

Big Data - Why it Matters to Learning & Talent

white paper

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Big Data

Why it Matters to Learning & Talent

Introduction

Big Data matters to all of us, whether we know it or not. Organizations are gathering massive amounts of data, and have been for years, and now data scientists are beginning to analyze the data to help improve performance (McAfee & Brynjolfsson, 2012). For a retailer like Target, the intent is to mine the buying patterns for customers to discern what they are going to buy next. Armed with a predictive model, Target sends marketing information about predicted future purchases with incentives to buy. From an operational perspective, it is brilliant. Past behaviors often predict future behaviors and the data help predict future needs. Target gained national attention, when its Big Data process identified that a teenager was pregnant and began marketing to her before her father knew (Hill, 2012).

Many Big Data efforts focus on buying behaviors with the intent of creating more loyal customers. Yet, any area of the business is fair game for a Big Data project—including learning, performance and talent.



Overview

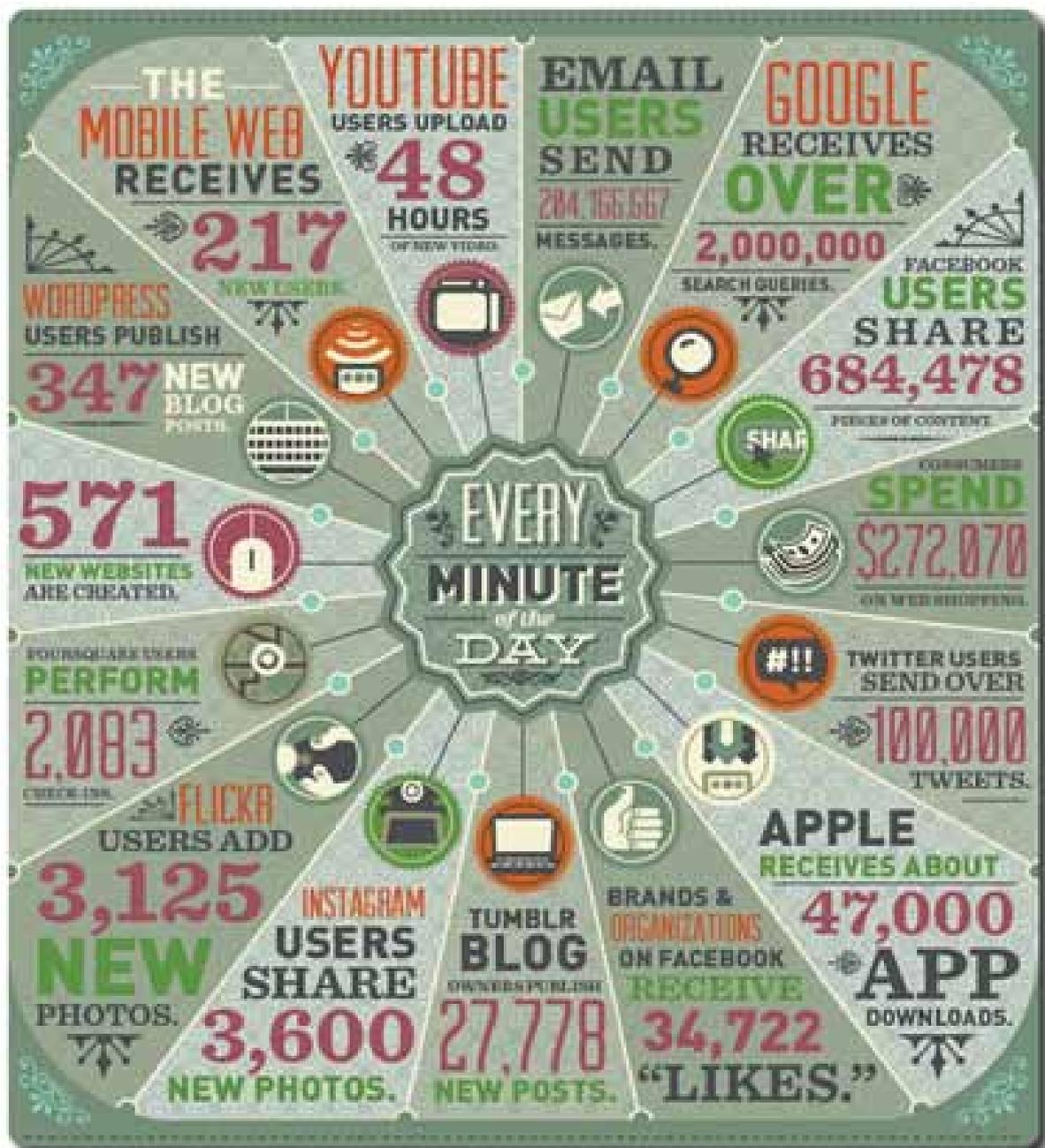
Before sharing examples of Big Data projects in talent, it may be worthwhile to define the term and how it is radically changing the way organizations do business.

Big data is defined by three common features, at least according to definitions provided by SAP, IDC and Gartner: volume, velocity and variety (Clark, 2012). Volume refers to the sheer amount of data collected. Velocity is the speed at which it is processed and analyzed. Variety reflects that fact that data are not just numbers; it can be words, pictures, tweets, videos or any other content. The vastness of Big Data is difficult to comprehend.

Figure 1 provides some insight about the volume, velocity and variety of information gathered daily by major technology players in the field.

Figure 1. Big Data Graphic

Source: Big Data Insight Group



Big data

is an issue for organizations because IT departments are having trouble handling the volume of data streaming in. IT is solving the problem by creating servers with greater storage capacity and finding efficient ways to archive the data for later use.

The point of Big Data is to provide insight into the operations of the organization. Yet, analysts are challenged to process the data quickly, especially when traditional techniques focus on quantitative processing of numbers, not texts or pictures or video.

IT is leveraging the Big Data storage systems to immediately process the data. Online analytic processing (OLAP) allows the data systems to automatically run statistical scripts to analyze data and generate reports. This approach is much more efficient because analysts do not have to manually extract data, manipulate it in separate spreadsheets (if they even had the capacity to hold the data), and then perform statistical tests.

Learning and talent professionals should be energized by these technology advances because they can help solve problems. However, most do not understand Big Data or how it can provide insights.

The ability to uncover relationships among data sets is a fundamental tenant of Big Data. Google showed the power of relationships when it published an article in *Nature* about predicting the spread of flu in the US (Ginsburg, et al., 2009). The Centers for Disease Control and Prevention (CDC) is tasked with tracking flu outbreaks, but its standard process often takes two weeks or longer to gather and report the incidence of flu across the country. Using its own set of Big Data, Google correlated 45 key search terms (e.g., cold medicine, head ache, fever, etc.) with geographic location. They predicted the outbreak locations and then validated the predictions with actual CDC data. As a result, Google's model provided a better predictor—using search terms and locations—than the CDC's health records, when the "swine flu" (H1N1) struck in 2009.

Vast amounts of data change the scientific approach as well. The ability to demonstrate cause and effect, that A causes B, is predicated on the ability to conduct experimental studies with random assignment of participants to treatment and control conditions and equal treatment of all participants (except for the key treatment variable). This experimental design / clinical trials approach is necessary to test life and death hypotheses (e.g., pharmaceutical testing). However, correlation—not causation—is often good enough to make decisions (Mayer-Schonberger & Cukier, 2013). In the Target marketing example used earlier, it was not necessary to know how or why the teenage girl was pregnant. Only the what matters—that she was pregnant and that she will need maternity products that Target provides.

Why Does Big Data Matter to Learning & Talent?

Simple correlational techniques are often all that is required to uncover relationships. In the Big Data era, the ability to link disparate data sets provides even more insight. For example, a learning group might track the amount of learning its employees consume each year and investigate whether it has any effect on employee retention. Using this technique, the learning group might find that individuals who attend 25 hours or more of training each year stay with the organization 1 – 2 years longer. When productivity is balanced against the cost of training, the ROI is high, and training is seen as a worthwhile investment. In this way, examining relationships provides insights about learning that can be shared with leaders. Armed with simple information like this relationship, leaders might decide to retain rather than cut the L&D budget.

In order to be a business partner, rather than “overhead”, learning and talent groups need to proactively mine their data and bring business intelligence to the table.

For talent management groups, Big Data offers the opportunity to investigate HR processes and determine what factors drive improvements. In the recruiting group, what are the qualifications that lead to great candidates who become high performers with high potential and stay with the organization for many years? Regarding performance appraisal, does the process actually identify high potentials? When high potentials are at-risk for leaving the organization, what incentives are most effective at retaining them (e.g., compensation, work / life balance, new manager, special projects, etc.)?

HR is one of the largest contributors of data to an organization. The ability to capture, analyze and report information about employees will lend competitive advantage. How—by improving the quality of talent hired, the processes used to monitor and manage them, and the bench strength available to accomplish organizational goals.

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