Big Data, Streaming Analytics, And Breakthrough Operational Intelligence

Mike Gualtieri, Principal Analyst
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Big Data means all your data++. 

Trend
Big Data has momentum - 61% of firms have an initiative

Does your firm have a Big Data initiative? If so, to what extent is it integrated with your current BI strategy and technologies like reporting, data mining, and predictive modeling?

- We do have a Big Data initiative
- We do not currently have a Big Data initiative or don’t know

Base: 482 software developers developing BI or analytics applications; Source: Forrsights Developer Survey, Q1 2013
Big Data is the *frontier* of a firm’s ability to store, process, and access *all* of the data it needs to operate, make decisions, reduce risks, and serve customers.
### Big Data is all your data++

<table>
<thead>
<tr>
<th>Structured text</th>
<th>Unstructured text</th>
<th>Binary</th>
</tr>
</thead>
</table>
| • Data described by a schema  
  • Relational database, XML, delimited flat file, system events | • Free-form text  
  • Email, documents, tweets, blog comments, Facebook status, genome | • Audio, images, video  
  • Surveillance cameras, geological survey maps, Siri voice |
Firms are flush in data and getting flusher, but only use a fraction of it for analytics.

Enterprise Data

Analyze only

~12%
Firms seek more value in data, struggle to wrangle it, & seek lower cost solutions

“What are the main business and technical requirements or inadequacies of earlier-generation BI technologies that lead you to consider new BI techniques and technologies?”

- We don’t know what our entire data universe contains, we… 41%
- Data volumes have grown beyond what we can cost… 38%
- We want to access data that was not accessible for us with… 36%
- Analysis requirements change too fast to keep up with 36%
- The number of data formats that we must be able to deal with… 32%
- Data changes or becomes available much faster than we can… 32%
- We can achieve (or are achieving) significant cost reductions… 28%
- The velocity of data is too high for earlier technologies 22%
- Earlier generation technology is too expensive 21%
- Don’t know 3%
- Other 2%
Big Data architecture must support three core capabilities:

<table>
<thead>
<tr>
<th>Store</th>
<th>Can you capture and store all your data++?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process</td>
<td>Do you have the processing power and tools to cleanse, enrich, &amp; analyze your data?</td>
</tr>
<tr>
<td>Access</td>
<td>Can you retrieve, search, integrate, and visualize all your data++?</td>
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</table>
#Streaming
Data in-motion is as valuable as data at-rest.
Streaming analytics can help firms make operational decisions, adapt to the business environments, and serve customers better when it really matters – in real-time.
How can you prevent this dude from fleecing you?
What could you predict if you had the court location of the players and ball 25 times per second?
Streaming provides real-time contextual awareness to serve a single individual.
#Royalty
People want to be treated like royalty.
Firms know that customers want to be treated as individuals

“What new customer expectations does your organization face?”
(Check all that apply for each category of customer)

- To be treated as individuals: 58.4%
- To enjoy their dealings with us more: 55.8%
- Easier interactions with us: 55.3%
- More information and help from us: 54.4%
- To deal with us via their smartphones: 50.6%
- Consistent treatment across channels: 47.3%
- To be heard by us (give us feedback): 44.7%
- To serve themselves: 26.2%
- To interact with other customers: 3.8%
- None of these: 0%

Base: 423 IT/marketing professionals, Q1 2013; Source: Forrester Research/IBM Customer-Facing Applications Survey Q1, 2013
Predictive apps leverage big data and streaming analytics to anticipate and provide the right functionality and content on the right device at the right time for the right person by continuously learning about them.
#Apps
Design principles for predictive apps

› Learning who the customer really is.
› Detect the customer’s intent in the moment.
› Morph functionality and content to match intent.
› Optimize for the device.
You can do it. We can help.
Easy. Buy a copper tube ice maker kit.
Buy a shut-off valve for the copper tubing.
Buy a T-connector to tap the cold water supply line.
Whoops. Also need to buy a hacksaw to cut the copper pipe.
Finally. A special drill bit to make a hole in the kitchen floor for the copper tubing.
Predictive apps can make customers feel intensely loyal.
You need data, data, data, and real-time intelligence – to understand your customers

Source: June 25, 2013, “Predictive Apps Are The Next Big Thing In Customer Engagement” Forrester report
You must infuse your app architecture with real-time streaming and predictive components

- **Context Monitor (CM)**
  - Events
  - **App Intent Detector (AID)**
    - Detected intents
    - **Individual Intent Predictor (IIP)**

- **Individual Action Predictor (IAP)**
  - Predicted Intent
  - **App Morpher (AM)**
    - Predicted Action
    - Feedback and History
    - **Learning Engine (LE)**
Capabilities you need to *digitally* treat customers like royalty.

1. Big Data
2. Data science
3. Real-time, streaming analytics
4. Predictive apps
Three trends driving the operational intelligence.

Trend 1 • Big Data means all your data++.

Trend 2 • Data in-motion is as valuable as data at rest

Trend 3 • People want to be treated like royalty.
Big data and streaming analytics is about innovation, but not if you don’t use it.

Collectors
- Capture
- Store

Journalists
- Reports
- Dashboards

Innovators
- Predictive models
- Streaming analytics

Transactions

Business Intelligence

Operational Intelligence
#Imagination
Thank you

Mike Gualtieri
mgualtieri@forrester.com

forrester.com