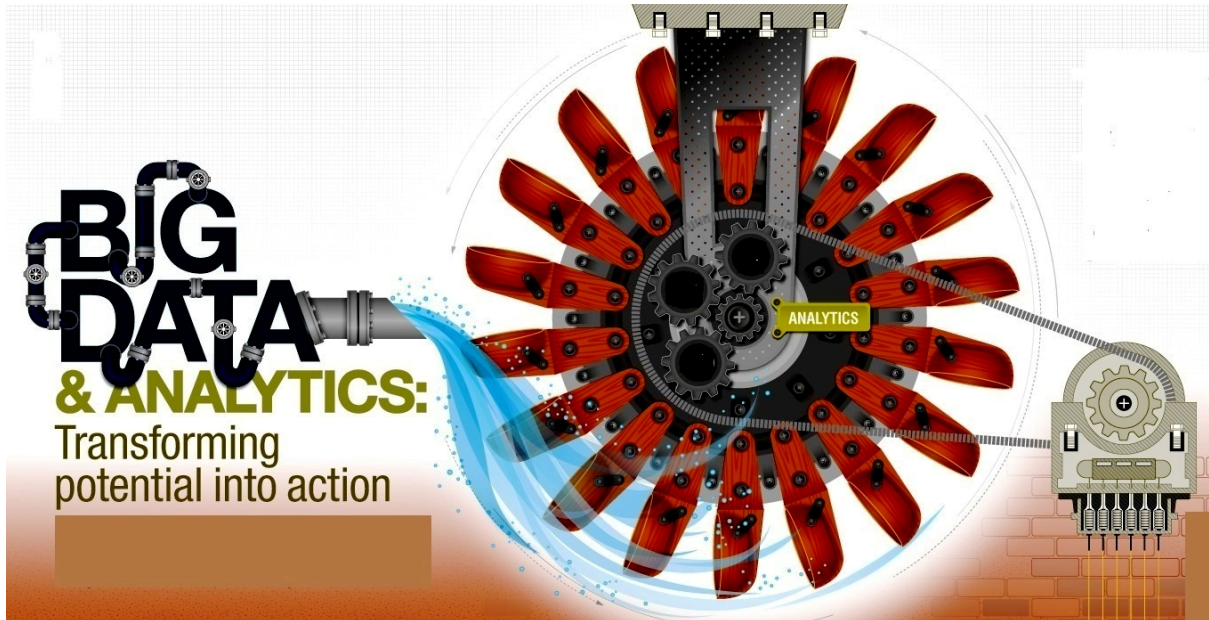


Big Data – Analytics



Big data is a broad term for data sets that are so large or complex that it is difficult to process this data using traditional database and software techniques. Big data could range from a few dozen terabytes to many peta bytes of data. Big Data represents the Information assets characterized by High Volume, Velocity and Variety to require specific Technology and Analytical Methods for its transformation into Value. (Refer to Understanding Big Data – June issue of I.S.R. pages 69-70).

In this scenario and in order to provide useful insight to the management and gain correct content, data has to be processed with advanced tools (analytics and algorithms) to generate meaningful information. Considering the presence of visible and invisible issues in an industrial environment, the information generation algorithm has to be capable of detecting and addressing invisible issues such as machine degradation, component wear, etc. **Big data requires exceptional technologies to efficiently process large quantities of data within tolerable elapsed times.**

An Organization doesn't need more Big Data, it needs actionable data. There are endless benefits to managing Big Data instead of either ignoring it or allowing it to overwhelm an organization.

Big data analytics refers to the process of collecting, organizing and analyzing large sets of data (called big data) to discover patterns and other useful information. Big data analytics can help organizations to better understand the information contained within the data and will also help identify the data that is most important to the business and future business decisions.

By fully integrating video surveillance and analytics with other security systems, such as access control, field operations and panic alarms, an organization can streamline its response and decision-making capabilities. **When these traditional security technologies are leveraged in combination with emerging systems, the result is actionable intelligence.** There is a strong link between video

and data analytics, not just for security operations, but for retail operations as well. Through new features such as real time access, instant event search, and archiving, other departments have visibility to what is going on across retail stores. Operations can uncover theft far more efficiently. Marketing can also optimize in-store promotions, and HR can better understand organizational behaviour.

Analytics can also provide real, measurable value in the area of business intelligence. By applying smart video to big data, retailers, banks and other organizations can realize a variety of operational benefits.

For example, retailers can use analytics to help count shoppers, monitor what products they're looking at and watch for traffic patterns—then adjust the store layout and merchandising accordingly. Banks can use analytics to help improve customer service and detect fraud. Casinos, meanwhile, can better identify when a high roller—or a known card counter—walks in the door and respond accordingly.

Big Data and Analytics strategy.

- Create Smarter, Leaner Organizations
- Equip the Organization to Have Cross-Channel Conversations
- Prepare the Organization for the Inevitable Future

Big data is everywhere. For organizations ready to take advantage of it, the key is adopting the right technology to help mine it effectively.

Traditional video surveillance is primarily a security application and very reactive – when something bad has happened, you spend hours reviewing the footage and then take action. With Big Data technologies, there is an opportunity to move beyond security to monitoring and analyzing the business in order to better understand customer behaviour, optimize operations, manage risk, and innovate. **For these organizations, integrating video with other security and business operations platforms, including loss prevention, marketing and point of sale, also yields a variety of benefits. Banks, retailers and casinos can more readily respond to criminal activity and vandalism, while easily sharing vital information with local law enforcement.**

Create Smarter, Leaner Organizations

A well thought out and executed Big Data and analytics strategy ultimately makes organizations smarter and more efficient. Big Data is being leveraged in many industries from criminal justice to health care to real estate with powerful outcomes. The same common sense approach to Big Data should be employed by organizations desiring similar results.

City Police Departments use Big Data technology to geo-locate and analyze 'historical arrest patterns' while cross-tabbing them with sporting events, paydays, rainfall, traffic flows, and federal holidays. These Departments utilize data patterns, scientific analysis, and technological tools to identify crime "hot spots." **With such analysis officers could be deployed to locations where crimes are likely to occur before the crimes are committed.**

Data creates leads and context in which the Police Department can operate at an optimal level - working smarter, leaner, and meaner.

Equip the Organization to Have Cross-Channel Conversations

Most Organizations are no longer able to carry out the conversations they once had with customers. A Forrester thought leadership paper, "Use Behavioral Marketing To Up The Ante In The Age Of The Customer," states that building "the technical infrastructure to support dynamic, cross-channel conversations with customers" is absolutely necessary for organizational impact. "It's simply not possible to manage the delivery of dynamic, targeted, consistent content, offers, and products, across digitally enabled customer touch points when marketing tasks are semi-automated with a series of un-integrated software tools."

Best industry practices today suggest staying close to the customer by investing in customer insight. Analytics enables the Organization to gain customer insight and strong market intelligence.

Prepare the Organization for the Inevitable Future

The digitization of all customer-facing organizational systems from customer service to sales to marketing is the inevitable future.

Big Data management tools are having a major impact on the marketing teams and departments of every organization today. **Organizations that resist the scientific and systematic approach to data analysis, online advertising, and more will become obsolete.**

The Challenges of Big Data Analytics

- Breaking down data silos
- Creating platforms that can pull in unstructured data as easily as structured data.

For most organizations, big data analysis is a challenge. Consider the sheer volume of data and the different formats of the data (both structured and unstructured data) that is collected across the entire organization and the many different ways the different types of data can be combined, contrasted and analyzed to find patterns and other useful business information.

The first challenge is to break down data silos to access all data an organization stores in different places and often in different systems. A second big data challenge is in creating platforms that can pull in unstructured data as easily as structured data.

This massive volume of data is typically so large that it's difficult to process using traditional database and software methods. To analyze such a large volume of data requires high performance analytics. Big data analytics is typically performed using specialized software tools and applications for predictive analytics, data mining, text mining, forecasting and data optimization. Collectively these processes are separate but highly integrated functions of high-performance analytics. **Using big data tools and software enables an organization to process extremely large volumes of data that a business has collected to determine which data is relevant and can be analyzed to drive better business decisions in the future.**

Use of Big Data Analytics - Examples

As the technology that helps an organization to break down data silos and analyze data improves, business can be transformed in all sorts of ways. Advances in analyzing Big Data allow researchers to decode human DNA in minutes, predict where terrorists plan to attack, determine which gene is mostly likely to be responsible for certain diseases and which ads one is most likely to respond to on, say, Facebook.



The business cases for leveraging Big Data are compelling. Netflix mined its subscriber data to put the essential ingredients together for its recent hit “House of Cards”. Subscriber data also prompted the company to bring back “Arrested Development”.

Another example comes from one of the biggest mobile carriers in the world. France's Orange launched its Data for Development project by releasing subscriber data for customers in the Ivory Coast. The 2.5 billion records, which were made anonymous, included details on calls and text messages exchanged between 5 million users. **Researchers accessed the data and sent Orange proposals for how the data could serve as the foundation for development projects to improve public health and safety.** Proposed projects included one that showed how to improve public safety by tracking cell phone data to map where people went after emergencies. Another showed how to use cellular data for disease containment.

The Benefits of Big Data Analytics

Enterprises are increasingly striving to find actionable insights into their data. Many big data projects originate from the need to answer specific business questions. With the right big data analytics platforms in place, an enterprise can boost sales, increase efficiency, and improve operations, customer service and risk management.

It is reported that most Organizations are applying big data analytics to improve customer retention, help with product development and gain a competitive advantage.

Organizations use big data analytics to improve speed and reduce complexity. They are using this to increasing efficiencies and optimizing operations.

Summary

- Big Data Analytics provides more than just security for video surveillance.
 - Analytics provides real, measurable value in the area of business intelligence.
 - Big Data and analytics help Police Departments to anticipate and identify criminal activity before it occurs.
 - Retail is gaining real-time insight across devices, destinations and geographies.
 - Heightened security concerns around the world are causing organizations to expand their use of video surveillance and other physical security technologies, forcing Security Departments and IT to converge and innovate. Big Data Analytics is driving this convergence to do more with video surveillance.
 - Operations can uncover theft for more efficiently.
 - Marketing can optimize in-store promotions.
 - HR can better understand organizational behaviour.
 - Big data analytics is being deployed to improve customer retention, help with product development and gain a competitive advantage.
 - Big Data Analytics helps increase efficiencies and optimizing operations.
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