WEEKLY STRATEGY
Perspectives

BMO Private Wealth

BMO Private Wealth Weekly Strategy Perspectives

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Guest Feature: AI Beyond the CapEx Cycle

"We can only see a short distance ahead, but we can see plenty there that needs to be done."
– Alan Turing

The Through Line: After decades in development, machine learning and its latest iteration – AI – burst into the public lexicon with the introduction of ChatGPT in November 2022. Since then, much of the news has focused on the buildout of infrastructure to facilitate the technology's rollout. Our guest authors argue that AI is not merely the next transitional step in the industrial revolution: it's a gigantic leap forward, propelling us all headlong into an enhanced age of knowledge.

Paradigm shift

Over the past year, advances in artificial intelligence have accelerated at an unprecedented pace, driving improvements in reasoning algorithms, large language models (LLMs) and imaging systems. We view AI as the next phase in the ongoing evolution of computing – following mainframes, client server networks, the internet, and mobile/cloud. AI continues the trajectory of technological advancement, building on previous cycles to enhance efficiency, connectivity and capability.

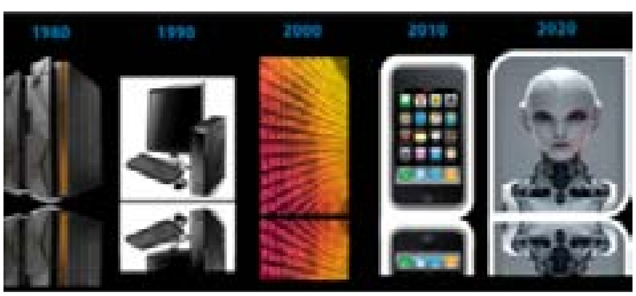

Figure 1- Historic Technology Cycles over the past 50 Years – Source: BMO GAM as of June 30, 2025

Through its ability to unlock and democratize knowledge, AI has the capability to transform entire industries, disrupt traditional gatekeepers monetizing information, and inaugurate a new era in which automated discovery and dissemination of knowledge eclipse previous human and technological constraints. Based on that premise, we believe that as investors we truly do not know AI. We say that because we are at a point in its development when the full potential of this technology is unknown – and nearly unimaginable.

At the World Economic Forum in January 2024, experts likened generative AI to the steam engine of a fourth Industrial Revolution – a force that, like 19th century steam, could unlock dramatic productivity and innovation across myriad sectors. Nvidia CEO Jensen Huang drew a parallel to electricity's early days, when its true value was still unclear to most observers. He proclaimed tokens – the discrete units of data that AI models process – as the new electricity. In this vision, AI factories will produce tokens, not widgets, then consume them to generate text, images, video, protein designs and more. Industries will build tailored AI factories, which are integrated infrastructures of data, models and compute (the computational resources required for AI systems to perform tasks). These factories will drive their own cognitive automation. **The authors predict that, within two to three years, these factories will have reshaped multiple industrial complexes.**

There's a token for that

Tokens are the building blocks that can automate knowledge discovery and are central to AI's transformative power. In language models like GPT, text is broken into tokens – words, subwords, or characters – then mapped to high-dimensional numeric vectors. By analyzing trillions of examples, these models learn the statistical relationships that govern language.

Critics argue this probabilistic (based on or relating to how likely it is that something will happen) mathematical process cannot rival human intellectual capacity. However, it is our view that there is more to the token than currently believed. That is because the token is not constrained to just words.

Any data item – images, time-series readings, chemical structures – can be tokenized and embedded in vector space. Companies such as Nixtla have launched products like TimeGPT to predict weather or financial trends by treating temporal data like tokens. When reconstituted, tokens derive value from their potential to aide human knowledge. When reassembled, for example, they can emulate human languages, molecular blueprints, digital graphics or robotic motion, accelerating the automated knowledge economy.

The evolution of knowledge

We see three distinct periods of knowledge evolution:

- **First Era: language invention –** Humans developed spoken and written language, enabling the recording and transmission of knowledge across generations; manuscripts and scrolls limited dissemination.
- **Second Era: mass distribution –** The invention of the printing press and Gutenberg's movable type made access to printed knowledge universal, no longer confined to a subset of the population. The spread helped launch religious (e.g., the Reformation) and political revolutions around the globe. Centuries later, digital networks and social media have exponentially expanded access yet again.
- **Third Era: unlocking/leveraging automated knowledge –** Spurred by AI, we enter an era when machines go beyond storing and retrieving information, now able to generate insights, spot patterns imperceptible to humans and automate discovery at scale.

We predict many possible ramifications of a new (third) era of knowledge:

Sidestepping domain experts by democratizing interpretation. A hallmark of the new knowledge era is the ability to remove – or at least reduce – reliance on human experts to interpret specialized information. For centuries, specialized training was required to understand and apply equations, legal codes and technical manuals. AI changes this dynamic. Given a complex mathematical formula, an AI system can translate it to plain English, convert it to executable code and even apply it to real-world scenarios – such as selecting optimal players in a fantasy sports league. Users can ask high-level questions ("Which athlete offers the best trade value?") and receive actionable answers without deep domain expertise. This bypassing of traditional knowledge gatekeepers promises to accelerate innovation and lower barriers to entry across professional fields and company size.

The One-Person, One-Billion-Dollar Phenomenon. AI's automation of core business functions also upends assumptions about organizational scale. AI-driven firms already reevaluate staffing norms; Duolingo has floated the idea of pivoting to an AI-first model that prioritizes machines over human contractors, provoking controversy about job displacement. Anthropic's CEO predicts that by 2026 we may see the first billion-dollar company with a single human employee – its operations run end to end by AI. **While this concept remains highly speculative, it illustrates AI's potential to invert the traditional scale advantages of large institutions, empowering individual entrepreneurs to compete on previously unimaginable terms**.

Economic and societal implications

If AI's trajectory continues, its economic and social impacts will rival those of past industrial revolutions. Knowledge, once scarce and gated by institutions, will become a near-ubiquitous commodity. Small teams and solo innovators could outpace large incumbents by leveraging AI factories to ideate, develop and deliver novel products and services. Intellectual property regimes, professional certifications, and educational models may require wholesale rethinking. Moreover, as AI automates not just tasks but the very discovery of new insights, the velocity of innovation could accelerate beyond any historical precedent. That will usher in an age of abundance in which many traditional constraints on resource allocation, research timelines and human expertise will fall away.

We caution that challenges remain despite AI's promise; the path forward will present obstacles. Economic pressures may cull unviable foundational models, leaving only those that can sustain token pricing above cost. Wary of hype, enterprises may hesitate to deploy AI at scale until clear ROI emerges. Ethical and regulatory concerns – over privacy, bias, misinformation and job displacement – demand careful governance. Technical limits also remain: GPT's probabilistic creativity ceiling; the brittleness of some reasoning algorithms; and the energy demands of large-scale training all pose near-term challenges.

Organizations and individuals must prepare for the new era by embracing a dual mindset: first, avoid undue pessimism that stifles experimentation; second, be vigilant against unchecked optimism that ignores real risks.

Key strategies should include these next steps:

- **Investing in AI infrastructure** (AI factories) tailored to domain-specific data and workflows .
- **Cultivating internal data pipelines** and annotation processes to maximize model relevance.
- **Upskilling workforces** to interact with AI, e.g., prompt engineering, model evaluation and ethical use.
- **Exploring new business models** that capitalize on automated knowledge discovery such as customized therapeutics, personalized legal advice, dynamic marketing content and beyond.

Implications for Investors

As we watch AI capabilities increase exponentially, we believe this is more than a technology cycle – and more than just the current hype around who is spending how much on the next data center or set of chips. The technology will touch virtually every person and every industry on the planet. It's incumbent upon investors to understand evolving developments and how company and industry leaders are adopting and adapting.

In focus in North America

Jon Borchardt, Sr. Analyst
George Trapkov, CFA, VP and Portfolio Manger

This week

U.S. rate cuts restarted – As widely expected, the U.S. Federal Reserve's Federal Open Market Committee lowered its benchmark overnight lending rate by 25 basis points, putting it in a range between 4.00% to 4.25%. The accompanying statement noted slowing job gains and an unemployment rate that had edged up. It also pointed to inflation that has risen and remained above the Fed's long-run target. This largely put the Fed's dual mandate (full employment and price stability) in conflict, a situation that Chair Jerome Powell noted is unusual. When the committee confronts those opposing goals, its next step is to determine which of the mandates is furthest from the desired state – which in this case is the labor market. Chair Powell discussed the impact of tariffs and prices and noted that some evidence of their impact was evident in goods prices, though services remain relatively well behaved. Only the future will show if those early indications are a one-time change in price level. It was noted that the committee monitors a variety of indicators of consumer inflation expectations (both short and long term) to ensure that they remain anchored toward achieving the Fed's long-term goals. They do not see anything in most recent readings that lead them to think consumers' expectations have become worrisome. This month's Summary of Economic Projections (SEP) revealed a wide range of views on future policy direction and economic outcomes. Nine committee members anticipate fewer than two rate cuts by year's end while 10 anticipate at least two cuts. Stocks and bonds rallied, dipped and then closed largely flat subsequent to the release and press conference as investors tried to read the tea leaves. Observers who were hoping for signs as clear as those contained in the Chair's Jackson Hole speech came away disappointed.

Countdown to a potential U.S. government shutdown – The U.S. government's fiscal 2025 budget expires September 30, raising the specter of a partial shutdown beginning October 1. On Wednesday, House Republicans introduced a short-term continuing resolution (CR) that would maintain current spending levels through November 21; Democrats were not consulted on the draft. GOP leaders expect to pass it in the House on a simple majority vote, then send it to the Senate, where Republicans would need seven Democrats to reach 60 votes. Democratic voters have pressed their representatives to fight harder on policy, and healthcare has become the focal point – specifically moves that would delay the expiration of ACA premium tax credits (set to expire at year's end). CBO estimates the reconciliation law enacted this summer will increase the number of uninsured by about 5.2 million in 2027, rising to about 10 million by 2034. This is largely driven by Medicaid changes, plus additional losses from ACA marketplace policies. Republicans say they are willing to discuss these issues in December, but Democrats' trust is low after this year's rescissions cut funds both parties had previously approved. Conventional wisdom holds that Democrats avoid shutdown blame in an election year, yet Senate Majority Leader John Thune said Tuesday the odds of a shutdown are increasing as Democrats dig in.

Canadian infrastructure spending accelerates – Canada's Prime Minister Mark Carney recently unveiled the creation of a Major Projects Office (MPO) aimed at fast-tracking initiatives deemed to be in the national interest and accelerating their development timelines. Last week, the MPO announced the first five projects selected for expedited review. Spanning British Columbia to Quebec, these projects represent over C$60 billion in investment and are expected to generate thousands of high-quality jobs for Canadians. In addition to these initial selections, the MPO is currently evaluating a broader pipeline of transformative projects that are in earlier stages of development and hold significant potential for the country's future.

Canadian inflation largely steady – Consumer prices fell 0.1% in August (but were up 0.2% in seasonally adjusted terms), nudging the headline inflation rate higher by a couple of ticks to 1.9%, a touch more subdued than consensus. Core inflation was largely as expected; most major measures rose a moderate 0.2% month over month in adjusted terms but kept the Bank of Canada's preferred gauges locked around the 3% year-over-year pace. Grocery price inflation remains a thorn; it was up slightly to 3.5% year over year. Shelter cost trends are now more helpful. Sagging home prices and a rare lull in home insurance costs reduced the bill for owned accommodation 0.1% month over month for a second month running.

Bank of Canada resumes rate cuts – On Wednesday, the BoC cut the key overnight lending rate 25 basis points to 2.50%, the first cut in six months and in line with widespread expectations. The explanation for the shift in the Bank's view since the prior meeting in July was straightforward: 1) the labour market has softened further; 2) upward pressure on underlying inflation has diminished; and 3) the removal of most retaliatory tariffs takes further heat off core CPI. Looking ahead to the next meeting, the BoC left its options wide open, maintaining a focus on a shorter-than-usual time horizon to determine the path for policy. BMO Economics expects the BoC to cut two more times in coming months, moving every other meeting (i.e., cuts in December and next March).

Next week

A smattering of economic stats including Canadian PPI (Monday) and GDP (Friday) and U.S. Purchasing Manager Indexes (Tuesday). The Fed's favorite inflation metric, the PCE, prints on Friday and will be much parsed by watchers for hints on the potential for continued rate cuts.

- **Monday 9/22 –** Canada PPI
- **Tuesday 9/23 –** U.S. S&P Flash services and manufacturing PMIs
- **Wednesday 9/24 –** Canada Manufacturing sales
- **Thursday 9/25 –** U.S. Initial jobless claims, GDP, inventories, trade balances, Durable-goods orders
- **Friday 9/26 –** U.S. PCE | Canada GDP

Data scorecard as of September 17, 2025

Equity Market Total Returns						
	9/17/2025 Level	WTD	YTD	2024	2023	2022
S&P 500	6,600	0.3%	13.3%	25.0%	26.3%	-18.1%
NASDAQ	22,261	0.6%	15.9%	29.6%	44.7%	-32.5%
DOW	46,018	0.5%	9.6%	15.0%	16.2%	-6.9%
Russell 2000	2,407	0.5%	9.0%	11.5%	16.9%	-20.5%
S&P/TSX	29,322	0.2%	20.9%	21.7%	11.8%	-5.8%
MSCI EAFE	10,087	0.2%	24.8%	3.8%	18.2%	-14.5%
MSCI EM	733	1.7%	27.6%	7.5%	9.8%	-20.1%

Bond Market Total Returns						
		WTD	YTD	2024	2023	2022
Bloomberg U.S. Aggregate		0.1%	6.5%	1.3%	5.5%	-13.0%
Bloomberg U.S. Treasury		0.1%	5.7%	0.6%	4.1%	-12.5%
Bloomberg U.S. Corporate		0.1%	7.3%	2.1%	8.5%	-15.8%
Bloomberg U.S. High Yield		0.2%	7.2%	8.2%	13.4%	-11.2%
Bloomberg 1-10 Year Munis		0.2%	4.6%	0.9%	4.5%	-4.7%
Bloomberg Canada Aggregate		0.1%	2.6%	4.0%	6.5%	-11.3%
Bloomberg Canada Treasury		0.1%	2.0%	2.9%	5.0%	-9.9%
Bloomberg Canada Corporate		0.1%	3.7%	6.9%	8.2%	-9.5%

Government Bond Yields						
	9/17/2025	Last Month End	Last Quarter End	2024	2023	2022
U.S. 10-Year Treasury	4.09%	4.23%	4.23%	4.6%	3.88%	3.88%
Canada 10-Year Government	3.19%	3.37%	3.27%	3.2%	3.11%	3.30%
U.K. 10-Year Gilt	4.62%	4.72%	4.49%	4.6%	3.53%	3.66%
German 10-Year Bund	2.67%	2.72%	2.61%	2.4%	2.02%	2.57%
Japan 10-Year Government	1.59%	1.60%	1.43%	1.1%	0.61%	0.41%

Currencies & Real Assets						
	9/17/2025 Level	WTD	YTD	2024	2023	2022
USD Index	96.87	-0.7%	-10.7%	7.1%	-2.1%	8.2%
CAD:USD	$0.73	0.5%	4.4%	-7.9%	2.3%	-6.7%
Bitcoin	$115,656.17	-0.5%	23.4%	120.5%	157.0%	-64.3%
Gold	$3,659.90	0.5%	39.5%	27.2%	13.1%	-0.3%
Oil (WTI)	$64.05	2.2%	-10.7%	0.1%	-10.7%	6.7%

Index Definitions

Equity indices

S&P 500® Index is an index of large-cap U.S. equities. The index includes 500 leading companies and covers approximately 80% of available market capitalization.

NASDAQ Composite Index is a market-cap weighted index of the more than 3,000 common equities listed on the Nasdaq stock exchange.

Dow Jones Industrial Average ("DOW") is a price-weighted average of 30 significant stocks traded on the New York Stock Exchange and the Nasdaq.

Russell 2000® Index (Russell 2000®) is an unmanaged index that measures the performance of the smallest 2000 U.S. companies in the Russell 3000® Index.

S&P/TSX Index is a capitalization-weighted equity index that tracks the performance of the largest companies listed on Canada's primary stock exchange, the Toronto Stock Exchange (TSX).

MSCI EAFE Index (Developed Markets —Europe, Australasia, and Far East Index) is a standard unmanaged foreign securities index representing major non-U.S. stock markets, as monitored by Morgan Stanley Capital International. The index captures large and mid-cap representation across 21 developed markets countries around the world, excluding the U.S. and Canada.

MSCI Emerging Markets Index is a market capitalization weighted index representative of the market structure of the emerging markets countries in Europe, Latin America, Africa, Middle East and Asia. Prior to January 1, 2002, the returns of the MSCI Emerging Markets Index were presented before application of withholding taxes.

Fixed income indices

Bloomberg U.S. Aggregate Bond Index is an unmanaged index that covers the U.S. investment-grade fixed-rate bond market, including government and credit securities, agency mortgage pass-through securities, asset-backed securities and commercial mortgage-based securities.

Bloomberg U.S. Treasury Index is an unmanaged index that includes a broad range of U.S. Treasury obligations and is considered representative of U.S. Treasury bond performance overall.

Bloomberg U.S. Corporate Bond Index measures the investment grade, fixed-rate, taxable corporate bond market. It includes USD denominated securities publicly issued by U.S. and non-U.S. industrial, utility and financial issuers.

Bloomberg U.S. Corporate High Yield Index is an unmanaged index that covers the USD-denominated, non-investment-grade, fixed-rate, taxable corporate bond market. Securities are classified as high yield if the middle rating of Moody's, Fitch and S&P is Ba1/BB+ or below.

Bloomberg 1-10 Year Blend Municipal Bond Index is a market value-weighted index which covers the short and intermediate components of the Bloomberg Capital Municipal Bond Index — an unmanaged, market value-weighted index which covers the U.S. investment-grade tax-exempt bond market.

Bloomberg Canada Aggregate Bond Index measures the investment grade, Canadian dollar-denominated, fixed-rate, taxable bond market. It includes treasuries, government-related, and corporate issuers.

Bloomberg Canada Aggregate Bond Index - Treasury is the treasury sub-component of the Bloomberg Canada Aggregate Bond Index, which measures the investment grade, Canadian dollar-denominated, fixed-rate, taxable bond market.

Bloomberg Canada Aggregate Bond Index - Corporate is the Corporate sub-component of the Bloomberg Canada Aggregate Bond Index, which measures the investment grade, Canadian dollar-denominated, fixed-rate, taxable bond market.

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