

Revolutionizing Work: How technology today is shaping the future of the workplace

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The world of work has constantly changed over the last two hundred years. In the preindustrial era, work was primarily agrarian. The Industrial Revolution in the late 18th century shifted the work dynamics to factory-based mechanization and mass production. In the 20th century, electricity, telecommunications, and computing advancements further automated industries. The Information Age in the late 20th century brought about a digital revolution, where the service sector grew in prominence, powered by the internet and personal computing.

Today, in the 21st century, the world of work is experiencing yet another transformation driven by globalisation, digitalisation, and disruptive technologies such as Artificial Intelligence (AI), robotics, and remote work capabilities. These advancements are changing how we work, redefining the very concept of work and leading to a more flexible, interconnected, and innovative workplace ecosystem.

AI: The Catalyst for Workplace Transformation

Artificial Intelligence (AI) has been affecting how we work for quite some time – automating routine tasks, allowing employees to focus on more productive aspects of their work, streamlining job application evaluations, and improving decision-making with predictive analysis. While the potential benefits of AI are undeniable, to do a comprehensive analysis of the impact of AI on workplace transformation, it is essential to consider both the opportunities and the challenges presented by AI in the workplace.

In talent management, AI is reshaping how organizations attract, develop, and retain talent. Recruiters and hiring managers can quickly generate new job descriptions and align them with the organization's skill needs. While traditional methods often rely on the manual evaluation of resumes, AI algorithms can analyze resumes, social

media profiles, and digital footprints to identify candidates who are best fit for a role. AI tools can collect and evaluate vast amounts of data that may exceed human analytical capabilities, allowing recruiters to choose talents from a broader pool in less time. This significantly reduces the workload of recruiters, and a shorter hiring cycle means that candidates do not have to wait weeks for a decision. So, AI, in a way, also improves the candidate experience.

However, potential downsides arise from a lack of human touch in the hiring process. AI tools are only as good as the data they are trained on. If the data used to train HR models contains biases, the tool will internalize and replicate them. AI tools can be subjected to historical biases, such as gender or racial discrimination, and the historical data fed into the algorithm may reflect societal biases. The AI algorithm will learn and perpetuate these biases. Over time, such perpetuating biases will only widen social and economic disparities and also negatively affect the future workplace. AI algorithms may also be subjected to sampling bias, leading to underrepresenting certain groups in the training data and resulting in a less diverse and lower-quality workforce.

For instance, Amazon introduced an AI system in 2014 to hire new engineering talent. Amazon's AI was trained on the applicant's data over the last 10 years. Most of these applicants had been male, so Amazon's AI was trained to believe that engineering applicants were predominantly men. The AI-based hiring tool thus downgraded resumes containing the word "women's" and filtered out women who had attended women's college only. By 2015, Amazon recognized the flaws in this experimental recruitment tool, and by 2018, Amazon had reportedly discontinued its use.

The human element is also an essential part of recruitment that gives a candidate an early insight

into the organization's culture and values before joining. AI tools, on the other hand, rely on specific keywords to evaluate candidates and thus possess an inherent limitation in assessing intangible qualities such as soft skills. The hiring process can eventually be frustrating and unengaging for the candidates. Thus, striking a proper balance between automation and the human interface is paramount in ensuring the quality of the workforce selection and, thus, the future of the workplace.

Another significant and multifaceted workplace transformation driven by advancements in AI and robotics is the automation of repetitive, manual, and mundane tasks. Automation is already predominant in industries like manufacturing, where robots have taken over assembly lines. AI is increasingly deployed in packaging, quality control, and predictive maintenance.

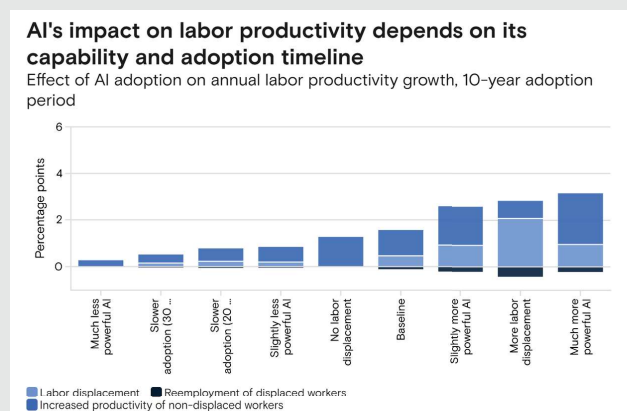
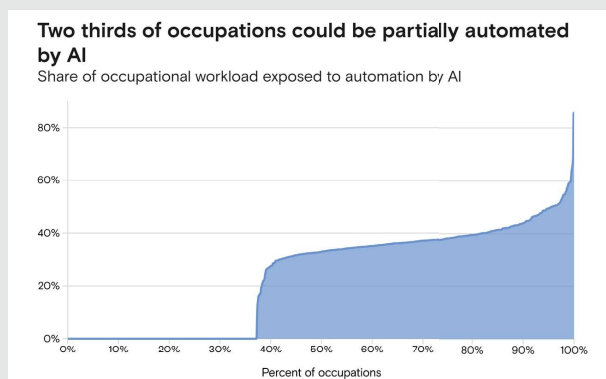
As AI continues to permeate the workplace, there is a widespread concern for AI, leading to massive job displacement. A 2023 Goldman Sachs report predicts that Generative AI could replace 300 million full-time jobs. However, the same report also forecasts a global GDP rise of 7%, driven by the growing adoption of Gen-AI.

So, the issue of the impact of AI on the workplace boils down to a critical question: Is the adoption of AI a threat? Is this new technological wave causing job displacement and contributing to

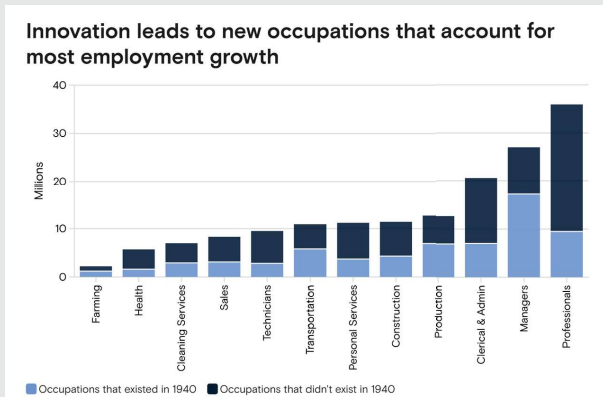
unemployment, or is it a catalyst for new opportunities, redefining jobs and creating new opportunities that we never imagined?

There is a general consensus that AI and related technologies will profoundly impact both work and workers. Various research has been conducted to qualitatively and quantitatively measure and identify the jobs that may get replaced. One such study, the Job Replacement Theory by Huang and Rust (2018), categorizes jobs based on four types of intelligence: mechanical, analytical, intuitive, and empathetic.

According to this theory, jobs that rely on mechanical intelligence – routine, repetitive tasks that can be easily automated – and analytical intelligence, which involves data processing and problem-solving, are moderately to highly susceptible to AI-driven replacement. In contrast, jobs requiring intuitive intelligence, such as creativity and abstract thinking, and empathetic intelligence, involving emotional understanding and relationship-building, are more resistant to automation. A study by Frey and Osborne (2017) to determine the impact of automation on employment highlights that routing tasks in sectors like transportation, logistics, administration, and production are particularly vulnerable to automation. On the flip side, advocates of AI argue that jobs will be redefined and reshaped.



The integration of AI is expected to drive demand for highly skilled workers proficient in AI-related fields, creating new roles such as AI trainers, ethicists, and maintenance specialists. This shift toward more specialized skills will boost workplace productivity and efficiency, increasing individual wages and overall wage growth. Moreover, adopting AI will free up capital and labor, which can be reinvested in innovation, business expansion, and the enhancement of products and services, contributing to GDP growth.



adoption can lead to stress and anxiety due to fears of job displacement. Additionally, the pressure to upskill and reskill can be particularly daunting for those unprepared to adapt to the digital landscape. To mitigate these concerns, employers and educational institutions should collaborate to provide accessible and effective training programs that help employees acquire the skills needed to thrive in an AI-driven environment.

The impact of disruptive technology in the workplace has largely been positive. Technology has helped to increase productivity and efficiency, improve communication and collaboration, and give employees more flexibility and mobility. However, the potential downsides of technology adoption should not be neglected, and organizations can mitigate the negative impacts by providing training and support to employees and setting clear expectations around technology use.

The ongoing evolution of AI necessitates a continuous reskilling and upskilling of employees. The growing dominance of AI in the workplace will compel workers to develop AI fluency to remain competitive and relevant in the job market.

A crucial aspect of implementing AI in the workplace is its psychological impact on employees. Research indicates that increased AI

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