

Data Analytics Trends for 2016 and beyond

Data analytics (DA) is the science of examining raw data with the purpose of drawing conclusions. Data analytics is used in many industries to allow companies and organizations to make better business decisions and in the sciences to verify or disprove existing models or theories. Data analytics is distinguished from data mining by the scope, purpose and focus of the analysis. Data miners sort through huge data sets using sophisticated software to identify undiscovered patterns and establish hidden relationships. Data analytics focuses on inference, the process of deriving a conclusion based solely on what is already known by the researcher.

The science is generally divided into exploratory data analysis (EDA), where new features in the data are discovered, and confirmatory data analysis (CDA), where existing hypotheses are proven true or false. Qualitative data analysis (QDA) is used in the social sciences to draw conclusions from non-numerical data like words, photographs or videos. In information technology, the term has a special meaning in the context of IT audits, when the controls for an organization's information systems, operations and processes are examined. Data analysis is used to determine whether the systems in place effectively protect data, operate efficiently and succeed in accomplishing an organization's overall goals.

The term "analytics" has been used by many Business Intelligence (BI) software vendors as a buzzword to describe quite different functions. Data analytics is used to describe everything from Online Analytical Processing (OLAP) to Customer Relationship Management (CRM) analytics in call centers. Banks and credit cards companies, for instance, analyze withdrawal and spending patterns to prevent fraud or identity theft. Ecommerce companies examine Web site traffic or navigation patterns to determine which customers are more or less likely to buy a product or service based upon prior purchases or viewing trends. Modern data analytics often use information dashboards supported by real-time data streams. So-called real-time analytics involves dynamic analysis and reporting, based on data entered into a system less than one minute before the actual time of use.

Big data analytics has been at the forefront of providing insights and predictive power to businesses. It is a vital ingredient in the planning process as it provides deep insights into consumer behavior and market dynamics that can better assist managers and executives in their decision-making process. Here are some important data analytics trends for 2016 and beyond:

Self-service big data discovery takes centre stage

Historically, self-service data discovery and big data analyses were two separate capabilities of Business Intelligence. Companies, however, will soon see an increased shift in the blending of these two worlds. There will be an expansion of big data analytics with tools to make it possible for managers and executives to perform comprehensive self-service exploration with big data when they need it, without major handholding from information technology (IT), predicts a December study by business intelligence (BI) and analytics firm Targit Inc.

“Self-service BI allows IT to empower business users to create and discover insights with data, without sacrificing the greater big data analytics structures that help shape a data-driven organization,” Ulrik Pedersen, chief technology officer of Targit, said in the report.

Data science, predictive, prescriptive analytics merge

As self-service BI proliferates, the new year will also bring a huge increase in advanced analytics projects across industries. However, unlike before, when big data discussions made it sound as if Chief Information Officers (CIOs) and analytics practitioners had to think of advanced analytics as something wholly separate from traditional analytics, the perspective is changing, according to a December report by International Institute for Analytics (IIA), an independent research and advisory firm.

“These things are, in many cases, being combined, and data science, if anything, is becoming a specialized branch of the central analytics group,” IIA co-founder Thomas H. Davenport said at a webinar on 14 December while presenting the report.

In 2016, the distinction between data science and analytics will continue to blur and become muddled, as big data is more deeply integrated into more traditional businesses.

“While many companies will face challenges as they take on projects involving big data, organizations will have to work diligently to successfully implement these projects,” Pedersen stated.

Analysts need to move beyond analytics

Christopher Arnold, senior vice-president of financial services company Wells Fargo India Solutions, says analysts need to move beyond analytics to succeed. “It’s no longer permissible,” he says, “for analysts to provide insights and then be excused from the boardroom while decisions are made by the businessperson.”

Today’s world is too analytic to allow laymen to take the final decision. Analysts need to hone their business and persuasion skills in order to earn their permanent place in the boardroom. For this to happen, universities should be looking to expand their curriculum to include applied coursework and domain training in order to better prepare tomorrow’s analysts, said Arnold.

Smarter thinking about data inclusion

Many early adopters of big data analytics struggled with analyzing too much, which resulted in small amounts of information about many different areas, and an incomplete picture of the business overall.

As analytics become more accessible to business users, there will be a shift towards more focused and realistic big data discovery projects, which will in turn provide valuable data for business decisions. Data preparation is one of the biggest time sinks for analytics professionals

and data scientists. But new tools are emerging that apply “the analytics we use typically to analyse data to curate data,” Davenport said in a report.

Rather than approach data management from a centralized, top-down approach, CIOs will work from the bottom up, leveraging machine learning to curate and clean the data, he added.

Data governance to gain prominence

The traditional way of handling data governance—centralized, strict and secure—is still valid for enterprise multi-dimensional data warehouses. But it is inefficient, riddled with unavoidable bottlenecks, and stymies experimentation.

In order to promote innovation and experimentation among teams, a decentralized data governance strategy is necessary for any type of ad hoc data discovery. Therefore, in 2016, BI platforms must establish various levels of permissions and settings to ensure high-quality data is delivered to the right people, at the right time.

The year 2016 will also be one when we will bypass brilliant analytics for more traditional approaches because we need to focus on risk issues such as privacy and increasing regulations across all industries, concludes Arnold.

Analytics everywhere will drive customer value

Over the years, analytics has evolved from business intelligence to transactional and big data.

Real-time analytics that enhance the customer experience by linking predictive insights to prescriptive actions will become the new normal, according to a 15 December blog by Otto Berkes, chief technology officer at CA Technologies.

In 2016, the so-called demographic of one will emerge and enable organizations to personalize services, pricing, sales and products in real time for the individual versus larger segments, the report added. This will partly be driven by the increased prevalence of analytical tools and techniques to derive deeper and more meaningful insights.

Analytics will also drive better customer experiences by putting security that safeguards the customer in the background. New analytics techniques will use behaviour patterns and machine learning to help separate the real customers from the fraudsters and provide more seamless transactions and experiences. However, analytics is most useful when applied to specific problems—not general ones, Berkes said. Big analytics packages that can crunch data endlessly looking for that needle in the haystack will be the past.

The way forward is to think of analytics as not the solution to anything, but as part of the solution to everything. Experts also believe that although the Internet of Things—an element of digital transformation—has plenty of potential, it is still early days. Analytics and security hold the key to unlocking and maximizing its value.

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