Big Data Is A Business Problem

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- “Bridge to Big Data”
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Tipping Point

Viral change inflected by a boiling point or a dramatic moment of critical mass

- Enablers
  - Web 2.0 Platforms
  - Social Media
  - Mobility
  - Cloud
  - Personalization
  - Location & Localization

- Empowerment
  - Analytics
  - Influence & Reach
  - Commoditization

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Background

• Big Data has been the keyword and focus for the last two years in the industry
• We all agree that there is a lot of value and hidden insights in the data classified as “Big Data”.
• But is there “REAL” value?
• How can organizations realize this value?
A Growing Trend

Expectations for BI are changing w/o anyone telling us

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Expectations</th>
<th>Reality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed</td>
<td>Speed of the Internet</td>
<td>Speed = Infra + Arch + Design</td>
</tr>
<tr>
<td>Accessibility</td>
<td>Accessibility of a Smartphone</td>
<td>BI Tool licenses &amp; security</td>
</tr>
<tr>
<td>Usability</td>
<td>IPAD - Mobility</td>
<td>Web Enabled BI Tool</td>
</tr>
<tr>
<td>Availability</td>
<td>Google Search</td>
<td>Data &amp; Report Metadata</td>
</tr>
<tr>
<td>Delivery</td>
<td>Speed of questions</td>
<td>Methodology &amp; Signoff</td>
</tr>
<tr>
<td>Data</td>
<td>Access to everything</td>
<td>Structured Data</td>
</tr>
<tr>
<td>Scalability</td>
<td>Cloud (Amazon)</td>
<td>Existing Infrastructure</td>
</tr>
<tr>
<td>Cost</td>
<td>Cell phone or Free WIFI</td>
<td>Millions</td>
</tr>
</tbody>
</table>

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Business Evolution – Product to Customer Focus Shifts

Image source - internet
Innovation as Way of Life

Top management is responsible for setting strategy

Getting better, getting faster is the way to win

IT creates competitive advantage

Being revolutionary is high risk

We can merge our way to competitiveness

Innovation equals new products and new technology

Strategy is the easy part, implementation the hard part

Change starts at the top

Our real problem is execution

Big companies can’t innovate

Everyone is responsible for setting strategy

Rule-busting innovation is the way to win

Unconventional business concepts create competitive advantage

More of the same is high risk

There’s no correlation between size and competitiveness

Innovation equals entirely new business concepts

Strategy is the easy only if you’re content to be an imitator

Change starts with activists

Our real problem is innovation

Big companies can become gray-haired revolutionaries

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Executive Ask

• Why is our competition **performing better** in the same markets as us?
• What is the real **revenue impact** to the organization?
• Why do our campaigns not predict the **accurate** revenue lift?
• How can we improve our **brand** and align to customer sentiment?
• Who can help us get to the bottom of the data **abyss**?
• When do we get the real **insights** from **Analytics**?
TRANSFORMATION - IMPACT ON DATA
Forces Shaping Business

Potential New Data
- Unstructured Data
  - GeoSpatial
  - RFID
  - Machine Logs
  - Clickstream Logs
  - Image Data
  - Video Data

Business Intelligence & Analytics

Technology
- Hadoop
- NoSQL
- Cassandra
- Cloud Deployments
- Mobility

Consumer
- Voice of Customer
- Social Media
- Multi Channel CRM
- SRM

Competition
- Log Parsing
- 3rd Party Data
- Micro Targeting
- Micro Sourcing

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Decision Support – Now & Then

Product

Promotion

Market

Price

Transactions

Sales

Channel

Customers

Behavior

Analytics

Competitors

Market

Promotions

Market

Value

Transactions

Satisfaction

Price

Customers

Product

Channel

Sales

Promotions

Market

Price

Transactions
State of Data
Big Data

• Data of formats that cannot be processed using traditional data processing techniques

• Apart from the traditional 3 V’s add
  – Complexity
  – Ambiguity
Noise vs Value

- Is Big Data **Noise or Value**?
- Is Big Data a **passing** hype?
- Is there **real value** behind Big Data?
- Is there any **measurable** and **actionable** insight from Big Data?
- Is there a need to invest in this **now**?

Image source - internet
Example

Tweet: @jdoe – very disappointed with @united @checkin lousy svc, bad mgmt, long lines #fail.
20000 retweets. 4 hours ago

IT Perspective
Text of 140 chars will be stored as string. The data model for this will be a table with source, content, datetime.

Business Perspective
User – JDoee
Brand – United
Sentiment – Negative
Process – Check-in
Time – Waiting in long lines
Impact – shared 20000 times in 4 hours

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Why Does Big Data Differ

- IT does not know **data**
- Business knows the **intelligence** to be applied to the data to derive **value**
- Business knows how to discover data **patterns** (manual and automated)
- Business understands the **semantics** better
- Business can perform data **interrogation** in an experiment and associate rules of engagement early on for data usefulness
- Business can sift the data to curate the **context**
- Big Data needs to be **curated** to be useful
Big Data Challenges

Complex | Ambiguous | Structure-less | Minimally Organized
---|---|---|---
Data Quality Issues | Metadata | Needs Intervention | Needs Context

Needs Analysis
Big Data Differentiators

- Is Data definitely, but
- It is not like anything you have dealt with before
- Has no finite structure
- Heavy on volume, ambiguous in metadata, loosely connected in structure
- If data is linguistic oriented, processing will be heavily contextual
- If data is numeric oriented, processing needs more granular data or has more number crunching
- If semi structured data, it needs more expansion and can have a mixed workload
WHY BIG DATA IS A BUSINESS PROBLEM
Perspective – Food For Thought
The Paradigm Shift

Data Warehouse

IT
• Driver
• Program Owner
• Budget Sponsor
• Maintain
• Support

Business
• User

Big Data

IT
• Facilitate
• Maintain
• Support
• Manage

Business
• Driver
• Budget Sponsors
• Program Owner
• Define & Consume
The challenge facing the business today is the ability to influence the buyer decisions in a window of opportunity that does not last long. The analytics available at a personalization level drives the buyer whether it is choosing a Doctor or buying a Donut.

To compete in this new era, businesses need to be driven by data and analytics, which are largely different from traditional transactions and campaigns.

The “Gen Z” and “Millineal Generation” of buyers will not be swayed by traditional engagement models of selling products and services.
## Analysis

<table>
<thead>
<tr>
<th>Acquire</th>
<th>Search</th>
<th>Process (Inspect / Analyze)</th>
<th>Metrics</th>
<th>Visualize</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd Party Data RSS Feeds Content Platforms Internet</td>
<td>Patterns Phrases Keys Tag</td>
<td>Categorize Filter Enrich</td>
<td>Contextualize Geo-Tag Meta-Tag Integrate</td>
<td>Score Aggregate Domain</td>
</tr>
<tr>
<td>IT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquire Search Platforms Crawlers API Development</td>
<td>Search Platforms Crawlers API Development</td>
<td>Metadata GeoSpatial Data</td>
<td>Platform Setup &amp; Integration</td>
<td>Platform Setup &amp; Workflow support</td>
</tr>
</tbody>
</table>
This entire cycle is driven by business users and more importantly the Data Scientist Team. IT serves as a facilitator and a participant. IF you make this an IT driven initiative, you will not be completely successful.
Critical Success Factors

- Business needs **to own and execute** the Big Data program
- Data collection and discovery is the **most critical** step
- **Metadata** is needed to process the data **prior and post** Data Warehouse integration
- **Data quality** can be **processed** by integrating **Taxonomies**
- **Data visualization** is needed to discover data
- **Metrics** and **Metadata** will be the bridge to integrate to the Data Warehouse
Questions
Thank You

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