Business Outcomes from Big Data
How to Exploit the Right Information at the Right Time
EXECUTIVE SUMMARY

Big data has not yet led to big outcomes. Despite all the hype, less than half of all employees find that corporate information helps them get their jobs done. The problem of getting the right information to the right people at the right time is getting worse with the growing number of information sources, uses, and users. Our previous research discussed how CIOs should help foster informed skepticism to boost the ability of employees to use big data for better decisions. This study discusses the CIO’s role in making big data attainable and useful.

Breaking the Confines of Traditional Information Management
Traditional information management initiatives are focused on structured data in core systems, but this data is used by only 50% of employees, whereas more than 80% now use data from other sources. There are several reasons for this trend. Best-of-breed technologies in the form of Software as a Service (SaaS) and an expanding analytic tool portfolio have both increased the volumes of data that are captured, stored, and manipulated outside the core enterprise systems. Second, the proliferation of knowledge work and social media networks generates many additional information sources and new information types.

New Opportunities for Insight
Enabling access to these new types of information and combining them with structured, high-quality data creates new opportunities for extracting value. First, a higher number of employees use these new information sources to support decision making. Second, enabling employees to combine this data with the high-quality, transactional, or operational data in the core enterprise systems leads to more accurate insight, better decisions, and more confident action.

Big data technologies are reaching the stage where they can, within limits, capture and integrate big data. But a technical solution is not enough. Four challenges with information usability still prevent most organizations from driving business outcomes from big data:

1. Spotting the best business opportunities for big data—Organizations struggle to identify the most valuable use cases for investments in big data.

2. Driving rapid innovation in exploiting big data—The growth of information sources, uses, and users and rapid changes in information demand create difficulties for anticipating and prioritizing cross-functional information needs.

3. Improving usability as data sources proliferate—The growth of new information sources and data types makes accessing data harder, not easier, and creates difficulties for presenting data in a way that improves decision making.

4. Upskilling IT for big data—Organizations struggle to identify and build the skills and competencies IT needs to exploit big data.

Our research shows that leading organizations pursue the following steps to address these challenges:

1. Spot the Best Business Opportunities for Big Data
How big data can be exploited is not always obvious. Business partners and IT alike struggle to spot the handful of genuine opportunities from the many dead-ends. All too often, use cases are identified bottom-up based on the capabilities of a tool or the availability of a particular data source. The resulting initiatives are unfocused and ultimately unproductive.

To help IT start business partner discussions on the business outcomes it hopes to achieve with big data, this study profiles 12 organizations that have obtained quantifiable value from big data. For example, by integrating diverse information sources to accelerate the sales cycle, drive contract renewal rates, improve customer service, and increase operational effectiveness.
EXECUTIVE SUMMARY (CONTINUED)

2. Drive Rapid Innovation in Exploiting Big Data
   IT has a vantage over cross-cutting data needs and data sources that no one else in the organization shares. One way to exploit this vantage is to proactively identify and prioritize the business events that employees manage with information. For example, the IT team of City of Minneapolis maps the right information to the right business outcomes by identifying and prioritizing cross-enterprise use cases for information integration.

As data and analytics do not drive business outcomes by themselves, they should be bundled into business outcome–focused services. Rockwell Automation organizes analytics and information management into an end-to-end IT services model. This allows the company to align the two capabilities with business outcomes and provide the flexibility IT needs to address rapid changes in information demand. The company enables effective service management and shared resource allocation by empowering the service managers for analytics and information management and creating a support structure based on them.

3. Improve Usability As Data Sources Proliferate
   To extract value from big data, IT must provide transparent and flexible access to information from diverse sources and design interfaces that enable employees to easily access, visualize, navigate, and analyze that information. Design simple analytic tool interfaces that behave like familiar platforms such as a search engine, and present information in the wider context against which it can be understood. Colt improves information accessibility and usability through wild card search capabilities, better information presentation capabilities, and information contextualization and enrichment.

   Usability can also be enhanced by enabling employees to conduct on-the-fly analysis with little or no help from the analytics team. GSK promotes this analysis freedom by helping employees understand and visualize the interrelationships between data elements and providing full transparency into information sources, flows, and quality.

4. Upskill IT for Big Data
   Arguably the most discussed role today is the data scientist. But data scientists are but one part of the solution. Addressing the challenges that prevent organizations from extracting business value from big data requires IT to build supporting roles that improve the usability of enterprise information assets, such as information architects and user experience designers.

   Accelerate IT staff development and engagement by providing clear directions on the skills they need to develop to exploit big data. These include information architecture, service management, user experience design, insight enablement, and information security.
Introduction
Few organizations translate increased investments in information management into better enterprise information.

- Most employees struggle to find the information they need to do their day-to-day jobs.
- Less than half of all employees find that corporate information is in a usable format.

### NOT A USEFUL EXERCISE

The Information I Need to Do My Job Is Available to Me

**Percentage of Employees**

- **67%** No
- **33%** Yes

n = 8,335 employees.

Information from Corporate Sources Is in a Usable Format

**Percentage of Employees**

- **54%** No
- **46%** Yes

n = 8,335 employees.

Source: CEB, CEB CIO Executive Board Insight IQ Diagnostic, 2012.

THE BIG DATA OPPORTUNITY

CHALLENGES IN EXTRACTING VALUE

INFORMATION MANAGEMENT PREREQUISITES

WHAT TOOLS CAN AND CAN'T DO

CIO QUESTIONS
Although employees spend much of their time looking for information, the information they find is often not timely and up to date.

- The growing volumes of information sources create difficulties for IT to improve the accessibility of the most relevant and timely information.

**WASTING TIME FINDING DATA**

Data from Corporate Sources Is Timely and Up to Date

*Percentage of Employees*¹

- 44% No
- 56% Yes

n = 8,335 employees.

¹ Responses from employees who spend at least 25% of their time finding information.

Source: CEB. CEB CIO Executive Board Insight IQ Diagnostic, 2012.
Less than one-third of all employees find standard reports and dashboards useful.

- Predefined reports cannot answer all employee questions while cubes are slow and offer limited dimensions.
- Standard reports rarely contain the right information depicted in the right way to be useful to employees.

REPORTING THE END OF THE REPORT

Reports and Dashboards That Are Pushed\(^1\) Are Valuable

Percentage of Employees That Agrees or Strongly Agrees

\[\begin{array}{c}
\text{73\%} \\
\text{No}
\end{array}\]

\[\begin{array}{c}
\text{27\%} \\
\text{Yes}
\end{array}\]

\(n = 8,335\) Employees.

\(^1\) Information supplied in standard dashboards and reports at a predefined frequency often distributed electronically through e-mail.

Source: CEB. CEB CIO Executive Board Insight IQ Diagnostic, 2012.
Information management innovation is hindered by two challenges: rapid changes in information demand and the inability to align analytic capabilities with clear business outcomes.

- As the number of information sources, use cases, and users continues to grow, IT fails to keep up with rapid changes in information and analytics demand.
- Information management and BI capabilities do not lead to clear business outcomes themselves but support business capabilities that deliver a set of business outcomes.

**CHALLENGES TO BIG DATA INNOVATION**

**Challenge 1: Prioritizing Information and Analytical Opportunities Across Functions**

IT struggles to prioritize information sources and analytical capabilities, leading to misaligned information offerings and inadequate analytical capabilities.

- Customer Value Analysis
- Risk Management
- Mobile Presence
- Executive Dashboards
- Automated Decisions

**Challenge 2: Aligning Big Data Initiatives to Business Outcomes**

The analytic capabilities and technologies IT provides do not reflect how the delivery of information adds value to the organization.
Notwithstanding the promises of the big data vendors, four challenges hinder the extraction of business value from big data.

## ROADBLOCKS TO EXTRACTING VALUE FROM BIG DATA

<table>
<thead>
<tr>
<th>Challenges</th>
<th>CIO Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 Spot the Best Business Opportunities for Big Data</strong></td>
<td><em>What are the most valuable uses for big data?</em></td>
</tr>
<tr>
<td><strong>2 Drive Rapid Innovation in Exploiting Big Data</strong></td>
<td><em>How do I prioritize cross-functional information needs?</em></td>
</tr>
<tr>
<td></td>
<td><em>How can I cater to diverse and harder-to-anticipate information needs?</em></td>
</tr>
<tr>
<td><strong>3 Improve Usability as Data Sources Profilerate</strong></td>
<td><em>How do I present information from diverse sources to improve decision making?</em></td>
</tr>
<tr>
<td></td>
<td><em>How do I make access to diverse sources of information flexible and transparent?</em></td>
</tr>
<tr>
<td><strong>4 Upskill IT for Big Data</strong></td>
<td><em>How do I upskill IT staff to exploit big data?</em></td>
</tr>
</tbody>
</table>
KEY TAKEAWAYS

Spot the best business opportunities for big data: Identifying innovative use cases for big data requires IT to move beyond the big data buzz. Unfortunately, IT often works its way up from big data capabilities to opportunity identification.

Set priorities based on business outcomes, not technology capabilities: Move beyond the big data buzz and start information integration efforts by working down from the business outcomes the organization wants to achieve. Enable integrated access to information sources to accelerate the sales cycle and drive contract renewal rates, improve customer services, and drive operational effectiveness.
KEY TAKEAWAYS

Drive rapid innovation in exploiting big data: Innovative use cases for big data require IT to take a proactive approach to identifying information requirements and breaking down information siloes. Leading organizations also embed information management and analytics into business-facing services to align the two capabilities with business outcomes and to provide the flexibility IT needs to address rapid changes in information demand.

1. **Identify the business events employees manage with data:** IT has a vantage over cross-cutting data needs and data sources that no one else in the organization shares. One way to exploit this vantage is to proactively identify and prioritize the business events that employees manage with information.

2. **Provide information management and analytics as an input to other business outcome-focused IT services:** Deliver information management and analytics as an internal IT service that feeds into business-facing services. Enable effective service management and shared resource allocation by empowering the service managers for analytics and information management toward a support structure.
KEY TAKEAWAYS

Improve information usability as data sources proliferate—To extract value from big data, IT must provide transparent and flexible access to information from diverse sources and design interfaces that enable employees to easily access, visualize, navigate, and analyze that information.

1. **Visualize and contextualize information to improve information usability**: Design simple analytic tool interfaces that behave like familiar platforms, such as a search engine, and present information in the wider context against which it can be understood.

2. **Provide flexible and transparent, self-service analytics**: Enable employees to conduct on-the-fly analysis with little or no help from the analytics team. Help employees understand and visualize the interrelationships between data elements by providing full transparency into information sources, flows, and quality.
KEY TAKEAWAYS

**Upskill IT for big data:** Addressing the four challenges that prevent organizations from extracting business value from big data requires IT to clarify and communicate role definitions, target recruitment at critical new roles, and develop skills that drive information usability.

**Develop skills for information architecture, integration, and visualization:** Accelerate IT staff development and engagement by providing clear directions on the skills they need to exploit big data. These include information architecture, service management, user experience design, information insight enablement, and information security.