Artificial Intelligence: The End of the World as We Know it?

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Executive Summary

The Fourth Industrial Revolution will be defined by the mainstream integration of artificial intelligence systems. The development of technologies capable of deep thought, critical interpretation, and superhuman strength will transform social and economic structures. This unprecedented 'human-machine frontier' presents a range of policy challenges, and central to this is the empowerment of current and future workforces with the technical skills and emotional stability necessary for re-skilling over a life cycle. The threat of job displacement posed by such digitisation is insufficiently addressed with declarations that recommend training programs along the working life, social dialogue, and access to new opportunities in the labour market. The G20's failure to effectively interact with the opportunities and challenges presented by artificial intelligence may result in mass unemployment and personal alienation and, in turn, exacerbate the likelihood of populism and policies of economic nationalism.

Artificial Intelligence and The Fourth Industrial Revolution

The opportunities and challenges presented by the approaching proliferation of artificial intelligence systems are best understood in the context of The Fourth Industrial Revolution. A defining feature of this revolution is the emergence of cyber-physical systems that are instructed by computer-based algorithms. Industries like healthcare and manufacturing are being transformed by machines that are capable of rigorous thought and superhuman strength. Unlike previous revolutions, the expected

advancements in artificial intelligence, biotechnology, and the establishment of the Internet of Things will drastically blur the lines between the biological, digital and physical. The rapid development of highly intelligent technologies- with intelligence being the computational thinking needed to achieve goals in the world is evident in the near arrival of self-driving 'robo-taxis'. The mainstream use of technology that is distinguished by autonomous and complex interpretation will fundamentally change social and economic structures. The encroachment of machine learning applications upon the cognitive space formerly occupied by humans presents an unparalleled policy challenge for forums like the G20. The lack of consensus regarding the number of jobs that will be displaced by the digital boom is evident in forecasts that automation will provide a net increase of 58 million jobs by 2020, coexisting with warnings that the rise in automation could result in 800 million workers being displaced by 2030. Despite this variance it is clear that the increased use of automation will create a new 'human-

machine frontier' where machines are predicted to fulfil an average 42% task hours in 12 major industries including agriculture and financial services by 2020, compared to 29% in 2018.

The governments and institutions that represent the G20 must interact with this aspect of The Fourth Industrial Revolution in four key areas:

1) The empowerment of current and future workforces with the skills necessary to flourish in a global job market that will be characterised by continuous re-skilling over a life cycle.
2) The realisation of bold policies like wage insurance and a universal basic income to support displaced workers transitioning in employment.
3) The championing of diversity in the field of computer science, so as to prevent a normalcy of data driven systems which fail to identify darker skin tones in facial recognition.
4) The creation of a compelling civic narrative of purpose and community against the alienating effects of automation,

in which the construction worker's role may be relegated to merely filling up the [bricklaying robot](#) with mortar.

The Current G20 Strategy

The Japanese Prime Minister's [confirmation](#) that the G20 Osaka Summit will include a focus on addressing the digital economy from an institutional perspective shows continuity with the [2018 Buenos Aires Summit Leaders' declaration.](#) Shinzo Abe's commitment to "an inclusive, fair and sustainable Future of Work by promoting decent work, vocational training and skills development" is commended. The goals from the Buenos Aires Summit are codified in the [G20 Menu of Policy Options for the Future of Work.](#) The document directed at G20 Finance Ministers and Central Bank Governors relates with the emergence of transforming technologies through four overarching objectives:

1) The attainment of inclusive growth and productivity through transformative technologies.

2) The creation of effective policies that support people during employment transitions.

3) The implementation of sustainable tax systems with appropriate taxation of the digital economy.

4) The utilisation of high-quality evidence to inform apolitical decision-making.

Evidence-based policymaking is furthered by the [G20 Toolkit for Measuring the Digital Economy](#). The resource collates existing methodologies and indicators that are used to monitor digital transformation in the G20 countries. The themes of infrastructure, empowering society, innovation and technological adoption, and jobs and growth provide a guideline for digital transformation. Within these themes are specific actions like ensuring internet access in rural communities, committing to infrastructure projects in preparation for the Internet of Things, and investing in research into machine learning technologies.

The social challenges that may prevent the equitable realisation of a digital future are confronted in the G20 Digital Economy Ministerial Declaration. The declaration champions public-private partnerships as a key tool in addressing the need for a technologically proficient workforce. This association is positioned as central in bridging the digital gender divide in computer science as part of the G20 'gender mainstreaming' initiative. The influence of the G20 and its associated organisations is evident in the United Kingdom policy context with the creation of The Institute of Coding. The scheme unites 81 industry partners, 33 Education partners, and 20 outreach partners with the aim of growing the nation's digital talent, the organisation ultimately seeks to address the country's need for 518,000 highly trained digital specialists by 2020.

The G20 Osaka Summit

The Ministerial Meeting on Trade and Digital Economy which occurred prior to the Osaka Summit from 8-9 June in Tsukuba, Japan facilitates an analysis into the presidency's digital vision. The Ministerial Statement reaffirms a commitment to bridging the digital divide amongst vulnerable groups as an essential action, this is viewed as central in ensuring that labour markets are responsive to the demands of automation. The threat of job displacement through the deployment of artificial intelligence systems is inconclusively addressed with calls for training programs along the working life, social dialogue, and access to new opportunities in the labour market lacking in explanatory depth.

The inclusion of the Data Free Flow with Trust (DFFT) initiative in the joint statement represents an ambitious Japanese intervention in the digital economy. The concept introduced by Prime Minister Abe at the World Economic Forum Annual Meeting envisions a 'hope-driven economy' in promoting the free flow of data across borders based on trust. The success of the DFFT campaign is contingent on its ability to reconcile an unprecedented data-driven economic reality with a respect for the security and independence of nation states. These

concerns are epitomised by the National Cyber Security Centre recognising the ['long-term security risks'](#) posed by the Chinese technology company Huawei.

The [G20 Osaka Leaders' Declaration](#) reiterates the need for a human-centred approach in the development of artificial intelligence systems. The empowerment of individuals through the adoption of digitisation among micro, small, and medium enterprises is seen as conducive to networking and experience sharing among cities. The realisation of deep connectivity among cities is seen as crucial for the establishment of smart cities. Alongside this is an extended promotion of the DFFT initiative, the campaign encourages a cross-border flow of data for generating higher productivity, greater innovation, and improved sustainable development. Despite the articulation of such pioneering proposals, the declaration's failure to actively recognise the threat of job loss as a result of automation weakens its fundamental usefulness. The unwillingness to engage with a conception of the Fourth Industrial

Revolution as inseparable from mass unemployment results indeclaration void of critical robustness. This questions the overall usefulness of the G20 in relation to artificial intelligence.

Conclusion

The faith placed in business to effectively upskill the current workforce, and the belief that employees have the intellectual capacity and emotional stability necessary to adapt to the robotics revolution, must be evaluated. An analysis of labour-force participation in America showed a drop in the rates of individuals that are working or seeking work, with this being most prominent amongst [men aged 25 to 54.](#) This decline was largely attributed to the increased adoption of industrial robots. In a future that will be defined by technological disruption, international forums like the G20 must take the lead in promoting frameworks that financially legitimise broadened ideas of civic participation. Decoupling the association between economic reward and formal employment would ensure responsiveness to job loss as a

result of automation, with this threat disproportionately affecting men with low educational levels. This progressive outlook can also resolve the gendered imbalance in unpaid care work. The absence of a dynamic reimaging of societal relations in the age of artificial intelligence may result in national-level vulnerability to protectionist populism, with policies of economic nationalism representing the ultimate threat to global growth.

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