

Applications And Best Practices Of Analytics In Business

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Abstract

In recent years, the use of analytics in business has become increasingly widespread, allowing organization to make data-driven decisions and improve their overall performance. The purpose of this article is to present the current status of business analytics, covering a variety of applications. We also discuss the challenges and opportunities associated with the use of analytics in business, including the need for skilled professionals, data governance and the ethical considerations involved in the collection and use of data.

Keywords: Analytics, Talent Management, Artificial Intelligence, Customer Analytics.

Introduction

Business analytics uses data, statistical algorithms, and machine learning to evaluate and understand complicated business data to make educated choices. Data visualization, data mining, predictive modeling, and other technologies help businesses find patterns, trends, and linkages in their data (Davenport, T. H., & Patil, D. J. 2012; Fader, P. S., Hardie, B. G., & Lee, K. L. 2005). Data-driven decision-making and innovation are the goals of business analytics. The massive volumes of data created by enterprises and the growing demand for data-driven decision making have boosted the profile of business analytics in recent years. Some of the most significant uses and advantages of analytics in business are, business analytics gives firms the resources and knowledge they need to base choices on facts rather than instinct or gut feeling. Decision-making becomes more precise, trustworthy, and efficient as a result, which may spur innovation and development. Businesses may optimize and simplify their operations to increase efficiency by using analytics to discover inefficiencies and bottlenecks in their operations and procedures. (Cukier, K., & Mayer-Schönberger, V. 2013; Gandomi, A., & Haider, M. 2015; and Lazer, D., Kennedy, R., King, G., & Vespignani, A. 2014). Businesses that use analytics are better able to spot market trends, client preferences, and other critical information that might offer them a competitive edge over rivals. Businesses may utilize analytics to learn more about consumer behavior, preferences, and comments. By doing so, they can enhance the customer experience and forge closer bonds with their clients. Analytics in business may assist companies in finding new sources of income, cutting expenses, and improving their overall financial performance. Bojarski, (M., Del Testa, D., Dworakowski, D., Firner, B., Flepp, B., Goyal, P., & Zhang, X. 2016; Frank, R. H. 2017; and Provost, F., & Fawcett, T. 2013). Businesses may reduce the impact of possible threats and optimize chances

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for development and innovation by using analytics to better detect and manage risks. For businesses to thrive in today's dynamic market, they need to utilize analytics to make informed decisions that propel expansion and new product development (Hastie, T., Tibshirani, R., & Friedman, J. 2009; Li, X., Liu, S., Wang, Z., & Li, G. 2017).

Artificial intelligence is set to revolutionize talent management.

Artificial intelligence (AI) has the potential to revolutionize talent management by providing new tools and techniques to attract, develop, and retain skilled employees. This digital change is just one source of frustration for both businesses and employees. Other serious challenges include pandemic-related workplace changes, economic uncertainty, and an unending talent and skills shortage. To compete in this climate, company executives must adopt a completely different approach when it comes to growing their workforces. Many people are turning to artificial intelligence.

AI is especially useful as talent acquisition shifts to a skills-based approach. When it comes to attracting both internal and external talent, firms all too often rely on inflexible job descriptions. As a result, many people do not apply because their experiences may not be directly related to the job advertisement or the job description is imprecise, leaving them uncertain.

Applications of analytics in business

1) Customer analytics

Customer analytics is an extremely important tool that helps businesses better understand their consumers, enhance the entire customer experience, and make choices based on the data collected from those customers (Frank, R. H. 2017; Fader, P. S., Hardie, B. G., & Lee, K. L. 2005; Hastie, T., Tibshirani, R., & Friedman, J. 2009; and Lazer, D., Kennedy, R., King, G., & Vespignani, A. 2014). Customers' levels of happiness, loyalty, and retention may all be boosted by using the insights that can be gleaned through customer analytics. This, in turn, can lead to an increase in an organization's revenue and profitability.

2) Supply chain analytics

Business analytics' supply chain analytics analyses data on product acquisition, manufacturing, and distribution. Supply chain analytics optimizes supply chain operations and decision-making. Demand forecasting, inventory management, logistics, supplier selection and performance, production planning, and capacity planning may all benefit from supply chain analytics. Supply chain analytics improves efficiency, customer service, decision-making, and costs. Internal systems, market data, and third-party data are used in supply chain analytics. (Davenport, T. H., & Patil, D. J. 2012; Gandomi, A., & Haider, M. 2015). Predictive analytics, machine learning, and simulation are being used in supply chain analytics. Organizations may increase performance and competitiveness by using supply chain analytics to make data-driven choices and optimize their supply chains.

3) Financial analytics

Financial analytics is a part of business analytics that analyses financial data to improve performance and decision-making. Data visualization, statistical analysis, and predictive modeling enable this. Budgeting, financial planning, risk management, and performance monitoring all use financial analytics. Financial analytics improves financial planning, risk management, decision-making, and operational efficiency

(Brynjolfsson, E., & McAfee, A. 2014; Gandomi, A., & Haider, M. 2015; and Lazer, D., Kennedy, R., King, G., & Vespignani, A. 2014). Financial analytics uses financial accounts, market data, and internal systems. Financial analytics increasingly uses big data and sophisticated analytics methods like machine learning and artificial intelligence. Financial analytics helps companies enhance their financial performance and boost profitability and competitiveness (Demirkan, H., & Delen, D. 2013; Hastie, T., Tibshirani, R., & Friedman, J. 2009; and McAfee, A., & Brynjolfsson, E. 2017).

4) Human resources analytics

HR analytics uses data and analytics to inform strategic HR decisions. Employee attrition rates, recruiting statistics, and performance measures are collected and analyzed. HR analytics informs talent management, performance management, and workforce planning choices by revealing HR practices. HR analytics helps firms to monitor and evaluate their HR operations, discover areas for improvement, and make data-driven workforce planning, talent management, and employee development choices (Cukier, K., & Mayer-Schönberger, V. 2013; Frank, R. H. 2017; Lazer, D., Kennedy, R., King, G., & Vespignani, A. 2014). HR analytics may assist firms understand the connections between HR procedures, employee behavior, and business results and enhance and optimize HR processes.

5) Marketing analytics

Marketing analytics uses data and analytics to improve marketing choices. Customer behavior, market trends, and campaign performance data are collected, analyzed, and interpreted. Marketing analytics helps companies make data-driven choices about their marketing plans and approaches. Marketing analytics may evaluate email, social media, and advertising campaigns (Davenport, T. H., & Patil, D. J. 2012; Fader, P. S., Hardie, B. G., & Lee, K. L. 2005; McAfee, A., & Brynjolfsson, E. 2017; and Provost, F., & Fawcett, T. 2013). It also helps companies evaluate consumer behavior and discover growth and development possibilities. Marketing analytics helps companies make smarter choices and better utilize their resources.

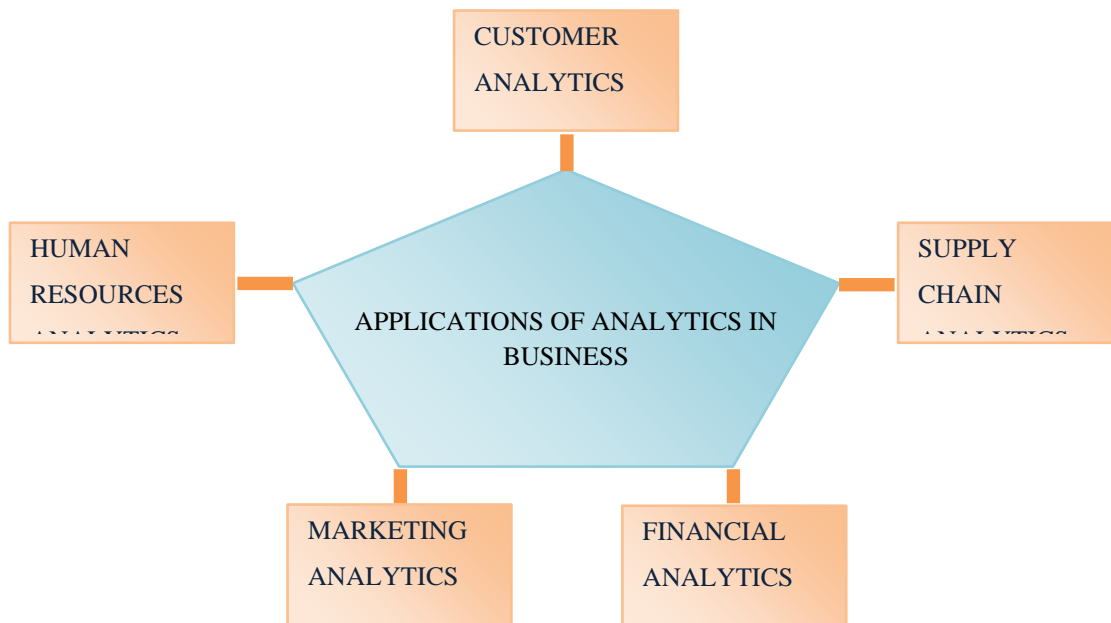


Figure 1: Analytics' Practical Uses in Industry

Best practices in analytics

1) Data governance and management

Organizations employ data governance and management methods, rules, and practices to manage and secure their data assets. It requires setting data quality standards, defining stakeholder roles, and assuring data security and ethics (Fader, P. S., Hardie, B. G., & Lee, K. L. 2005; Gandomi, A., & Haider, M. 2015). Data governance and management ensures data is consistent, accurate, safe, and utilized efficiently to meet corporate goals. Organizations need data governance and management to maintain data integrity, comply with regulations, and secure sensitive data (Cukier, K., & Mayer-Schönberger, V. 2013; Fader, P. S., Hardie, B. G., & Lee, K. L. 2005). High-quality data helps companies make educated choices and ensures data is utilized as intended. Organizations may increase data literacy, quality, security, and ethical usage by creating a strong data governance and management framework.

2) Data quality and accuracy

Data quality and accuracy measure data's correctness, completeness, consistency, and dependability. These standards guarantee data is trustworthy and useful for company choices and operations. Addressing missing values, duplicate entries, and inconsistent data formats improves data quality and accuracy. Data profiling, cleansing, and standardization may do this. Monitoring and improving data quality and accuracy involves data governance and management methods (Hastie, T., Tibshirani, R., & Friedman, J. 2009; Provost, F., & Fawcett, T. 2013). Organizations need high-quality data to make educated choices, increase operational efficiency, and compete. Effective data management requires data quality and accuracy.

3) Integration of analytics with business operations

Analytical tools and data are integrated into an organization's daily activities. Data-driven choices and corporate goals are improved by this combination. Analytics integration requires fostering a culture of data-driven decision-making, developing the skills and infrastructure to support analytical activities, and embedding analytical tools and processes into business operations (Bojarski, M., Del Testa, D., Dworakowski, D., Firner, B., Flepp, B., Goyal, P., & Zhang, X. 2016; Hastie, T., Tibshirani, R., & Friedman, J. 2009). This improves efficiency, customer satisfaction, and competitiveness. Business and IT must work together to integrate analytics into business operations and understand the company's data assets, objectives, and procedures. Businesses may maximize data assets and improve results by incorporating analytics into operations.

4) Collaboration and communication between analytics and business teams

Analytics and business teams must work together to incorporate analytics into company processes and accomplish objectives. Business teams know the company's operations, objectives, and customers, whereas analytics teams know data and tools. These teams may identify and priorities the most significant analytical tasks and communicate and act on their findings by working together. Effective cooperation and communication requires business teams to understand analytics' strengths and weaknesses and analytics teams to understand the business context in which their work is employed. Meetings, cross-functional training, and clear data visualizations may help (Brynjolfsson, E., & McAfee, A. 2014; Davenport, T. H., & Patil, D. J. 2012; Frank, R. H. 2017; Lazer, D., Kennedy, R., King, G., & Vespignani, A. 2014). Organizations may maximize value from their analytical efforts by encouraging cooperation and communication between analytics and business departments.

5) Data visualization and reporting

Data visualization and reporting help firms share their analytical findings with stakeholders and decision-makers (Gandomi, A., & Haider, M. 2015; Li, X., Liu, S., Wang, Z., & Li, G. 2017). Data visualization uses charts, graphs, dashboards, and other visual aids to make data more understandable. Effective reporting is also necessary to communicate and act on analytical findings. Reports should effectively express analytical findings and insights and be customized to the target audience. Organizations may enhance decision-making and business success by employing clear and simple data visualization and reporting.

Challenges and opportunities**1) Skilled professionals and workforce development**

Organizational analytics success depends on skilled experts and workforce development. Organizations must hire data and analytics experts to advance their analytical efforts as demand rises [Demirkan, H., & Delen, D. 2013; Gandomi, A., & Haider, M. 2015). This involves workforce development, including talent identification, training and certification, and a culture that appreciates and invests in analytical capabilities.

Data management, statistical analysis, machine learning, and data visualisation experts may also aid organizations. These experts can assist build and execute successful analytics strategies (Cukier, K., & Mayer-Schönberger, V. 2013).

Additionally, firms should guarantee that their current personnel has the skills and expertise to apply analytics in their daily job. This may entail offering training and developing a culture of constant learning. Organizations can assure analytics success

and commercial value by investing in their personnel and ensuring they have the proper skills and experience (Demirkan, H., & Delen, D. 2013; McAfee, A., & Brynjolfsson, E. 2017).

2) **Data privacy and security**

Analytics faces data privacy and security issues. As companies acquire, store, and analyse more sensitive and personal data, they must employ strong privacy and security measures to prevent unauthorized access, abuse, and theft.

Ensuring privacy and security rules are obeyed locally and globally is a major concern. This demands a thorough awareness of applicable laws and regulations and the capacity to establish effective privacy and security policies and processes.

Organizations must also safeguard their technology and infrastructure and remediate problems quickly. This may include firewalls, encryption, access restrictions, security audits, and penetration testing (Gandomi, A., & Haider, M. 2015; Lazer, D., Kennedy, R., King, G., & Vespignani, A. 2014; and Provost, F., & Fawcett, T. 2013).

Data privacy and security possibilities exist despite these limitations. Effective privacy and security risk management may increase consumer and partner trust and provide companies a competitive edge. Privacy and security investments safeguard sensitive data, show ethical data management, and provide new business possibilities.

3) **Ethics and social responsibility in the use of data**

Ethics and social responsibility play a crucial role in the use of data, particularly in the context of business analytics. The way in which data is collected, stored, and analyzed has significant implications for individuals, organizations, and society as a whole and it is important to ensure that these activities are conducted in an ethical and socially responsible manner. (Frank, R. H. 2017)

Conclusion

The analytics play a vital role to uncover trends and patterns, enhance customer experiences, gain a competitive edge, simplify processes, and manage risks. Analytics helps companies track KPIs, analyze consumer behavior, and prioritize their efforts. Analytics improves decision-making, cost savings, and market and consumer insight, leading to corporate success. Analytics is used in data-driven decision making, consumer insights, marketing analytics, financial analysis, supply chain optimization, and risk management. Business analytics best practices include choosing the relevant data sets and tools, assuring data quality, setting clear objectives and KPIs, adopting data governance and security measures, and continuously assessing and upgrading analytics processes. A cross-functional approach to analytics ensures that findings are leveraged throughout the firm. Companies should also teach personnel to use analytics tools and approaches. Business analytics has problems and possibilities. Challenges include: Data privacy and security: As personal and sensitive data is gathered and kept, privacy and security concerns are developing. Companies must safeguard their collected and analyzed data. Data quality: Accurate and relevant analytics insights depend on data quality. Data collection, cleansing, and preparation are time-consuming and difficult. Skilled labor: Analytics demands a highly skilled labor force, which may be scarce. Data science, machine learning, and AI are examples. In conclusion, businesses looking to enhance their analytics usage should define clear objectives and KPIs, invest in data quality, choose the correct tools and approaches, promote a data-driven culture, collaborate across departments, and continuously evaluate and update procedures.

References

1. Bojarski, M., Del Testa, D., Dworakowski, D., Firner, B., Flepp, B., Goyal, P., & Zhang, X. (2016). End to end learning for self-driving cars. arXiv preprint arXiv:1604.07316.
2. Brynjolfsson, E., & McAfee, A. (2014). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. WW Norton & Company.
3. Cukier, K., & Mayer-Schönberger, V. (2013). The rise of big data: How it's changing the way we think about the world. *Foreign Aff.*, 92, 28.
4. Davenport, T. H., & Patil, D. J. (2012). Data scientist: The sexiest job of the 21st century. *Harvard business review*, 90(10), 70-76.
5. Demirkan, H., & Delen, D. (2013). Leveraging the capabilities of service-oriented decision support systems: Putting analytics and big data in cloud. *Decision Support Systems*, 55(1), 412-421.
6. Fader, P. S., Hardie, B. G., & Lee, K. L. (2005). Counting your customers the easy way: An alternative to the Pareto/NBD model. *Marketing science*, 24(2), 275-284.
7. Frank, R. H. (2017). *Success and Luck: Good Fortune and the Myth of Meritocracy*. Princeton University Press.
8. Gandomi, A., & Haider, M. (2015). Beyond the hype: Big data concepts, methods, and analytics. *International Journal of Information Management*, 35(2), 137-144.
9. Hastie, T., Tibshirani, R., & Friedman, J. (2009). *The elements of statistical learning: data mining, inference, and prediction*. Springer Science & Business Media.
10. Lazer, D., Kennedy, R., King, G., & Vespignani, A. (2014). The parable of Google Flu: traps in big data analysis. *Science*, 343(6176), 1203-1205.
11. Li, X., Liu, S., Wang, Z., & Li, G. (2017). Business intelligence and analytics: From big data to big impact. *Journal of Management Analytics*, 4(1), 1-5.
12. McAfee, A., & Brynjolfsson, E. (2017). *Machine, platform, crowd: Harnessing our digital future*. WW Norton & Company.
13. Provost, F., & Fawcett, T. (2013). Data science and its relationship to big data and data-driven decision making. *Big Data*, 1(1), 51-59.
14. Qian, J., & Zhao, Y. (2020). The impact of artificial intelligence on talent management: Evidence from China. *Sustainability*, 12(22), 9441.
15. Rana, A. R., & Soni, A. (2020). Artificial intelligence in talent management: A systematic review. *Journal of Advances in Management Research*, 17(2), 184-201.
16. Tahir, A. H., Haider, R., Shaukat, Z., & Akram, M. W. (2021). Artificial intelligence in talent management: A systematic review and future directions. *Journal of Business Research*, 128, 50-64.
17. Vasanta, S., & Vijayakumar, S. (2021). Impact of artificial intelligence on talent management: A review. *Journal of Intelligent & Fuzzy Systems*, 40(3), 4867-4877.