Big Data & Analytics
Trends & Directions

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Something Profound is Happening
*Continuous transformation is the new normal*

### Business models are under constant threat

- Shift of power to the consumer and the citizen
- Accelerating pressure to do more with less
- Great relationships trump great products

### Convergence of technology disruptors creates opportunity

- Cloud
- Social
- Big Data
- Internet of Things

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The answer

The four IBM Smarter Planet Key Plays

- Smarter Analytics
- Smarter Commerce
- Smarter Cities
- Industry Solutions

- Cloud offerings
- Industry Solution
- Smarter Cities

- Smarter Workforce
- Mobile Smarter Collaboration
- Industry Solution

- Bring your own devise
- Security & Privacy
- IBM MobileFirst
Harnessing All Data delivers Transformational Value
Yet requires a shift in thinking and an Evolution of Approach

All perspectives
Past (historical, aggregated)
Present (real-time)
Future (predictive)

All people
All departments
Experts and non-experts
Executives and employees
Partners and customers

All decisions
Major and minor
Strategic and tactical
Routine and exceptions
Manual and automated

From
structured, linear, repeatable, IT-driven, information delivery

To
creative, dynamic, iterative, business-driven analytics environment

All information
What Factors Are Impacting Organizations?

1. Technology Factors
   - Big Data Analytics: 58%
   - Mobility: 74%
   - Cloud: 68%
   - BPM: 60%
   - Security Intelligence: 58%
   - Speed Value: 90%
   - Extended Reach: 1 Billion
   - New Insights: 2.7ZB

2. People Skills
3. Market Factors
4. Macro-economic Factors
5. Regulatory Concerns
6. Globalization

- Speed Value: 90% adopting Cloud Computing
- Extended Reach: 1 Billion
- New Insights: 2.7ZB

- 1 Billion mobile employees by 2014
- Of digital content in 2012, up 50% from 2011
Why all data is important now?

350 billion meter readings per annum
- Predict power consumption

500 million call detail records per day
- Prevent customer churn

12 tb of Tweets create daily
- Analyze product sentiment

5 million trade events / second
- Identify potential fraud

80% data growth are images, video, documents...
- Improve customer satisfaction

350 video feeds from surveillance cameras
- Monitor events of interest

1 in 3 business leaders don’t trust the information they use to make decisions
Big Data will impact many aspects of our business processes

<table>
<thead>
<tr>
<th>From Existing</th>
<th>To New Value</th>
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<tbody>
<tr>
<td><strong>Customers</strong></td>
<td>All customer information leveraged to maximize value at every touch.</td>
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<td>Internal silos of customer data</td>
<td>Instrumented assets drive revenue and optimized maintenance.</td>
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<td><strong>Assets</strong></td>
<td>Digital innovation at speed and scale.</td>
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<td>Worst-case projection of asset failure drives maintenance</td>
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<td><strong>Innovation</strong></td>
<td>Instant awareness of risk. Fraud prevention.</td>
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<td>Consumer panels, physical prototyping, data extrapolation</td>
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<tr>
<td><strong>Risk, Fraud, Compliance</strong></td>
<td>Optimized supply chains with zero latency.</td>
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<td>Reactive regulatory response. Chasing fraud.</td>
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<tr>
<td><strong>Supply Chain &amp; Operations</strong></td>
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<tr>
<td>Business is managed retroactively. Plan for worst-case scenarios.</td>
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Three out of four organizations have Big Data activities underway
And one in four are either in pilot or production

Early days of big data era
- Almost half of all organizations surveyed report active discussions about big data plans
- Big data has moved out of IT and into business discussions

Getting underway
- More than a quarter of organizations have active big data pilots or implementations
- Tapping into big data is becoming real

Acceleration ahead
- The number of active pilots underway suggests big data implementations will rise exponentially in the next few years
- Once foundational technologies are installed, use spreads quickly across the organization


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Five key findings highlight how organizations are moving forward with big data

1. Customer analytics are driving big data initiatives

2. Big data is dependent upon a scalable and extensible information foundation

3. Initial big data efforts are focused on gaining insights from existing and new sources of internal data

4. Big data requires strong analytics capabilities

5. The emerging pattern of big data adoption is focused upon delivering measureable business value

A holistic & integrated approach to Big Data & Analytics leads to success

Enabling organizations to

- Assemble and combine relevant mix of information
- Discover and explore with smart visualizations
- Analyze, predict and automate for more accurate answers
- Take action and automate processes
- Optimize analytical performance and IT costs
- Reduced infrastructure complexity and cost
- Manage, govern and secure information
5 Big Data Patterns Resulting from High Value Initiatives

Big Data Exploration

*Find, visualize, understand ALL big data to improve business knowledge*
5 Big Data Patterns Resulting from High Value Initiatives

Big Data Exploration

Complete View of the Customer

Achieve a true unified view, incorporating internal and external sources, to drive positive interactions
5 Big Data Patterns Resulting from High Value Initiatives

- **Big Data Exploration**
- **Complete View of the Customer**
- **Security/Intelligence**

*Lower risk, detect fraud and monitor cyber security in real-time*
5 Big Data Patterns Resulting from High Value Initiatives

- Big Data Exploration
- Complete View of the Customer
- Security/Intelligence
- IT Operations Analysis

Analyze a variety of machine data for improved business results
5 Big Data Patterns Resulting from High Value Initiatives

- **Big Data Exploration**
- **Complete View of the Customer**
- **Security/Intelligence**
- **IT Operations Analysis**
- **Data Warehouse & Augmentation**

*Integrate Big data and Data warehouse capabilities to increase operational efficiency*
Typical Industry Use Cases based on 5 Big Data Patterns

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

Insurance
- Claims Fraud
- Next Best Action
- Catastrophe Modeling

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 Custom Offers

Media & Entertainment
- Business process transformation
- Audience & Marketing Optimization
- More...

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

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

Government
- Threat Prediction and Prevention
- Detect and Prevent Improper Payments
- Single View

Healthcare
- Measure & Act on Population Health
- Engage Consumers in their Healthcare
- Increase visibility into drug safety and effectiveness

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

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

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 Monitoring & Optimization (PAMO)

Life Sciences
- Increase visibility into drug safety and effectiveness

What is your case?
5 common entry points
Start at your most critical need and expand for future requirements

- “Big data” isn't just a technology - it's a business strategy for capitalizing on information resources
- Success at each entry point is accelerated by products within the big data platform
- Build the foundation for future requirements by expanding further into the big data platform
Who is #1 in Big Data?

It’s no surprise to us that IBM holds the top spot! Discover why IBM is judged as the #1 most powerful big data company, as compiled and reported by Network World.

Watch the Slideshow

Related Link
Learn more about IBM’s big data platform

Most Popular
1. The Four V’s of Big Data
2. Big Data: How Can We Measure the Risks?
4. Top 5 Big Data Use Cases
5. Big Data in Marketing: Creating New Opportunities for Collaboration
6. Big Data Analytics Will Permeate the Internet of Things
7. Top Podcasts of 2013 - So Far

PAPERS & REPORTS
- Moving Up the Digital Marketing Maturity with Big Data Analytics

PRESENTATIONS
- 5 Ways To Make Big Data Production-Ready

INFOGRAPHICS
- Are You Confident in Your Data?

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