Build a smarter Enterprise with Bigdata & Analytics

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Eras of computing

Tabulating Systems Era

Programmable Systems Era

Cognitive Systems Era

cognitive: of or pertaining to the mental processes of perception, memory, judgment, learning, and reasoning.
Big Data key shifts in South Africa

128%
Mobile penetration. South African population 51.8 M, Total mobile connections 66.1 M.

39%
Estimated mobile data penetration. 11 M active smartphones. Average revenue per user monthly R119.

5th
In the world for Mobile data usage. 1st is Russia, 7th is USA

60%
Of South African’s use cellphones to connect to the internet.

129%
Twitter annual growth, to 5.5M users. Facebook highest active users with 9.4M. Mxit 6M users & 12.3M Internet users

87%
Of Facebook users and 85% of Twitter users access these tools on their mobiles;
Big Data key shifts in South Africa

1990

The year South Africa was granted the top level domain .za

40.6%

Of South Africa households have at least one member who had access or used the internet either at home, work, place of study or internet cafes while 10% have access at home

41%

Internet penetration. 12.3M in 2012, up from 2.4M in 2000.

60%

Of Internet traffic generated on the African continent originates from South Africa

54.7%

Of people in Gauteng have access to the internet followed by Western Cape (54.3%), Free State (42.1%) and then Eastern Cape (25.5)

40%

Of south Africa’s internet users are aged 15-24 yrs old;
Are You Reaping Return on Your Big Data Investment?

- 40k+ sensors to monitor
- 9 billion CDRs collected for analysis
- 100’s of TB of social media analyzed for customer sentiment

...<400 are collected for analysis
...but takes 14 days to respond
...but upsell tactics take months to roll out
Big Data Is All Data

- **Volume**: Data at Scale
- **Variety**: Data in Many Forms
- **Velocity**: Data in Motion
- **Veracity**: Data Uncertainty
The goal is not to collect big data. The goal is to act on big data.
Real-time Actionable Insight

DATA
- Data warehouse, transactions, descriptive
- Datamarts, spreadsheets
- Notes, logs
- Pulse, emerging issues
- Attitudes, opinions
- Sensors

ANALYZE
- Non-obvious
  - Correlations
  - Temporal
  - Spatial
- Organize
  - Model
  - Scale
  - Simplify

ACTION
- “consumer oriented agile insight”
  - Mobile
  - Dashboard
  - What-if?
  - Decision Mgmt
  - Case Mgmt

“in the business moment”

LEARN

Differentiated analytic solutions

People, process
The Opportunities from Big Data & Analytics Are Infinite

- 15 min Response time to requests
- 150% Revenue growth rate
- 95% Accuracy of 18+ month sales forecasts
- 70% Counterparty measurements changed
- 80% Reduction in serious accidents
- 80% Less time required to open an account
- 30% Reduction in heating bills
- 98.5% On-time delivery target achieved
Three Key Imperatives for Big Data & Analytics Success

Build a culture that infuses analytics everywhere

Invest in a big data & analytics platform

Be proactive about privacy, security and governance

Imagine It.  
Realize It.  
Trust It.
Imagine It. Start with your people.

20% More than 20 percent increase in analytics-based jobs between now and 2018.

U.S. Department of Labor Forecasts*

Skills Roles Mastery

Novice Builder Leader Master

*More than 20 percent increase in analytics-based jobs between now and 2018.
Imagine It. Infuse analytics into key business processes.

- Create new business models
- Transform financial processes
- Manage risk
- Optimize operations and reduce fraud
- Attract, grow, retain customers
- Improve IT economics

Big Data & Analytics
Sherif has had a number of dropped calls recently. He called a competitor's contact center.

<table>
<thead>
<tr>
<th>Action</th>
<th>Impact on Churn</th>
<th>Impact on Customer Lifetime Value</th>
<th>Likelihood to respond positively to action</th>
</tr>
</thead>
<tbody>
<tr>
<td>$20 off this month’s bill</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deliver an apology — Issue with cell tower being fixed this weekend</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 months free unlimited data plan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upgrade phone</td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>
Ufone reduced churn and kept subscribers happy, helping ensure that campaigns are highly effective and timely

Needs
- To ensure that its marketing campaigns targeted the right customers, before they left the network
- To keep its higher usage customers happy with campaigns offering services and plans that were right for them

Benefits
- Predictive analytics is expected to improve the campaign response rate from about 25% to at least 50%
- CDRs can be analyzed within 30 seconds, instead of requiring at least a day
- Expected to reduce churn by approximately 15-20%
One of the largest Telco service provider in Egypt more than 32M subscribers, Is using IBM’s predictive analytics solutions to reduce customer churn.

Needs

- Did not have a clear understanding of customer churn, including exactly how many customers it was losing, why the customers were leaving and what the company could do to stop them.
- Needed a way to analyze the data, predict which customers were likely to switch providers and launch targeted marketing campaigns and products specifically designed to retain those individuals.

Benefits

- Reduced the churn rate by 10% overall by identifying and targeting high-risk customers with relevant offers.
- 23% decrease in the rate of the increase in churn annually.
- Helped increase revenue and lower costs by keeping more customers from switching to competitors.
Reduce warranty claims for new cars by analyzing historical information and vehicle data using IBM Predictive Asset Optimization (PAO).

Customer Overview
German manufacturer of quality vehicles for worldwide markets
• Manufacturing plants in Germany and elsewhere
• Service / Warranty agencies worldwide

Business Challenges
Needed to gain deeper insights into the causes and combinations of circumstances which led to warranty issues in each geography
• Needed to increase customer satisfaction through increased product quality and reduced warranty issues

Solution Implemented
• Implemented a data mining capability to gain actionable insights across a wide range of warranty issues
• Fed back issue findings into product design process for improvements and modified service patterns

Improving current processes and performance
Does this sound familiar?

Today we treat Aki like any other customer in her segment… ..but Aki is an individual

Bank: “Hi <NAME>! Can we interest you in a credit card?”

Aki: “Oh, look! More junk mail from the bank…”
By using only our limited segmentation, we treat Aki like anyone else.

Aki holds a mortgage and a savings account with us.

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</tr>
</thead>
<tbody>
<tr>
<td>Cash Management Acct.</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
</tr>
<tr>
<td>Set meeting with Private Banking and Wealth Mgt. Advisor for a Portfolio Review</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
</tr>
<tr>
<td>Equity Bank Line / Secured Line-of-Credit</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
</tr>
<tr>
<td>Preferred Gold Credit Card</td>
<td>[]</td>
<td>[]</td>
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Information helps us understand how Aki is different, but do we use it?

- Last week, Aki asked the Call Center about loan processing times.
- This week, she checked mortgage rates on the Web Site three times.
- Aki’s current credit score and profitability qualifies her for a preferred rate.
- Aki has also posted property photos to Facebook asking friends to vote.
- And today she’s tweeted a link to an article about buying a second home.
- Aki holds a mortgage and a savings account with us.
By using all the information we can make our service unique to Aki.

Last week Aki asked the Call Center about loan processing times. This week, she checked mortgage rates on the Web Site three times. Aki's current credit score and profitability qualifies her for a preferred mortgage rate. Aki has also posted property photos to Facebook asking friends to vote. And today she's tweeted a link to an article about buying a second home.

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<td>Cash Management Acct.</td>
<td><img src="image" alt="Red" /></td>
<td><img src="image" alt="Red" /></td>
<td><img src="image" alt="Blue" /></td>
</tr>
<tr>
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</tr>
<tr>
<td>Mortgage special rate discount 25 basis points</td>
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Major Italian bank leverages unstructured client data to improve customer retention

Need
- Drive customer retention activities based on behaviors instead of only transactions
- Leverage branch teller notes, call center notes and client emails to identify changing client behaviors
- Track social media sentiment analysis to measure impact of targeted campaigns

Targeted Benefits
- Reduce attrition from 6% to 3%
- Optimize offers and cross sell to increase average products per customer from 1.4 to 2.2
- Improve client advocacy (NPS)
Discovery Health uses predictive analytics to craft preventive programs that keep members healthier and costs lower

**USD25 million**
recovered in fraudulent health insurance claims and billing errors

**>99% reduction**
in the time required to run predictive analytics models

**More accurate**
clinical risk models, enabling more effective and better targeted preventive programs

**Business Challenge:** For Discovery Health to maintain its cost advantage over competing health insurance providers, it needs to constantly refine the clinical risk management capabilities that are the source of its strength. That means tapping new sources of data and applying innovative models to pinpoint where the health risks are and how best to manage them proactively.

**The Smarter Solution:** Discovery’s new predictive risk management solution extracts deep and accurate insights from clinical, demographic, billing and even unstructured member data to point out chronic health risk patterns within its member base and provides planners with the granular, analytical guidance to develop the most effective preventive programs.

“We can now predict which of our members are most likely to require procedures and adjust our health plans to serve them more effectively and offer better value.”

—Matthew Zylstra, actuary, Risk Intelligence Technical Development

**Solution Components**
- IBM® SPSS Statistics
- IBM SPSS Modeler
- IBM SPSS Text Analytics for Surveys
- IBM PureData™ System for Analytics, powered by IBM Netezza®
- IBM Business Partner BITanium
IBM's Big Data to help Uganda with water project

Uganda has selected IBM and Waterfund to benchmark water infrastructure and provide a vital tool for attracting funding for national projects.

Create new business models

Delivering new insights and new possibilities
Imagine It. Every Industry can Leverage Big Data and Analytics

**Banking**
- Optimizing Offers and Cross-sell
- Customer Service and Call Center Efficiency

**Insurance**
- 360° View of Domain or Subject
- Catastrophe Modeling
- Fraud & Abuse

**Telco**
- Pro-active Call Center
- Network Analytics
- Location Based Services

**Energy & Utilities**
- Smart Meter Analytics
- Distribution Load Forecasting/Scheduling
- Condition Based Maintenance

**Media & Entertainment**
- Business process transformation
- Audience & Marketing Optimization

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

**Travel & Transport**
- Customer Analytics & Loyalty Marketing
- Predictive Maintenance Analytics

**Consumer Products**
- Shelf Availability
- Promotional Spend Optimization
- Merchandising Compliance

**Government**
- Civilian Services
- Defense & Intelligence
- Tax & Treasury Services

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

**Automotive**
- Advanced Condition Monitoring
- Data Warehouse Optimization

**Chemical & Petroleum**
- Operational Surveillance, Analysis & Optimization
- Data Warehouse Consolidation, Integration & Augmentation

**Aerospace & Defense**
- Uniform Information Access Platform
- Data Warehouse Optimization

**Electronics**
- Customer/Channel Analytics
- Advanced Condition Monitoring

**Life Sciences**
- Increase visibility into drug safety and effectiveness
Realize It. The spectrum of Analytics is expanding

Be More Right, More Often

What is happening? Discovery and exploration
What action should I take? Decision management
What could happen? Predictive analytics and modeling
Why did it happen? Reporting, analysis, content analytics

New/Enhanced Applications

Data
Media
Content
Machine
Social
BD&A Infrastructure as part of the IBM BD&A Capability stack
IBM Systems portfolio and value for BD&A

- **POWER — Analytics Platform**
  - Innovation to put data to work

- **Storage — Set the Data AGENDA**
  - FlashSystem, XIV, GSS

- **System z — Mission Critical Analytics**
  - Analytics in the right place

- **Scale-out Infrastructure**
  - Linux on Power and x86

- **Optimized capabilities designed for big data and analytics workloads**
  - DB2 BLU on Power – 7-10X lower TCO
  - Reference Architectures for Hadoop and Streams – faster TTV
  - IBM GPFS™ – worlds only proven enterprise-grade scale out file system
  - Platform Symphony – record setting benchmark for Hadoop workloads

- **Innovation in scale-out computing –x86**
  - x3650 M4 HD performance, flexibility, reliability & customer satisfaction that’s better than competitive offerings

- **Storage Innovation for big data & analytics**
  - Real-time compression – 5X more data no performance hit
  - IBM MicroLatency™ - 100x performance improvement
  - FlashSystem storage can drive down costs by 50%

- **Analytics closer to the data – System z**
  - Much of the worlds transactional data sits on z – integrate advanced analytics with IDAA; Enterprise Linux Server, SPSS/Cognos on z; enhanced Hadoop integration.
A New Era of Smart

**Trust It.** Be proactive about privacy, security, and governance.

- **Trust the facts**: Create foundation of trusted data
- **Ensure privacy and security**: Understand usage and monitor compliance
- **Make risk aware decisions**: Model exposure and understand variability
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Imagine It.  
Realize It.  
Trust It.
A New Era of Smart

Imagine It.

GBS BAO Services: To bring unmatched industry and domain experience to help forge your big data and analytics strategy and roadmap

Proven Use Cases: developed from industry best practices and leading edge solutions to deliver value quickly.

Cognitive Systems: To transform how organizations think, act, and operate in the future. Learning through interactions, they deliver evidence based responses driving better outcomes.

Innovative Discovery: To blend search; data acquisition; visualization; and business language in a seamless analytic experience

Cloud-based Analytics-as-a-Service: Harnessing information to deliver solutions that solve business problems and create new revenue opportunities

Realize It.

Real-time Analytics: To process data in real time as it flows within and from outside the enterprise. This enables nimble assessment; analysis, and action...in the moment...use cases that other vendors cannot even consider.

Enterprise Class Hadoop: To augment open source Hadoop for the enterprise by adding a SQL engine; visual console interface; development; provisioning; security features, etc.

Predictive-led Breadth of Analytics: on structured data as well as unstructured content that discovers what’s happening, why it’s happening, what might happen, what should happen next, and what’s the best course of action.

Speed of Thought Analytics: Dynamic in-memory columnar processing and compression dramatically accelerate queries and reduce storage requirements. (BLU Acceleration)

Cloud Data Virtualization: Virtualized cloud analytics ensures unified access, modeling, deployment, optimization and management of big data as a resource.

Trust It.

Governance and Trust for All Data & Analytics: To make sure the data you rely on is the right data, IBM Integration and Governance has been extended to BigInsights for Hadoop and other big data sources to increase confidence and trust in any big data use case.

High Performance, Strategic Infrastructure: organizations recognize that they need a highly flexible, scalable IT infrastructure tuned for today’s big data and analytic environments that enables shared, security-rich access to trustworthy information—on premise, in the cloud, or anywhere in between.

Data Security and Privacy: capabilities to security and protect sensitive big data needed for analysis, while extending compliance initiatives to Hadoop (Data Privacy for Hadoop)
We have built the world’s broadest and deepest portfolio in data and analytics.

$24 billion invested to date to build IBM’s capabilities in Big Data and analytics, with $7 billion in organic investment.

$17 billion of gross spend for Big Data and analytics acquisitions, including more than 30 acquired companies.

15,000 analytics consultants and 400 mathematicians.

40,000 client engagements to date.

$1 billion investment in Flash technology, providing industry-leading speed and efficiency to enable data to be real-time ready for analytics.

1,000 university partnerships, and 2,215 IBM Business Partners.

500 analytics patents generated each year.

2/3 of IBM Research is focused on data, analytics and cognitive computing.
Go Further and Faster with IBM

Accelerated Discovery Lab

Expertise

30k Engagements

9k Consultants

Ecosystem

2,500 Business Partners

Academic Initiative

1,000 Partnerships

Resources

Analytic Initiative
Can we make computers creative?
IBM BusinessConnect 2014
A New Era of Smart

Thank You