9 Social and Cultural Implications of Generative AI

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> Generative AI profoundly impacts culture and society, and will shape the fabric of society, redefine industries and introduce societal challenges. Understanding the implications empowers technology innovation leaders to drive positive change and foster innovation.

Additional Perspectives

- Summary Translation: 9 Social and Cultural Implications of Generative AI (25 September2023)

Overview

Impacts

The impact of generative AI will be accelerated and inhibited by far more than just technology alone. As a key part of their strategic planning, technology innovation leaders need to think beyond just technology. They should understand the full breadth and scope of the impact that generative AI may have on their organizations, starting with a thorough understanding of the social and cultural impacts.

Recommendations

Technology innovation leaders looking to prepare for the digital future must:

- Evaluate generative AI, beyond just the technology. Understand its impact and interdependencies with other organizational elements to enhance strategic planning. Adopt what Gartner refers to as a “tapestry” mindset.
- Analyze and mitigate risks. Assess the potential risk connected to generative AI, such as privacy concerns, misinformation, regulatory compliance, accountability issues and filter bubbles due to excessive personalization.

- Embrace change. Approach the possible use cases of generative AI with an understanding of their implications and a commitment to responsible and sustainable implementation.
- Foster human-AI collaboration. Recognize that generative AI is a tool to enhance human creativity and innovation rather than a replacement for human judgment. Encourage the integration of generative AI with human input to create personalized experiences, preserve cultural diversity and respect individuality.
- Invest in talent and skills. Promote digital capabilities and effective change management by investing in developing talent and skills aligned with generative AI. This includes upskilling existing teams, fostering a culture of continuous learning, and recruiting individuals with a deep understanding of AI technologies and their societal impact.

Introduction

As technology innovation leaders develop a more complete point of view on generative AI, they must consider the technological, political, economical, social/cultural, trust/ethics, regulatory/legal, and environmental (TPESTRE) impacts. This will paint a more holistic picture and enhance leaders' strategic decision making. Gartner refers to this approach as tapestry (see Complexity, Chaos and Confidence: A Tapestry of Trends Across Brave New Worlds).

Technology and IT leaders must recognize the profound impact of generative AI on our society, as well as how society will impact the adoption of generative AI. This note highlights nine plausible impacts, albeit not a comprehensive list, of GenAI from a social and cultural perspective. By understanding these impacts and taking proactive measures, leaders can harness the potential of generative AI while addressing its challenges. This note provides insights to guide technology and IT leaders in determining if, and how, generative AI may be an essential part of their digital future.

Impacts and Recommendations

Table 1 provides an overview of potential impacts generative AI may have on society and culture that are covered in this research.

Table 1: Potential Impacts of Generative AI

(Enlarged table in Appendix)

Impact Area	Potential Benefits and Risks
Academia	GenAI has the potential to accelerate academic research and improve education. However, concerns about academic integrity and policies arise.
Mental Health	GenAI holds the potential to both mitigate and exacerbate information overload. Additionally, it offers a platform for creative expression, though apprehensions about excessive dependency, bias and potential harm emerge.
Dehumanization	GenAI can enhance creativity and productivity but cannot replace human judgment. Challenges concerning biases, impersonalization and distrust arise.
Visual and Performing Arts	GenAI can democratize creation, and offer new frontiers and revenue streams. GenAI will also disrupt traditional arts, and raise legal and ethical concerns.
Social Media	GenAI will enable hyper-personalization, automate content creation and foster deeper user engagement. However, ethical considerations, algorithmic bias, filter bubbles and privacy concerns will arise.
AI Natives	AI natives will reshape communication, work, socialization and technology interaction. While their reliance on GenAI tools brings potential drawbacks, it also presents opportunities for job growth and flexible skill sets.
Collaboration	GenAI will revolutionize collaboration, play a vital role in the creation of digital human assistants and enhance work outcomes. Concerns about bias, security, privacy, dependency and integration difficulties will arise.
Depreciation of Knowledge	GenAI raises concerns about knowledge depreciation, skills erosion and limited diversity of thought. Overdependence on GenAI can hinder independent task performance and stifle innovation.
Societal Divide	GenAI can deepen societal divisions, reinforce biases and widen wealth disparities. Job displacement may affect certain groups more negatively.

Source: Gartner (August 2023)

Academia

Generative AI has significant potential to accelerate academic efforts, enabling new advancements in scientific research, automating repetitive tasks and improving accessibility of education. Generative AI, with the help of synthetic data, can enhance scientific research by analyzing large and complex datasets. It enables the discovery of new insights and hypotheses beyond the capacity of traditional data analysis techniques. [1] GenAI can also automate time-consuming tasks such as transcribing lectures, organizing research data, and simplifying the grading and assessment process. This frees up valuable time for more critical tasks, such as dedicating additional time to provide one-on-one guidance to students.

The use of generative AI also opens up new opportunities for personalized learning experiences, intelligent tutoring systems, and simulation environments that can enhance the overall learning experience. [2] However, its increased adoption prompts concerns about academic integrity, as well as highlights the need to refine present approaches to teaching, learning, student assessment and application of knowledge. [3] Certain institutions are already implementing a shift in their approach by incorporating reflective elements into assignments. This includes prompting students to compose comprehensive self-assessments that reflect on their decision-making process and explain the rationale behind choosing one answer over another. [4]

To fully realize the benefits of generative AI in academia, educational institutions must evaluate the impact of various use cases for applying generative AI and develop policies that consider the capabilities and limitations of these technologies.

Digital capabilities and effective change management are becoming key enablers of higher education competitiveness and key components of effective K-12 school operations. [5]

On the downside, academic environments run the risk of facilitating an overreliance on the same technology. Human verification and corroboration of output remains elemental to academics' success and new, groundbreaking or overall innovative research in every area. Adversarial attacks on models and data, or simply unintended and accidental poisoning of them, including model collapse are clear risks as AI-generated information increasingly may become part of the fact base for new model training. This can negatively impact the quality of academic research and co-direct malinformation campaigns in the longer term.

Mental Health

Generative AI has significant potential in aiding medical diagnosis and research, but there are key issues of concern. These include overreliance on technology, potential bias in algorithms and training data, as well as the technology's tendency to be error prone or invent responses. [6, 7, 8] One incident involving an AI chatbot developed to provide support and resources to those concerned about eating disorders has faced criticism and was eventually taken down for providing harmful advice related to healthy eating tips and weight loss techniques. [9] This raises concerns about the potential risks of relying on generative AI systems, as human interaction and expertise cannot yet be adequately replaced by even highly intuitive programs.

The abundance of material created through GenAI, whether textual, auditive, visual or a combination of these, brings additional risk to mental health of the general public through overexposure to information flanked with the uncertainty of truthfulness.

Additionally, the expectation of enhanced and increased production in work and (social) media activities can lead to stress, peer and performance pressure, and uncertainty. Conversely, GenAI offers a creative outlet and allows users to channel their focus on specific areas of interest. It also simplifies and summarizes information, reducing information overload and potentially relieving related stress.

It is important for technology innovation leaders, especially in the mental health arena, to consider the potential impact of generative AI on mental health and to work toward maximizing its positive effects while mitigating its negative consequences. Further research is needed to fully understand the impact of generative AI on mental health and to develop ethical guidelines for its use in mental healthcare.

Dehumanization

Generative AI should not be viewed as a replacement for human judgment but as a tool to enhance creativity and innovation. Gartner predicts that by 2036, the incremental spending for products, services and hybrid offerings to deliver AI solutions will exceed $50 trillion. Additionally, a forecast from the Institute for the Future states that 85% of the jobs in 2030 haven't even been invented yet. [10] Ten years after that, the workforce may be totally unrecognizable. Technology and innovation leaders should be aware of the psychology of the new diversity that will emerge as teams become composed of humans and nonhumans working together. This diversity brings the risk that stereotypical beliefs and biases can easily influence decisions and teamwork.

When machines are considered as nonhuman co-workers, they may face distrust and negative expectations, similar to out-group members. This can lead humans to share less information and avoid collaborating with machines.

Team leaders will need to respond to such negative team dynamics and be trained so they understand the reality of those negative beliefs and its consequences.

Technology and innovation leaders should engage in open dialogue with stakeholders to ensure that generative AI is developed and deployed in a way that optimizes their operations and processes while also demonstrating a commitment to valuing and supporting employees. While AI-based machines are fast, accurate and consistently rational, they lack the intuitive, emotional and culturally sensitive abilities that humans possess. Organizations that integrate generative AI with human input can create more personalized and authentic experiences while also preserving cultural diversity and individuality.

Visual and Performing Arts

Until recently, creativity and art were the exclusive domain of humans. Generative AI challenges that by generating award-winning artworks, [11] replicating artistic techniques and even encroaching on individual artists. Generative AI is transforming visual and performing arts by democratizing the creation of art, commercializing it through customizable artworks, personalizing it to the individual and offering new artistic frontiers while also disrupting traditional installations. These disruptions could lead to new business models and revenue streams for artists and entities that utilize generative AI for creating, distributing and monetizing artworks.

With the help of AI-generated algorithms, musicians are exploring new sounds and styles, performers are creating interactive and immersive performances that adapt to the audience's responses in real-time, and screenplay writers are generating new scripts.

Generative AI is also changing the creative process for artists, with models able to generate visuals such as digital images, logo design, animation and 3D modeling. In the world of performing arts, AI is allowing for the creation of realistic virtual performers, and improving accessibility and inclusivity through captioning and translation tools.

At the same time, AI is creating legal and ethical considerations around authorship, copyright, ownership and authenticity. Technology innovation leaders must work with their legal and regulatory teams to ensure their organizations are managing the risks of leveraging generative AI-generated works of art and graphic design.

Social Media

The integration of generative AI into social media platforms has profound implications for technology innovation leaders. The total number of active social media users is currently 4.76 billion, highlighting the importance of utilizing social media for brand marketing. [12] By investing in generative AI, various social media platforms such as Snapchat, Meta, YouTube and Reddit are contributing to the projected growth of the AI in the social media market. Research anticipates that by 2028, this market will reach $5.6 million, experiencing a compound annual growth rate (CAGR) of 28.77%. [13]

With the ability to analyze user preferences, behaviors and interactions, generative AI algorithms can deliver hyperpersonalized content in real time. This level of personalization fosters deeper user engagement, strengthens brand loyalty and drives conversion rates.

Additionally, generative AI automates content creation, allowing users to scale production, meet demand and ensure a consistent flow of engaging material. It also facilitates real-time language translation, breaking down barriers and expanding user reach globally.

Alongside these opportunities, the prevalence of AI-generated content raises concerns about the spread of fake information and the erosion of trust in social media platforms and digital interactions. The dissemination of misleading or manipulated content can further diminish public trust in the authenticity of information shared on social media, undermining the credibility of these platforms and media sources overall.

For technology innovation leaders, understanding the implications of generative AI on social media is essential. It offers opportunities for enhanced user experiences, improved ad targeting and data-driven strategies. However, it also demands ethical considerations, responsible implementation, and proactive measures to address challenges such as algorithmic bias, polarization, misinformation and privacy concerns.

AI Natives

Although AI natives will include a generation that has grown up with AI, the starting point of that generation remains uncertain — AI has been around for decades but simmered for a long time. We will all need to adapt to the growing AI pervasiveness, and the term “AI Natives” will be used broadly to indicate those to whom AI will become second nature. Artificial intelligence systems will get integrated into our daily lives, causing significant cultural changes. AI natives will have a natural affinity for and adeptness with artificial intelligence, forming unique perspectives and expectations shaped by their interactions with AI technology. Their inherent familiarity with AI will reshape communication, work preferences, socialization, entertainment and their interaction with technology.

Integration of AI into day-to-day life will be natural for AI natives. They will seamlessly embed AI into their routines, utilizing generative AI tools as a primary resource. While the consequences are uncertain, this heavy reliance on AI could potentially harm their cognitive and social skills.

For instance, there is a potential decrease in critical thinking and problem-solving abilities as AI natives heavily depend on AI for information and decision making, diminishing their need to analyze situations independently. [14]

The arrival of AI natives will bring new expectations to the workforce, much like digital natives did for analog-native businesses. AI natives will entrust AI systems with tasks and rely on them, viewing this as a competitive requirement. Blurring boundaries between human and AI-created content will be commonplace, and the reliance on generative AI tools will shape their long-term thinking. Moreover, the widespread adoption of AI will give rise to new job opportunities and necessitate reevaluating the conventional notion of jobs, demanding a more flexible and adaptable skill set. Adapting to the demands of AI natives and embracing continuous reinvention will be essential for technology innovation leaders to consider in their long-term strategies.

Collaboration

Generative AI is poised to have a transformative impact on collaboration, revolutionizing how teams work together and with technology. By leveraging deep learning algorithms, generative AI can mimic human creativity and generate new content in various forms, such as text, speech, images, music and video. This technology offers significant benefits for collaboration and for simplifying interactions.

Generative AI plays a vital role in the creation of digital human assistants, serving various important functions (see Quick Answer: What Is a Digital Human?).

Digital humans can aid in many tasks, such as answering queries, summarizing and producing reports, facilitating data analysis, delivering tailored suggestions, and automating activities like meeting scheduling, email handling, calendar management and document organization.

Digital assistants learn from user interactions over time, enabling them to handle more complex tasks and freeing human workers to focus on higher-level work requiring critical thinking and creativity. Generative AI enables idea generation by leveraging existing digital inputs to generate new content. This use case is particularly valuable for sparking creativity, developing fresh ideas and enhancing work outcomes.

Generative AI's impact on collaboration is not without challenges and potential adverse effects. These include concerns about bias and fairness in the generated content, security of user data, people's privacy, ethical considerations in content manipulation, dependence on AI without critical thinking, and learning curve and integration difficulties. Organizations must address these issues responsibly through diverse and curated training data, robust data protection measures, ethical guidelines, fostering user engagement, and providing adequate training and support.

Depreciation of Knowledge

The rising prominence of generative AI necessitates careful consideration of the potential depreciation of knowledge. Acknowledging the risks of skills erosion, reduced innovation, decreased diversity of thought and erosion of facts, prompts organizations to make informed decisions. Balancing generative AI with human expertise, fostering continuous learning, and emphasizing human verification and critical thinking are essential to leverage the transformative power of generative AI while preserving the value of employees' skills and knowledge.

Overdependence on generative AI may result in a decline in skills among team members, limiting their ability to perform tasks independently.

This reliance can stifle innovation, as individuals may hesitate to explore novel ideas or approaches beyond AI-driven solutions. Excessive reliance can also lead to narrowing ideas and perspectives, hampering critical thinking. To mitigate these challenges, technology innovation leaders should advocate for investment in ongoing training, while recognizing that human skills and education will become decreasingly encyclopedic in the face of advancing GenAI capabilities.

Societal Divide

Widespread adoption of generative AI has the potential to further divide an already polarized society and create new chasms between groups. Societal divides on economic, political, cultural, ethnic and religious lines — already problematic — may widen as hyperpersonalized content reinforces and accelerates existing biases and suspicions, and strengthens individual or group echo chambers. Thus, it is important that technology innovation leaders understand that new advances in GenAI will influence not just processes and systems, but human environments and actions.

The development of generative AI, especially in the context of foundation models, is becoming economically unfeasible for smaller firms. If this trend persists, it is likely that large technology conglomerates will further consolidate power and resources, exacerbating economic disparities.

Displacement of jobs due to GenAI will cause further societal divide. Gartner predicts that through 2026, despite all the advancements in AI, the global jobs' impact will be neutral (see The Future of AI: Reshaping Society). Yet, displacement of certain types of jobs will disproportionately impact some social and economic groups more negatively than others. Access to, and training on, GenAI will not be equally distributed without intervention, creating the potential for greater wealth disparity, further widening the societal divide. Technology innovation leaders should strive to distribute the opportunities presented by GenAI equitably.

Evidence

[1] Scientists' Perspectives on the Potential for Generative AI in Their Fields

[2] Generative AI: Education in the Age of Innovation, Forbes.

[3] Alarmed by A.I. Chatbots, Universities Start Revamping How They Teach, The New York Times.

[4] Generative AI Tools and the Impact on Teaching and Learning, Northwestern University.

[5] Predicts 2023: Education Will See Consolidation, Competition and Creativity

[6] What Do We Do About the Biases in AI?, Harvard Business Review.

[7] Generative AI Makes Headway in Healthcare, The Wall Street Journal.

[8] The Danger of Over-reliance on AI, Psychology Today.

[9] A Wellness Chatbot Is Offline After Its 'Harmful' Focus on Weight Loss, The New York Times.

[10] Emerging Technologies' Impact on Society & Work in 2030, Dell Technologies.

[11] Artist Wins Photography Contest After Submitting AI-Generated Image, Then Forfeits Prize, ARTnews.

[12] Number of Internet and Social Media Users Worldwide as of January 2023, Statista.

[13] Artificial Intelligence (AI) in Social Media Market Size and Share Analysis — Growth Trends and Forecasts (2023-2028), Mordor Intelligence.

[14] Impact of Artificial Intelligence on Human Loss in Decision Making, Laziness and Safety in Education, Humanities and Social Sciences Communications.

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Complexity, Chaos and Confidence: A Tapestry of Trends Across Brave New Worlds

Quick Answer: How Should Education Institutions Respond to Use of Generative AI such as ChatGPT?

Predicts 2023: Education Will See Consolidation, Competition and Creativity

Innovation Insight for Generative AI

Quick Answer: What is a Digital Human?

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