

## The Real Thing

The March 23, 2023 public launch of ChatGPT-4 has fueled widespread “Artificial Intelligence (“AI”)” enthusiasm from consumers, businesses, and investors alike. AI has rapidly become a major focus for capital investment and a correspondingly dominant stock market narrative. Excitement is primarily around “Generative AI” which creates text, images, video, audio or code by using Natural Language Processing (“NLP”). Although seemingly an overnight phenomenon, an immense amount of capital and effort has already been invested in AI and Machine Learning for over a decade. However, the ChatGPT-4 revelation has ushered in a Gold Rush mentality and created urgency to capitalize on its capabilities.

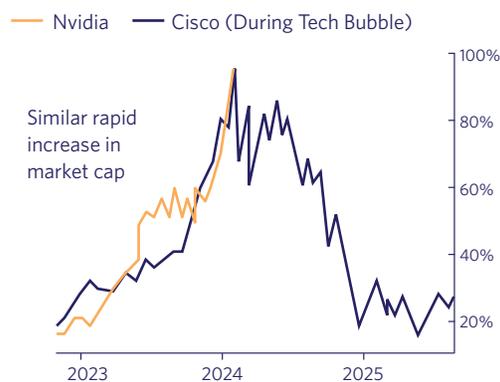
Nvidia, with its commanding leadership position in Graphic Processing Units (“GPUs”) initially developed for gaming, and later adapted to crypto mining, has seen its revenues triple and earnings quadruple since ChatGPT-4’s public launch. Its stock price has appreciated well over 300% as

Nvidia has become the 3rd most valuable publicly traded company in the world. Nvidia’s quarterly earnings reports are now major market events as they provide insight into not only its performance but also broader AI adoption. Comparisons to Internet infrastructure leader, Cisco, during the dot.com era are natural. However, although Nvidia’s increase in market capitalization has largely mirrored Cisco’s prior ascent, Nvidia’s earnings’ growth has dwarfed Cisco’s ramp and kept its valuation significantly lower (Chart 1).

Given that capitalism inherently induces periodic euphoria over new investment themes, sober investors will naturally question whether AI is mostly hype, pointing to the recent craze in crypto-currencies, Non-Fungible Tokens, and Electric Vehicles. However, it is Lyell Wealth Management’s view that AI will be transformative to business and society, akin to the changes ushered in by the adoption of broadband internet and mobile and social computing over the last 30 years.

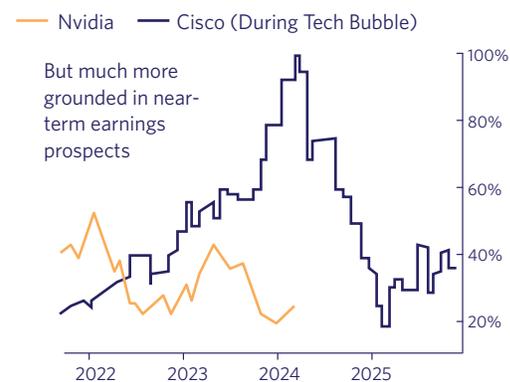
**CHART 1**

Market Cap (Indexed to Peak)



Source: Ray Dalio, Bridgewater Associates, LinkedIn

2 Year Forward Price/Earnings Multiple



MATT BENNITT

MATT@LYELLWEALTH.COM

JEFF BERRY

JEFF@LYELLWEALTH.COM

KEVIN CONNELL

KEVIN@LYELLWEALTH.COM

PERI SOYUGENC

PERI@LYELLWEALTH.COM

NANCY TUCK

NANCY@LYELLWEALTH.COM

JOANNA LEVASSEUR

JOANNA@LYELLWEALTH.COM

TODD SHIMADA

TODD@LYELLWEALTH.COM

ANNA WONG

ANNA@LYELLWEALTH.COM

KATHERINE HILL

KATHERINE@LYELLWEALTH.COM

LISA SANCHEZ

LISA@LYELLWEALTH.COM

FRANCESCA FAORO

FRANCESCA@LYELLWEALTH.COM



A race is underway to build out the cloud computing infrastructure needed to train and run large AI applications. This massive investment is coming from cloud service providers, large technology companies, datacenter businesses, financial institutions - in reality, it is a race amongst the best-capitalized companies on Earth. There is more demand for Nvidia semiconductors than can be currently produced. Efforts are underway to reduce reliance on Nvidia and/or find less expensive/more efficient options, but this won't be easy given Nvidia's comprehensive suite of capabilities that were built over twenty-five years. It seems inevitable that the infrastructure will at some point be overbuilt, similar to the telecom and networking excesses of the 1990s, but this would appear to be years away.

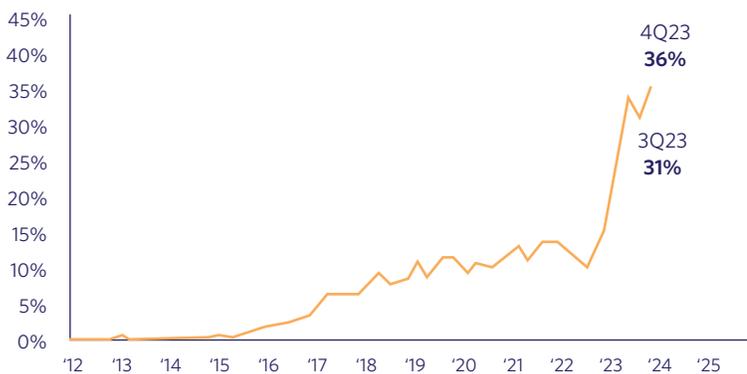
The widely reported errors and "hallucinations" by ChatGPT and Google's Gemini service legitimately raise questions as to whether Generative AI consumer applications are market ready. However, AI's clearest path for near-term adoption is from within the enterprise and it is well underway. A 2023 KPMG survey of 400 CEOs indicated that 72% identified Generative AI as a top investment priority, and much of this spend is coming from specific-AI targeted investment, not the overall IT budget. Companies as diverse as Eli Lilly, Travelers Insurance,

and CarMax are publicizing their AI use cases. Although some corporate funding will be allocated towards automation or machine learning that doesn't fit within the Generative AI definition, the focus placed on AI generally will encourage widespread investment and enhance productivity. The market expects publicly traded companies across most industries to have an "AI strategy" (Chart 2).

While the revenue model for some consumer services remains unclear, for the enterprise customer there is an expectation that embedding AI in new and existing products will create economic value. In addition to the potential for stronger revenue growth, the stock market may be just as excited about margin improvement. AI enables companies to reduce headcount and cut costs for tasks such as document retrieval, writing assistance, and coding support.

The Wall St. Journal reported in late February that the Fintech company Klarna laid off 700 customer service employees after it deployed its virtual assistant. Klarna estimates that profits will increase by \$40 million this year due to this change, in addition to seeing improved customer resolution metrics. Generative AI should allow attorneys to be more productive. A law firm will presumably be able to automate much of the current Associate and Paralegal tasks, given that ChatGPT-4 scored in the top 10% of law school admission test takers. Technology teams will need fewer programmers. Widespread AI adoption is occurring concurrent with a newfound focus on efficiency by many leading Technology companies (i.e. Meta, Salesforce, Google) that had historically been seemingly indifferent to expenses and shareholders.

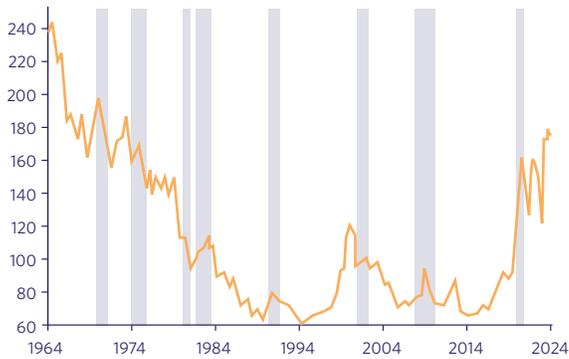
**CHART 2**  
*Mentions of AI on S&P 500 Quarterly Earnings Calls*



Source: Goldman Sachs Global Investment Research, Bridgewater Associates, LinkedIn

### CHART 3

Highest Stock Market Concentration Since the Early 1970s  
HHI concentration measure (sum of squared stock weights)



Source: J.P. Morgan Equity Macro Research

Companies best positioned to capitalize on this transformation - at least initially - will be those with massive amounts of data, digitally native employees, and substantial capital. The U.S. stock market has the most concentrated leadership since 1972 with a new categorization of the “Magnificent Seven” - Microsoft, Apple, META, Google, Amazon, Nvidia and Tesla (Chart 3). In addition to an increasingly large percentage of the overall economy running through or on top of these platform companies, these same companies would presumably fit the description of those well poised for the AI era (Chart 4).

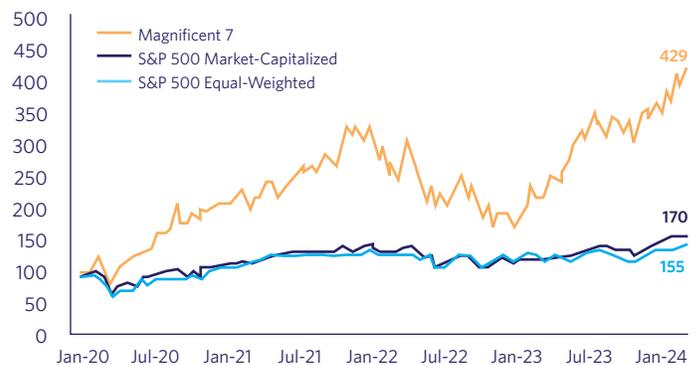
The implications for society are immense. AI seemingly promises greater economic productivity, lower inflation, as well as scientific and healthcare advances. For those that navigate AI well, margins and profitability will be enhanced. However, transformative periods always present great risk. Military and government use of this technology raise profound moral questions. There is also the question whether sufficient new employment opportunities will emerge to absorb workers displaced by AI, as has historically been the case with technology advancements.

Lyell Wealth Management focuses investments on companies with strong competitive moats that can sustain significant revenue and earnings growth. We are alert to the inevitability that some of today’s winners will become tomorrow’s also-rans. IBM, Hewlett Packard, Intel and Cisco continue to be fine companies, but they no longer command the leadership positions that they once did. We remain very focused on our current portfolio companies to see how they are navigating this new paradigm and continue to search for the next set of leading companies.

This AI wave seems relatively early, and there should be several years of investment runway ahead. Some observers liken today as more similar to 1995, shortly after Netscape introduced the first Internet browser, rather than 1999, which marked the final stages of the dot.com bubble. While it is impossible to know, that perspective resonates with Lyell Wealth Management.

### CHART 4

Magnificent 7 vs. S&P 500  
(Indexed to 100, 12/31/2019, Total Return Basis)



Source: Strategas, Bloomberg



3000 SAND HILL ROAD  
BLDG 1 - SUITE 135  
MENLO PARK, CA 94025  
(650) 353-3692  
LYELLWEALTH.COM

INFO@LYELLWEALTH.COM

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