

Data Handling and Business Intelligence

LCBB5000

Student: Andrada Maria Oncescu

ID: 2030829

Report on Business Intelligence trends

Business Intelligence is part of the Decision Support System and is the sum of the information systems that aggregates structured and unstructured data to be transformed in useful knowledge for the organisation. The organisation can then make use of the knowledge to have better informed decision making processes. The concept of Business Intelligence became more popular in the late eighties and has evolved since then. Business Intelligence specialists created Business Intelligence object models or predictive models to add semantics, rules, and predictive capabilities to the reports and trends have been starting to take shape (Connolly et al, 2008).

The *Analytical Databases* are defined as the specialised databases optimised for analytics that can be available as software or as data warehouse appliances. Initially the Business Intelligence systems assumed sparsely populated data warehouses and existed in a reduced number. Some databases such as OLAP database were capturing static snapshots of primarily numeric structured data, but that has been developed and data now has clear characteristics volume, variety and velocity and *Cloud computing* technologies have emerged (Ng, 2013).

The Internet is a major source for unstructured data through social media platforms and provides significant information for the organisations, but can be difficult to be analysed as it requests a large storage solution and computational units. The current technology used towards that are cloud computing infrastructures which are more cost effective now with the development of technology. Therefore the cloud computing has become crucial to the business intelligence infrastructure. The data warehouses are owned by specialists who are able to manage it and provide support around it. The Business Intelligence end users don't even need to have specialist knowledge they can benefit of technological solutions that can give the required results.

One of such technology is the *Artificial Intelligence* technology. Society and business including have different expectations nowadays and expect results within minutes and want to be able to use the technology themselves without the support of IT specialists. Artificial Intelligence is considered to be the most revolutionary tool as a business intelligence technology and is used in many industries for many purposes. Business Intelligence has integrated the Artificial Intelligence to estimate demand, for customer service provision, for recruitment and training. Business benefits of automated process for hiring and job hunting, for shortlisting candidates. Artificial Intelligence can sort data based on requested patterns the candidates that fit better the positions. The technology is also used for analysing proposals and keeping track of prices and selecting the right client. It can also be used for Cybersecurity and avoid data leakage and keep away any attack to the system.

Another application of Artificial Intelligence is for market forecasting where some machines learning can help with predictions by learning the stock market patterns. It is also used to analyse customer behaviour and provided feedback. Social media can generate great amount of feedback and artificial intelligence it is used to analyse it. It is also used for chatbots to provide customer service and offer 24/7 assistance. Artificial Intelligence can process data extraction and segregation and facilitate the financial management (Gupta, 2022).

Data literacy is defined as “the fluency with which individuals and organisations can comprehend and communicate data (Collibra, 2022). The organisations nowadays are data-driven and highly literate organisations can benefit for the flux of information and knowledge. This ability to “speak” data refers to the ability to handle the data, to read, write and communicate. This also means that are able to overcome siloed architectures to analyse the collected data.

According to Tech Target (2015) data literacy also involves obtaining meaningful knowledge for the business decision taking and having this competencies it requires certain skills and training such as reading graphs and charts, understanding of data constructs, data sources through required techniques and analytical methods, but also being able to draw correct conclusions and resulting value.

Data discovery refers to the process of collecting the data and evaluating it. This can be realised from different sources and determines the patterns occurred from the data and the generated trends. The organisations use data discovery to understand their data and it has an informatory purpose which can be extracted from siloed data sources. Data which is not understood is not helpful for the organisation and can not contribute to the business activity, it has no meaning and no significance. It involves aligning the sum of data sources and preparing the data following the cleansing process. Collecting data only becomes relevant when is transformed in insights for the business decision making process from the organisations. Besides data preparation visual analysis and guided advanced analytics are two other categories of data discoveries. Visual analytics is used by the data analysts to identify hidden insights from the collected data which can have great potential. It can look for trends and patterns, but also for relationships or anomalies that can have certain significance. Making data “clean” refers to the process of spotting the opportunities and enhancing value creation. All this actions would also keep the organisation ahead competition and create competitive advantage (Pierson, 2021).

Data discovery applies to all operations from the organisation capturing a 360 degree view from the interaction with the customer, it can detect customer dissatisfaction, it can offer comprehension over

the customer behaviour and how they perceive the business activity of the organisation. This way the organisation can act based on this insights and can make decisions (Tibco, 2022).

Microsoft is one of the most important actors in the market for Analytics and Business Intelligence Platforms. Its contribution has been acknowledged and the organisation was placed as one of the leaders for the abilities to develop and apply technologies towards the Business Intelligence. The company promotes products and services that help business to secure data analytics and Power BI is a service that allows data visualisation and sharing insights, it converts data from different sources to build interactive dashboards and bi reports using .PBIX file. The service is promoted under the Microsoft brand which is well know and trusted world wide and is familiar through the Microsoft 365 experience. The service assumes data loss prevention and oversight of sensitive data and are compatible with services such as Azure Private Link and Azure Virtual Network. The service is “a unified, scalable platform for self-service and enterprise business intelligence” (Power BI, 2022).

In conclusion all this trends that derive from the Business Intelligence are in continuous development along with the technology and with the way organisation makes business. The concept of Business Intelligence itself has developed its methods, its frameworks, the technology used, the skills and it has demonstrated the importance of knowledge and the benefits for the business in the current competitive business environment.

References

Connolly, T., Begg, C.E., Holowczak, R. (2008) "Business database systems". Harlow: Addison Wesley

Gupta, M., Sharma, D., Gupta, H. (2022) "Revolutionizing Business Practices Through Artificial Intelligence and Data-Rich Environments". Hershey: IGI Global

Ng, R.T. (2013) "Perspectives on business intelligence". San Rafael, Calif. (1537 Fourth Street, San Rafael, CA 94901 USA): Morgan & Claypool. Available at: <https://doi.org/10.2200/S00491ED1V01Y201303DTM034>.

Pierson, L. (2021) "Data science". 3rd edition. Hoboken, NJ: John Wiley & Sons, Inc.

Power BI (2022) "Power BI service" [Online]. Available at: <https://powerbi.microsoft.com/en-us/desktop/> Accessed 22.12.2022

Collibra (2022) "Data literacy" [Online]. Available at: https://www.collibra.com/us/en/resources/why-data-literacy-is-crucial?utm_source=google&utm_medium=paid_search&utm_campaign=15853324301&utm_term=&utm_device=c&gclid=CjwKC A i A q t - d B h B c E i w A T w - g g F w Q Z x T j 6 Y I - i E o s U z f f 4 w u T N y N 6 k P E A p I a M T K J U C x m G J S z I L a g 2 W x o C t O k Q A v D _ B w E Accessed 22.12.2022

Tech Target (2015) "Data literacy" [Online]. Available at: <https://www.techtarget.com/whatis/definition/data-literacy> Accessed 22.12.2022

Tibco (2022) "Data discovery" [Online]. Available at: <https://www.tibco.com/reference-center/what-is-data-discovery> Accessed 22.12.2022