

THE EVOLUTION OF BIG DATA

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The explosion of the Internet, social media, technology devices and apps is creating a tsunami of data. Extremely large sets of data can be collected and analyzed to reveal patterns, trends and associations related to human behavior and interactions. Big data is being used to better understand consumer habits, target marketing campaigns, improve operational efficiency, lower costs, and reduce risk. International Data Corporation (IDC), a global provider of market intelligence and information technology advisory services, estimates that the global big data and analytics market will reach \$125 billion in 2015.¹

The challenge for businesses is how to make the best use of this wealth of information. Some experts break down big data into three subcategories:

- **Smart data** — Information is useful and actionable if it can be organized and segmented according to a company's needs. Smart data can be combined from multiple sources and customized to address particular business challenges.
- **Identity data** — Profile data on consumers can be combined with their social media data, purchasing habits and other behavioral analytics to help companies target their marketing campaigns much more precisely.
- **People data** — Gleaned largely from social media data sets, people data helps companies to better understand their customers as individuals and develop programs that address and anticipate their needs. It seeks to create a shared community of customers with mutual likes, ideas and sentiments.²

Big data sets are so large that traditional processing methods often are inadequate. Big data challenges data analysis, capture, management, search, sharing, storage, transfer, visualization and privacy protection.³ As companies work through these data processing and management issues, the focus is shifting to the areas of data strategy and data governance.

DATA STRATEGY

Technology has advanced to provide the necessary computing power, memory, storage, software and network capabilities to handle vast amounts of data. Companies are beginning to realize the promise of better analytics, increased accuracy and greater confidence in decision making. Data strategies are focusing on the quality of the data and identifying what information can drive better performance, reduce risk, and predict customer behaviors. The accuracy and trustworthiness of data have assumed greater value for yielding reliability and results.⁴

An important component of a company's data strategy is predictive analytics. Raw data in a company's customer relationship management systems and other databases can be combined and analyzed to create useful insights into customer behavior and to predict future behavior and trends. This can help a company to improve its operations and performance through better investments and strategic decisions.⁵



GOVERNANCE AND CYBERSECURITY

How big data is managed and put to meaningful use in actionable plans is the goal of data governance. Converting big data into something smaller and easier for end-users to analyze and manage is the approach now being taken.⁶ Many companies are developing protocols on how data is used, protected and shared, especially with outside service providers used for information analytics and data management. IDC estimates that 70 percent of large organizations are purchasing external data, and 100 percent will do so by 2019.⁷

The data breaches highlighted recently in the news have alarmed consumers and put companies and government agencies on high alert. Cybersecurity has become the number-one issue on most companies' information technology agendas. Around the globe, governments and industries are introducing legislation that requires the use of better data protection and security controls.⁸

Big data tools may help businesses to address this critical problem. Big data analytics may become the first line of defense in cybersecurity to predict, detect, deter and prevent security breaches.⁹ Analytics enable companies to identify anomalies occurring in networks in real time and to move quickly to address the problems.

To continue to realize the promise of big data, companies must remain agile and adapt quickly to changes in regulations, new technology and social media trends. These areas will shape the evolution of big data and impact its usefulness for strategic business planning.

To discuss these topics in more detail, please contact your PNC Relationship Manager.

¹ "6 Predictions for the \$125 Billion Big Data Analytics Market in 2015," by Gil Press, *Forbes*, December 11, 2014, <http://www.forbes.com/sites/gilpress/2014/12/11/6-predictions-for-the-125-billion-big-data-analytics-market-in-2015/>

² "The Evolution of Big Data, and Where We're Headed," by Higinio Maycotte, Umbrel, *Wired*, March, 2014, <http://www.wired.com/2014/03/evolution-big-data-headed/>

³ Definition of Big Data in Wikipedia at: https://en.wikipedia.org/wiki/Big_data

⁴ Summary of concepts presented in "10 Key Elements of Your Data Strategy," by Mike Schiff, consultant at MAS Strategies, on The Data Warehousing Institute (TDWI) blogsite. Available at: <https://tdwi.org/Articles/2012/01/17/10-Elements-Data-Strategy.aspx?Page=1>

⁵ "Making Sense of Big Data in 2015: A Few Predictions," by Cohn Reznick, March 19, 2015, <http://www.cohnreznick.com/insights/newsletters/making-sense-of-big-data-in-2015>

⁶ "Making Sense of Big Data in 2015: A Few Predictions," by Cohn Reznick, March 19, 2015.

⁷ Press release: "IDC Reveals Worldwide Big Data and Analytics Predictions for 2015," December 11, 2014, at <http://www.idc.com/getdoc.jsp?containerId=prUS25329114>

⁸ "Using Big Data to Defend Against Cyber Security Threats," CSC, available at: http://www.csc.com/cybersecurity/publications/93325/104033-using_big_data_to_defend_against_cyber_security_threats

⁹ "6 Predictions for the \$125 Billion Big Data Analytics Market in 2015" by Gil Press, *Forbes*, December 11, 2014, as cited above.

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