

Redefining Service Work: The Role of AI in Restructuring Employee Participation

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Abstract. The use of AI in better service delivery is common. Different types of AI are developed: Mechanical, Thinking, and Feeling AI. Each AI technology has its strengths and drawbacks. There are anticipations that AI may replace human beings in service. However, not many studies have delved into this issue by simultaneously analyzing the value of AI technology and human employees and considering current and future trends. Thus, this essay will address this gap by concluding that Mechanical AI can be applied to complete standardized tasks; Thinking AI assists in identifying new opportunities, customizing services, and making more sound decisions; and Feeling AI can interact with customers, providing general emotional support. However, human employees should complete tasks regarding an advanced level of service as they possess self-consciousness and genuine emotions. Moreover, in the light of the Feeling Economy, jobs will become people oriented. It is necessary to keep and expand people's specialty.

Keywords: Feeling economy, artificial intelligence, service process, service outcome.

1. Introduction

The events of Google's "AlphaGo" robot defeating world Go champions Lee Sedol and Ke Jie, and the Xiaodu Robot invented by Baidu performing Outstandingly in the Big Science Competition Program "Super Brain" show the mighty power of AI technology. Besides Global Robotics 2019, a market report published by the International Federation of Robotics (IFR) in Shanghai in 2019 reveals that robotics sales worldwide have surpassed \$16.5 billion annually, setting a new milestone. The occurrences above and the statistics demonstrate that Artificial Intelligence has emerged as the primary force behind a new wave of innovation in science and technology, social progress, and industrial transformation. It influences the global economy, social advancement, and everyday life [1]. Nowadays, AI technology, like service robots and advanced equipment, is widely exercised in hospitals or clinics, hotels, and restaurants [2,3]. For instance, In China, robotic servers serve more meals with a percentage of 50 to 100 than waiter employees while maintaining lower costs compared to human staff's annual wage [2]; Large-scale data Applications of AI are utilized to take the position of portfolio managers; and Pepper, a sociable robot, becomes a substitute of human greeters in client-oriented businesses [3]. The AI machine revolutionizes the understanding of service delivery and contributes to automating the service process.

However, although AI technology is a significant innovative drive, it also poses a danger to human service professions [3]. According to literature, it foresees the eventual eradication of humans in favor of robots, which coincides with the emergence of various natures of AI [2]. The manufacturing industry failed to meet the crisis of AI automation machines and thus led to severe job displacement or unemployment. Whether service people will also be replaced in the future is doubtful. Theoretically, service people might survive as the nature of delivering services depends on offline interaction and natural responses regarding different occasions [3]. Nevertheless, the development of AI technology is not stopping. Hence, people may lose their positions one day.

Current research has investigated the development of AI and its advantages, such as advanced functions and efficiency. However, whether AI is replacing employees in service remains unsolved. This study will discuss the question and offer an inspirational understanding of AI and human employees' values. The essay will be divided into four sections. First, an overview of social economies and AI development will be given. The second part introduces different applications of

AI technology in the service process. Then, the disadvantages of AI will be explained. Finally, suggestions about future direction and managerial implications will be provided.

2. Overview of Social Economies and AI Development

2.1. The Evolution of Economies

Human society has generally undergone three major economic patterns, from Mechanical to Thinking to Feeling Economy. In the Mechanical era, people relied on physical strength and regular work, such as examining and fixing equipment, for financial rewards. Essentially, these jobs were recurring and did not require specialized skills. Later, the Thinking Economy surfaced and replaced the Mechanical Economy decades ago. In the Thinking Economy, information is flooded throughout the work process. Employees must use their brainpower to review, discuss, and investigate information, thereby making rational decisions and resolving issues. Although contemporary society is still in the Thinking Economy age, the Feeling Economy appears to be gaining ground. In this emerging economy, labor remains people-centered. However, the emphasis will shift from the intellect to the senses. Workers will earn money by doing more emotional tasks than Thinking or Mechanical work. Being friendly, enthusiastic, supportive, and understanding is essential for effective communication, collaboration, and even partnerships with other firms [4].

2.2. Current Artificial Intelligence Development

2.2.1. Defining Artificial Intelligence

Artificial intelligence first appeared in the 1950s, and the Dartmouth Summer Research Project on Artificial Intelligence in 1956, organized by John McCarthy and his colleagues, is credited as the genesis of the field. AI refers to thinking machines that emulate humans in logical thought and conduct. The advent of the mobile Internet, supercomputing, and big data have propelled AI into a new phase since the turn of the century [1]. It can learn from numerous forms of contextual or non-contextual input, such as text, audio, and video, and modify its beliefs or behaviors [4]. AI technology with such characteristics has gradually been applied and has impacted many spheres of social life to facilitate human activities [1].

Currently, there are three kinds of Artificial Intelligence: Mechanical, Thinking, and Feeling [4]. Each AI technology matches the economic environment it was in at the time and serves different types of purposes.

2.2.2. Three Types of AI

Mechanical AI is at the lowest level and is used for implementing repetitive and ordinary activities [2,4]. Repetition indicates standardization and non-diversity, enabling Mechanical AI to complete the job without innovation [2]. This design aims to convey consistency, accuracy, and efficiency based on its modest capability to learn and adapt to new things [2,4].

Thinking AI is prevalent in modern society. It can be analytical for handling sophisticated problems like studying client base variety, spotting meaningful trends, and offering a more individualized service [2, 5]. Thinking AI can also be intuitive when its application contributes to solving problems and improving decision accuracy. As Intuitive AI can be seen as an iteration of the Analytical one, people can use it to address analytical problems [5].

Finally, Feeling AI is the most advanced Artificial Intelligence at present. This AI gathers data from contextual experiences generated through customer interactions using natural language and updates itself [2,4]. For example, ChatGPT and Siri are conversational AI tools aimed at creating a human-like experience. However, they fail to connect with people on a deeper level [4]. A real emotional AI machine should be responsive in identifying and comprehending customers' emotions and acting properly or affecting those feelings [2,4]. As human beings are complicated, their emotions may change constantly. Perceiving the right moments every time is a challenge for Feeling AI. Its potential is yet to be discovered [5].

3. AI's Use and Employees in Service

3.1. Service Process Phases

AI technology has been applied in many fields to promote organizations' success. In service, it can be employed as well. For customer service providers, achieving an equilibrium between excellence and efficiency is a major problem [6]. The vendors will strive to utilize their equipment to convey the best service. In the course of services, bilateral interactivity between clients and service providers determines the effectiveness of services. By involving these two parties in a collaborative and interactive way, value can be constantly created [5].

The service process can be divided into three sections: service delivery, service creation, and service interaction. They do not flow through sequentially, as each stage may be mutually influenced. Each type of AI is adapted to different circumstances and achieves optimal service outcomes [5].

3.1.1. Mechanical AI for Service Delivery

Service delivery indicates the behavior of providing services from a vendor to a customer. The fundamental factors that service providers must remind themselves of are convenience and efficiency. Mechanical AI thus rules this stage as it can convey services quickly and productively. Its application can be illustrated by the service process automation. One example is Prime Air, a drone delivery service operated by Amazon. It is meant to simplify the service procedure to ensure consumers can experience it smoothly and conveniently. Once customers place their orders, Amazon staff will operate the drone in the background to ensure that goods can be safely delivered [5].

Amazon Go is another innovation for efficient service. It creates an advanced and revolutionary shopping experience. Customers need to download Amazon Go onto their cell phones to access the store. Then, they verify identities and unlock the electronic gate by scanning their unique QR codes. Conventionally, people select goods and head to the checkout counter or self-service checkout. Sometimes, they may change their minds at the last minute and leave unwanted merchandise at the checkout counter or put it back in place and get back in line again. It seems inconvenient and time-wasted. By contrast, Amazon Go can track customers' paths, identifying and recording their purchases. They can carry them and leave without informing cashiers or using the automated cash register. The users' Amazon account is invoiced for the takes on the billing side, and a receipt is immediately issued to the app [7].

3.1.2. Thinking AI for Service Creation

Service creation refers to discovering new opportunities on the market, creating various and valuable services, and even customizing them. Traditionally, employees should conduct market research to understand their targeted audience before they make the next move; people who work in the fashion industry need to focus on current phenomena and predict future trends to be updated. They make decisions based on their knowledge and experience, and sometimes they might get wrong. However, with Thinking AI, these issues can be greatly solved. Thinking AI deals with intensive information, analyzing and learning from it. It can be employed to identify and segment customers, introduce services that customers appreciate, and anticipate industry trends resulting from continuous knowledge acquisition from broad data. For instance, fashion retailer Gap applied a large data-driven ecosystem for shared and concentrated creativity to identify the following seasons' style instead of keeping the creative director to anticipate [5].

In addition, Harley-Davidson employs the AI machine "Albert" to promptly accommodate its marketing approach in response to various types of consumers. Albert examines customer data based on the current level to determine the characteristics of priority clients and the sorts of marketing campaigns that would be the most effective with them. After that, it automatically modifies campaigns to improve their appeal to vital prospective clients [5]. Both examples show the power of Thinking AI: how well it can digest information and extract value from it.

Moreover, in the entertainment industry, Netflix utilizes data and statistics to determine new programs and film production. At the beginning of AI utilization in 2010, Netflix applied it to power

its recommendation engine. In order to provide a customized streaming experience for each customer, Netflix broadened its strategy in 2014 and began making significant investments in exploring user behavior. Nowadays, what the audience sees from screens is designed by a machine in real time. Human designers state several constraints and settings when they are about to start the process. However, algorithms incorporated in AI problem-solving loops make judgments: which films to show, how to present them, which images to portray them, and many other design considerations [8]. This Thinking AI deployed by Netflix analyzes and adapts from data, gets inspiration from it, and boosts to generate new and individualized elements for their audience.

3.1.3. Feeling AI for Service Interaction

In this final stage, service providers should consider in what manner and how they would like to interact with their customers [5]. The essential factor of this whole interaction part is to catch clients' emotions. People frequently react emotionally to novel technology like service chatbots. The advent of unconventional things may either please or overwhelm them. If customers feel comfortable engaging with AI technology, they may regularly visit stores where people first generate favorable emotions as they would like to replicate the happiness [2].

From the perspective of emotions, Feeling AI is the tool that dominates in this field. It can be used to detect emotions and socialize with consumers. Nevertheless, as mentioned above, the development of Feeling AI is still in progress. It might not be easy to fully engage with customers like humans. At the present time, service providers can leverage Feeling AI's existing advantages to a great extent to offer customer service.

The service interaction stage includes two sub-processes: communication and after-sales services. In both phases, Feeling AI needs to cope with different types of consumers. They might be either sensible or sentimental. Emotional support is a crucial business strategy that guarantees the business's position among rivals. One application is an AI language chatbot, Eno. Eno assists customers by examining their accounts, paying credit bills, and asking basic inquiries. Unexpectedly, the invention company discovered that people tend to develop connections with chatbots, although they realize they are conversing with AI tools [5]. Customers often seek extra special attention in addition to self-service AI tools that are convenient and adaptable [6].

What people act when interacting with AI technology displays the increasing customer demand and the importance of "feeling." Since the majority of chatbots are defined with text, they are not self-conscious and cannot behave autonomously. Similarly, Eno is ineffective at resolving client concerns or complaints. It might upset customers and result in an insufficient service outcome. To overcome the deficiency, an empathy-capable AI can be utilized to enhance relationships and increase trust. Since customers want special attention, offering services through customization or hyper customization may achieve the goal as individualized services convey the superior concept. Customers may hold different expectations, and they all can be satisfied. Besides, AI can instantly respond to customers' questions with as much accuracy as possible to manifest sympathy. In this case, customers would feel valued and unite with AI more. Furthermore, regular maintenance of AI to spot and prevent inconsistencies contributes to winning positive feedback and the confidence of clients as well [5].

3.2. Elements That Prevent AI From Replacing Humans

3.2.1. The Emergence of Feeling AI

Feeling Economy is gradually appearing. By 2036, it would ultimately surpass the Thinking Economy regarding scientific research. Jobs dominated by "feeling" will become vital in certain sectors, such as consultancy, HR, and specialists. These work all provide services that embrace massive interpersonal engagement and emotions. Since the potential of Feeling AI is yet to be discovered, employees should be the mainstream rather than relying solely on AI technology [6].

3.2.2. The Fatal Flaw of AI

Additionally, the original purpose of developing AI devices is to apply them to interact with customers like qualified employees. However, AI cannot thoroughly behave like human staff. Service delivery cares beyond physical work. The more profound component concerns the social level during service interaction: whether AI can act like a social actor and show mental support [9]. In the current and predictable future, AI devices may not be advanced enough to do so. As mentioned, AI machines can offer emotional aid by responding instantly and reducing irregularities.

Moreover, AI machines can be anthropomorphized, imitating human expressions and movements to please customers. These tactics can serve clients who do not ask for a higher level of services. In the long-term, however, it has concerns about whether customers are satisfied by it. Here comes the difference between human staff and automated machines: reality. Employees express their actual emotions, which customers can comprehend, while what AI machines have conveyed is shallow as they are text-based [10].

Although customers may attempt to connect with AI when they communicate with it, it remains to be evaluated how long consumers will continue to tolerate this superficial response.

3.2.3. Customers' Attitudes

Furthermore, not all customers feel confident and accept the "AI takeover" circumstance. People undergo a complicated process to assess whether they would like to embrace AI devices in service interactions [2, 10]. Generally, the process contains three evaluation measurements. The first stage has three indexes: social impact, hedonistic drive, and personification. These three factors are studied to see if they have a positive correlation with performance and effort expectancy in the second phase. And if they can affect emotion, thereby influencing people's readiness to use AI categorized in the third part. The results show that social influence and hedonism positively correlate with performance expectancy, indicating that people can perceive benefits using AI machines. Besides, emotion is a fundamental component impacting people's willingness to use AI. Therefore, even if AI is good at delivering or creating services, people have their preferences and reasons to reject the invasion of AI. For example, if AI machines replace employees, there will be a wave of unemployment or job displacement; human civilization and heritage may disappear; and people with lower degrees or the absence of professional skills may be eliminated, causing inequality [9].

4. Recommendations Based on the Nature Between AI and Humans

4.1. The Use of AI for Different Tasks

Artificial and Human Artificial Intelligence both have their values in service. The key element is to have different intelligence assigned to appropriate positions to handle tasks. For standardized tasks, service providers can use Mechanical AI. The purpose is to convey fast and convenient service to customers. For example, some hotels use automated robotics to deliver a meal to customers; a Machine that cuts noodles swiftly is used in restaurants. Then, Thinking AI is the tool that imitates people's brains. Therefore, it is for analytical and personalized tasks such as examining data and customizing services for high-value customers to boost the quality of the service. Finally, Feeling AI at the current level can handle general emotional work, like giving instant feedback and mimicking human expressions to please clients for short-term benefits. Moreover, one thing that service providers need to notice is that they should not entirely rely on self-service equipment to serve customers, particularly avoid doing so while establishing trust and relationships with clients due to the possibility of lost revenue when service staff is absent from online interaction [6].

4.2. Hiring Implications

In addition, as people are gradually stepping into the Feeling Economy, the number of people-oriented work may increase. HR must pay more attention to hiring employees to cope with this circumstance. Also, personnel training should be reinforced to maintain people's distinctiveness. For

example, salespeople should be friendly while interacting with customers, listening, and answering their questions with patience. Also, a staff nurse at the nursing home needs to have a warm heart to care for the elderly. They are prone to experiencing loneliness due to their reduced mobility and distance from their offspring. Nursing staff can take them out in the sun and read them stories.

4.3. The Collaboration Between AI and Employees

Finally, the hybrid mode of AI and employees can be considered to offer a better service [11]. Mechanical AI can still perform general tasks to avoid excessive labor costs and inefficiency. However, a potential issue is whether employees and AI systems can collaborate well. The study shows that employees will engage less with organizations adopting AI. If there is a conflict between employees and the use of AI when performing the same task, the terrible outcome will be transferred to customers, causing inferior services. Thus, the company should explain the purpose of joint working processes with AI machines to identify and reconcile arising conflicts timely [12].

5. Conclusion

This paper aimed to study the importance of Artificial Intelligence and employees in service and whether Artificial Intelligence will replace Human Intelligence. Currently, three types of AI have been created: Mechanical, Thinking, and Feeling AI. Mechanical AI is designed for repetitive and standardized tasks due to its convenience and consistency. Then, Thinking AI can be applied to examine information, segment and categorize customers, and make rational decisions. Some real-life examples are Gap's predictable AI systems and Albert, which can identify primary clients and automatically alter marketing campaigns accordingly. Finally, Feeling AI can be used to cope with general problems and offer superficial emotional support. Human employees should manage to provide higher levels of emotional support since they are both intellectual and social.

Moreover, considering the current climate, although modern society is still in Thinking Economy, Feeling Economy is gradually emerging and will likely replace the former within 15 years. The jobs will become more people-oriented, and employees must be socially sensitive, communicative, understanding, and caring. Overall, AI technology and human intelligence should collaborate rather than replace each other, employing respective strengths to accomplish tasks effectively.

In addition, this study raised a major question about the nature of Artificial Intelligence and the value of human workers' existence. Artificial intelligence was initially intended to help people complete activities with productivity and low costs. Indeed, the potent value of AI technology cannot be denied. However, it also may cause other issues like inequality and unemployment. Society and organizations still need people to drive economic growth. The distinctiveness of human beings determines their irreplaceability.

One limitation of this study is the lack of a deeper evaluation of Feeling Economy due to relatively scarce research. As mentioned above, people will handle more emotion-related tasks in the Feeling Economy. Investigating Feeling Economy may provide insight into the value of human workers' existence and its comparison and collaboration with AI technology in service. A future study could assess that to better understand the relationship between Artificial Intelligence and human staff.

References

- [1] Xu Peng, Xu Xiangyi. Change Logic and Analysis Framework of Enterprise Management in the Era of Artificial Intelligence. *Journal of Management World*, 2021, 39 (8): 122 - 129.
- [2] Schepers J, Belanche D, Casaló L, Flavián C. How Smart Should a Service Robot Be? *Journal of Service Research*, 2022, 25 (4): 565 - 582.
- [3] Huang Minghui, Rust R. Artificial Intelligence in Service. *Journal of Service Research*, 2018, 21 (2): 155 - 172.

- [4] Huang Minghui, Rust R, Maksimovic V. The Feeling Economy: Managing in the Next Generation of Artificial Intelligence (AI). *California Management Review*, 2019, 61 (4): 43 - 65.
- [5] Huang Minghui, Rust R. Engaged to a Robot? The Role of AI in Service. *Journal of Service Research*, 2021, 24 (1): 30 - 41.
- [6] Adam M, Wessel M, Benlian A. AI-based chatbots in customer service and their effects on user compliance. *Electronic Markets*, 2021, 31: 427 - 445.
- [7] Huberman J. Amazon go, surveillance capitalism, and the ideology of convenience. *Economic Anthropology*, 2021, 8 (2): 337 - 349.
- [8] Verganti R, Vendraminelli L, Iansiti M. Innovation and Design in the Age of Artificial Intelligence. *Journal of Product Innovation Management*, 2020, 37 (3): 212 - 227.
- [9] Gursoy D, Chi Hengxuan, Lu Lu, Nunkoo, R. Consumers acceptance of artificially intelligent (AI) device use in service delivery. *International Journal of Information Management*, 2019, 49: 157 - 169.
- [10] Wirtz J, Patterson P, Kunz W, Gruber T, Lu V, Paluch S, Martins A. Brave new world: service robots in the frontline. *Journal of Service Management*, 2018, 29 (5): 907 - 931.
- [11] Makarius E, Mukherjee D, Fox J, Fox A. Rising with the machines: A sociotechnical framework for bringing artificial intelligence into the organization. *Journal of Business Research*, 2020, 120: 262 - 273.
- [12] Braganza A, Chen Weifeng, Canhoto A, Sap S. Productive employment and decent work: The impact of AI adoption on psychological contracts, job engagement and employee trust. *Journal of Business Research*, 2021, 131: 485 - 494.