

IJRTBT | Will Artificial Intelligence Compliment or Supplement Human Workforce in Organizations? A Shift to a Collaborative Human – Machine Environment

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Abstract

Introduction: Artificial Intelligence (AI) is impacting organizations worldwide in the post-covid era, especially service-oriented firms that are attempting to automate most processes. We have observed a significant effect on business consulting businesses that use AI to automate all operational processes and boost employee efficiency by using them for strategic decision-making. This study examines the overall impact of AI on organizations and the human workforce to determine if automation of business processes will eventually replace employees or work more collaboratively, paving the way for more technology jobs soon.

Methodology: This study is a conceptual effort to integrate several streams of literature and papers published in the last 3 years in recognized journals such as Web of Science, Scopus, Science Direct, and ABDC to present an overview of AI-led robo-consultants and employees in the business consulting domain.

Results: It is predicted that AI will automate some unskilled jobs, but also generate new jobs that require new skill sets. Hence, it is predicted that AI cannot replace humans rather lead to a workplace evolution by working in collaboration with employees being spearheaded by them. In business consulting domain, automation would take up all repetitive tasks including, reporting, invoicing, payment reminders, etc. so that employees can focus on more strategic tasks like client interaction, financial planning and complex decision making. However, it wouldn't lead to the elimination of human jobs, rather create a shift in employer perspective to achieve a balanced human-machine sync.

Keywords: *Artificial Intelligence; AI in Business; Human-machine Collaboration; Post-pandemic Business Landscape; Business Consulting; Consulting Firms*

Received September 9, 2022; Received in revised form September 28, 2022; Accepted September 30, 2022

Introduction

Artificial Intelligence (AI) is transforming service delivery by executing a variety of tasks, producing considerable innovation while threatening human employment. Service jobs typically require four intelligences: mechanical, analytical, intuitive, and sympathetic. It is entirely up to businesses to pick between humans and technology to complete these activities. Mechanical intelligence typically precedes analytical intelligence, analytical intelligence typically precedes intuitive intelligence, and intuitive intelligence typically precedes empathetic intelligence (Huang & Rust, 2018). Organizations are increasingly using machines that display traits of human intelligence (HI), which is known as artificial intelligence (AI). For instance, in big data AI applications, robo-consultants are used to replace portfolio managers and virtual bots convert client support into self-service (Divatia, Tikoria, & Lakdawala, 2021).

AI plays a crucial role in the service industry, particularly in business consulting, where many administrative and repetitive duties can be automated by machine algorithms and the saved time can be used to produce more constructive and strategic value-added deliverables (Jaiswal, Arun & Varma, 2022). As per a recent MIT Sloan Management Review and Boston Consulting Group's 2020 global executive survey and research report on artificial intelligence and business strategy, where around 3000 management organizations were surveyed, almost 90% organizations have at least one function AI enabled but only 5% - 10% are able to achieve significant financial benefits. Companies that can leverage human – machine collaboration efficiently can only gain competitive advantage.

Literature Review

Impact of AI in the Business Consulting Industry

AI software can do things that human minds can do, like perceive, reason, learn, and solve problems. Because of this, they can have a big impact on how businesses work and are slowly replacing human workers in many fields, especially in the business consulting domain.

Many consulting firms are considering integrating AI or, at the very least, automating their business processes in response to the introduction of these new technologies. AI is already transforming the way consultants conduct data analysis and a variety of other aspects of their work. Apart from speeding up data crunching for consultants, it can also improve the accuracy of their analysis, enabling them to provide more insightful advice to customers. This will enable significant improvements to internal operations, giving employees more time to focus on value-adding tasks (Paliwal et al. 2021).

Most consulting firms in the world including world leaders in this domain including Mc. Kinsey, Boston Consulting Group (BCG) and many more use AI to significantly enhance how the way of operation as well as add value to the services they provide to clients. A study done by Alexandre, Blanckaert, & Belleflamme (2020), explained how AI primarily compliments these firms in:

- **Data Collection** - AI technology is capable of processing, storing, and analyzing vast quantities of data considerably more quickly and efficiently. This information can be utilized by consultants to better their client products and services, ultimately enhancing their clients' return on investment.
- **Streamline Administrative tasks** - The handling of routine paperwork is one of the most onerous components of a consultant's job. Whether it involves manually creating invoices for clients, processing payroll, or generating client reports. A process-automated robot can do administrative duties more effectively than a human.
- **Enhancing Productivity** - Automating typical administrative procedures can boost the productivity of businesses. Consultants can reduce monotonous operations with automated software that removes duties from employees' workloads, allowing them to focus on more enjoyable work and increase employee engagement and firm-wide efficiency.

Primary benefits of AI and automation for consulting firms:

- Cognitive ('smart') search is the new generation of information gathering technology.
- Business intelligence (BI) and data visualization tools.
- Text analysis is used to extract value from text data.
- Stakeholder engagement software is used by organizations to analyze their stakeholders.
- Data preparation tools, data integration tools, and master data management solution.

With today's business increasingly being driven by big data, artificial intelligence, and machine learning, which are currently processing massive volumes of structured and unstructured data to generate insights, are increasingly driving modern business. AI and automation now enable enterprises to eliminate the need for humans to absorb, digest, and analyze vast quantities of data (John, Olsson & Bosch, 2021).

A shift to a collaborative human – machine environment

In future, for organizations to have a competitive advantage, they need to make *a shift towards a collaborative Human – Machine environment*. According to a study done by Jarrahi (2018), the advent of artificial intelligence needs a new human-machine symbiosis, culminating in a shifting human-machine labour split. Pervasive conceptions of human-machine collaboration propose that regular jobs should be performed by machines, allowing humans to focus on more strategic and innovative tasks. AI skills enable people in overcoming complexity through a more analytical approach, but the role of human decision makers and their intuition in coping with inherent uncertainty and ambiguity in decision making remains unquestioned (Anute & Paliwal, 2021). AI systems have already surpassed several quantitative targets with calculable criteria, thereby reducing the complexity of decision-making. In analysing subjective, qualitative, and social elements, it seems likely that humans will outperform AI (Madakam, Holmukhe, & Jaiswal, 2019). Human capitals are experience, insight, and holistic vision that

have been internalised as subconscious, instinctual, and intuitive thought processes but still give individuals an advantage when confronting unclear and ambiguous situations. Due to their intuitive abilities, humans continue to thrive in thinking globally. Cognitive technologies such as AI can help, but strategic thinking requires a level of sensemaking and comprehension of the world outside specific decision contexts that can only be achieved by humans (Langer & Landers, 2021).

The post-pandemic business landscape

As per a recent study done Basu et al. (2021), the pandemic has changed the way businesses operate. Most businesses have adapted in terms of services, structure, and operations to gain a competitive edge. After the pandemic, it has been observed that organizations, specifically small-scale companies, have focused on technology-led applications to understand consumer profiles, behaviour and thus alter their offerings to best suit the market. Specifically, the service-oriented firms like consulting firms have focused largely on improving the workflow decision making by automating most processes.

According to the findings of a study done by Malhotra (2021), businesses will now hire personnel with skill sets to operate in the new environment and achieve the best results.

Consulting firms

Consulting firms have included artificial intelligence in almost every sphere of their business right from gather client information to analysis of data to client interaction, etc. The adoption of new technologies and AI solutions have helped to improve business processes by offering efficient services to clients and has also led to improved efficiency (Alexandre, Blanckaert, & Belleflamme, 2019). The consulting industry has witnessed increased demand for cloud-based services. To address the ever-changing business environment and demand, the consulting industry is increasing its workforce and providing chances for data science, digital analytics, design, compliance services, cyber security, and change management specialists (Strack et al. 2021).

Research Methodology

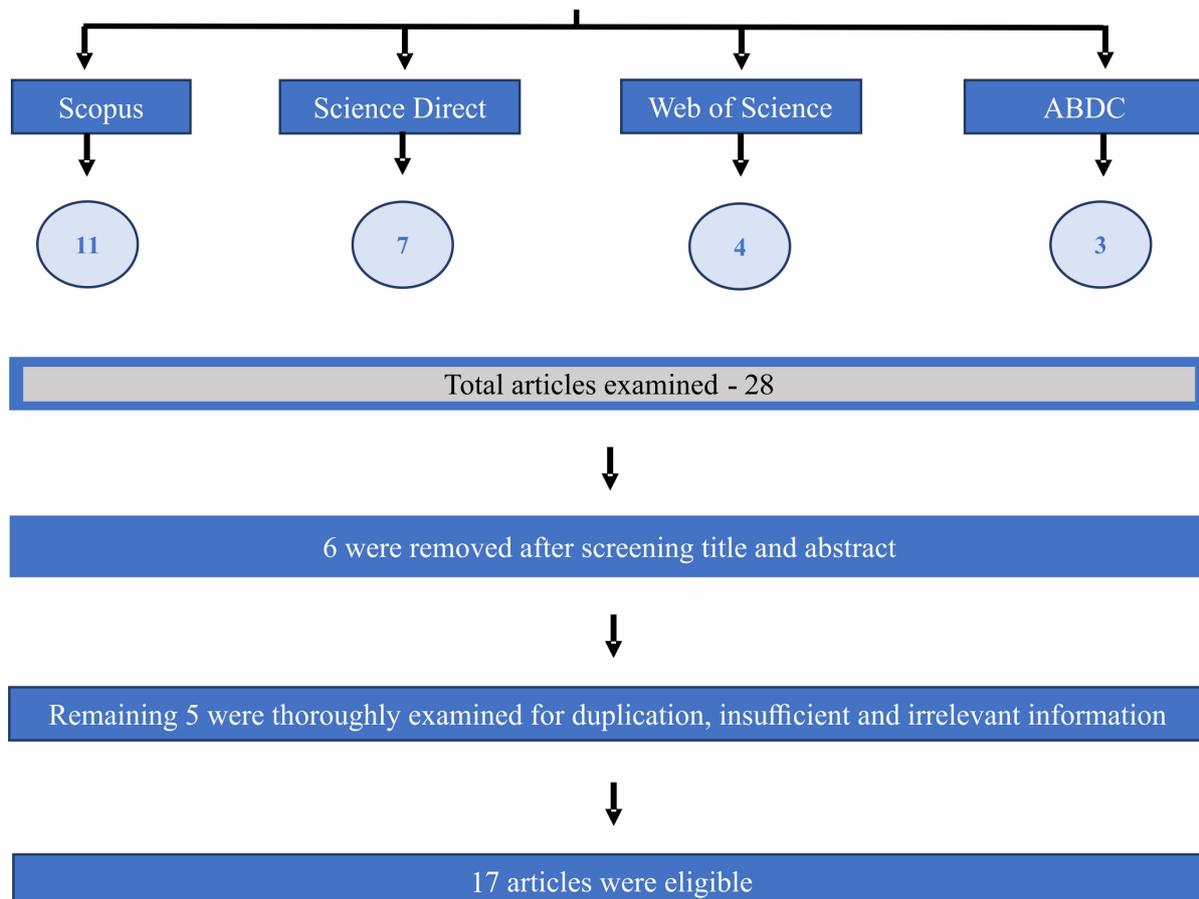
This study focused on extensive study of secondary data, which were composed from varied reports, publications from multiple websites, books, newspapers, journals, and other relevant sources.

Search Criteria

Article searching was done from the pool of e- resources to locate peer-reviewed articles from various renowned journal including but not limited to Scopus, Elsevier, and Web of Science by means of the subsequent search terms Impact of Artificial Intelligence and Automation on Business Consulting Industry and restricted to the title, "Impact of AI on Business", "Business consulting Industry" and "Impact of AI on Human Workforce." The studies published after

COVID-19 pandemic were shortlisted. Non-peer reviewed articles, and articles with inappropriate information or have deviated from our focus area have been excluded from the review (refer to figure 1).

Figure 1: Selection Strategy



Inclusion/ Exclusion Criteria

Several inclusion and exclusion criteria were applied to set boundaries for a systematic literature review. Studies were included if they were focused on how AI can provide business value, how AI is adopted and used in an organizational context in specific reference to business consulting firms or how AI would impact human workforce in organizations. Therefore, studies that emphasized on other technical and process-oriented aspects of AI were not selected. Recent publications especially the ones from post covid era were shortlisted. In addition, the systematic literature review included journal articles and conference proceedings whereas book series, dissertations, and webpages were excluded. After careful review, if results of one article did not agree with the other, the methodological quality of all included studies were assessed. Finally, publications that were not peer reviewed were also eliminated.

Quality Assessment

The assessment criteria were like recent research conducted by Ghosal et al. (2021), where all shortlisted papers after the eligibility check were assessed for their quality in terms of several criteria. Studies were examined in terms of scientific rigor, credibility, and relevance. Scientific rigor refers to the application of the appropriate research method has. Credibility assesses if the research is believable, and the findings are well presented. Relevance refers to if the findings are relevant in research context and for organizations implementing AI and automation in their processes. Together these quality criteria ensure that the papers remaining after this stage could have a positive and valuable contribution to the review. After this stage, 14 papers were left for data extraction and synthesis.

1. Synthesis of Literature Review

In this section, the literatures selected were categorized under following sections:

S. No.	Categories	Literatures
1.	Impact of AI on organizations & business	2
2.	Human Machine Collaboration	2
3.	AI's Value proposition for organizations & teams	3
4.	Impact of AI on future of jobs	4
5.	Impact of AI on Consulting Industry	3
	Total	14

RESULT AND DISCUSSION

Future of AI in organizations

Administrative duties such as keeping registrations and logs, automated meeting preparation including room booking, emailing of invitations, agenda drafting, and meeting mounting are already performed by AI. It will eventually be able to do increasingly complicated project management responsibilities. Evidently, in the near future, the majority of businesses will use virtual platforms and transition from conventional operational methods to innovative digital business models (Prasad, & Ghosal, 2021; Sarkar & Ghosal, 2018).

Will smart machines really replace human workers?

Most likely not. Both humans and artificial intelligence possess unique abilities and strengths. The real question is how human intelligence can collaborate with artificial intelligence to generate augmented intelligence. Despite the fact that AI-based machines are clearly faster, more precise, and more rational, they lack the intuitive, emotional, and cultural sensitivity that humans possess; hence, employees will always be successful and irreplaceable due to these

qualities (Willcocks, 2020). While smart machines are capable of doing all administrative tasks with greater accuracy, human intelligence would play a greater role in tasks that require an analytical approach including intuitive predictions and strategic decision making (Fleming, 2019).

In specific, service-oriented industries including business consulting, where work is dependent on multiple factors predominantly clients. Cognitive technologies may prove to be perfect till there a situation that requires human rationality, analytical sense, and ability to work on intuition and leverage personal judgement. Machines might prove to be incapable of making decisions under such circumstances that do not have any past data or experience for machine to respond in probability. Abstract reasoning and an intuitive approach enable individuals to deal with novel and creative decision-making situations. This inherent, unexplained perception that arises from within is nearly impossible to simulate with artificial intelligence.

Thus, to have a competitive edge, organizations must be able to create a synergy between the speed with which AI collects and analyses data and the greater intuitive judgement and insight of people (Strack et al. 2021).

Conclusion

In years to come, Artificial intelligence is presumed to eliminate millions of existing jobs and create millions more — some of which have not yet been invented. In an article recently published on medium by a group of senior-level tech executives who comprise the Forbes Technology Council and AI guru Kai-Fu Lee, CEO of Sinovation Ventures and author of the 2018 book “AI Superpowers: China, Silicon Valley, and the New World Order”, predict that 50% of all jobs will be automated by AI inside of 15 years. But the biggest question that arises in everyone’s mind is:

Will AI be able to replace human workforce?

AI is expected to supplant 85 million jobs globally by 2025, according to the World Economic Forum's "The Future of Jobs Report 2020." While that may sound frightening, the report goes on to state that it will also result in the creation of around 97 million new jobs during that same time period. In the current scenario, there is always a fear that technology will supplant this current workforce or set of tasks, and this is true.

However, the bigger truth is that AI takes over repetitive tasks and makes room for more productive output. Although, the manual tasks would move to technologically assisted deliverables, the number of people required to deliver ever-improving technology will also increase dramatically. Therefore, there’s a shift in perspective required from questioning the impact of high technology to literally contributing to create the technology. Undeniably, to integrate AI in an organizations’ ongoing business model, there would be a recurring need for

training, maintenance, and ability to cater to defaults, errors, and risks. Who will take care of these activities? How to monitor AI? How to train and feed algorithms?

These will all be the new jobs in next 15 years

There is no doubt that the AI revolution will necessitate significant adjustment and sacrifice but despairing rather than preparing for what lies ahead would be ineffective. We must keep in mind that our inherent capacity for compassion and empathy will be a valuable asset in the future workforce, and that jobs requiring compassion, creativity, and innovation will continue to be critical to our society.

Managerial Implications

The introduction of AI and digital transformation in organizations has redefined the way management would operate. Undoubtedly, adaption of digital solutions has led to minimal administrative co-ordination and control and hence managers and devote their time in more value-added tasks like problem solving, collaboration, strategy, innovation and engaging with stakeholders. Management needs to understand the requirement for right skills and whether the current workforce can be upgraded in terms of skills and trained to perform required functions.

Limitation & Future scope of the study

From the review, few limitations are identified in relation to the study of the future impact of AI and automation implementation on human workforce in organizations. In specific reference to business consulting industry in India and the extent to which AI can either disrupt the current employee base or complement processes is yet to be fully studied and researched upon. There is found to be limited availability of information with regards to what functions of business consulting firms can be owned by AI assisted machines and how the transition can be successfully implemented. Hence, there is a huge scope of further research in this direction.

Conflict of Interests

The authors declare that they have no conflict of interests.

Acknowledgement

The authors are thankful to the institutional authority for completion of the work.

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