Alley Company Quarterly Letter
Innovation's Path to Economic Impact

April 12, 2024

We are old-fashioned. In a ChatGPT world, we relied on our *authentic* intelligence to write this letter. Recent technological advances in artificial intelligence (AI) make stating this a near requirement.

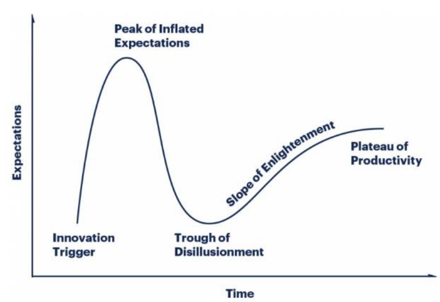
Despite its decades-old founding, the AI innovation wave has recently kicked into high gear, prompting investors to place bets on which companies might reap its rewards and propelling portions of the stock market significantly higher. For example, the PHLX Semiconductor Index rose nearly 60% during the year ended March 31, 2024, as many constituent companies produce chips that are critical components of AI-related infrastructure.

Powering Nvidia and ChatGPT-related headlines, are impressive recent AI product releases. The current iteration of AI has the potential to materially impact myriad industries. Existing tools can generate useful software code, produce human-quality art, and aid in pharmaceutical drug discovery.

A McKinsey & Company study[1] estimated that AI could add a whopping $2.6 trillion to $4.4 trillion in value to the global economy, annually.

And while this technological acceleration shows significant promise, investing through transformational periods is no simple task. Change involves heightened uncertainty that can damage portfolios that are not properly managed.

Evolving technology can challenge an investor's ability to determine cash flow sustainability, as an innovation's productivity impact often doesn't follow a straight line. Research and consulting firm, Gartner, has created a graph titled the "Gartner Hype Cycle" that charts a common path. It goes something like this: a technological advance emerges, people's expectations of the technology exceed its current capabilities, people are confronted with the reality of what the technology can currently accomplish, expectations and reality reach healthy equilibrium over time. The graph[2] is included below.



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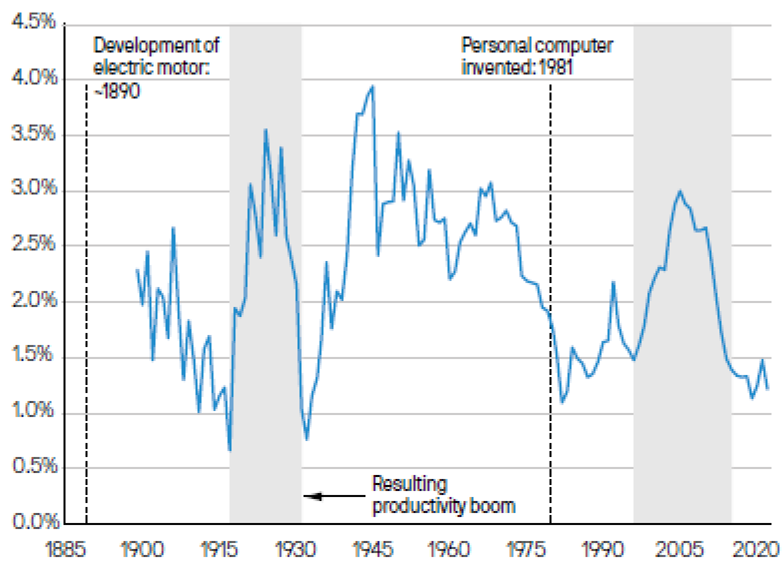
As the innovation cycle unfolds, new or progressing technology can take time to make its economic mark, even if its emergence eventually translates into productivity growth that drives gross domestic product higher. The below chart[3] depicts the yearslong gap between when two groundbreaking inventions were created–electric motors and the personal computer–and ensuing productivity growth.

Past general-purpose technologies have taken considerable time to deliver gains in labor productivity, which has been the main engine of U.S. GDP over the last century

Labor productivity growth
Rolling 10-year annualized rate



Source: BLS, NBER, J.P. Morgan Asset Management. Data from 1888-1957 reflect productivity data for the total private economy from John Kendrick, "Productivity Trends in the United States," NBER. Data from 1958-2022 reflect non-farm productivity data from the BLS. Data are as of August 31, 2023.

In addition to the aforementioned high-level timing uncertainties, identifying the individual stocks that will ultimately benefit from a technological shift poses another challenge. Maintaining balance in portfolios can help investors guard against this wrinkle, as overexposing portfolios to technologies that are finding their footing can invite unwelcome volatility. For example, the rise of the internet in the late 1990s lead to a large group of competitors in the search engine space. Google was the eventual winner, but there were several companies whose search engine capabilities perished, including Alta Vista, Ask Jeeves, and Infoseek, to name just a few.

Despite the variability surrounding the path that a potential AI-driven transformation could take, the technology's advances make one thing clear: the American innovation engine is alive and well. Investors that exhibit patience and discipline will be able to profitably participate in current and future innovations.

1. McKinsey & Company, “The Economic Potential of Generative AI”, June 2023.
2. Gartner.
3. J.P. Morgan Asset Management.