Governance, Risk, Compliance and a Big Data Case Study

By showing what would have changed if a previously successful big data analytics project was performed given today's governance, risk and compliance (GRC) imperatives, this article highlights the GRC considerations that should be incorporated by design into any new big data project.

This project did not begin with the intention of being based on big data at the outset. Rather, big data was found to be incidental to helping solve a business problem for a Forbes Global Top 1000 bank. It is only in retrospect that the bank found it had met the definition of big data as part of its solution to achieve data-driven customercentricity.¹

Defining Governance, Risk, Compliance and Big Data

To ensure this article is interpreted as intended, the following definitions are provided:

- **Governance**—“[S]tructures and processes that are designed to ensure accountability, transparency, responsiveness, rule of law, [and] stability…”²
- **Risk**—“The effect of uncertainty on [business] objectives.”³
- **Compliance**—Acting in accordance with a wish or command.⁴
- **Big Data**—High-volume, high-velocity and high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making.⁵

A Business Summary of the Big Data Case Study

The market share of the bank was under pressure due to increasing competition. Data-driven customercentricity proved to be an effective solution to the problem, putting the bank on track to regain market share. The bank regained market share through the creation of US $94.95 million in incremental value for the bank within six months. The way the value was created for both the bank and its customers provided a peek into the power of a customercentric paradigm.

As part of the process of understanding the business problem, the outcome of multiple focus group sessions with a representative sample of customers showed that the bank was not meeting its customers' expectations, a finding in parallel with the bank's own market research (figure 1).

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utilization, channel utilization, wallet dilution, economic insights, industry insights, and regional insights. The data needed as inputs for these insights—made up of both internal and external, and structured and unstructured data—were identified. However, not knowing the quality and, therefore, the eventual usability of the analytics posed a considerable business risk. Processes were thus created and executed to determine the completeness, uniqueness, validity and accuracy dimensions of data quality for the data elements identified. In one case, the findings of the data quality assessments were such that enterprisewide data restitution was performed to increase the completeness attribute of a key data element.

Corrective actions were then identified and prioritized according to their urgency and impact, and prospective solutions were filtered based on their risk-adjusted business cases and their ease of implementation.

The deep customer insights raised in figure 2 were categorized as products and services, product...
The point of deployment gets tougher given the growth in privacy legislation today. While few laws were applicable to leveraging data when the case study was performed, two observations are useful at this point. First, the bank already had working business relationships with their clients, implying consent in today’s terms. Second, data-driven customercentricity was not just a phrase. It meant the creation of two-way value. Value was created for the bank because real value was created for customers. The results bear this out.

Once prototyping proved that data-driven customercentricity could address the business problem, senior approval was given for enterprise deployment. This involved distributing periodically generated analytics-derived customer insights to 1,300 branches using a customer relationship management (CRM) tool. Customer-facing bank staff now had access to key insights on each of their customers and could consequently strategize about how to have more meaningful and mutually beneficial conversations with them.

Coupled with improved training on the bank’s products and services (figure 2), bank staff could now better link the right products and services with the position of their customers during their unique banking life cycles. Customer interactions were consequently more relevant and meaningful, resulting in sales strike rates of almost one in two (50 percent). This is a noteworthy result because direct marketing strike rates are only about five percent. This outcome demonstrates the superior effectiveness of relationship marketing over direct marketing, a very interesting dimension of competitiveness. Figure 3 shows the overall results of these efforts.

While the bank’s customers experienced better-focused interactions from bank staff, the bank, in turn, experienced a financial uplift by increased sales and activity in four ways, as shown in figure 3.

<table>
<thead>
<tr>
<th>Outcomes</th>
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<tr>
<td>What they got:</td>
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"We will use your work to boost sales scorecard performance," AVP sales
"Come and help us meet our scorecard targets," AVP New Business
"Where have you been all our lives?," Provincial sales manager
"When are you coming to help us?," Provincial sales manager
"The great thing is that it is not rocket science," EVP
"We need to entrench your work," VP
"This is big," VP
"Go big," EVP
While big data was instrumental to success, note that it was incidental. The bank did not seek to solve a business problem with big data. Rather, by first appropriately understanding the problem and then objectively implementing the best response from a set of alternatives, the bank ended up with a big data-driven approach to customer-centricity.

So did the foundation of the data-driven project qualify as big data? Based on the big data definition introduced earlier, yes. Those definitions are:

- **High-volume data**—Multi-terabytes of data were produced.
- **High-velocity data**—Transaction volumes were around 1,000 transactions per second at peak.
- **High-variety data**—Structured and unstructured data, both internally and externally sourced from across multiple divisions of the bank and from specialist data vendors. They included government gazette data, national, provincial and regional economic forecasts. The potential of these disparate data sources was unlocked by data fusion for data enrichment.
- **Innovative processing**—New database technology was needed to accelerate the daily data processing required to produce up-to-date customer insights to the field in a timely manner.
- **Enhanced insight and decision making**—Better customer insights mean significantly higher quality customer engagement, resulting in enhanced financial outcomes, as shown in figure 3.

### The Impact of Governance

Data governance is one of the greatest challenges to corporate governance because many boards ignore the risk posed by the mismanagement of data. Demonstrating the potential to appropriately mitigate this risk, 16 areas of alignment were found between data governance (using the Data Management Association International [DAMA’s] framework) and corporate governance (using Deloitte’s framework) that could be meaningfully applied in pursuit of risk mitigation.

Consider what the impact of today’s corporate governance and data governance disciplines would have been if the big data project was taken on now, starting with corporate governance.

For data governance, note that the impact is partially reflected by the integrity pillar in figure 4 and partially by privacy principle two in figure 5.

The overall governance implications of the big data project are clearly significant. Three of the six pillars of corporate governance would demand at least some change to the project’s approach, with data governance possibly having the most governance implications for implementation.

<table>
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<tr>
<th>Pillar¹³</th>
<th>Impacted?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance</td>
<td>Yes</td>
<td>While an executive committee provided a means of control for a project that could have incurred incremental operational risk for the bank, today, data governance, IT governance and even the enterprise program management office (EPMO) could form additional controls in large corporations.</td>
</tr>
<tr>
<td>Strategy</td>
<td>No</td>
<td>There were already direct links to the bank’s strategy.</td>
</tr>
<tr>
<td>Performance</td>
<td>No</td>
<td>There were already direct links to the bank’s performance.</td>
</tr>
<tr>
<td>Integrity</td>
<td>Yes</td>
<td>While some consideration for the quality of the insights was applied by testing the data, there was no consideration for metadata or master data management, which are modern imperatives for data.</td>
</tr>
<tr>
<td>Talent</td>
<td>Yes</td>
<td>There was no consideration of the succession risk in a project that spanned multiple years.</td>
</tr>
<tr>
<td>Risk</td>
<td>-</td>
<td>Considered in the next section</td>
</tr>
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Corporate governance mitigates some of this risk by enterprise risk management (ERM) within the risk pillar, while data governance mitigates some of this risk by means of the policies, procedures, standards, guidelines and tools used to perform and assess various characteristics of the data asset, and to ensure adherence to the enterprise’s policies for audit purposes.

The greatest risk boards of directors need to protect against is reputation risk.11 Because an organization’s reputation can be negatively impacted today by, for example, the incorrect or inappropriate use of data or by not complying with privacy regulation, appropriate controls need to be put in place to mitigate this risk.
The modern GRC landscape has a significant impact on how an enterprise-scale big data project would be undertaken today.

**Conclusion**

The modern GRC landscape has a significant impact on how an enterprise-scale big data project would be undertaken today. Much of the impact falls under corporate governance’s integrity pillar. This pillar aligns data governance with corporate governance, helping ensure that data activities subscribe to enterprise standards of integrity.

Figure 6 summarizes the major areas of impact of GRC on a big data project applicable from the perspective of the European model of privacy, which, as noted, is the dominant global model.

| Figure 6—The Drivers of the Biggest Impact to an Enterprise-Scale Big Data Project |
|-----------------|----------------|-------------------------------------------------|
| Category        | Governance     | Impact Summary                                  |
| Governance      | Corporate      | Given the scope and duration of the project, succession planning is needed to ensure the appropriate level of continuity for long-term projects. |
| Risk            | Corporate and data | There is a clear need to establish the relevant data controls and oversight and to understand the risk and impact of a breach of sensitive personal and financial information both before and during deployment. |
| Compliance      | Data           | There is a need to ensure the requisite level of data quality. Ensure that the privacy regulations around these data in the relevant jurisdictions are adhered to if any data are purposefully collected (i.e., not already existing in a database). Check the applicability of the limited use principle (principle three in figure 5). |
This article provides an overview of the likely impact of GRC on today’s big data initiatives. Given the span of risk and compliance issues and the relationship between corporate governance and data governance, this article is not exhaustive in content, in highlighting the complexities of each jurisdiction, in highlighting the complexities of data and information movement between jurisdictions, or even in highlighting the relevant content in a single jurisdiction. The article does, however, highlight the need to be increasingly aware of regulatory considerations—such as those concerning privacy—as part of both current and proposed big data projects, particularly if data are involved in driving how the enterprise interacts with its customers.

Endnotes


5 Op cit, Sicular


7 Yordanova, V.; Filling the Gaps of Big Data Regulation, master’s thesis, Maastricht University, The Netherlands, 2015


9 Data Management Association International, Body of Knowledge, https://www.dama.org/content/body-knowledge


15 Op cit, Dowling


17 Op cit, Chaffey