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# A Shared Future for Humankind Underpinned by Artificial Intelligence and Machine Learning technologies

In recent years, the world has both marvelled and raised concerns at the development and widespread adoption of Artificial Intelligence (AI) and Machine Learning (ML) - a subset of AI - as these evolving technologies revolutionise industries across the globe. While the deployment of AI and ML technologies provide untapped potential for boosting productivity and the associated socio-economic benefits for society at large, it remains to be seen if they will usher in an age of equality for all humankind or intensify inequalities.

Not confined to any particular task, function or sector, with the next iteration of ever-evolving AI/ML technologies likely to be even more transformative than the present generation, beyond the hype, the proliferation of algorithm-driven technologies has put both benefits and risks of overcapacity under the spotlight. The implications for a world characterised by abundance and over-production instead of inefficiency and scarcity is a topic that economists have deliberated for many years. In his 1848 pamphlet, The Communist Manifesto, German-born philosopher, political theorist and economist, Karl Marx described "the epidemic of over-production" as too much substance, too much industry and too much commerce to the extent that the productive forces at the disposal of society no longer favour the development of the bourgeois class over the proletariat or lower socio-economic class.

While the era of AI/ML technologies is vastly different from the era Marx was visualising, instead of over-production attributed to the exploitation of the workers by the bourgeoisie, the current question is, could over-production result from the deployment of AI/ML? PwC's global AI study, Exploiting the AI Revolution, predicts by 2030, AI could contribute up to USD15.7 trillion to the global economy, more than 85% of the current output of Mainland China. Of this, USD6.6 trillion is likely to come from increased productivity and USD9.1 trillion is likely to come from consumption-driven side effects.

While the predictive figures make for impressive reading, there is another dimension of increased productivity to be considered. To prevent the world economy from entering into recession as a result of over-production, monetary policies will need to remain flexible and accommodating. This raises the possibility that Quantitative Easing (QE) could become the norm in the future. In a perpetual cycle of AI/ML-fuelled over-production, free trade agreements and a flexible monetary environment would be necessary to make sure the products produced are available all over the world at affordable prices.

This article is contributed by Publications Sub-Committee, The Hong Kong Institute of Bankers.

**Development of AI/ML technologies**

Characterised by human-AI/ML interaction modes, high-capacity connectivity, virtual reality systems and Large Language Models (LLMs), the Fourth Industrial Revolution - also known as Industry 4.0 - is the next phase of digitisation reshaping fundamental economic and social changes. Industry 4.0 marks the extension of the Third Industrial Revolution, which took place during the second half of the 20th century. Also known as the Digital Revolution, the Third Industrial Revolution signalled the rise of the Internet, emergence of cloud computing, robotic manufacturing and software-led manufacturing efficiencies. Earlier, industrial revolutions are defined by scientific and technological development. The First, in the mid -18th century, led to the introduction of steam-driven machines and the first factories. The Second, which began in the first half of the 20th century, was largely underpinned by the availability of electricity that led to a period of rapid industrial and technology development as well as social and economic advancements.

Compared to previous technological leaps, in its scale, scope and pace, Industry 4.0 is unlike anything humankind has experienced previously. Because the application of AI/ML is largely based on software development, the utilisation of technologies can spread quickly. A prime example is a desktop computer that was the top of its performance class five years ago would now be considered outdated if put into a smartphone with today's performance capabilities. In simple terms, the speed and expanses can be attributed to Moore's Law, a computing term that has been used since the 1970s which states the processing power of computers or more precisely silicon chips, doubles every two years. It took 75 years for 100 million people to gain access to the telephone - a sharp contrast to the adoption of ChatGPT which gained one million users within five days of its launch in November 2022 and later surpassed 100 million active users within two months of its release.

**Applications and Uses**

AI/ML technologies can easily be extended, adapted and applied to different business operations. For instance, because of two core attributes - accessibility and versatility - once a LLM is trained on a body of text, a legal document for example, it can be adapted to analyse or summarise a medical or an insurance document. In the banking sector, the integration of AI and ML technologies are transforming personalised financial planning, fraud detection, anti-money laundering and process automation. As adoption of AI/ML technologies grows in the banking sector, Hong Kong's de facto Central Bank, the Hong Kong Monetary Authority, is urging financial institutions in the city to follow a new set of guidelines when using Generative Artificial Intelligence (GenAI) in consumer-facing applications. Banks utilising GenAI in their products should follow a range of principles, including ensuring customers can choose to opt out of using the technology and that AI models do not lead to unfair bias or disadvantage certain consumer groups.

**The future of jobs in the era of AI/ML**

In spite of reassurances that AI/ML technologies are not meant to replace human capabilities but to augment and enhance them, as they are deployed across different industry sectors, it is unsurprising to see the debate about whether AI/ML complements or displaces human labour raises many questions and triggers uncertainties. The latest iteration of AI/ML is different from past technological innovations as it

affects creative and cognitive jobs as well as physical ones and routine cognitive tasks. In a growing number of business and industry segments, AI/ML is being applied where traditionally people have had limited connections with technology. Few occupations are likely to remain unaffected. Instead of the lowest-paid workers being the most affected, which was traditionally the case when new technologies emerged, many of the highest-paying occupations are experiencing the impact of AI/ML. According to the World Economic Forum's Future of Jobs Report 2023, across 45 economies and covering 673 million workers, nearly a quarter of all jobs will change in the next five years as a result of AI/ML's impact on jobs and employment.

Taking into account that jobs usually comprise multiple tasks, various studies predict that between 30% to 70% of current tasks could be displaced or automated by AI/ML over time. Assuming an average of one out of two tasks is automated by AI/ML, this would mean that 50% of workers could become surplus to requirements. However, at the same time, it is also predicted that job losses from automation are likely to be offset by the creation of AI/ML-related jobs. Even if this is the case, assuming that the jobs lost to the jobs created do not occur in a like-for-like manner, without Government intervention, in major western economies where the current unemployment levels are about 5%, tasks displaced by AI/ML could triple or even quadruple.

The scenario of technology displacing humans is not exactly new. Throughout history, at various times and in various forms, technology has either replaced or displaced humans. For example, the way that ATMs replaced or reduced the need for bank cashiers and, in more recent times, customer support lines that use chatbots to answer customer enquiries. The question that needs to be asked is, what are the best ways that humans can utilise AI/ML and shape its use to their advantage? For instance, AI/ML tools are capable of doing work that people do not want to do, such as repetitive tasks. In theory, this could allow humans to spend more time doing value-added tasks or doing the things they prefer. AI can also be a useful tool for those that have time constraints or need to cover numerous tasks simultaneously. Nevertheless, in the AI/ML era, it is expected that the number of tasks taken up by AI/ML would be faster than the number of new tasks created, which would have an impact on short to medium-term job security.

**The impact of AI/ML on the property market**

While it remains to be seen how AI/ML will be applied over the long-term to specific sectors such as the property sector, aware of the impending change, property industry participants are already exploring ways to harness AI's transformative possibilities. AI-compliant infrastructure and the ability to plug in multiple systems to rejuvenate the "space-as-a-service" model is an area currently being explored by landlords and developers to create new revenue streams. While property industry participants use AI/ML models to operate their portfolio databases to extract insights on property performance and inform strategies for portfolio improvement, the one thing that AI is unable to do is create physical space. This means the supply of property is finite. People cannot live or conduct a physical business in a virtual space. As such, in the new AI/ML era, when it comes to banks' lending to households, if job security proves to be a concern, banks could lend against collateral such as property, which banks are already familiar with, instead of future income earnings.

**Democratising the benefits of AI/ML**

In addition to playing a leading role in formulating policies and regulations that govern the development, deployment and use of AI/ML technologies, Governments also have an integral role to ensure that AI/ML is applied in an ethical, transparent and human-centric manner across all segments of society. In doing so Governments can stimulate economic growth and help to offset some of the potential disadvantageous effects AI/ML pose to tasks and jobs.

Because AI/ML technologies are global in nature, Governments can consider exploring collaboration by establishing bilateral and multilateral agreements, sharing best practices and standardising regulations. AI is one of the technologies that many Gulf Cooperation Council (GCC) countries - which comprise Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates (UAE) — are investing to diversify their economies away from oil through increased innovation and, in some cases, cross-border convergence of traditional industries.

While not specifically directed at the use of AI/ML, in the context of high quality development, in recent years the Mainland China Government has been advocating the need for "common prosperity", focusing on raising the incomes of low income groups, promoting fairness, maintaining a more balanced regional development and stressing people-centred growth. In addition to regulatory campaigns, common prosperity policies involve investments and incentives to address development and quality of life issues. For example, the Mainland Chinese Government has embarked on a rural revitalisation campaign which includes the building of infrastructure projects to improve conditions in rural areas. The Government has also initiated strategies to encourage industrial transfer from prosperous areas to less-developed regions. Echoing initiatives the Mainland China authorities have been promoting in recent years, the groundwork could provide the macro-economic context for the development of a global community with a shared future for humankind.

While the development of AI/ML offers significant positive potential for society, there are also profound concerns about the impact and speed at which AI/ML is predicted to spread, not only on the short-term, but also on the broader social and economic environment.