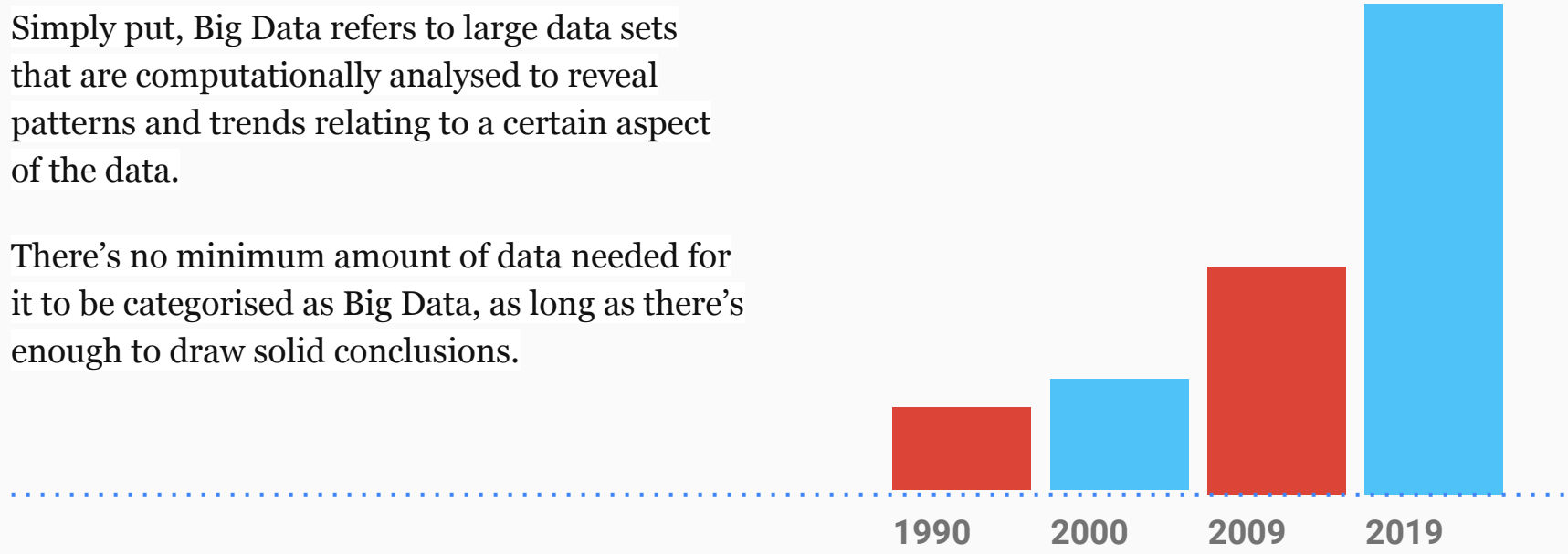
Big Data Analytics:
The next big thing.

What exactly is Big Data Analytics?

Simply put, Big Data refers to large data sets that are computationally analysed to reveal patterns and trends relating to a certain aspect of the data.

There's no minimum amount of data needed for it to be categorised as Big Data, as long as there's enough to draw solid conclusions.



Some Famous Big Data Analytics Examples-

23andMe

23andMe is a privately held personal genomics and biotechnology company. The company has developed its whole model around pulling insights from big data to give customers a 360-degree understanding of their genetic history.

Centers for Disease Control

The Centers for Disease Control and Prevention (CDC) is the national public health institute of the United States. Its main aim is to protect people health and safety through the control and prevention of diseases. CDC had to rely on doctor reports of influenza outbreaks. CDC was weeks behind in providing vaccines to the affected patients. Using historical data from the CDC, Google compared search term queries against geographical areas that were known to have had flu outbreaks. Google then found forty five terms correlated with the outbreak of flu. With this data, CDC can act immediately.

CBA

Commonwealth Bank of Australia is using big data to analyse customer risk. Using analytics can get better risk assessment businesses, ongoing cash flow performance and early warning of risk challenges.

Delta

Delta Air Lines, Inc. is a major American airline with an extensive domestic and international network. In general the top concern for an airlines would be passenger's lost baggage. Delta looked further into their data and created a solution that would remove the uncertainty of where a passenger's bag might be.

Energy Future Holdings Corporation

Energy Future Holdings Corporation is an electric utility company. The majority of the company's power generation is through coal- and nuclear-power plants. The company used Big data to install smart meters. The smart meters allows the provider to read the meter once every 15 minutes rather than one month.

Some Famous Big Data Analytics Examples-

US Xpress

US Xpress, provider of a wide variety of transportation solutions collects about a thousand data elements ranging from fuel usage to tire condition to truck engine operations to GPS information, and uses this data for optimal fleet management and to drive productivity saving millions of dollars in operating costs

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Verizon

Verizon uses big data to enhance mobile advertising. A unique identifier is created when the user registers in the website. The identifier allows advertiser to use information from the desktop computer. Marketing messages can be delivered to you mobile phone using this information.

McLaren's Formula One racing team

McLaren Racing Limited is a British Formula One team. The racing car team uses real-time car sensor data during car races, identifies issues with its racing cars using predictive analytics and takes corrective actions pro-actively before it's too late.

Woolworths

Woolworths is the largest supermarket/grocery store chain in Australia. Woolworth uses business analytics to analyse customers' shopping habit. The company nearly spent $20 million dollars to buy stakes in data Analytics Company. Nearly 1 billion is being spent on analysing consumer spending habits, and boosting online sales.

Some Famous Big Data Analytics Examples-

Google
Google constantly develops new products and services that have big data algorithms. Google uses big data to refine its core search and ad-serving algorithms. Google describes that the self-driving car as a big data application.

Kreditech
Kreditech is a young tech company headquartered in Hafencity, Hamburg. The European company uses Big Data to create a unique credit score for consumers using more than 8000 sources. The analysis also lead to a surprise discovery of correlation between social media behaviour and financial stability.

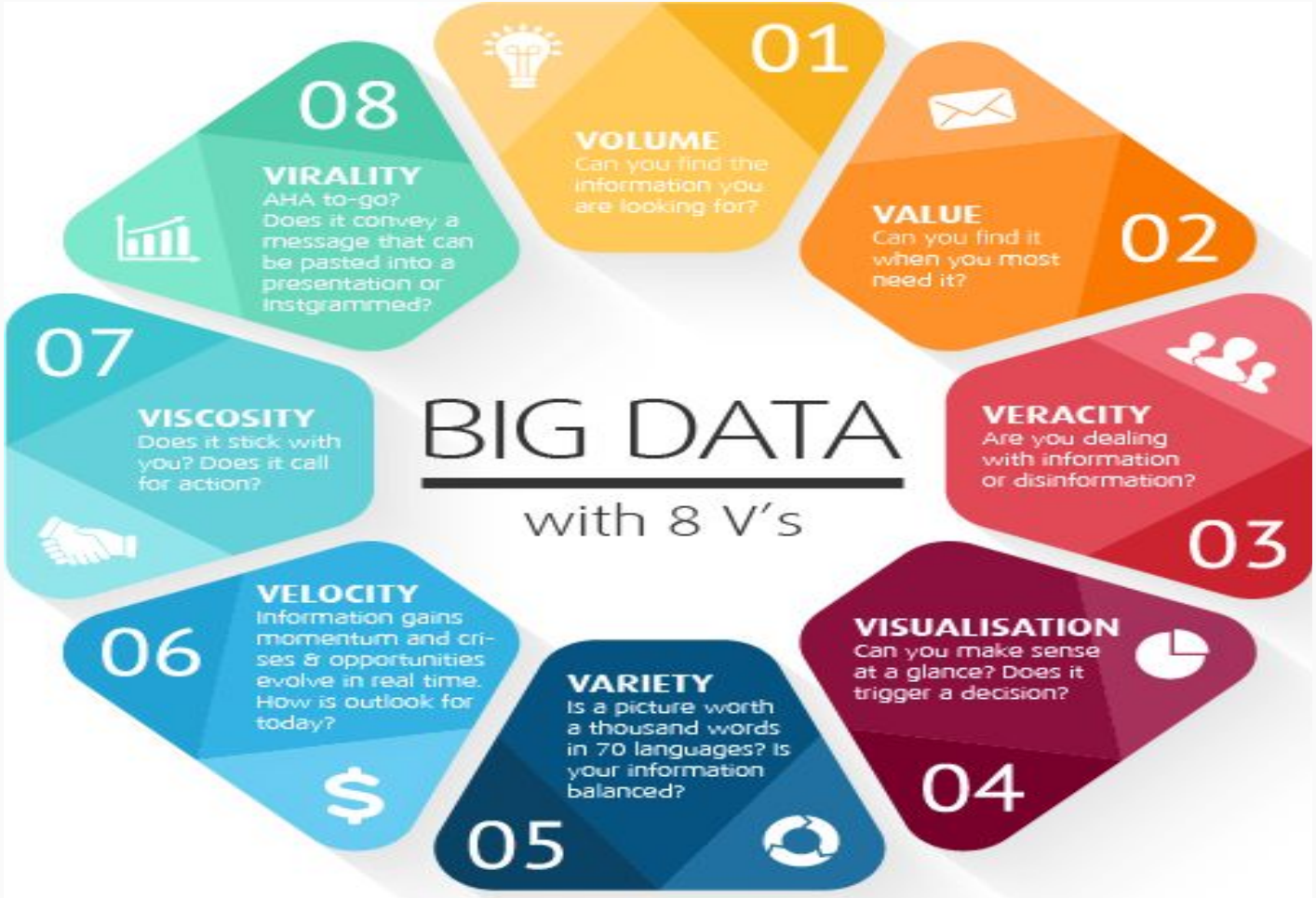
LinkedIn
LinkedIn is a business-oriented social networking service. Founded in December 2002 and launched in 2003, it is mainly used for professional networking. LinkedIn uses big data to develop product offerings such as people you may know, jobs you may be interested in, who has viewed my profile and more.

Mint.com
Mint.com is a free web-based personal financial management service for the US and Canada. Mint.com uses big data to provide users information about their spending by category and have a look where they spent their money in a given week, month or year.

Singapore healthcare
The healthcare providers in Singapore used analytics to better understand each patient's condition, lifestyle choices, work and home environment. They can create personalized treatment plans tailored to that person's individual behaviour.

Sprint
Sprint Corporation, is a United States telecommunications holding company that provides wireless services and is also a major global Internet carrier. It is the third largest U.S. wireless network operator as of 2014.Wireless carrier Sprint, uses smarter computing – primarily big data analytics to put real-time intelligence and control back into the network driving a 90% increase in capacity.

The different facets of Big Data through the 8 V's:



WHY Big Data Analytics?

Proactivity and Anticipating Needs

Organizations are under immense pressure to not only concentrate on acquiring customers on a regular basis, but to also understand the demands of the consumer so that they can optimize the customer experience while developing a long-standing relationship. When customers share their data, they are actually expecting their preferred brands to have a better understanding of them, form the necessary interactions, and deliver seamless experiences across the various touch points.

This is why companies should capture and reconcile the various customer identifiers such as email addresses, physical addresses, cell phones, etc. Customers are making use of a number of channels for interacting with the companies. This is why both digital and traditional data sources should be combined to understand the customer behavior. Customers also expect companies to deliver relevant and real-time experiences.

WHY Big Data Analytics ?

Mitigating fraud and risk

The main objective of fraud and security analytics is to protect the physical, intellectual, and financial assets from being misused by either internal or external threats. Effective data and analytics capabilities will help in delivering the optimum level of prevention from fraud as well as complete organizational security. Using statistical methodologies for fraud propensity models, which lead to alerts, assures the timely responses that are triggered by threat detection procedures as well as automated alerts or mitigation. Data management, along with transparent and efficient reporting of all fraud incidents, may result in better management of frauds. Moreover, the complete integration and correlation of all the data across the entire enterprise, can provide a unified view of the trickery across the different lines of products, transactions, or businesses.

WHY Big Data Analytics ?

Delivering the relevant products

There is no doubt that products are the life and blood of every organization. They are also undoubtedly the biggest investments that companies make. The role of the product management team is to find out the current trends in the market, which are responsible for driving the strategic maps for innovation, services, and new features. An effective and proper data collation from third-party sources, where individuals showcase their opinions and thoughts when merged with analytics, will help companies to remain competitive, even when new things are demanded or a new technology is being developed.

WHY Big Data Analytics ?

Personalization

Most companies are seen to struggle with structured data. Brands have to be responsive so that they are capable of dealing with the volatility that customers create by engaging with available digital technologies. A company can react and permit the customers to feel valued, and this is possible only because of advanced analytics. Big data provides the opportunity to interact with customers, based on their personality and understanding their attitudes. Companies can also consider real-time locations for delivering personalization in multi-channel service environments.

WHY Big Data Analytics ?

Optimizing the customer experience

If operations are poorly managed, it can lead to a number of issues that will be expensive. Furthermore, it involves the risk of spoiling the customer experience, and have a negative effect on brand loyalty. When companies apply analytics to design, control of various processes, optimization of business operations for producing products or services, it assures an effectiveness and efficiency of fulfilling customer expectations. Furthermore, companies can achieve an operational experience.

The analytical techniques that are modern and advanced can be established for improving the productivity of field operations. It can also increase efficiency and help in optimizing the organizational workforce, in accordance with the needs of both the business as well as customer demands. The maximum use of data analytics helps to ensure continuous improvement due to the proper measurement of the main operational metrics.

Features of Big Data Analytics

with real world examples of huge companies...

Big Data for Customer Acquisition and Retention

In the year 2015, Coca-Cola managed to strengthen its data strategy by building a digital-led loyalty program.

Big Data in Supply Chain Management

PepsiCo is a consumer packaged goods company that relies on huge volumes of data for an efficient supply chain management. The company is committed to ensuring they replenish the retailers' shelves with appropriate volumes and types of products.

Big Data Analytics to Solve Advertisers Problem and Offer Marketing Insights

Netflix is a good example of a big brand that uses big data analytics for targeted advertising. With over 100 million subscribers, the company collects huge data, which is the key to achieving the industry status Netflix boosts

Big Data Analytics for Risk Management

UOB bank from Singapore is an example of a brand that uses big data to drive risk management. Being a financial institution, there is huge potential for incurring losses if risk management is not well thought of. UOB bank recently tested a risk management system that is based on big data. The big data risk management system enables the bank to reduce the calculation time of the value at risk.

Big Data Analytics As a Driver of Innovations and Product Development

Amazon Fresh and Whole Foods
Focusing on big data analytics, Amazon whole foods is able to understand how customers buy groceries and how suppliers interact with the grocer. This data gives insights whenever there is need to implement further changes.

Disadvantages of Big Data Analytics

The various disadvantages of data analytics are as follows:

- Data analytics can breach customer privacy as information such as online transactions, purchases, or subscriptions, can be viewed by the parent companies. There are chances that the companies will exchange these databases for mutual benefits.
- The price of the tools normally depends on the features and applications that they can support. Moreover, some tools are complex and require proper training.
- The information that is obtained by making use of data analytics can be misused.
- One of the toughest jobs is to select the correct analytics tool.

Why is Big Data So Important?

Consumers live in a digital world of instant expectation. From digital sales transactions to marketing feedback and refinement, everything in today's cloud-based business world moves fast. All these rapid transactions produce and compile data at an equally speedy rate. Putting this information to good use in real-time often means the difference between capitalizing on information for a 360 view of the target audience, or losing customers to competitors who do.

How to Use Big Data?

Getting a handle on all of the above starts with the basics. In the case of big data those usually involve Hadoop, MapReduce and Spark, 3 offerings from the Apache Software Projects.

Hadoop is an open-source software solution designed for working with big data. The tools in Hadoop help distribute the processing load required to process massive data sets across a few—or a few hundred thousand—separate computing nodes. Instead of moving a petabyte of data to a tiny processing site, Hadoop does the reverse, vastly speeding the rate at which information sets can be processed.

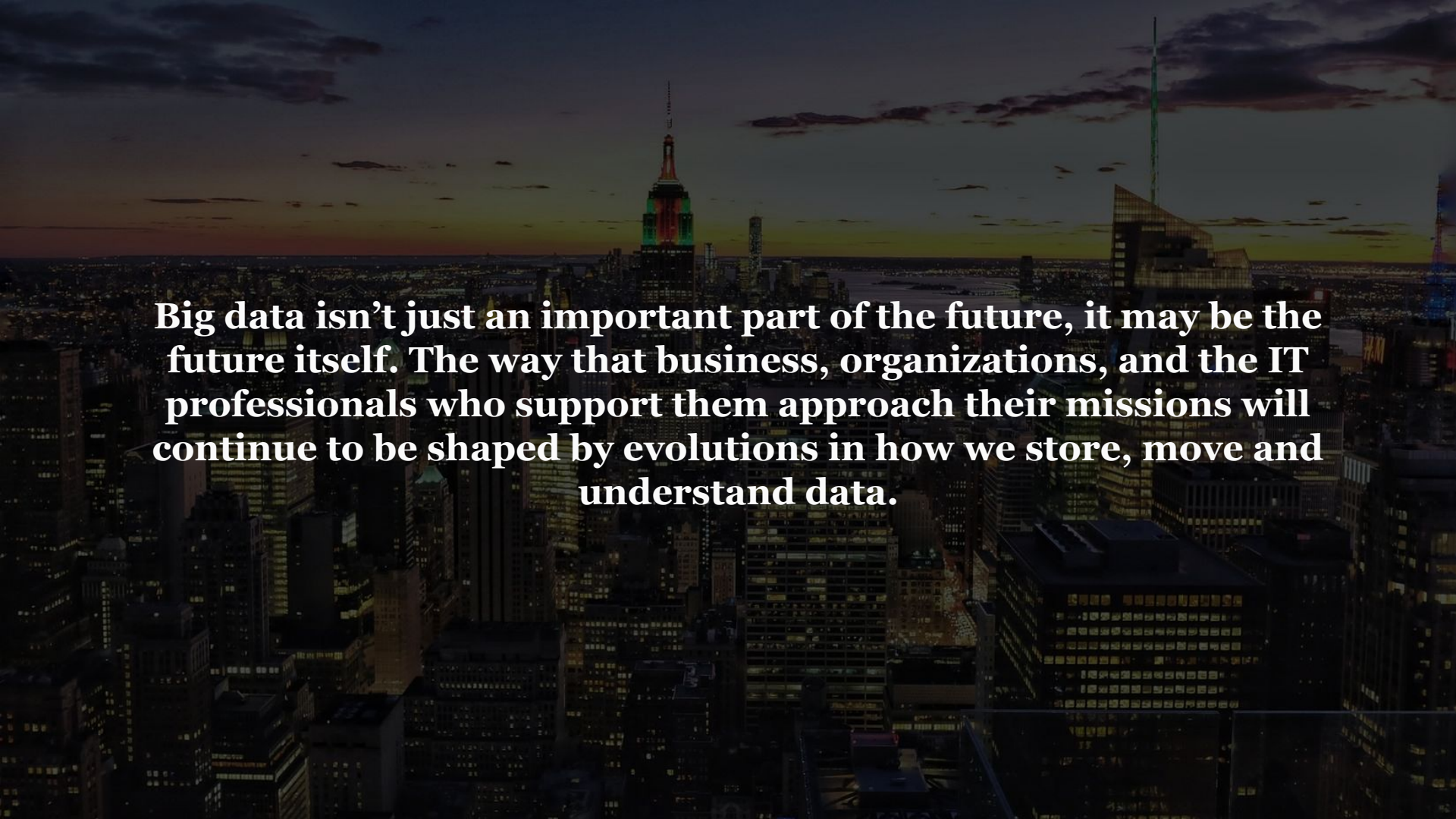
MapReduce, as the name implies, helps performs two functions: compiling and organizing (mapping) data sets, then refining those into smaller, organized sets used to respond to tasks or queries.

Spark is also an open source project from the Apache foundation, it is an ultra-fast, distributed framework for large-scale processing and machine learning. Spark's processing engine can operate as a stand-alone install, a cloud service, or anywhere popular distributed computing systems like Kubernetes or Spark's predecessor, Apache Hadoop, already run.

The Rise and Future of Big Data

With the explosion of cloud technologies, the need to wrangle an ever-growing sea of data became a ground-floor consideration for designing digital architecture. In a world where transactions, inventory, and even IT infrastructure can exist in a purely virtual state, a good big data approach creates a holistic overview by ingesting data from many sources, including:

- Virtual network logs
- Security events and patterns
- Global network traffic patterns
- Anomaly detection and resolution
- Compliance information
- Customer behavior and preference tracking
- Geolocation data
- Social channel data for brand sentiment tracking
- Inventory levels and shipment tracking


Big data isn’t just an important part of the future, it may be the future itself. The way that business, organizations, and the IT professionals who support them approach their missions will continue to be shaped by evolutions in how we store, move and understand data.