Emerson Wang

Professor Julie Gonzalez

Econ 197

1/31/2026

Technology as the Foundation of the Modern Global Economy

Every morning, we wake up to a world that is technologically more advanced than the one we left the night before. It feels like the iPhone 7 just came out yesterday, yet we are already discussing the iPhone 17 with industries leveraging AI all around us. As digital growth accelerates at an unprecedented pace, we must ask: Is our economy keeping pace with the programs we've built? Today, the technology sector is no longer just a standalone industry; it is the foundation that supports the global economy. Beyond just retail and finance, digital technology has become the essential engine for efficiency and communication in almost every field today. This shift represents a transition from the reliance on physical labor to one where data and insights are valuable commodities for any business. Thus, the tech sector has become a direct indicator of global economic stability and future growth potential. The emergence of AI has triggered a massive shift in how the global economy functions. It's no longer just about basic, tedious tasks; it's about how intelligent technology can help us do work more effectively, fundamentally changing the way every person participates in the global economy

Technology is no longer just a vertical industry; it has become the horizontal layer that supports every other sector of the economy. The tech sector has now expanded beyond its traditional boundaries to become an essential foundation for global trade and communication. The transition from the manufacturing of physical hardware to the making of intelligent software

defines the tech sector's growth. The industry that once relied on computer chips and servers now runs on cloud computing and software-as-a-service (SaaS), which allows any business to scale its operations instantly. This global economic dominance is most visible in the stock market, where tech companies now act as both economic stabilizers and disruptors. In 2024, the sector dominated the market so heavily that just eight tech firms, such as Nvidia and Microsoft, drove 55% of all US market gains. Furthermore, research links this digital shift directly to national growth, where every dollar invested in digitalization yields an average return of over eight dollars. This exceptional return on investment and market dominance underscore the immense influence of big tech, which now fundamentally dictates the flow of global capital. While this financial dominance is impressive, the true power of this new era lies in the specific technology driving it: Artificial Intelligence.

The emergence of Artificial Intelligence (AI) represents a historic shift across all sectors, transitioning from simple task automation to the creation of intelligent systems capable of complex decision-making. In fields like healthcare and life sciences, AI is accelerating drug discovery by modeling compounds in weeks rather than months. While in the financial sector, it is capable of streamlining customer operations and risk management. Companies like Nvidia and Microsoft are at the forefront of this transformation, leveraging massive datasets to train the complex models that power these innovations, effectively making data the "new oil" of the modern economy. According to research by McKinsey, generative AI alone could add between $2.6 trillion and $4.4 trillion to the global economy annually - an impact comparable to the entire GDP of the UK. Meanwhile, the Digital Cooperation Organization envisions that generative AI will play a large role in cutting-edge software development with a projected market value of $207 billion by 2030. This surge is largely due to AI's ability to automate complex tasks that

require human intervention, such as data classification and content creation. By utilizing data and turning it into actionable insight, AI is shifting the technology sector from providing simple tools to also increasing the speed and efficiency of global trade. Ultimately, AI has become a major focus that any sector and any nation is keeping its eye on for its growth and speedup is simply unprecedented. However, this unprecedented speed does not come without its costs, as the same tools that drive growth also risk leaving many behind.

Technological advancement always brings new risks, and the rapid growth of the tech sector is no exception. Despite the technology sector's growth, offering any business a path to increased productivity, it also threatens to widen the "digital divide" and worsen wealth inequality. High-tech regions often concentrate economic growth, leaving areas with less digital infrastructure struggling to keep pace. The concentration of wealth within these hubs fuels an asymmetrical labor market: high-wage professionals reap the benefits of AI, while others face increasing risks of job displacement. While Generative AI has the potential to contribute trillions to the global economy, we can only realize this value if we successfully redeploy the workforce. This could include a move toward a more skills-based approach to labor, such that the worker's ability to collaborate with an intelligent system is just as important as what they already know. In addition, policymakers must also focus on addressing wealth inequalities by fostering digital growth and providing access to AI education. If the situation is managed correctly, the benefits from the tech sector would massively boost a nation's well-being and overall global productivity. Successfully managing these risks will determine whether the current expansion of the tech sector creates a more equitable world or simply a more efficient one.

The expansion of the technology sector, coupled with the emergence of Artificial Intelligence, has fundamentally shifted the workings of the global economy. The emergence of

AI is not just a technical milestone; it is a sign of a new direction where intelligent systems rewrite the rules. However, this transformation brings as many challenges as it does opportunities, thus we must be careful to ensure that the massive growth of tech doesn't leave vulnerable regions or workers behind. We now need a commitment to upskilling our workforce more than ever before. Ultimately, we should measure the success of the new era not only by the speed of our machines but also by our ability to use these tools to create a more productive and inclusive future for everyone.

Works Cited:

Albrecht, Bella. "Tech and Communication Stocks Drove US Market Gains in 2024." Morningstar, 3 Jan. 2025, https://global.morningstar.com/en-gb/markets/tech-communication-stocks-drove-us-market-gains-2024.

Digital Cooperation Organization. Digital Economy Trends 2024. Digital Cooperation Organization, 2024, https://dco.org/wp-content/uploads/2024/10/Digital-Economy-Trends-2024.pdf.

Huawei. "Global Digitalization Index (GDI) 2024." Huawei, 2024, https://www.huawei.com/en/gdi.

"The Economic Potential of Generative AI: The Next Productivity Frontier." McKinsey & Company, 14 June 2023, https://www.mckinsey.com/capabilities/tech-and-ai/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier.