Chapter 14
Big Data Management in Financial Services

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ABSTRACT

Many organizations are beginning to feel frustrated by the limited progress of their companies with the application of new technologies to date. At the same time is convenient to remember that this is something that always happens when new technologies are introduced, companies must accept the challenge of self-assessment and measure the barriers that threaten to prevent them from reaching to get the maximum potential derived from big data and analytics In financial services, there are significant opportunities to obtain benefits by applying technologies and methodologies of big data and analytics. Regulatory pressure has forced many businesses, particularly in banking, to invest in areas such as risk management, compliance and operations. This has accelerated the trend toward enterprise data management.

INTRODUCTION

The combination of an impressive explosion of data and the rapid development of new technologies to store and process this information will transform the way companies manage their business. After an initial period in which big data was considered optional for most companies, their value is widely recognized today. Big data and analytics are becoming part of everyday business.

Organizations around the world have begun to exploit the opportunities that big data offers. However, progress has been very small in terms of value quantification to get to the analysis of structured and unstructured data together, to generate knowledge to support decision-making. The biggest advantage of big data and analytics is the value that is derived from the management of the data and transforming it into useful knowledge, the three challenges that are so often mentioned associated with big data are the following:

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- **Volume**: Huge amount of data that cannot be handled by traditional management tools databases.
- **Variety**: Data from a wide variety of sources, both internal and external, and with different formats, both structured and unstructured.
- **Speed**: data change and evolve at a rapid rate, and business needs that require analysis and answers almost in real time.

Many companies have not yet developed the appropriate framework to generate this value. The projects, many of them still only proof of concept or pilot, are being developed as separate and individual rather than as part of a comprehensive plan at the level of the entire organization (Biesdorf, Court, & Willmott (2013)). Often, companies are even know what questions they need to raise, what are the business problems that require a response from the realm of big data and analytics (Turner, Shroeck, & Shockley (2013)). Similarly, they are still rare organizations that already have a global view of the barriers to get to maximize the value of their data, and include aspects such as the huge volume of data to manage, lack of capacity and skills in areas as analytics, or legal and regulatory issues type.

BACKGROUND

In financial services (banking and insurance), there are significant opportunities to obtain benefits by applying technologies and methodologies of big data and analytics. With the crisis of the financial sector in 2008, regulatory pressure has forced many businesses, particularly in banking, to invest in areas such as risk management, compliance and operations. This has accelerated the trend toward enterprise data management, which is a good starting point in adopting new and more advanced initiatives exploit them (Kruschwitz (2011)).

From the point of view of the opportunities perceived by the industry, the main application area of the big data and analytics provides advanced customer segmentation. The incorporation of new data sources to traditional segmentation allows obtaining a vision and a complete understanding of companies by the customer, which entails the definition of more value propositions tailored to different profiles of customers. This allows a tighter targeting, and it translates into greater efficiency and performance of commercial activities (Lambrecht & Tucker (2013)).

Customer loyalty is emerging as the second application of these techniques, especially relevant to insurance companies. After a deep crisis in the sector, which has led to heavy loss of confidence by customers, it is important to detect abandonment in advance (especially for high-value customers) and define efficient retention actions has become a priority for companies, in this sense big data and analytics can help improve this area.

A better management of multiple channels, so important in a context in which the new technologies made available to customers a greater number of improved communication channels and high capacity of transaction with businesses, and the definition of strategies of dynamic pricing by customer segment, in a context that is closer to real time, also appear in prominent positions when asked by the main areas of application of big data (McAfee, Brynjolfsson, Davenport, Patil, & Barton (2012)).

With respect to the benefits expected by financial institutions, there is a broad consensus in indicating support in complex processes of decision making as the first differential aspect. How is reviewed