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By Nivakan Sritharan, Salawati Sahari, Cheuk Choy Sheung Sharon, and Mohamed Ahmad Syubaili

World Economic Forum explains that the upcoming fourth industrial revolution is expected to alter the way people live, alter the way they work, and alter the way they are connected in the world. However, it is highlighted that the introduction and the integration of such an industrial revolution into society must be made in consultation and cooperation with all the stakeholders from the public, and private sectors and the academics in the community to make the service of artificial intelligence (AI) accepted by the workforce of the country, and its benefits enjoyed by the people of the country. Scholars predicted the fourth industrial revolution would add to the third industrial revolution. Human beings can fulfil their needs and activities of their daily life remotely from distant places, ordering a taxi for commuting from one place to another, ordering food delivery from restaurants to their dwellings, making online payments, etc., which indicates the results or outcome of the fourth industrial revolution through the particular automation. Emerging technologies such as automation, robotics, AI, the ‘Machine to machine’ (M2M), and the Internet of Things (IoT) are actively installed to shape the future world. However, the fourth industrial revolution is expected to displace and disconnect people from their workplaces as robots replace their places. The engagements and contacts made by the public with their authorities at offices may be reduced, and people may raise their concerns about policy changes.

Traditional robots, currently employed in industries, are made of rigid, metallic components, unsafe for the people nearest to the robotics. Robots and other new devices and equipment of technology are in the stage and process of eliminating many jobs in the future. Robots and the Future of Welfare Services (ROSE), a project funded by the Academy of Finland, reveals that business organisations find the installation of robots does evolve the ecosystem in older adults and care professionals. Further, ‘Power Transmission Line Inspection Robots’ (PTLIRs) are programmed to replace the manual inspection carried out by humans. Interestingly, ‘Leader Robots (LRs) are produced to monitor the operational robots in various areas, including manufacturing and marketing.

Furthermore, the LRs are challenging the application of professional judgement, which had been previously owned only by humans. Apart from that, artificially demonstrated intelligence is known as AI, which is the opposite of the natural intelligence possessed by humans and animals. Artificial Intelligence is the strongest application for industrialists to move forward in meeting new revolution. Recently, AI has earned great attention from the government, industries, and academia for making their operations smooth. Vaishya et al. (2020) pinpointed that AI is an innovative technology to fight against the recent Covid-19 pandemic. Mainly the application has been used to screen, track and locate patients. The studies related to AI surmised that the greatest benefits had been bearded by the medical sectors on producing drugs, diagnosing sickness, and keeping patients’ records.

In addition to robotics and AI, the 'Machine to Machine' (M2M) is a communication network between devices that do not require manual assistance from humans. The facilities and comforts provided by 'M2M' through infrastructures, such as telephone, mobile phone, computers and internet, etc., have been used by humans in their daily life, as seen at the following places: traffic lights, automatic distance recognition, etc. on the roads and railways by traffic and road users; Home Robot, Security Camera, Smart Locks, Robot Vacuum cleaners, etc. at homes and residences by inmates; at educational institutions such as schools and colleges; in the health care system, 'Diagnosis and Treatment Applications', etc.; in the monetary system such as banks, Robot Advice, Customer Service / Engagement (Chatbot), etc.

In recent years, the 'Energy Harvesting-Based Cognitive Machine-To-Machine' (EH-CM2M) communication has replaced manual harvesting in farming, taking over human engagement by promoting time consumption with limited battery consumption. The developers of the M2M facilities mainly utilised block-chain technologies to provide a secure communication transmission without a central administrator. Though the usage of blockchain in M2M facilities provides transparency, longevity, and trust in the applications of 'The Internet of Things' (IoT), the developers should address the privacy issues in the usage.

When reviewing the previous industrial revolutions, it is clear that they did cause unemployment at a magnitude level, but they never disturbed human engagement completely in the labour force. However, automation, along with the imposition of artificial intelligence, shows convincing benefits to the government and the other stakeholders on its complete installation in every premise. In the first industrial revolution, the economy of manual handicrafts (Artisan Handicraft) had been completely transformed into a one-dominated industry with machines by manufacturers around the world. For mass production, the second industrial revolution involved human labour facilitated by fuel (oil) and electricity. Human labour had also been involved in information technology operations during the third industrial revolution. The major features of the fourth industrial revolution significantly impact human labour when participating in the workforce, even though they are an addition to the previous three industrial revolutions. It may take a long time for the future labour force to modify and adjust itself to cope up with the fourth industrial revolution. The relevant authorities may need more time to respond to the externality caused by the fourth industrial revolution on the human labour force. Thus, it is clearly indicated that an upcoming fourth industrial revolution is inevitable; however, a proper policy on economic sustainability is needed to cope with the negative externalities caused by human labour.

Having a strong theoretical base, the areas of automation and employment remain critical. The World Economic Forum highlighted that with the help of automation and artificial intelligence, the fourth industrial revolution would result in a major disruption to the labour market. It may affect the workforce in terms of gender, forming a massive gender gap in the future. This article is produced aiming at (1) controlling the implementation of technology and (2) imposing automation taxes through the existing tax policy on capital allowance management. Depreciation on fixed assets, such as the types of machinery and tools, are generally non-deductible expenses under tax computation in many countries.

In contrast, the governments provide the initial allowance (IA) and the Annual Allowance (AA) to claim a certain percentage of the bonuses offered to many industries. Controlling the implementation of automation and the imposition of the automation taxes could be made through capital allowance by modifying the existing public rulings. For that, the governments may segregate the type of automation used in industries to reconsider utilising human labour for automation. However, the automation for certain operations is inevitable, and those kinds of capital investments are profiled differently. In the end, unnecessary replacements carried out through automation are not practical everywhere. Finally, this article recommends the policy makers to adhere to the policy of (1) controlling the technology implementation, and (2) imposing automation taxes through the existing tax policy on the 'Capital Allowance' Management'.



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[back to top \(/index.php/wordpress/item/8027-imposition-of-automation-taxes-a-control-approach-for-the-replacement-of-human-labour#startOfPageId8027\)](/index.php/wordpress/item/8027-imposition-of-automation-taxes-a-control-approach-for-the-replacement-of-human-labour#startOfPageId8027)

