The power of data: What directors need to know about Big Data, analytics and the evolution of information

Data is everywhere and transforming the way we live our lives — with every click on a web browser, text message, mobile bank transaction or purchase, information is being collected, stored and analyzed. The ability of companies to process and mine information from a variety of sources has evolved significantly in recent years; the sheer volume of data available to crunch is transformational in itself. The shift to information management techniques like Big Data has signaled a new way of doing business — one that is driven by practical, actionable insights and data-based decision-making. Big Data capabilities, large volumes of varied sources of data — both internal and from third-parties — can help businesses get higher definition ‘intelligence at the moment’ that was previously unattainable and at a much faster pace. This insight can help inform strategy decisions, spur innovation, inspire new products, enhance customer relationships, uncover fraud, bolster operations, predict expected behaviours and build a competitive advantage.

Learning how to harness your company’s data and interpret it insightfully requires a culture shift in the way your organization thinks about data analytics. To help you in this process, we recently held Audit Committee Connect events on Big Data and information management across the country. Our objectives were to (1) share insights from top data, risk and legal experts on trends they’re seeing in the market and what’s on the horizon for our data-driven world (2) provoke questions for directors around the opportunities and risks of Big Data and analytics, and (3) to hear our audience’s views on how companies are managing and adopting Big Data. Keep reading to learn what they had to say.
The power of data – why do we care?

What is Big Data? The speed, volume and variety of information available define what Big Data is. It’s not about big dollars. In fact, it demands cost-effective and innovative ways of processing information (often non-traditional data) that will lead to quality, actionable business insights that your company can act on, and that may lead to competitive advantages.

Consider what your company could discover by looking at non-traditional, unstructured data gleaned from social media, photos, web forums, weather or travel logs, etc. Different patterns can emerge and reveal different insights – that’s the power of analytics.

Organizations in all industries are looking at their data, but many are doing so without a strategy in place for what they want to accomplish. Just because data exists does not mean that there is inherent value in analyzing it. The struggle for perfect information can also slow companies down and lead to a loss of their competitive edge – the challenge is discovering what themes can be developed from the data that aligns to your overall business strategy.

Only when boards and management focus on the strategic insight derived from their data, will the return on investment of analytics projects materialize.

A new corporate culture

A culture shift takes place within an organization when they begin to look at their data in a new way. The goal is to move from an ‘I think’ culture, to an ‘I know’ culture where decisions are not based on intuition, but on insights validated from a variety of sources and data patterns. A company with an ‘I know’ culture gain far greater return in value from their data-driven decision-making—increased revenue, lower costs, improved efficiencies, increased customer experience and brand awareness.

Making that culture shift in your organization isn’t necessarily easy. Here are three key components of using Big Data to get you started:

1. Strategy: Establish a clear vision for what you want to accomplish. Old analytics were about requirements-driven data collection; Big Data is all about opportunities and strategic purpose.

2. Governance: Put the right governance structure in place for data, technology, process and people, while balancing your objectives around value, risk and cost. A strategy can’t implement itself, and it’s often during implementation that the original strategic intent of the project is forgotten or misunderstood. This is why governance is key. But don’t let governance inhibit the progress.

3. People: Have the right people in the right place: technologists, data scientists, visualization specialists and storytellers (people who can tell the business insight story of the

Key takeaways

How would you rate your level of understanding of Big Data? Audience response:

<table>
<thead>
<tr>
<th>Level</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>High—Expert level</td>
<td>53%</td>
</tr>
<tr>
<td>Medium—I have a general understanding</td>
<td>43%</td>
</tr>
<tr>
<td>Help!!</td>
<td>4%</td>
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</tbody>
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Has management or the board(s) of your companies considered how Big Data could be used to create efficiencies, more targeted marketing or transform the business? Audience response:

<table>
<thead>
<tr>
<th>Option</th>
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<tbody>
<tr>
<td>Yes</td>
<td>49%</td>
</tr>
<tr>
<td>No</td>
<td>33%</td>
</tr>
<tr>
<td>Not sure</td>
<td>18%</td>
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data you’re mining) are all roles to consider. Some of these will be new roles your organization did not previously have.

**A calculated risk – An internal auditor’s perspective**

There’s no denying it – Big Data when poorly deployed and governed can pose big risks. But, when managed properly, analyzing and interpreting your data can also have big rewards. Audit Committees need to be aware of what their organizations are doing with their data and make sure there is no gap between the capabilities of your organization to harness the data and what you’re actually able to do without introducing extreme risk. Risks can include data storage and retention, ownership and quality, information security, reputation, regulatory requirements including privacy issues; and legal compliance. To effectively manage these issues, companies need to make sure their governance structures and frameworks are updated, and be able to quickly assess and respond to concerns that arise.

Advanced analytics like Big Data aren’t just risks that you’ll need to manage but can also be useful tools that your Internal Audit (IA) function can use in their projects. Leading IA teams are using data analytics to focus audits on key issues, test large numbers of transactions for trends and compare past data to support recommendations. But IA will need support from executive management and the audit committee to establish appropriate controls and to understand how it maps to the business.

**Questions boards should be asking**

*By Alex Cameron, Fasken Martineau*

When was the last time we audited and updated our privacy policies and procedures? What are we doing about privacy and Big Data? Do we have a data breach response plan? Do we have insurance to cover a data breach?

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**Is legal on board?**

Data storage and retention policies have had the attention of privacy regulators for years. But recent high profile privacy breaches have led to heightened awareness among consumer trust – particularly when it comes to personal data and how it can be used. Individuals and class action lawyers are filling Canadian courtrooms pursuing privacy claims (data breaches and improper collection) and damage awards. And courts are proving to be responsive to these claims.

To prevent and mitigate risk, employee training and a robust data breach response plan are crucial. These are areas not to be taken lightly. Breaches are extremely costly on every level: out of pocket costs, reputational harm and lost opportunity. Before your company begins to store data and act on the insights generated from analytics techniques like Big Data, consult your legal team for guidelines on federal regulations (i.e. PIPEDA) and for best practices.
Big data journey – where to begin

While companies may want to incorporate Big Data into their decision-making process, many don’t know where to begin. Buzz words and hot trends may represent interesting developments in the data world, but which trends actually matter to your strategy, business and key performance indicators? Consider launching one or more pilots to explore and address a primary business issue using Big Data techniques. The most successful are tailored to the unique needs of the business and new technologies. Pilots are low cost, but will test the viability of using Big Data before larger investments are required.
3. Governance
How do we currently govern information management and analytics?

An organization has many different types of information assets. Some may be public or private, while others need to be accurate and current, or estimates and projections. It’s critical to recognize different types of information assets in order to understand:

- what needs to be governed
- how governance needs to be implemented

Remember, governance needs to cover all people, processes and technologies. Do you have adequate governance mechanisms in place to take advantage of what information management and analytics can do for your business? Or are you at risk of information mismanagement?

5. Value, risk and costs
How do we balance the value, risk and cost of information management and analytics?

Information management and analytics are seen differently by different parts of your organization. Corporate development and marketing focus on value, and security and compliance focus on risk, while finance and IT look at costs. Many information management frameworks tend to lean towards one or two of these dimensions. However organizations need to equally balance value, risk and costs to drive effective information management and analytics programs. PwC developed the Integrated Information Management Model (I2M2) to address this challenge and to bring the value, risk and cost dimensions under one information management framework.

2. Practical and actionable business insight
What can we use analytics for?

Analytics are only meaningful if they can deliver practical and actionable business insights that can help create value or mitigate risk and costs. They’re not always about uncovering something that’s new. Organizations can fall into the trap of attempting to analyze all kinds of data just because the data exists and the analysis can be done. If organizations place much greater emphasis on practical and actionable business insights, the return-on-investment of analytics projects will improve significantly.

4. Risk management and compliance
How are we managing risk and compliance around information management and analytics?

Sensitive data and analytics can represent material risks to your business. From information placement, sovereignty and retention, to analytical guidelines and usage policies, data must be used strategically. Do you have a working governance model and effective policies and standards to guide risk management and compliance? Do you have a formal business plan to address breaches in risk management policies and protocols, such as information leaks or privacy breaches?

6. Role of business vs. information technology (IT)
Who should be accountable for information management and analytics in our organization?

Information management and Big Data often involve highly sophisticated technologies. Yet it’s a mistake to consider these to be solely an IT concern. Information management and analytics are a top of house issue. Organizations can no longer separate what’s business and what’s IT. To get the most out of investments, they have to work together.
Big data journey – where to begin (continued).

7. **Management of data**  
   How do we define our data?  
   The lack of quality control and consistent definitions can lead to a number of challenges for your organization. Many information management and analytics projects suffer because the importance of proper data management was either underestimated or ignored from the outset.  
   Has your organization established proper disciplines and standards around how data should be managed? Are there common data definitions, quality controls and data management environments?  
   Ask yourself, are your projects still focused on their initial goals? And are these goals aligned to your overall information management and analytics strategy?

8. **Project delivery**  
   How should we approach information management and analytics projects?  
   When planning out your approach, it’s important not to get too focused on just one aspect of the project. Too often we see information management and analytics projects get bogged down in data quality management or the creation of new technology environments. You don’t always need 100% accurate data or perfect information to make informed decisions. Some great analytical insights can be extracted from rudimentary or easily deployed technology installations.  
   Despite the recent trends in Big Data techniques and technologies, many organizations still struggle with small data. The reality is that both small and Big Data matter. Similarly, both established and emerging technologies are important. The question isn’t which hot trends or technologies are being used, but rather what techniques and technologies are being used within your organization now? And are the right tools being applied to the right problems? What new techniques and technologies can evolve, replace and complement the existing structures in order to get meaningful results?  
   How is your organization tackling this challenge?

9. **Techniques and technologies**  
   What techniques and technologies should be used?  
   Despite the recent trends in Big Data techniques and technologies, many organizations still struggle with small data. The reality is that both small and Big Data matter. Similarly, both established and emerging technologies are important. The question isn’t which hot trends or technologies are being used, but rather what techniques and technologies are being used within your organization now? And are the right tools being applied to the right problems? What new techniques and technologies can evolve, replace and complement the existing structures in order to get meaningful results?  
   How is your organization tackling this challenge?  
   As leaders, you need to feel confident in the results and empowered to act on these insights. Leading organizations are encouraging their people to take advantage of the insights generated from their information management and analytics investments. These shouldn’t become isolated disciplines that your organization can’t effectively use.

10. **Delivering insight**  
    How do we deliver insight to the decision makers?  
    All the data management and data crunching you do will make little difference unless they provide practical, actionable, timely and relevant insights that can be accessed by your organization’s decision makers and stakeholders. As leaders, you need to feel confident in the results and empowered to act on these insights. Leading organizations are encouraging their people to take advantage of the insights generated from their information management and analytics investments. These shouldn’t become isolated disciplines that your organization can’t effectively use.
To learn more about Big Data, read the Digital IQ Survey 2013 and Understanding and managing data risks.

For more information about Big Data and how PwC can help, please contact:

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Audit Committee Connect is designed to keep board directors at the forefront of corporate governance trends and Canadian business issues. We aim to provide content that helps you feel confident and supported as you make critical business decisions on strategy, financial reporting and compliance for the companies you oversee.

PwC’s Audit Committee Connect will give you access to:

- Frequent events featuring world-class guest speakers to explore and discuss hot topics of relevance,
- A network of top Canadian companies’ audit committee members,
- Valuable and forward-looking thought leadership, and
- PwC’s worldwide network of corporate reporting and governance experts.

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