Data Handling and Business Intelligence

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Report on Business Intelligence trends

The business environment nowadays is very competitive and because of that business have evolved trying to remain relevant and their way of action has changed. Being informed is crucial for any business and business intelligence supports the business to obtain and manage the information better. The role of business intelligence has become a priority for majority of business and industries as it can contribute towards creating competitive advantage and for the business to thrive. The concept of business intelligence has been explored more deeply in the recent times along with the development of the technologies to support the business decision making. According to Foyle and Guillemette (2021) business intelligence is "a combination of processes, policies, culture, and technologies for gathering, manipulating, storing, and analysing data collected from internal and external sources, in order to communicate information, create knowledge, and inform decision making".

One of the Business Intelligence trends is the Cloud, Saas and Cloud Adoption either on private or public Cloud of Saas Solution. The Cloud System is a current technology embraced by business worldwide based on their capabilities. It enables the managers to make use of the technology and benefit of the emerging Web-based technologies and computing systems (Soliman, 2015).

In the past, acquiring and storing data was not at the hand of large number of business because of the resources involved, but nowadays the cost has decreased and business use it to remain competitive. Business collect more and more data at a greater rate. Big Data analysis requires powerful computing devices, connected sensors and business want to obtain answers in real time if possible from a wide variety of data. Technology development in software and hardware have improved data and software consumption, infrastructure and the levels of connectedness. Business can use distributed storage systems to store large volumes of data that allows users to execute data queries very fast, as often as needed and with reduced or no assistance from IT expertise (Ng, 2013).

There are different types of cloud computing, private clouds, public clouds, hybrid clouds and multi clouds and are used three main types of cloud-computing Infrastructure-as-a-Service (IaaS), Platforms-as-a-Service (PaaS), and Software-as-a-Service (SaaS). Each cloud has its features and its own mix of technologies and it has the purpose of sharing scalable computing resources and running workloads within the selected system. The clouds are based on an operating system, a management platform, application programming interfaces and can also involve visualisation and softwares for automation. The public clouds are not owned by the end user, whilst the private clouds

are, but when the private cloud is partitioned and redistributed to multiple tenants it becomes public. The public clouds can also become private when is used by a single customer under its firewall and isolated access. Private clouds can be owned or rented. Some organisations that lack IT expertise will use the services of a third party to benefit of the cloud services. The hybrid clouds are created from multiple environments connected through local area networks (LANs), wide area networks (WANs), virtual private networks (VPNs), and/or APIs. Multi clouds are formed of more than 1 cloud service, from more than 1 cloud vendor either public or private. Multi clouds become hybrid clouds when multiple clouds are connected by some form of integration or orchestration (Red Hat, 2022).

Natural Language Processing (NLP) is used to generate answers that can be accessed by the organisation irrespective of the existing technical skills. It helps the users to interact with the data and obtain required information. Sometimes the extraction of the information involves a need of adapting to specific domains and tasks and in the case of real-world applications can be used rule-based systems or a methods combination. Obtaining structured data can be realised from different sources such as texts which can offer information on named entities which involves temporal expressions, and are connected by means of relations. Ambitious language that can suggest more interpretations lead to reduced levels of correct computer analysis. That is why the performance of the NLP can vary depending on the base of information. Many natural language processing tasks, especially the more complex ones, only become really accurate and usable when they are tightly focused and restricted to particular applications and domains (Maynard et al, 2017).

Artificial intelligence is used by many industries and it is applied in job processes and in accumulating business data. It can be used for learning processes, but also for planning and problem solving processes. It is one of the most advanced existing technologies in the world and it is still growing as it has the attention of many scientists. A good example of usage of artificial intelligence through the business intelligence is in the Human Resources. It facilitates recruitment, staffing, training and development and many other aspects. The Artificial Intelligence programs and applications are important to reduce the human effort and human error, but it needs to follow the organisational principles and ethics also. Applying to a job is made accessible to a large volume and that can involve numerous job applications as artificial intelligence is able to make use of bulk data. With the usage of artificial intelligence the process of shortlisting the applicants can be done at an increased and fast pace. Artificial intelligence is important to increase efficiency of work but also for task innovation and fruitful outcomes (Gupta et al, 2022).

Mobile Business Intelligence is the system which allows access of business data through mobile devices such as tables or mobile phones to support business decision making or other activities required by the business to perform. This trend has been emphasised along with the smartphones development which had opened a new era of mobile computing. A large number of business are making use of the Mobile Business Intelligence systems because of the practical aspects given and the variety of the benefits. It has been observed that it helps the business processes, it increases employee productivity and it leads to an overall faster and with more results as it can access data from any location at any time. Some business are reluctant to use the mobile business intelligence and prefer to use other systems, but other business are finding the mobile business intelligence apps more straightforward and faster (Peters et al., 2016).

Data quality refers to the condition of the data which is based on different factors that can provide indicators such as accuracy, consistency, completeness, reliability and timeliness. The measuring of all this factors are used by organisations to verify the data and identify data errors. Any errors has to be assessed and resolved accordingly by the specialised department existing in the organisation. The increased role of data usage and application has emphasised the importance of data quality and data quality management. Incorrect, ambiguous or partial data can lead to poor-quality data and further that to inaccurate analytics that can reflect in poor business decisions. Poor quality data can add extra costs to the business, can make the business loose sale or improper financial conduct. The annual cost of the bad data quality can have a high cost up to 15% to 25% of the annual revenue (Tech Target, 2022).

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