Big Data and why it is critical to successful growth

Noel Garry, European Big Data Insurance Leader

Business Models are under Constant Threat

| **Demanding and connected customers** | **Brands built and destroyed in days** | **Great relationships trump great products** |

Telecommunications

Transforming their use of network data into new revenue streams

Electronic Retailing

Disrupted by social media, networks and mobile commerce

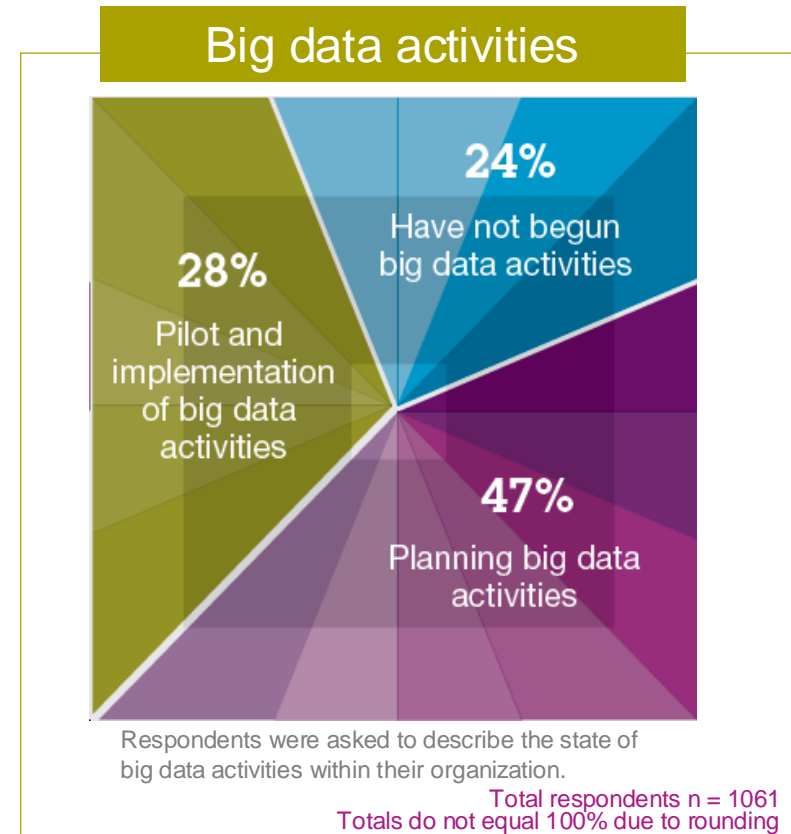**Political Campaigns**

Game changing targeting and recruitment of individual voters
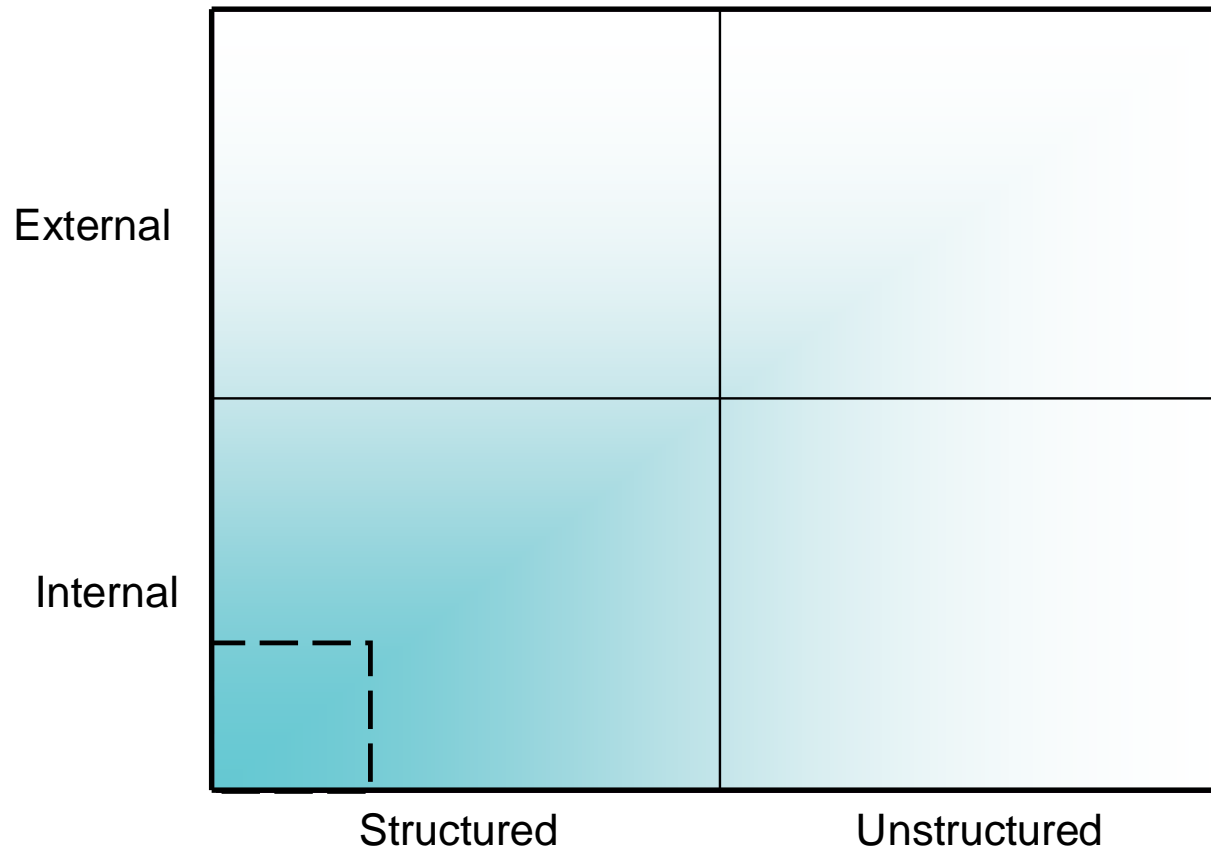
Not changing is the same as losing

Three out of four organizations have big data activities underway; and one in four are either in pilot or production

Big data activities

24%
Have not begun big data activities

28%
Pilot and implementation of big data activities

47%
Planning big data activities

Respondents were asked to describe the state of big data activities within their organization.

Total respondents n = 1061
Totals do not equal 100% due to rounding

37 **Big Data, Integration & Governance**

Most companies only use a fraction of available data

Big Data, Integration & Governance

Change is Being Fueled by Disruptive Technology Factors

Cloud

Big Data

Mobile

Internet of Things

Social Media

Big Data is All Data and All Paradigms

Transactional & Application Data	Machine Data	Social Data	Enterprise Content

- Volume
- Structured
- Throughput
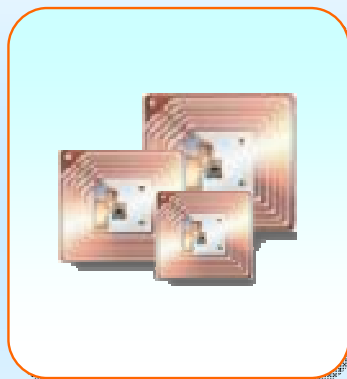
- Velocity
- Semi-structured
- Ingestion

- Variety
- Highly unstructured
- Veracity

- Variety
- Highly unstructured
- Volume

Every Industry can Leverage Big Data and Analytics

Banking
- Optimize Offers and Cross Sell
- Contact Center Efficiency and Problem Resolution
- Payment Fraud Detection & Investigation
- Counterparty Credit Risk Management

Insurance
- Claims Fraud
- Customer Retention
- Catastrophe Modeling
- Telematics
- Producer Management

Telco
- Pro-active Call Center
- Network Analytics
- Location Based Services
- IT/Network Infrastructure Transformation
- Smarter Campaigns

Energy & Utilities
- Smart Meter Analytics
- Distribution Load Forecasting/Scheduling
- Condition Based Maintenance
- Create & Target Customer Offerings

Media & Entertainment
- Business process transformation
- Audience & Marketing Optimization
- Multi-Channel Enablement
- Digital commerce optimization

Retail
- Actionable Customer Insight
- Merchandise Optimization Playbook
- Dynamic Pricing

Travel & Transport
- Customer Analytics & Loyalty Marketing
- Capacity & Pricing Optimization
- Predictive Maintenance Analytics

Consumer Products
- Optimized Promotions Effectiveness
- Micro-Market Campaign Management
- Real Time Demand Forecast

Government
- Threat Prediction and Prevention
- Health and human services fraud, waste & abuse
- Tax compliance - fraud and abuse
- Crime prevention and prediction

Healthcare
- Measure & Act on Population Health
- Engage Consumers in their Healthcare

Automotive
- Data Warehouse Optimization
- Predictive Asset Optimization (PAO)
- Actionable Customer Intelligence
- Connected vehicle

Chemical & Petroleum
- EDW Smart Consolidation & Augmentation
- Operational Surveillance, Analysis & Optimization
- Engineering & Operational Data Exploration & Mining

Aerospace & Defense
- Uniform Information Access Platform
- Data Warehouse Optimization
- Predictive Asset Optimization (PAO)

Electronics / Industrial Products
- Channel Driven Customer Analytics (CDCA)
- Predictive Asset Optimization (PAO)

Life Sciences
- Increase visibility into drug safety and effectiveness

The 5 Key Use Cases

Big Data Exploration
Find, visualize, understand all big data to improve decision making

Enhanced 360º View of the Customer
Extend existing customer views (MDM, CRM, etc) by incorporating additional internal and external information sources

Security/Intelligence Extension
Lower risk, detect fraud and monitor cyber security in real-time

Operations Analysis
Analyze a variety of machine data for improved business results

Data Warehouse Augmentation
Integrate big data and data warehouse capabilities to increase operational efficiency

1. Big Data Exploration

Explore and mine big data to find what is interesting and relevant to the business for better decision making

Requirements

Explore new data sources for potential value

Mine for what is relevant for a business imperative

Assess the business value of unstructured content

Uncover patterns with visualization and algorithms

Prevent exposure of sensitive information

Industry Examples

- Customer service knowledge portal
- Insurance catastrophe modeling
- Automotive features and pricing optimization
- Chemicals and Petroleum conditioned base maintenance
- Life Sciences drug effectiveness

Global automotive manufacturer gains a timely, integrated view of vehicles

The IBM Big Data platform combines at-rest vehicle data with real time data-in-use from vehicles for single, integrated, near real-time view of the vehicle and its usage.

- Monetize telematics data

- Predict demand for replacement parts and service

- Provide drivers assistance

Single, integrated view of vehicle - functional architecture

2. Enhanced 360º View of the Customer

Optimize every customer interaction by knowing everything about them

Requirements

Create a connected picture of the customer

Mine all existing and new sources of information

Analyze social media to uncover sentiment about products

Add value by optimizing every client interaction

Industry Examples

- Smart meter analysis
- Telco data location monetization
- Retail marketing optimization
- Travel and Transport customer analytics and loyalty marketing
- Financial Services Next Best Action and customer retention
- Automotive warranty claims

How well do we know our customers?
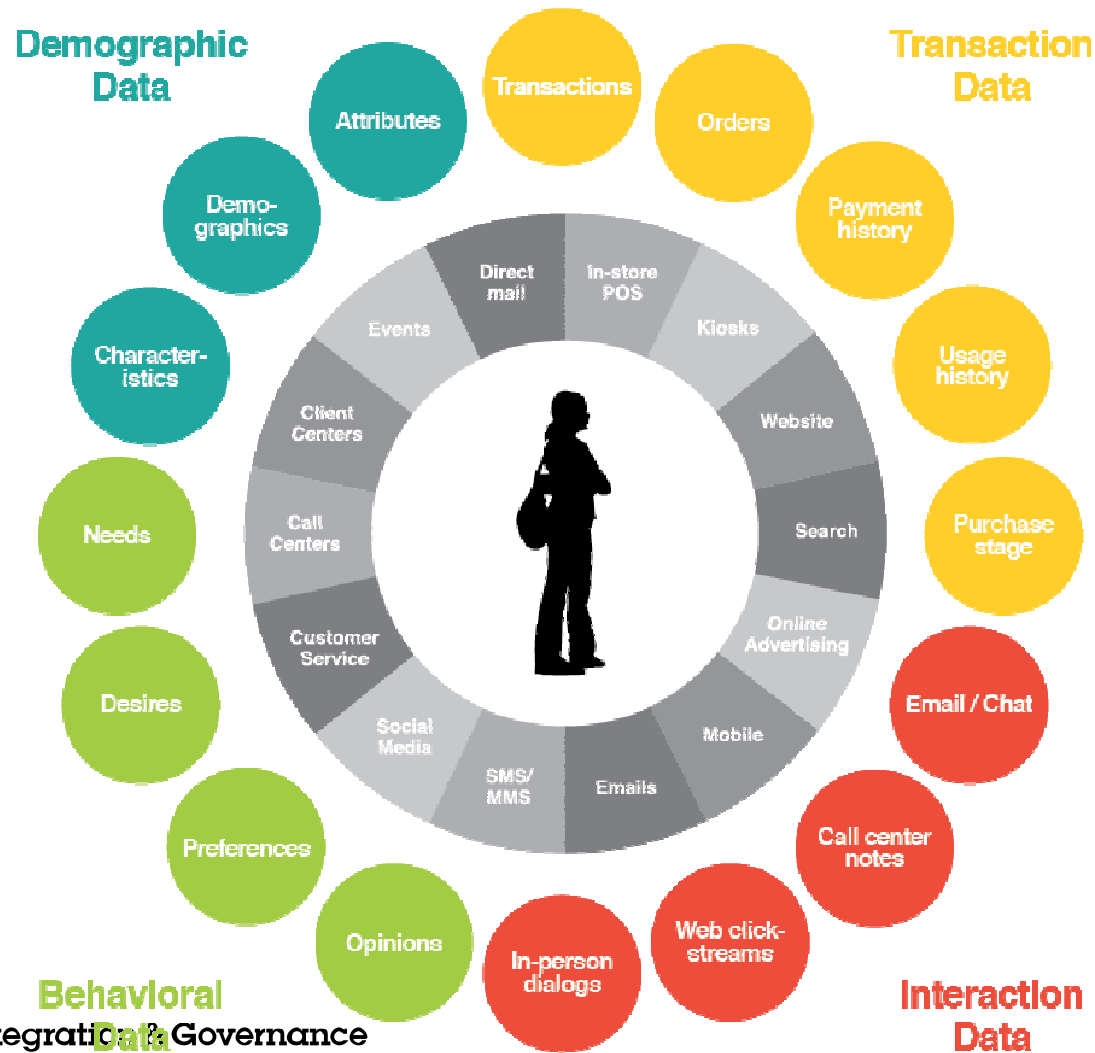
Would you insure her?

NORMAL CRITERIA

Young
First time driver
No experience

REJECT

facebook   Search for people, places and things   Jane Smith | Find Friends | Home | ▼
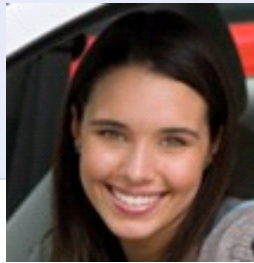
Add a Cover

Jane Smith

Update Info   Activity Log   ⚙ ▼

From: Beverly Hills, California
Studying: Medicine at Harvard University
Current Location: On holiday in Mauritius

4 ▼

Photos

Here is a photo of me on my pony

Photos

Holiday photos from Mauritius

Activities

Looking for my first flat in the Harvard area next week

Taking more driving lessons at the driving school

Now
September
2012
2011
2010
2009
2008
Born

News
My Mum and Dad have just had their first ever insurance claim after 30 years of driving when somebody scratched the side of their new Bentley when it was parked at the cricket match

✕   Secure Search

start   InfoPrint ...   ThinkVant...   AT&T Net...   2 Lotus ...   Noel Garr...   Big Data i...   Microsoft ...   Desktop   My Documents   EN   99%

2. Enhanced 360º View of the Customer

SOURCE SYSTEMS

CRM
Name: J Robertson
Address: 35 West 15th
Address: Pittsburgh, PA 15213

ERP
Name: Janet Robertson
Address: 35 West 15th St.
Address: Pittsburgh, PA 15213

Legacy
Name: Jan Robertson
Address: 36 West 15th St.
Address: Pittsburgh, PA 15213

360º View of Party Identity

InfoSphere MDM

First:	Janet
Last:	Robertson
Address:	35 West 15th St
City:	Pittsburgh
State/Zip:	PA / 15213
Gender:	F
Age:	48
DOB:	1/4/64

Cognos Consumer Insight

Cognos BI

InfoSphere Data Explorer

Unified View of Party's Information

3. Security and Intelligence Extension

Enhance traditional security solutions to prevent crime by analyzing all types and sources of big data

Requirements

Enhanced Intelligence and Surveillance Insight

Real-time Cyber Attack Prediction and Mitigation

Crime Prediction and Protection

Analyze data-in-motion and at rest to:
- Find associations
- Uncover patterns and facts
- Maintain currency of information

Analyze network traffic to:
- Discover new threats sooner
- Detect known complex threats
- Take action in real-time

Analyze telco and social data to:
- Gather criminal evidence
- Prevent criminal activities
- Proactively apprehend criminals

Industry Examples

- Government threat and crime prediction and prevention

- Insurance claims fraud

- Credit card fraud

3. Security/Intelligence Extension

Traditional Security Operations and Technology

Logs

Events   Alerts

Configuration information

System audit trails

Identity context

Network flows and anomalies

External threat intelligence feeds

Video / audio surveillance feeds

Web page text

Business process data

E-mail and social activity

Customer transactions

Big Data Analytics
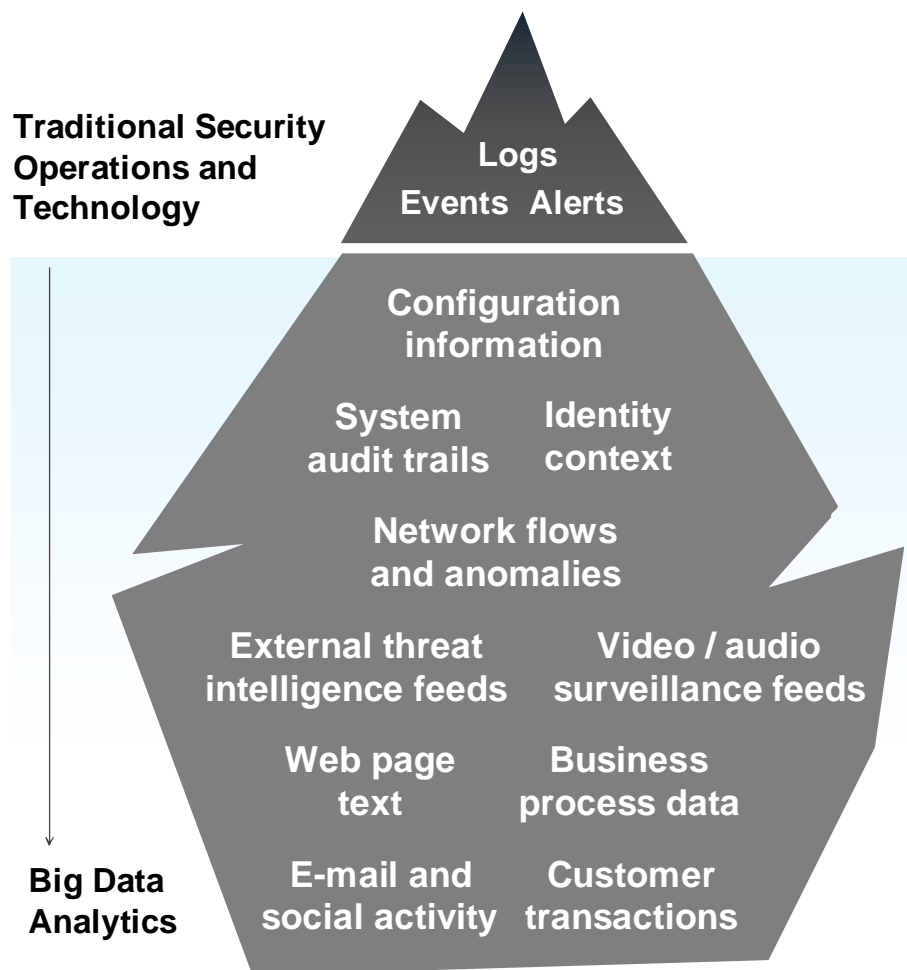
New Considerations

Collection, Storage and Processing

- Collection and integration
- Size and speed
- Enrichment and correlation

Analytics and Workflow

- Visualization
- Unstructured analysis
- Learning and prediction
- Customization
- Sharing and export

4. Operations Analysis

Apply analytics to machine data for greater operational efficiency

Requirements

Analyze machine data to identify events of interest

Apply predictive models to identify potential anomalies

Combine information to understand service levels

Monitor systems to avoid service degradation or outages

Industry Examples

- Automotive advanced condition monitoring
- Chemical and Petroleum condition-based Maintenance
- Energy and Utility condition-based maintenance
- Telco campaign management
- Travel and Transport real-time predictive maintenance

4. Operations Analysis

Raw Logs and Machine Data

Only store
what is needed

Data Security
& Monitoring

Machine Data
Accelerator

Real-time Analysis

Indexing, Search

Statistical Modeling

Root Cause Analysis

Federated Navigation
& Discovery
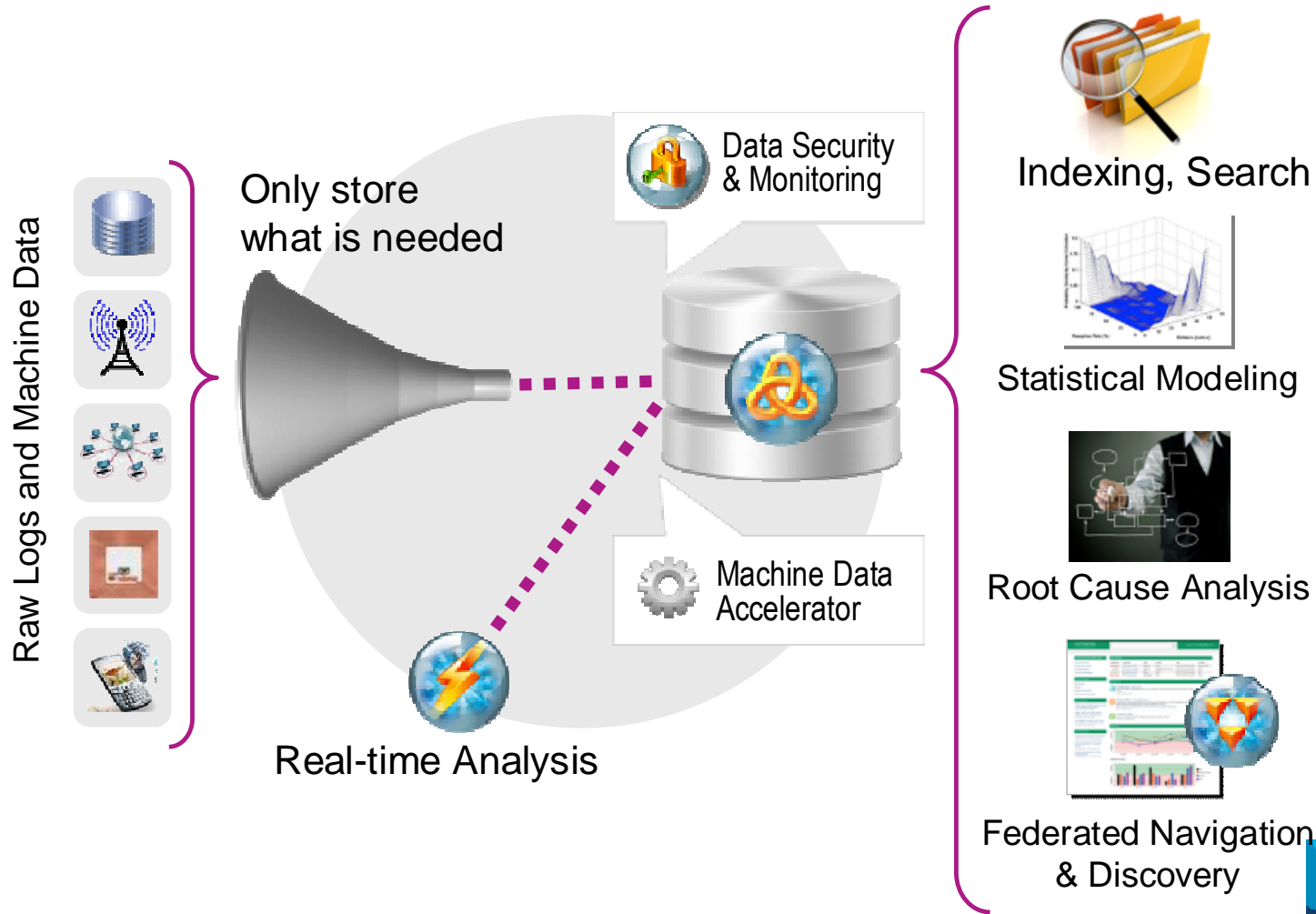
Battelle, helping reduce energy costs and enhancing power grid reliability and performance

Need

- Assess the viability of one smart grid technique called transactive control

Benefits

- Engages consumers and responsive assets throughout the power system to help optimize the system and better integrate renewable resources

- Provides the capability to analyze and gain insight from up to 10 PB of data in minutes

- Increases grid efficiency and reliability through system self-monitoring and feedback

- Enables a town to avoid a potential power outage

Battelle
The Business of Innovation

5. Data Warehouse Augmentation

Exploit technology advances to deliver more value from an existing data warehouse investment while reducing cost

Requirements

Add new sources to existing data warehouse investments

Optimize storage and provide query-able archive

Rationalize for greater simplicity and lower cost

Enable complex analytical applications with faster queries

Scale predictive analytics and business intelligence

Examples
- Pre-Processing Hub
- Query-able Archive
- Exploratory Analysis
- Operational Reporting
- Real-time Scoring
- Segmentation and Modeling

Data Warehouse Augmentation

Constant Contact®

Improved analysis performance by over 40 times, reduced wait time from hours to seconds, and increased campaign effectiveness by 20+%.

Could Data Warehouse Augmentation benefit you?

✓ Are you drowning in very large data sets (TBs to PBs) that are difficult and costly to store?

✓ Are you able to utilize and store new data types?

✓ Are you facing rising maintenance/licensing costs?

✓ Do you use your warehouse environment as a repository for all data?

✓ Do you have a lot of cold, or low-touch, data driving up costs or slowing performance?

✓ Do you want to perform analysis of data in-motion to determine what should be stored in the warehouse?

✓ Do you want to perform data exploration on all data?

✓ Are you using your data for new types of analytics?

Product Starting Point: InfoSphere BigInsights, InfoSphere Streams

New Architecture to Leverage All Data and Analytics

Data in Motion

Data at Rest

Data in Many Forms

Streams

Information Ingestion and Operational Information

- Stream Processing
- Data Integration
- Master Data

Real-time Analytics

- Video/Audio
- Network/Sensor
- Entity Analytics
- Predictive

Landing Area, Analytics Zone and Archive

- Raw Data
- Structured Data
- Text Analytics
- Data Mining
- Entity Analytics
- Machine Learning

Exploration, Integrated Warehouse, and Mart Zones

- Discovery
- Deep Reflection
- Operational
- Predictive

Intelligence Analysis

Decision Management

BI and Predictive Analytics

Navigation and Discovery

Information Governance, Security and Business Continuity

58 **Big Data, Integration & Governance**

Recognized for our Leadership

"IBM has the deepest Hadoop platform and application portfolio."
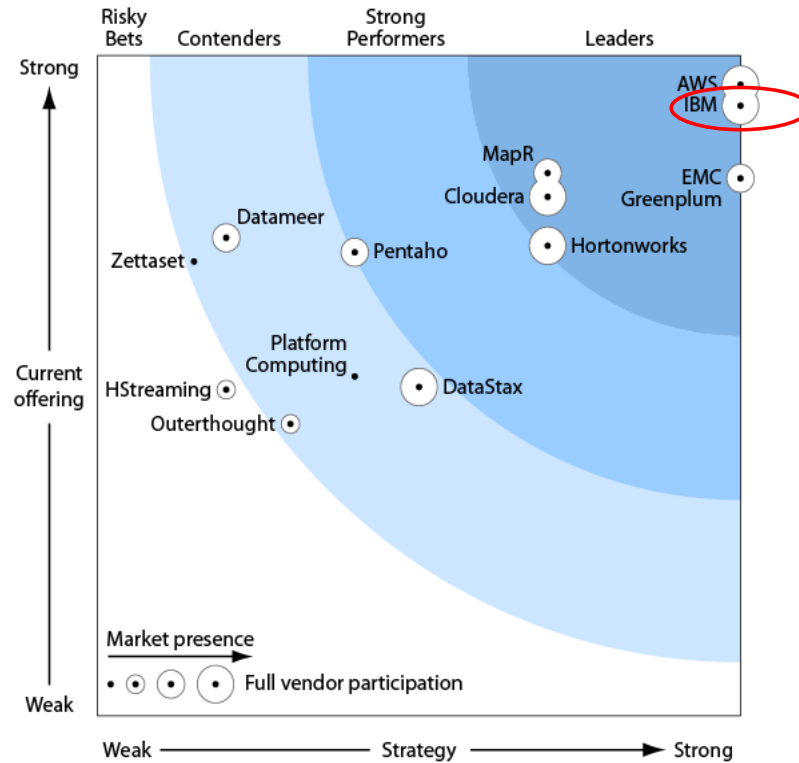
February 2012 *"The Forrester Wave™: Enterprise Hadoop Solutions, Q1 2012"*

Get Started

Get Educated

- Forum content

- IBMBigDataHub.com

- Big Data University

- IBV study on big data
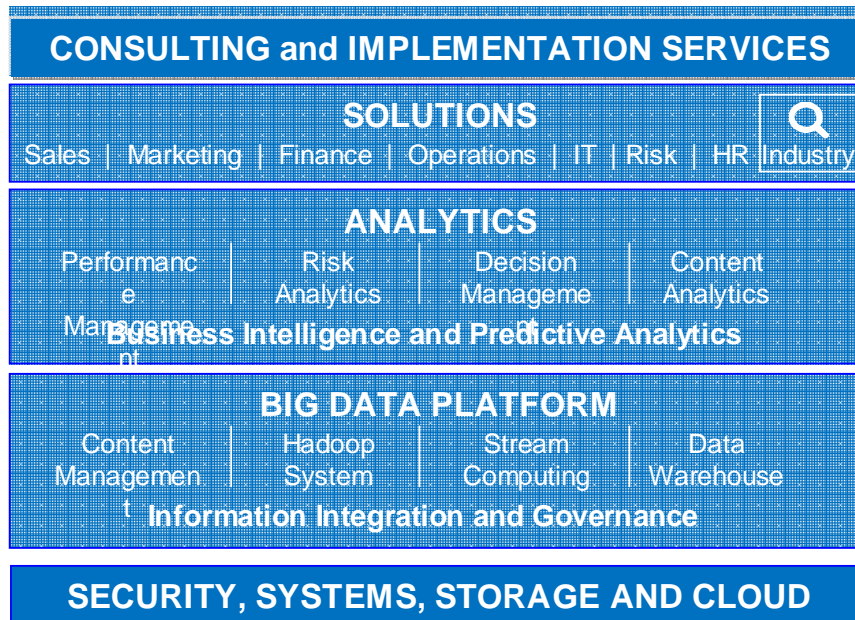
- Books / Analyst papers

Schedule a Big Data Workshop

- Free of charge

- Best practices

- Industry use cases

- Business uses

- Business value assessment

Thank you

IBM provides a holistic and integrated approach to Analytics and Big Data

CONSULTING and IMPLEMENTATION SERVICES

SOLUTIONS 🔍
Sales | Marketing | Finance | Operations | IT | Risk | HR | Industry

ANALYTICS
| Performance Management | Risk Analytics | Decision Management | Content Analytics |

Business Intelligence and Predictive Analytics

BIG DATA PLATFORM
| Content Management | Hadoop System | Stream Computing | Data Warehouse |

Information Integration and Governance

SECURITY, SYSTEMS, STORAGE AND CLOUD

Only IBM has expanded and evolved Analytics for Big Data to…

- Fuel all decision-making with powerful analytics

- Broaden analytic adoption without silos

- Analyze all data wherever it lives

- Accelerate business value with solutions that have built-in analytics expertise

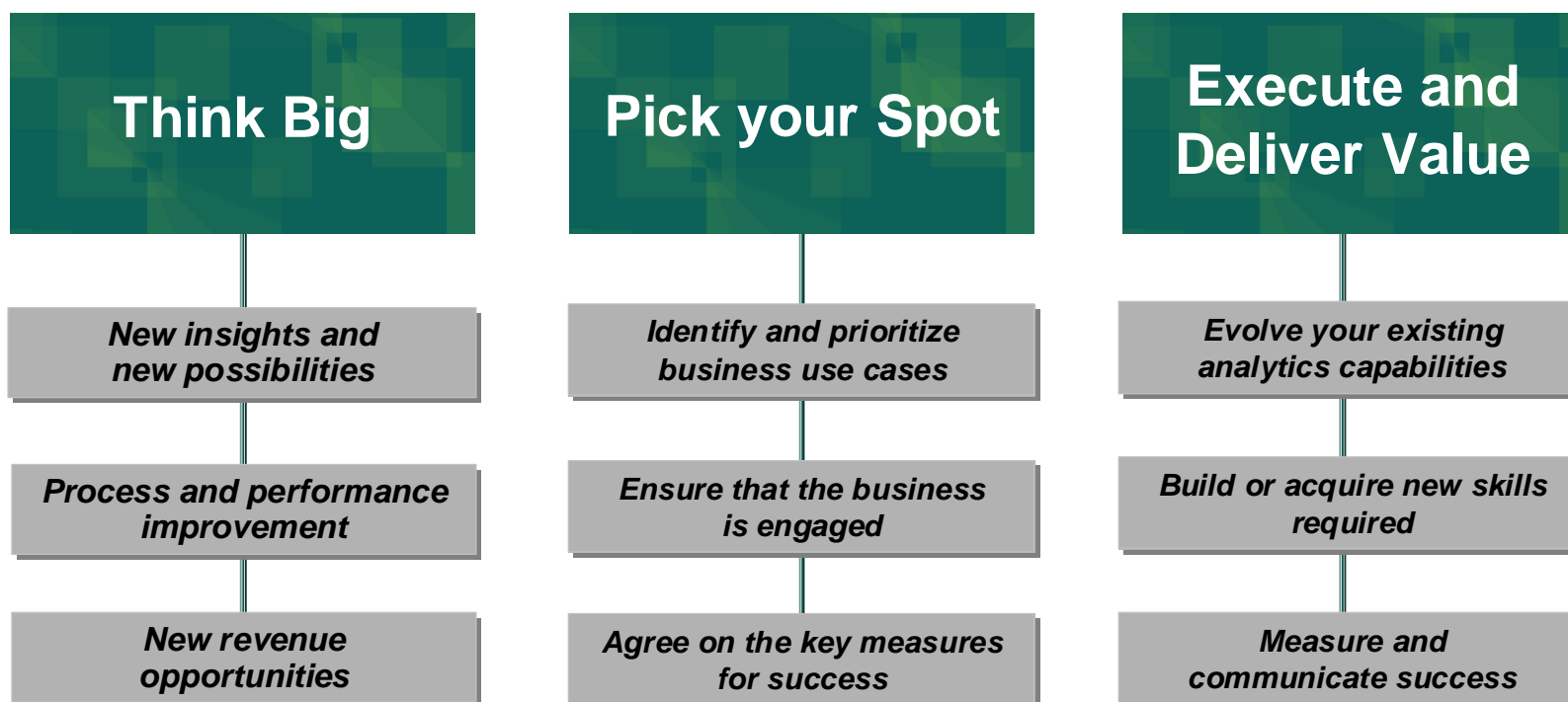…**so organizations can find what is business relevant in big data and make it instantly actionable**

IBM offers support to help organizations achieve success with their Analytics and Big Data initiatives

AnalyticsZone by IBM

CMO Study : www.ibm.com/services/c-suite/cmo/

Get started!

Think Big	Pick your Spot	Execute and Deliver Value
New insights and new possibilities	**Identify and prioritize business use cases**	**Evolve your existing analytics capabilities**
Process and performance improvement	**Ensure that the business is engaged**	**Build or acquire new skills required**
New revenue opportunities	**Agree on the key measures for success**	**Measure and communicate success**

Thank you for attending today

Tony Boobier
boobier@uk.ibm.com