

Data Handling and Business Intelligence

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Introduction

Business Intelligence incorporates the tools and methods that corporations leverage to gather, organise, process and present data that helps in making crucial business decisions. Business Intelligence tools make it possible for corporations to process raw data for ease of comprehension. When stakeholders within a business comprehend the meaning of data they can capitalise on lucrative market opportunities. This enhances the competitive edge of business in the dynamic business environment. Business intelligence makes it possible for corporations to stay ahead of the competition by receiving customer insights, moves made by rival firms and changes in market trends. This report will critically assess the reasons that business intelligence (BI) trends, tools, and apps are the way of the future and how they can support the organisation in making decisions.

BI tools, trends and application

Predictive analytics: Kumar and Garg (2018) note that these trends are utilised by Amazon to make future predictions through statistical algorithms and historical data. The benefit of predictive analytics is that it enables Amazon to understand the current tastes and preferences of clients in the market and design customised products. Amazon can segment its market and adopt customised promotions that make them aware of current products. A machine learning tool is used to detect any fraudulent transaction. This helps to enhance customers' trust and minimise the loss of finances. However, predictive analytics is uncertain and cannot be relied on to give accurate results (Lousa, Pedrosa and Bernardino, 2019).

Natural language processing: Chowdhary and Chowdhary (2020) note that this tool mainly focuses on computer and human interaction. NLP has eased the process of communication as computers can comprehend and interpret human language. For instance, Chatbots and virtual assistants are utilised by Amazon to facilitate self-service where customers can ask any query and receive instant responses. NLP can be misleading as it might fail to translate the client's language properly. Thus, inaccurate responses might be given which might not satisfy clients (Chowdhary and Chowdhary, 2020).

Cloud-based BI solutions: According to Al-Aqrabi et al. (2015), these are services provided by cloud service providers who are mandated to host and distribute organisation data online. Cloud-based solutions enhance the scalability of Amazon as they can modify their computer resources to suit the demand. Thus, amazon can manage big data cheaply as they are not required to make

investments in new infrastructure. Cloud-based solutions are expensive as they need a strong data network for users at Amazon to access any data stored in the cloud platforms. When the data connectivity is low or the cloud service providers have weak encryption, Amazon data can be interfered with by cyber attackers (Al-Aqrabi et al., 2015).

How BI trends help in making efficient decisions

Advanced-Data Analytics and Machine Learning: Corporations are in a position to leverage the use of sophisticated data analytics and machine learning algorithms in deriving insights from big datasets, analysing the patterns and making predictions of the future. For instance, Amazon leverages the use of predictive data analytics to estimate the expected number of customers that will make an order within a week (Aroraa et al., 2022). As a result, they can tell the resources needed which ensures that quality services are delivered to customers and total costs are reduced. The negative side of this data analytics and machine learning is that algorithms might lead to bias and false assumptions which affects the accuracy of predicted outcomes. In the event of a job opportunity, biased machine learning algorithms could be designed to favour the selection of a certain gender and in the end, encourage discrimination which might result in legal issues (Rico et al., 2019)

Real-time business intelligence: Business intelligence provides corporations in the industry with real-time updates on client behaviour and market trends which enhances their level of flexibility (Machado et al., 2019). They can adapt to any change in the market depending on the trends in the industry. For Amazon to enhance their sales and client satisfaction they leverage the use of real-time intelligence to monitor traffic on their website and adopt their prices to suit customer needs. The negative side of depending on real updates can mislead the business into developing ineffective strategies. For instance, when Amazon is experiencing website traffic it might be quick to replenish its expensive stock level. When clients visit the website it might not be that they want to make purchases (Delen, Moscato and Toma, 2018).

Cloud-based BI solutions: cloud-based solution providers have increased the analysis and storage of Big data. This has allowed small businesses to rival big corporations as they can easily access sophisticated cloud-based solutions which seem to be affordable (Al-Aqrabi et al., 2015). Cloud-based solutions are usually faced with data security issues as they are prone to cyber-attacks. For instance, when Amazon fails to implement proper security measures, their systems might be

hacked leading to loss and exposure of client data to third parties. They might be sued for damages from affected clients which is costly. Lack of strong internet connectivity might make it difficult for users to make real-time decisions as they cannot access data stored on clouds (Al-Aqrabi et al., 2015).

Natural language processing: these tools usually provide users with an opportunity to communicate as they are configured with the ability to understand natural language, augmented analytics and NLP technologies (Aroraa, Lele and Jindal, 2022). This makes it easier for data to be read by individuals who are not proficient in technology. For instance, Chatbots which have been configured with NLP can allow the sales team at Amazon to access pertinent data and obtain needed recommendations in real time. However, overreliance on these insights from augmented analytics without the involvement of an expert might lead to complacency. As a result, decisions made might sometimes be misleading causing a company to make losses (Aroraa, Lele and Jindal, 2022).

Self-service tools: these tools of BI enable users to access any data that is deemed important which frees up overreliance on IT experts quickening the process of decision-making. The benefit of self-service tools is that employees within corporations such as Amazon can access real-time data and process it to generate reports without assistance from IT experts (Farah, Ramadan and Shatila, 2020). The rate of responding to an issue is quickened as front-line employees have more freedom to make key decisions with the help of self-service tools. At Amazon, individuals are allowed to use the Amazon Advertising Console which is a self-service tool to create and advertise their online campaigns. These self-service tools might be misleading unless the individuals involved have received sufficient training. Failure to train the users might result in inconsistencies in data interpretation (Alpar and Schulz, 2016).

Conclusion

Business intelligence has revolutionised how companies utilise data in their operations. Business intelligence serves as a strategic tool that helps in making critical business decisions. BI tools and applications identified such as self-service tools. Natural language processing and advanced data analytics have enhanced the competitive edge of online retail outlets such as Amazon. Through the application of these trends, applications and tools Amazon can capitalise on market opportunities which are lucrative through data analytics.

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