



IMPACT OF EMERGING TECHNOLOGIES ON BUSINESS AND INDUSTRY ENVIRONMENT: A CRITICAL REVIEW ON STRATEGIC COMMUNICATION

Management

Chandra Sekhar Pattnaik

Doctoral Scholar Management Radha Govind University, Jharkhand, India

Dr. Rabinarayan Patnaik*

Associate Professor Marketing Siksha 'O' Anusandhan SOA University, Bhubaneswar, Odisha, India *Corresponding Author

ABSTRACT

As a continuous process, digital world has been changing the way the business world in every aspect. In this process of transformation, industrial business has moved to the universal level for the development of the economic system and its sustainable growth being one of India's largest business sector, followed by agriculture. Various stakeholders and strategists of this business environment are currently confronted with enormous technological and industrial changes and challenges. The global industry is well positioned to benefit from the introduction of new trends, tools, and technologies such as IoT, ICT, Big data, automation, standardization, disruption, inflection, block chain, and so on. The developments in Cloud Computing, Artificial Intelligence, and the Internet of Things hold greater promises in bringing a collaborative and integrated environment for the management. This work provides an in-depth review of the literature on the use of artificial intelligence in managing the industry at large. Implementing these emerging technologies has a huge impact on improving communicative productivity across industries. The results of this study can open up innovative areas for future researchers and thinkers to make detailed inroads.

KEYWORDS

AI, Business Environment, Strategic Communication, Machine Learning

1. INTRODUCTION

Information technology is the life line of current generation. The rapid growth and increased demand for technical applications forces us to stay current on the power of various related subjects in general, and the manufacturing & modern manufacturing business (Ford and Despeisse, 2016). Management in recent years, owing primarily to the technology's potential to improve operational performance and efficiency (Nayak *et al.*, 2019). Long-term, IoT and AI technology combinations will change the process of management by creating new business opportunities and revenue streams, as well as new business models and structures that leverage IoT and AI capabilities (Le *et al.*, 2019). It can be valuable in areas such as logistics, customer relationship management, support, workflow, automation, and finance. AI can assist in realistic situations for training, reducing injuries and major mistakes, and improving operational as well as communicative productivity (Furman and Seamans, 2019). Here an attempt has been made to discover the past and present applications of AI and its usage on communications management (Wirtz *et al.*, 2019). In any industry with complicated work structure, with strategic importance at the regional, national, and global levels (Brock and Von Wangenheim, 2019). The reason behind this being industries have been plagued by a variety of issues for decades, including low productivity, low profit margins, and waste and safety concerns (Luthra and Mangla, 2018). Industries like manufacturing companies that go digital always stand to gain a significant competitive advantage (Distanont and Khongmalai, 2020). Certain issues like the way stakeholders of industries take the help of AI need to be addressed.

2. Literature Review

The industry spectrum in India is expanding rapidly, and there is significant scope for improvement through the adoption of emerging new technologies such as automation process and artificial intelligence (Raj *et al.*, 2020). There are high interest levels in industries and many manufacturing projects are incorporating systems for digitalization, intelligent machines, mobile devices, and new application software system are gradually integrated with a central digital platform (Plantin and Punathambekar, 2019). Big data has the potential to generate manufacturing solutions and quickly process each method of manufacturing contracting. AI applications in manufacturing dispute resolution have always been a fascinating area to examine (Mülle *et al.*, 2018). One of the overarching goals of Artificial Intelligence is to create computer algorithms that can improve themselves automatically through manufacturing experience (Makridakis, 2017). Various implications of artificial intelligence in various industries like manufacturing have been discussed from time to time (Benbya *et al.*, 2020).

The rise of AI in the industrial sector has been very prominent in the last few years. On various occasions, AI is linked to business

transformation. Variety of AI applications in industries, including current use-cases has been discussed many times (Burstrom *et al.*, 2021). Artificial intelligence (AI) is the next frontier in the transformed industry practices. The importance of AI in supporting the business environment has been emphasized (Tabrizi *et al.*, 2019). Recent aspects on digitalization in the manufacturing industry/manufacturing management (like Contract Manufacturing - CM and manufacturing tools, techniques, and technologies) have always been in focus (Lee and Li, 2018).

3. OBJECTIVES OF THE STUDY

The following research objectives have been taken for studying the aforesaid research problem such as:

1. To study the application of Artificial Intelligence (AI) on business management and its rational use in different fields such as Machine Learning for solving strategic issues like corporate communication.
2. To study the application of AI on new technology used on track to revolutionize the next generation industry practices.

4. About Artificial Intelligence

Artificial intelligence (AI) is a broad field of computer science which has the ability of a digital computer or computer controlled robots with creating intelligent machines capable of performing tasks that normally require human intelligence (Hassani *et al.*, 2020). AI will play a larger role in the future of manufacturing in terms of increasing productivity, quality, and safety on the jobsite. AI detects a large number of patterns and trends (Liu *et al.*, 2020). Though limited in scope and difficult to modify, reactive machine artificial intelligence can achieve a level of complexity and reliability when designed to perform repeatable tasks (Ulnicane *et al.*, 2021).

Limited Memory

When gathering information and weighing potential decisions, artificial intelligence with limited memory can store previous data and predictions — essentially looking into the past for clues on what may come next. Artificial intelligence with limited memory is more complex and offers more possibilities than reactive machines. The model must be able to receive human or environmental feed-back that feedback must be stored as data, and these steps must be reiterated as a cycle (Kimura *et al.*, 2020).

Machines would essentially need to be able to grasp and process the concept of "mind," the fluctuations of emotions in decision making, and a slew of other psychological concepts in real time, establishing a two-way relationship between people and artificial intelligence (Hind *et al.*, 2019). Hence, we can say AI in manufacturing happening now. Intervention of AI in business environment can take into consideration of this sensitization (Fig. 1).

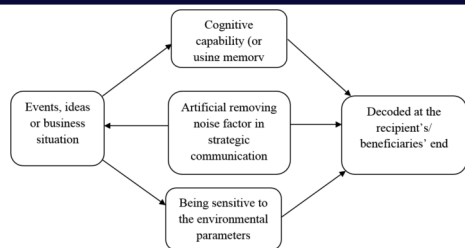


Fig. 1: An illustrative schema of AI in strategic communication

Source: suggested by authors

The value of this data is in conducting deeper analysis, trending, and what-if scenarios to make projects and businesses more profitable. Activities that impede manufacturing can now benefit from artificial intelligence to improve productivity, safety, quality, and scheduling (Arias-Pérez and Cepeda-Cardona, 2022). Despite being a sophisticated system, block-chain technology, may be thought of as a collection of different blocks that are linked together to ensure data flow (Kumar and Mallick, 2018).

5. CONCLUSION

As a result, it can be said that technology is a wonderful tool in every industry. In particular, the use of new applications and technologies made possible by technology is bringing about a new and reinvigorated era for the manufacturing sector carrying out their initiatives. The capacity of the cloud to enable greater freedom and convenience of access to information from satellite offices, job sites, or customer locations that extend across the globe positions manufacturing enterprises in a unique position to profit from this feature. AI is a brand-new technology that is on pace to transform the manufacturing sector out of all the emerging technologies now available on the market. The creation of computer algorithms that can automatically improve because of manufacturing experience is one of the overarching goals of artificial intelligence.

REFERENCES

- Arias-Pérez, J., & Cepeda-Cardona, J. (2022). Knowledge management strategies and organizational improvisation: what changed after the emergence of technological turbulence caused by artificial intelligence?. *Baltic Journal of Management*, 17(2), 250-265.
- Benbya, H., Davenport, T. H., & Pachidi, S. (2020). Artificial intelligence in organizations: Current state and future opportunities. *MIS Quarterly Executive*, 19(4).
- Brock, J. K. U., & Von Wangenheim, F. (2019). Demystifying AI: What digital transformation leaders can teach you about realistic artificial intelligence. *California Management Review*, 61(4), 110-134.
- Burström, T., Parida, V., Lahti, T., & Wincent, J. (2021). AI-enabled business-model innovation and transformation in industrial ecosystems: A framework, model and outline for further research. *Journal of Business Research*, 127, 85-95.
- Distanont, A., & Khongmalai, O. (2020). The role of innovation in creating a competitive advantage. *Kasetsart Journal of Social Sciences*, 41(1), 15-21.
- Ford, S., & Despeisse, M. (2016). Additive manufacturing and sustainability: an exploratory study of the advantages and challenges. *Journal of cleaner Production*, 137, 1573-1587.
- Furman, J., & Seamans, R. (2019). AI and the Economy. *Innovation policy and the economy*, 19(1), 161-191.
- Hassani, H., Silva, E. S., Unger, S., TajMazinani, M., & Mac Feely, S. (2020). Artificial intelligence (AI) or intelligence augmentation (IA): what is the future?. *AI*, 1(2), 8.
- Hind, M., Wei, D., Campbell, M., Codella, N. C., Dhurandhar, A., Mojsilović, A., ... & Varshney, K. R. (2019). TED: Teaching AI to explain its decisions. In *Proceedings of the 2019 AAAI/ACM Conference on AI, Ethics, and Society* (pp. 123-129).
- Kimura, Y., Watanabe, A., Yamada, T., Watanabe, S., Nagaoka, T., Nemoto, M., ... & Ishii, K. (2020). AI approach of cycle-consistent generative adversarial networks to synthesize PET images to train computer-aided diagnosis algorithm for dementia. *Annals of Nuclear Medicine*, 34, 512-515.
- Kumar, N. M., & Mallick, P. K. (2018). Blockchain technology for security issues and challenges in IoT. *Procedia Computer Science*, 132, 1815-1823.
- Le, D. N., Le Tuan, L., & Tuan, M. N. D. (2019). Smart-building management system: An Internet-of-Things (IoT) application business model in Vietnam. *Technological Forecasting and Social Change*, 141, 22-35.
- Lee, H. H., & Li, C. (2018). Supplier quality management: Investment, inspection, and incentives. *Production and Operations Management*, 27(2), 304-322.
- Liu, A., Guerra, S., Fung, I., Matute, G., Kamar, E., & Lasecki, W. (2020). Towards hybrid human-AI workflows for unknown unknown detection. In *Proceedings of The Web Conference 2020* (pp. 2432-2442).
- Luthra, S., & Mangla, S. K. (2018). Evaluating challenges to Industry 4.0 initiatives for supply chain sustainability in emerging economies. *Process Safety and Environmental Protection*, 117, 168-179.
- Makridakis, S. (2017). The forthcoming Artificial Intelligence (AI) revolution: Its impact on society and firms. *Futures*, 90, 46-60.
- Müller, O., Fay, M., & Vom Brocke, J. (2018). The effect of big data and analytics on firm performance: An econometric analysis considering industry characteristics. *Journal of Management Information Systems*, 35(2), 488-509.
- Nayak, P. K., Mahesh, S., Snaith, H. J., & Cahen, D. (2019). Photovoltaic solar cell technologies: analysing the state of the art. *Nature Reviews Materials*, 4(4), 269-285.
- Plantin, J. C., & Punathambekar, A. (2019). Digital media infrastructures: pipes, platforms, and politics. *Media, culture & society*, 41(2), 163-174.
- Raj, A., Dwivedi, G., Sharma, A., de Sousa Jabbour, A. B. L., & Rajak, S. (2020). Barriers to the adoption of industry 4.0 technologies in the manufacturing sector: An

inter-country comparative perspective. *International Journal of Production Economics*, 224, 107546.

- Tabrizi, B., Lam, E., Girard, K., & Irvin, V. (2019). Digital transformation is not about technology. *Harvard business review*, 13(March), 1-6.
- Ulnicane, I., Eke, D. O., Knight, W., Ogoh, G., & Stahl, B. C. (2021). Good governance as a response to discontents? Déjà vu, or lessons for AI from other emerging technologies. *Interdisciplinary Science Reviews*, 46(1-2), 71-93.
- Wirtz, B. W., Weyerer, J. C., & Geyer, C. (2019). Artificial intelligence and the public sector—applications and challenges. *International Journal of Public Administration*, 42(7), 596-615.
- Yin, M., Wortman Vaughan, J., & Wallach, H. (2019). Understanding the effect of accuracy on trust in machine learning models. In *Proceedings of the 2019 chi conference on human factors in computing systems* (pp. 1-12).