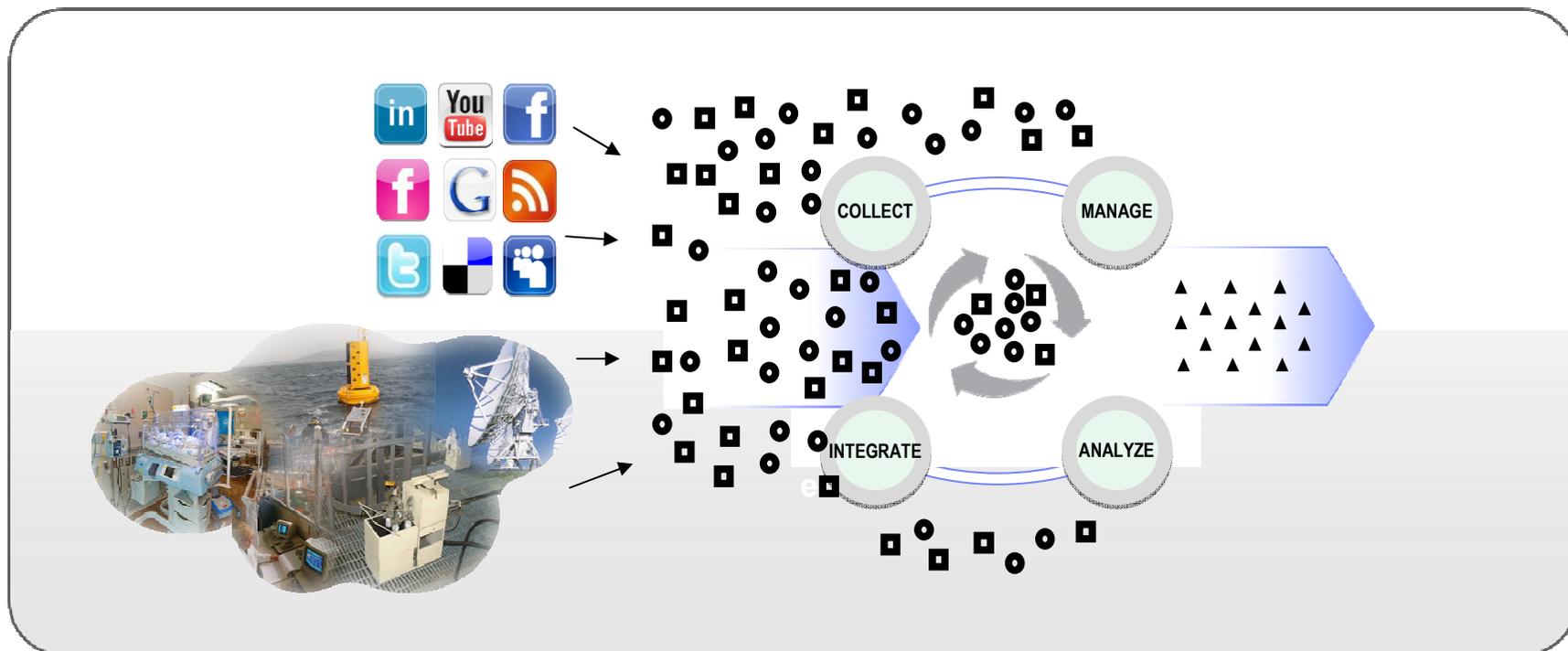
Big Data = Variety, Velocity, and Volume

Extracting insight from an immense volume, variety and velocity of data, in context, beyond what was previously possible.
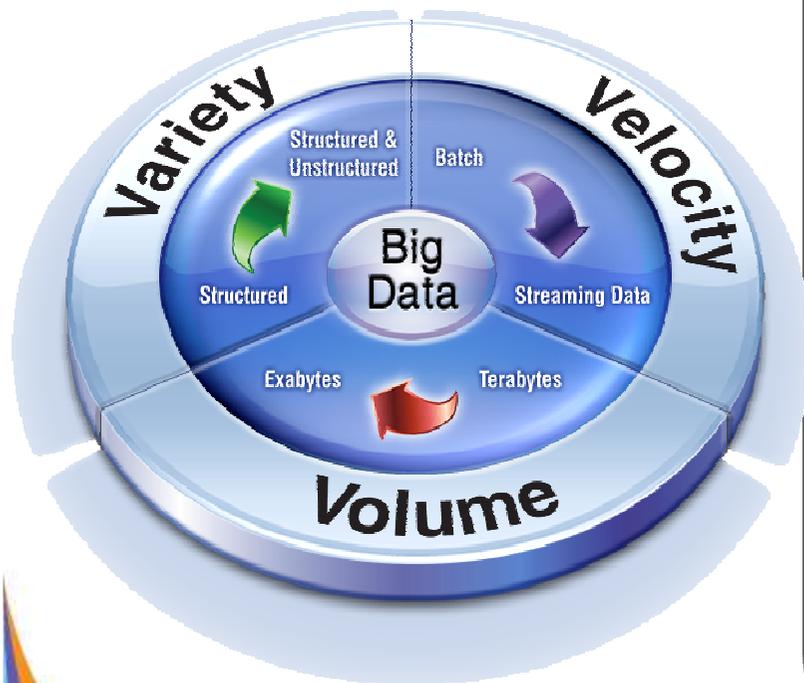
Variety	Manage the complexity of multiple relational and non-relational data types and schemas
Velocity	Streaming data and large volume data movement
Volume	Scale from terabytes to zettabytes

The Challenge: Bring together a large volume and variety of data to find new insights

Multi-channel customer sentiment and experience a analysis

Detect life-threatening conditions at hospitals in time to intervene

*Predict weather patterns to plan optimal wind turbine usage, and optimize capital expenditure on asset placement*

Make risk decisions based on real-time transactional data

Identify criminals, networks, and threats from disparate video, audio, and data feeds

facebook

twitter

http://www

RISK

?

Bring together any data source, at any velocity, to generate insight

- Analyzing a variety of data at enormous volumes

- Insights on streaming data

- Large volume structured data analysis

Big Data Platform

Warehouse
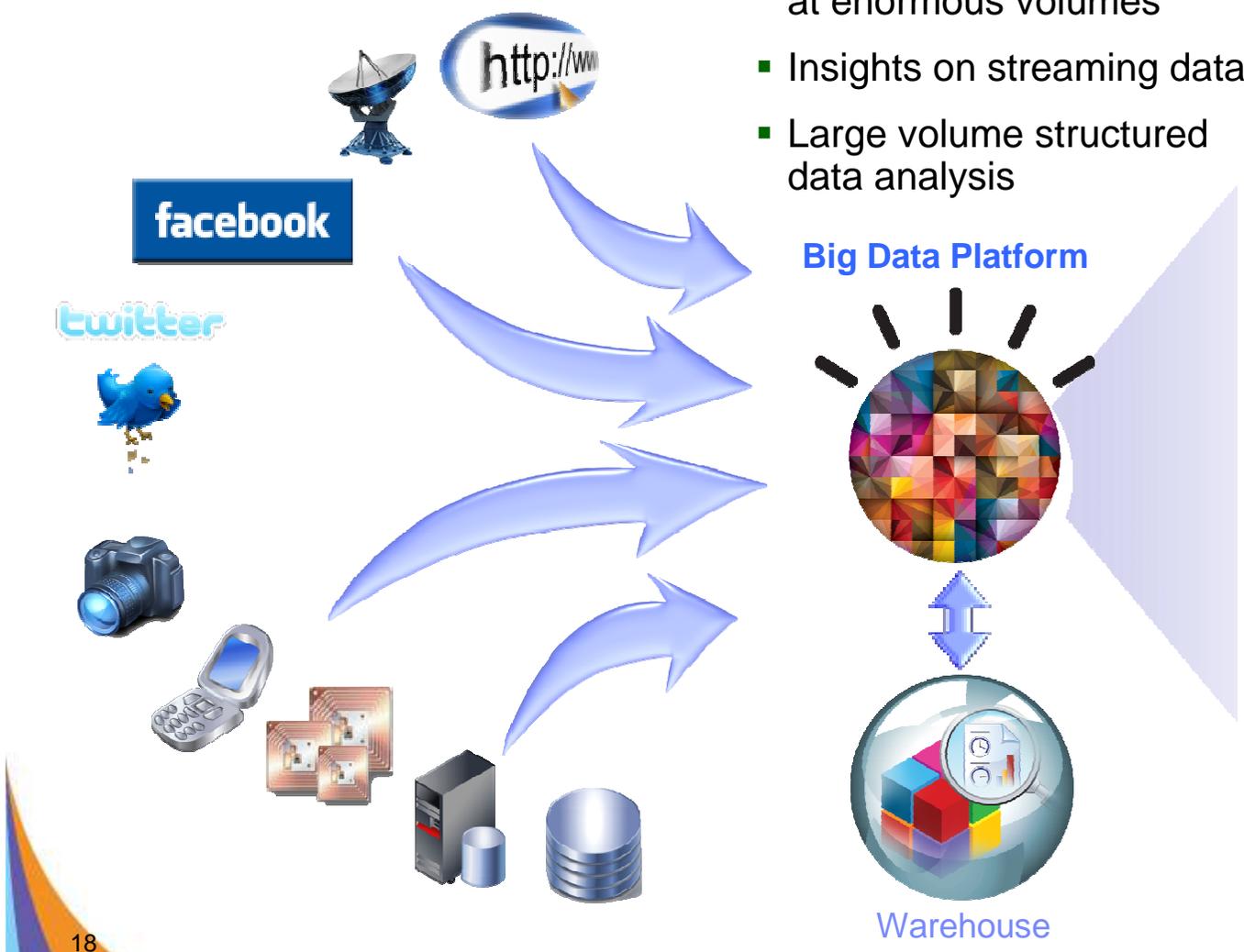
Big Data Should Not Be a Silo
Must be an integrated part of your enterprise information architecture

Data Warehouse

Big Data Platform

Traditional Sources

Enterprise
Integration

New Sources

INFORMATION INTEGRATION & GOVERNANCE FORUM 2011

IBM
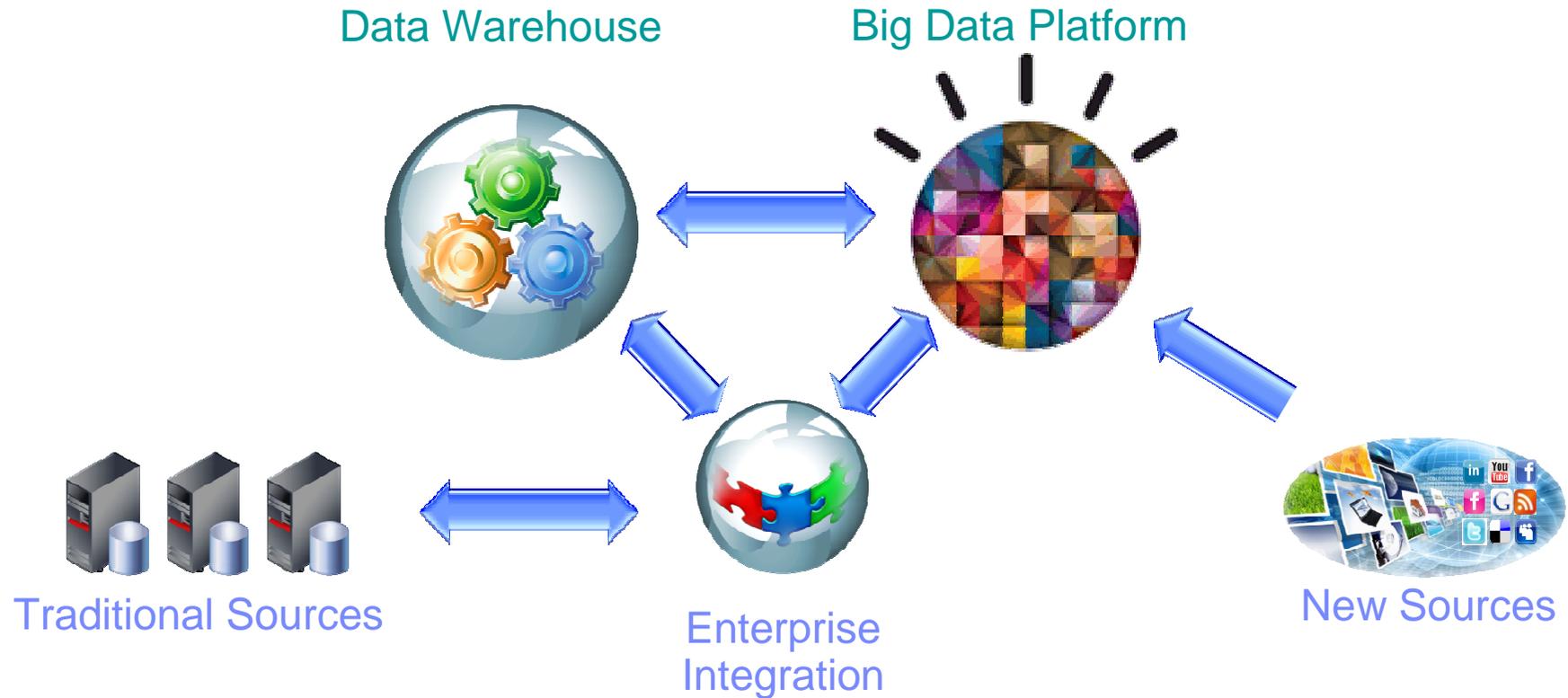
IBM's extensive portfolio of Workload Optimized Offerings

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 Appliance
Simple, fast, 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 Netezza

The true data warehousing appliance

- Purpose-built analytics engine

- Integrated database, server and storage

- Standard interfaces

- Low total cost of ownership

- **Speed: 10-100x faster than traditional system**

- **Simplicity: Minimal administration and tuning**

- **Scalability: Peta-scale user data capacity**

- **Smart: High-performance advanced analytics**

A true appliance drives
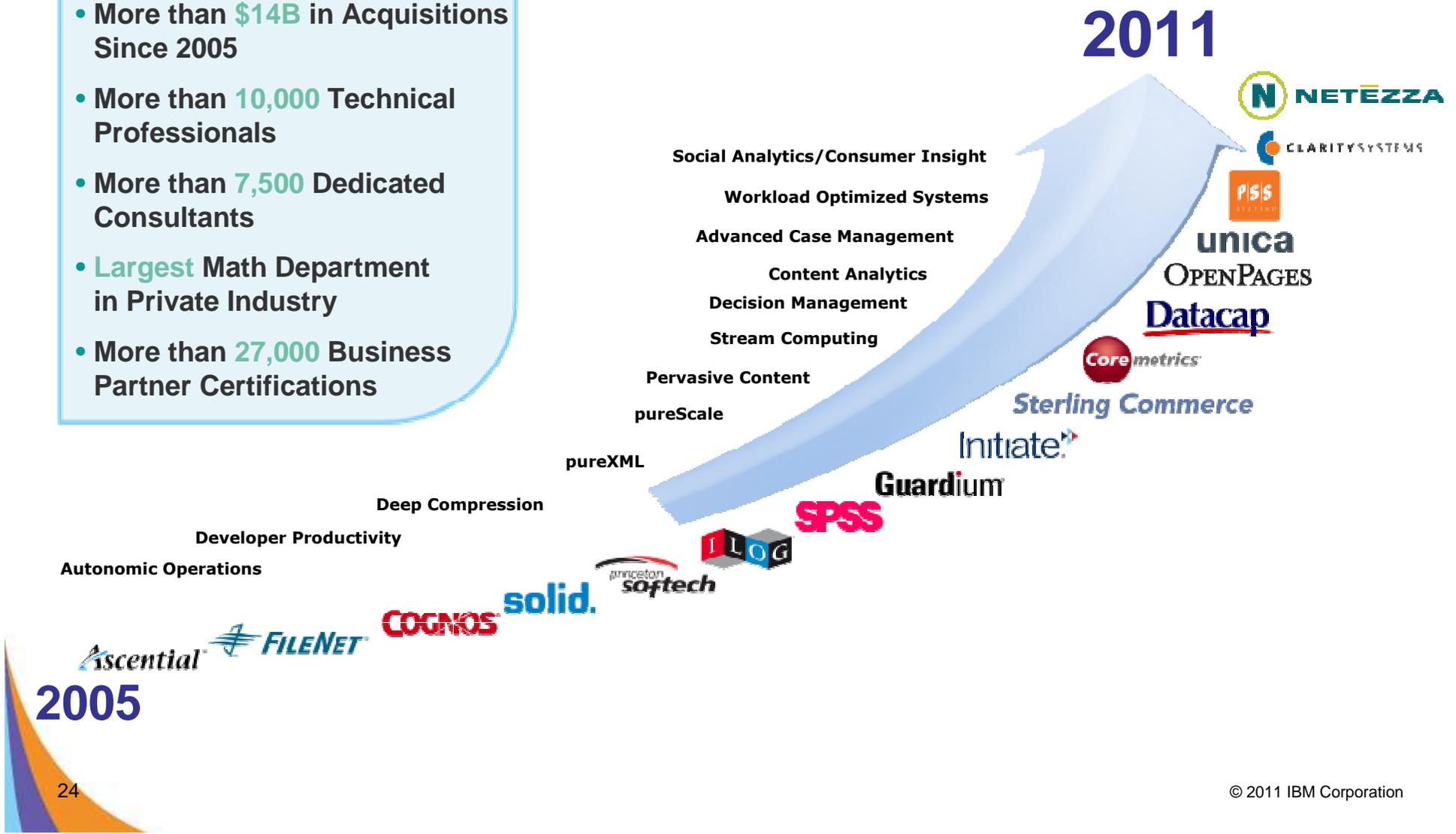
much easier and faster deployment

eHarmony

"
They shipped us a box, we put it into our data center and plugged into our network. Within 24 hours we were up and running. I'm not exaggerating, it was that easy.
"

- Joseph Essas, Vice President of Technology, eHarmony

IBM is Investing to Help Companies Deliver Vital Business Information

- 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

Social Analytics/Consumer Insight

Workload Optimized Systems

Advanced Case Management

Content Analytics

Decision Management

Stream Computing

Sterling Commerce

Pervasive Content

Initiate

pureScale

Guardium

pureXML

SPSS

Deep Compression

ILOG

Developer Productivity

princeton softech

Autonomic Operations

solid.

COGNOS

FILENET

Ascential

2005

IBM

Information is a vital resource to achieve better outcomes

Enhance Customer Understanding
- Customer Churn
- Marketing Spend
- Sales Productivity

Optimize Real-Time Decisions
- Trading Advantage
- Fraud Protection
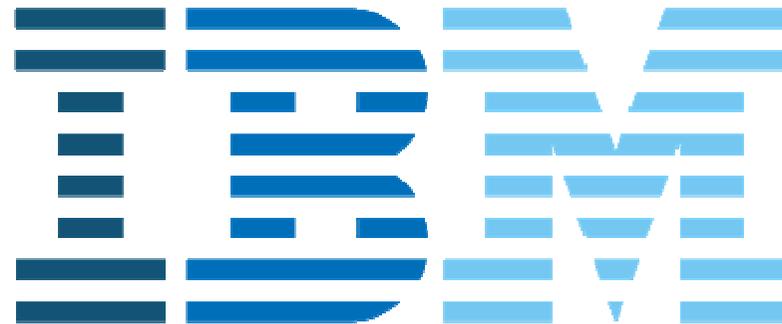- Health Monitoring

Foster Collaborative Decisions
- Customer Service
- Channel Management
- Loan Origination

Enable Enterprise Visibility
- Risk Management
- Demand Visibility
- Strategy Alignment

…Doing so requires a focus on information governance

visit *ibm.com/informationmanagement*