THE MOST PRACTICAL
USE CASES OF BIG DATA

Enterprise Integration | entint.com | 888-848-9332 | info@entint.com

Organizations are continuously collecting larger and larger volumes of digital data with the intention of using it to improve their efficiency and boost bottom-line performance. But often times, those organizations have difficulty managing that volume and extracting value from it. Plus, the data is still growing at an unbelievable rate. By 2020, the new information projected to be generated by every human being will be approximately 1.7 megabytes per second. At that volume, it's impossible to effectively manage this manually. A big data platform can help provide meaning to this data without the need for manual intervention.

Big data has virtually unlimited use cases, but choosing the right ones that deliver the most business value is vital for capitalizing on opportunities offered by big data. The right use cases can bring life to the data that drives successful innovation and growth. The wrong use cases can result in distress and potentially, failure of a big data implementation.

While every organization is different, there are some big data use cases that are industry-neutral and can apply to a wide range of businesses. Here are six of the most practical industry-neutral big data use cases:

1. A COMPREHENSIVE CUSTOMER VIEW

Many organizations are now using big data to collect customer data from multiple outlets and place it into single pain-of-glass view that paints a comprehensive, 360-degree picture of their customer.

Data is pulled together from a variety of internal and external sources, analyzed and then presented to internal personnel such as customer service, sales or marketing, to help them better perform their jobs. This data could include customer demographic information, sales history, previous interactions with emails, chats or calls, social media posts, website visits and more.

While this information helps better prepare an organization's staff to interact with a customer, it could even go a step further to provide maximum customer satisfaction. Big data combined with machine learning tools can determine the reason for the customer's call. It could also make suggestions for cross-selling or potential discounts by detecting the customer's state of readiness.

2. PRICE OPTIMIZATION

With big data's help, both business-to-business (B2B) and business-to-consumer (B2C) organizations can optimize the prices they charge their customers based on monitoring a competitor's prices, growing or declining demand, customer profiles and any other applicable criteria.

The goal for any business is to maximize income. If prices for their products or services are too high, fewer products get sold or fewer services are rendered. Too low and money is left on the table. Neither scenario yields a positive result. Big data allows organizations to see which price points produced the best results historically under various market conditions.

Some businesses, mostly B2B, are also utilizing dynamic pricing strategies. In this approach, they use big data to divide their customer base and model what different types of customers would be willing to pay under different circumstances.

3. IMPROVED OPERATIONAL EFFICIENCY

Big data is also helping organizations identify potential opportunities to streamline operations and maximize profits.

Big data and its tools have improved the sophistication of the reports executives use to track their bottom line by providing the ability to incorporate data from a variety of sources and to update those reports much more often than they were before. Analysis of this information offers the ability to uncover potential problems in real time, which allows for instant remediation and lessens the chance for costly errors or inaccurate conclusions.

Be it by preventing machinery malfunctions through proactive breakdown preparation, improving warehouse processes through optimizing prioritization or improving product quality management through advanced controls, organizations are gaining valuable, and actionable, insight via the data collected from Internet of Things (IoT) devices and throughout their day-to-day operations.

To take it a step further, adding a machine-learning layer to a big data platform also allows for automatic processing, analysis and remediation (in many cases) without the need for human intervention.

4. SOCIAL MEDIA INSIGHT

Today, it's essential that companies monitor what people are saying about them in social media and respond appropriately. Not doing so often leads to the loss of customers and revenue and can eventually lead to the loss of market share.

Organizations use big data to process the stream of posts that flow through social media outlets like Twitter, Facebook and Instagram. By analyzing their data, organizations can identify the most effective time, format and platform for their advertisements.

They can also use big data to identify the characteristics of a customer who is about to stop doing business with them and make efforts to correct the issue. Additionally, they can identify common behaviors between different customers to see what makes them more likely to become a repeat, long-time customer and then use this information to convert social media users into customers through influencer marketing techniques and personal marketing communication.

The actionable insight and real-time intelligence gained by leveraging big data in social media helps ensure customer satisfaction and provides organizations with a never-ending supply of paths to innovation and growth.

5. SECURITY INTELLIGENCE

With the adoption of cloud technologies, mobile device use and social network engagement, the organizational boundaries for most companies has become more difficult to identify. This, along with increased attacker sophistication and intelligence, has caused the need for organizations to focus on more than just defense.

Big data can help organizations meet the needs of these new security challenges by combining, correlating and analyzing internal and external cyber threat intelligence data to prevent, detect and mitigate attacks.

Through big data, organizations gain a thorough understanding of their ecosystem and can identify the attractive targets for attack within their company.

6. RECRUITING AND CANDIDATE PLACEMENT

The latest approaches to utilizing big data for recruiting have provided recruiters with the opportunity to quicken the pace of placement and simplify their processes.

Because matching resume keywords with job descriptions is no longer sufficient to compete in a fast-paced environment, recruiters can no longer achieve their desired results without the right tools in place.

A big data recruitment platform can source candidates from databases and provide a comprehensive view that recruiters can use more effectively. The candidate's experience, education, certifications, skill sets, geography and more are compared to an organization's past hiring experience, the characteristics of prior successful candidates, salaries and more to identify the best match.

These recruitment platforms are even capable of anticipating recruiting needs and providing suggestions for which candidates could fill openings before positions are posted, allowing for a more proactive approach from recruiters.

HOW ABOUT SPECIFICS?

Now that we've explored a few of the generic practical use cases for big data, let's take a look at some industry-specific cases and real-world examples of companies that are leveraging from the benefits offered by big data.

1. HEALTHCARE

Just by the nature of the industry, Healthcare generates a huge amount of data; but taking advantage of that data comes with its own set of difficulties.

For example, electronic health records (EHRs) are sets of electronically-stored patient health information that can be shared digitally across different healthcare settings. Nearly 80% of clinical data in each patient's EHRs, however, is unstructured and in a format that health information technology systems cannot use, making it difficult to maximize the potential value of EHRs.

Big Data in Action:

- In the U.S., Kaiser Permanente has fully implemented a big data system that shares data across all of their facilities and makes it easier to use EHRs. According to a McKinsey report, *"The integrated system has improved outcomes in cardiovascular disease and achieved an estimated $1 billion in savings from reduced office visits and lab tests."*

2. BANKING/FINANCIAL SERVICES

According to GDC prognosis, the amount of data generated each second in the banking sector will grow 700% by 2020. Having the ability to process and utilize this data effectively, instead of being overwhelmed by it, means having advanced abilities to apply its insight in real time and make more informed business decisions.

On top of the list of sought-after abilities in the banking and financial services industry, is fraud management and prevention. Understanding an individual's typical spending patterns helps raise a red flag if something seems out-of-whack and the analysis of transactions helps greatly reduce the risk of fraudulent actions.

Big Data in Action:

- To identify and eliminate fraud in all areas of commerce, including online and in-person banking, CitiBank has made strategic investments in a platform that utilizes machine-based learning to analyze and evaluate big data to identify fraudulent or questionable activity, along with quickly alerting their customer.

3. GOVERNMENT

Governments must keep track of numerous databases and records on a daily basis. Information on their citizens, resources, budgets, geographical surveys, growth and more, all contribute to their big data ecosystem. Effectively analyzing and studying this data can help governments of any country in countless ways.

Governments currently use big data to help overcome unemployment, explore alternate energy resources, effectively track agriculture activities and catch tax evaders, just to name a few. They're also using the actionable insight they gain to investigate various occurrences in real time.

Big Data in Action:

- The United States Food and Drug Administration (FDA) currently leverages big data to uncover patterns and associations in order to identify and examine occurrences of food-based infections.

4. TRANSPORTATION

For both shipping and logistics companies, big data can optimize routing, simplify processes and provide transparency to the supply chain. According to Fleetowner.com, 98% of third-party logistics companies said improved data-driven decision making is "essential to the future success of supply chain activities and processes". Additionally, 81% of shippers and 86% of third party logistics companies said that using big data effectively will become "a core competency of their supply chain organizations".

With big data's help, logistics companies are improving their speed and reliability of delivery while improving overall logistics optimization. By gathering real-time data about weather and traffic conditions, they're more accurately defining their routes for safe transport and minimizing the impact of any associated downtime.

Big Data in Action:

- After examining their data, UPS found that turning left, or into oncoming traffic, was causing unnecessary delays, wasted fuel and safety risk. UPS claims they "use 10 million gallons less fuel, emit 20,000 metric tons less carbon dioxide and deliver 350,000 more packages every year" after making this change that has resulted in UPS drivers now turning left only about 10% of the time. Due to effective examination of their data and this "no left" strategy born from it, UPS has also reduced their number of trucks by 1,110 and their fleet's total distance traveled by 28.5 million miles.

5. EDUCATION

Effective correlation and examination of data regarding students, test results, disciplinary issues, grades, courses, faculty and more can provide insights that can be used to enhance the learning experience and improve the operational effectiveness of educational institutions.

These big data insights are motivating changes that provide a progressive framework in which students learn through modified methods. These modifications include customized and mapped learning programs, advancements in grading systems, reframed course material and career prediction analysis.

Big Data in Action:

- With over 38,000 registered students, the University of Alabama has a tremendous amount of data at its fingertips. Through the use of big data, Alabama's analysts retrieve data, perform analyses and generate reports in minutes rather than the weeks or even months it took to manually transcribe data into workable spreadsheets. 'Bama's administrators get information on demand and are able to make quick evaluations with real-time information.

SCRATCHING THE SURFACE

Once organizations begin to have success with big data endeavors and experiment with use cases in other areas of business, they're certain to discover uses and benefits they hadn't originally considered. And as big data tools become more mature and sophisticated, they're also sure to uncover new uses that haven't yet been thought of.