

PALOS

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Weekly Commentary

Issue No. 12 | MARCH 20, 2023

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By Charles Marleau CIM[®] and William Mitchell CIM[®]

Artificial Intelligence: Who Will Win the Race?

Large Language Models (LLMs) are a type of machine learning that uses neural networks to process massive amounts of text whilst performing a given task. LLMs are trained using readily available data- assigned parameters. LLMs can understand natural language instructions or text using complex algorithms. They are capable of understanding and generating responses to queries, can create content, translate from one language to another and even make predictions. This is clearly a powerful tool that is of great interest to business organizations, researchers and academics.

As we discussed in last week's letter, the most recognizable LLM is Microsoft-backed ChatGPT with improvements happening at breathtaking speed. Last week ChatGPT-4 was introduced a mere four months after the original release of ChatGPT-1 and the progress is astounding. The latest iteration, only accessible through subscription, is substantially "smarter", having the capability to process words eight times faster with much improved capacity to prevent inaccurate responses and also the ability to filter out inappropriate queries. Furthermore, ChatGPT-4 can respond to queries sent through an image or swiftly code a new computer program from a voice instruction. Other advancements include improved rationalization and the ability to create more "human-like" text.

However, the technology remains a long way from perfect. Given that the database used to create responses is based on the internet, there's room for a wide range of errors. The Trump era has taught us all we need to know about "fake news" and the internet is full of falsehoods, misinformation, and propaganda. This creates a serious problem as the technology to accurately decipher between what's real or not is not available. Imagine if an individual's query on how to treat a specific medical emergency was met with a misguided response that caused bodily harm? The legal repercussions are obvious so there is clearly a long way to go before trust can be engrained.

Another problem is cost. Enormous amounts of capital, in the hundreds of millions, is required for development. This limits participation to industry players like Microsoft, Google, Meta Platforms, Amazon, and Apple; effectively those with the deepest pockets. The competition is fierce and although ChatGPT seems to be the early leader, even the creators acknowledge that nobody has an idea where we're headed. There are concerns over bad actors having the ability to use AI with malicious intent. Impartiality, plagiarism, and

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source credibility are among many other challenges. The rapidly evolving technology has taken the worlds by storm and determining who the winners will be is virtually impossible but, as investors, we have enormous interest in following this story to identify those companies that are best positioned to profit.

Let's look back in time. The automobile industry ushered in the era of the assembly line and mass production of cars which, in turn, made personal ownership of the "family car" a possibility. Ultimately, a golden era of oil exploration and refining began as gasoline stations were needed to fuel every car regardless of who built it. Similarly, the California Gold Rush of 1848 inspired a generation of dreamers to head west in search of personal enrichment. Most failed to find much gold, however, the real winners were the purveyors of "picks and shovels", hoteliers and saloon keepers that profited from miners' hard work. This led us to ask ourselves the following question: which companies are most likely to profit from the explosive growth in AI?

The "picks and shovels" of today are the hardware and data storage companies (i.e., chips and cloud storage). Assuming a leadership position is chip maker **Nvidia (NVDA:NASDAQ)**. In an interview aired yesterday on CNBC with Nvidia's CEO Jensen Huang, he expanded on NVDA's superior gaming chips that drove the company to realize a decade-long leadership position in graphics technology. Nvidia is in an enviable position. The company's proven expertise in graphics chips has placed Nvidia at the forefront of AI architecture and advanced computing.

Optimism about Nvidia's chip technology has boosted NVDA shares which are up 115% since last October and as of Friday's close, NVDA is higher by 76% year-to-date (y-t-d). Bank of America has named Nvidia (NVDA:NASDAQ) as its "top compute pick" and on Friday Morgan Stanley upgraded NVDA to overweight. The recent price appreciation in NVDA has compared very favorably with the S&P500 Composite (+2.01% y-t-d) and NASDAQ Composite (+11.1% y-t-d). The outperformance has been substantial.

The rise in shares of NVDA has been swift and we believe this to be reflective of the optimism of investors as the AI revolution picks up steam. Given the quickness of the rise, it's important to note that that you should not view our commentary as a buy recommendation. We expect valuations to fluctuate, potentially with above normal volatility, as the future pace of AI adoption and technological change remains uncertain. However, we are optimistic about the long-term growth prospects for AI.

Disclosure: The Palos-Mitchell Alpha Fund holds shares of NVDA.

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Chart 1: Palos Domestic Funds versus Benchmarks (Total Returns) ¹	FundServ	NAVPS	YTD Returns
Palos Income Fund L.P.	PAL100	\$8.33	0.97%
Palos Equity Income Fund - RRSP	PAL101	\$6.54	0.46%
Palos WP Growth Fund - RRSP	PAL213	\$12.61	1.04%
Palos-Mitchell Alpha Fund ³	PAL300	\$8.69	9.01%
S&P TSX Composite (Total Return with dividends reinvested)			0.69%
S&P 500 (Total Return with dividends reinvested)			2.40%
S&P TSX Venture (Total Return with dividends reinvested)			6.13%
Chart 2: Market Data ¹			Value
US Government 10-Year			3.43%
Canadian Government 10-Year			2.78%
Crude Oil Spot			US \$66.74
Gold Spot			US \$1,973.50
US Gov't 10-Year/Moody BAA Corp. Spread			214 bps
USD/CAD Exchange Rate Spot			US \$0.7283

¹ Period ending March 17th, 2023. Data extracted from Bloomberg

² Fund is priced annually

³ Fund is priced weekly on Tuesdays

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PALOS

1 Place Ville Marie, Suite 1670
Montreal (QC) H3B 2B6, Canada

T. +1 (514) 397-0188
F. +1 (514) 397-0199

1 St. Clair Avenue East Suite 504
Toronto, Ontario M4T 2V7

T. +1 (647) 276-0110
F. +1 (647) 343-7772

www.palos.ca