Big Data: The Four V’s And Use For Business Innovations

Big Data:-

Big data refers to large volumes of information collected within a business over time. In this case, most of the data being collected is market information stemming from consumer usage. This information is essentially a constant loop of feedback from different kinds of consumers.

Big Data: The Four V’s:-

One can separate big data and “regular-sized” data based on the presence of a set of characteristics commonly referred to as the four Vs: volume, variety, velocity, and veracity (Schroeck, Shockley, Smart, Romero-Morales, & Tufano, 2012; Goes, 2014).

Volume

The U.S. Library of Congress, which archives both digital and offline content, has collected hundreds of terabytes of data (Manyika et al., 2011). Interestingly, the average company in 15 of 17 industry sectors in the United States has more data stored than the Library of Congress (Manyika et al., 2011), which underscores the fact that big data is pervasive across industries including finance, manufacturing, retail, health, security, technology, and sports. For a detailed discussion of various applications domains for big data, see Chen et al. (2012). Furthermore, in the vocabulary of big data, petabytes and exabytes have now replaced terabytes. For instance, large retailers each collect tens of exabytes of transactional data every year (McAfee & Brynjolfsson, 2012). To put these volumes into perspective using the classic grains of sand analogy, if a megabyte is a tablespoon of sand, a terabyte is a sandbox two feet wide and one-inch deep, a petabyte is a mile-long beach, and an exabyte is a beach extending from Maine to North Carolina.

Variety

Organizations are now dealing with structured, semi-structured, and unstructured data from in and outside the enterprise (Schroeck et al., 2012). The variety includes traditional transactional data, user-generated text, images, and videos, social network data, sensor-based data, Web and mobile clickstreams, and spatial-temporal data (Chen et al., 2012; McAfee & Brynjolfsson, 2012). Effectively leveraging the variety of available data presents both opportunities and challenges.

Velocity

The speed of data creation is a hallmark of big data. For instance, Wal-Mart collects over 2.5 petabytes of customer transaction data every hour (McAfee & Brynjolfsson, 2012). With respect to unstructured data, over one billion new tweets occur every three days, and five billion search queries occur daily (Abbasi & Adjeroh, 2014). Such information has important implications for “real-time” predictive analytics in various application areas, ranging from finance to health

(Bollen, Mao, & Zeng, 2011; Broniatowski, Paul, & Dredze, 2014). Simply put, analyzing “data in motion” presents new challenges because the desired patterns and insights are moving targets, which is not the case for static data.

Veracity

The credibility and reliability of different data sources vary. For instance, social media is plagued with spam, and Webspam accounts for over 20 percent of all content on the World Wide Web (Abbasi & Adjeroh, 2014). Similarly, clickstreams from website and mobile traffic are highly susceptible to noise (Kaushik, 2011). Furthermore, deriving deep semantic knowledge from text remains challenging in many situations despite significant advances in natural language processing.

How Big Data and AI Are Driving Business Innovation:-

Technological advancements we have actually come to accept as the norm, most notably the cost and other benefits of migrating infrastructure to the cloud, have a turbo-charged business, and fuelled a migration to Digital Interactions.

The following are some of the ways in which big data and AI have been combined into business processes to drive innovation.

But before we look at the supportive environment which is generating innovation in the field, here are some specifics about the ways AI is delivering innovation you might not know about.

AI is already a big part of your digital interactions. IBM believes that, by as soon as 2020, more than 85% of your interactions with brands will be between a human and automated response.

Personalization of key functions for mass populations:

The keyway AI provides innovation in Digital is through the provision of individually personalized content to a mass audience. Big Data and AI are what allow Spotify to personalise a playlist for each of their 70 million customers, without any human involvement. Amazon raised sales 35% by showing their customers that ‘people that bought this, also bought that’ – another personalized message built with the same tools.

Better and more relevant advertising:

As we speak, Google’s Adwords platform is being adapted with a new layer of Artificial Intelligence, around Google’s core search revenue platform. By analysing not just the many elements of user profiles that they already have, Google is adding consideration of each individual’s likelihood of converting on the site behind each of their paid search results. Google’s algorithm will show users ads of goods that they’re more likely to buy, raising the value of a visitor to the website and therefore what they are prepared to pay Google for the click. Everyone wins.

Innovation in content discovery:

AI engines that associate content fragments with users who are likely to engage with it are behind some of the extraordinary suggestions enjoyed by Facebook and Google in recent years. Google is now worth $720bn, Facebook $475bn, even after a recent market drubbing. Facebook now collates and disseminates much of the world's news automatically, using AI to ensure its own success. Two-thirds of American adults get their news from social media and engagement with news on social platforms actually rises with socioeconomic status and education.

Context-awareness and the Internet of Things:

The Internet Of Things is one innovation, happening in parallel to the AI revolution. Each will reinforce the work of the other. Networking equipment manufacturer Ericsson, for example, is investing hundreds of jobs in the US in Research and Development centered on both 5G and AI. Critically, the company wants to use context – the location and spatial coordinates of each connected device to inform the data it records and how it responds to queries.

Re-engagement:

AI is at the forefront of innovation in media, constantly tweaking the media assets you're shown and, recently, the time you're shown them, to maximize the chances of you engaging with the content. OVO Mobile is a next-generation phone company in Australia. OVO has secured the rights to digital video content such as the world e-Sports league and Australian gymnastics and delivers it in an app to their users. Customers who take a SIM plan from OVO automatically get access to the content OVO provides. Over time, the app learns each user's preferences and behavioural patterns. For example, suggesting a video clip someone might be interested in, while they are traveling on the bus to work and therefore have the time to enjoy it.