ETHICAL *Thinking*

AI, ETHICS AND THE REIMAGINED
customer experience

IN THE CURRENT ENVIRONMENT OF COVID-19, THE ROLE OF AI AND MACHINE LEARNING HAS NEVER BEEN MORE CRUCIAL. AT SOCAP'S 30TH ANNUAL SYMPOSIUM 2020, ETHICS AND TECH EXPERT DR CATRIONA WALLACE WILL ANSWER THE QUESTION: WHAT DO ETHICS AND THE CONSUMER EXPERIENCE LOOK LIKE IN A WORLD SHAPED BY ALGORITHMS, AND WHAT ARE THE LESSONS FOR ORGANISATIONS?

DE-CODING AI

The term Artificial Intelligence (AI) was coined in the 1950s and means 'software that mimics human intelligence'. Machine Learning (ML) is the ability of a computer program to learn on its own accord, without needing to be explicitly programmed or coded. The software learns each time it conducts a task.

DR CATRIONA WALLACE

Dr Catriona Wallace has been recognised by the Australian Financial Review as the Most Influential Woman in Business & Entrepreneurship. Based between the US and Australia, Catriona is the Founder & Executive Director of Artificial Intelligence ASX-Listed company Flamingo Ai, provider of Machine Learning based technologies. Flamingo Ai is the second only woman-led (CEO & Chair) business ever to list on the Australian Stock Exchange.

She is an Adjunct Professor at the Australian Graduate School of Management, UNSW and has also achieved Advance Australia's highest award in Technology & Innovation for Australians working abroad. Catriona has been named among the Top 9 Female Entrepreneurs by the Sydney Morning Herald and Top 30 Women redefining business by Womens' Agenda.

Dr Wallace is one of the world's most cited experts and speakers on Artificial Intelligence, Customer Experience, Ethics & Human Rights in Technology and Women in Leadership. She is a keynote speaker at SOCAP's 30th Annual International Symposium this year and will present on AI and ethics and what this means for the consumer.

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Artificial Intelligence (AI) Is expected to be the most impactful technology on commerce and the consumer experience, with 40% of service and admin jobs set to be replaced by robots and 30% of customer interactions to be conducted by robots in the next five years.

Dr Catriona Wallace, an expert in AI technology as well as being one of the Top 25 Most Influential People globally in consumer experience, has compared AI as having the same level of influence as the discovery of fire, invention of electricity and the impact of the Industrial Revolution. 'AI is the fastest-growing tech sector in the world,' she says. 'US$38bn was invested in the past 12 months and this is due to grow 12-fold in the next five years. The major challenges with AI come from the lack of regulation, legislation or guidelines to monitor its development and use. There are little to no laws governing this sector at the moment. As such, there are risks of AI being biased in its decision-making and potentially causing harm.'

The hidden bias in AI

The systems we require to sustain our lives – including governance, health care, banking and finance, transportation, retail, hospitality, and energy and natural resources – are becoming increasingly reliant on machine-learning (ML) algorithms to function. The vast majority of AI's applications are based on deep-learning algorithms and how these algorithms find patterns in data.

The inherent challenge is data bias; ML is built through supervised training, or data fed by a human that effectively acts as a teacher, raising the issue of conscious or unconscious individual and societal biases being passed on. Bias can infiltrate at many stages of this deep-learning process and current systems are ill-equipped to detect it.

'Bias in AI comes from two primary sources,' explains Dr Wallace. 'First, less than 10% of coders in the AI sector are women, which means that there is the potential for conscious or unconscious bias to be built into the algorithms. Second, the data that is used to train the algorithms, which is historical data, is often a reflection of the data that has been collected reflecting society's past norms. For example, I am a professor, I am female and I regularly wear a dress. If you google 'Professor Style' and look at images, you can see that 90% of images are of men in tweed suits.

'In this example, both of the two factors may have played out: the coder who was tagging the images may believe that professors are men in tweed suits; and then secondly, the images that were provided to the coder most likely would have a majority of men because this was the historical norm. The result is that the AI learns that men in tweed coats are professors and that this is the predominant answer.'

The human cost of AI

Gartner predicts that 1.8m jobs will be replaced by robots and machines in the next 12 months. The sectors to be affected the most include financial services, retail, hospitality, tourism and telecommunications.

'The jobs to be automated are typically administration, service, sales, marketing and entry-level work,' says Dr Wallace. 'Ninety percent of these jobs that will be displaced are the jobs of women and minority groups. This is a very real challenge.'

Current framework for the development and employment of AI in Australia

In November, 2019, Minister Karen Andrews launched Australia's first AI & Ethics framework, to which Dr Wallace was an advisory. In the framework are eight key principles:

1. **Human, social and environmental wellbeing:** Throughout their lifecycle, AI systems should benefit individuals, society and the environment.
2. **Human-centred values:** Throughout their lifecycle, AI systems should respect human rights, diversity and the autonomy of individuals.
3. **Fairness:** Throughout their lifecycle,

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AI systems should be inclusive and accessible, and should not involve or result in unfair discrimination against individuals, communities or groups.

4. **Privacy protection and security:** Throughout their lifecycle, AI systems should respect and uphold privacy rights and data protection, and ensure the security of data.
5. **Reliability and safety:** Throughout their lifecycle, AI systems should reliably operate in accordance with their intended purpose.
6. **Transparency and explainability:** There should be transparency and responsible disclosure to ensure people know when they are being significantly impacted by an AI system, and can find out when an AI system is engaging with them.
7. **Contestability:** When an AI system significantly impacts a person, community, group or environment, there should be a timely process to allow people to challenge the use or output of the AI system.
8. **Accountability:** Those responsible for the different phases of the AI system lifecycle should be identifiable and accountable for the outcomes of the AI systems, and human oversight of AI systems should be enabled.

How can businesses prepare?

Dr Wallace says AI technology is about five years ahead of the legal system, and in the interim businesses need to rely on frameworks and guidelines and ethical leadership.

'All businesses regardless of size or industry must be looking to learn about AI now,' she says. 'Australia is regarded as a laggard in this field. We have less than 50% of the per capita investment in AI compared to the US and only a quarter of Israel.

She says the best approach to learning is: read, listen to podcasts and webinars, and trial or experiment yourself with different AI. Additionally, learn about the ethical frameworks so that you are able to commence an AI journey or roadmap with ethical principles in mind so that bias and discrimination are avoided.

AI TOOLKIT FOR BUSINESS

With regard to toolkits for AI and ensuring responsible and ethical development of AI and machine learning without bias, Dr Wallace says the following may be useful for businesses to adopt:

• Risk assessments
• Privacy and security audits
• Data analysis techniques to remove bias
• Command Line Tools: a tool that allows you to add an ethics checklist to projects. The checklist is customisable for each project and provides a list of examples to illustrate potentially harmful results.
• Ethics and Algorithm Toolkits: assess and then manage the

algorithm risk. It delves deeply into potential harms and human rights considerations. The main goal of the toolkit is to elicit conversation, and is effective in raising questions and considerations.

• Bias and Fairness Audit Tool: look at four measures of fairness, and assess a categorical dataset based on these metrics.
• What-If Tool: users can test algorithmic fairness constraints, visualise inference results and edit a datapoint to see how a model performs.
• Open Source Tools: an open source tool that allows users to understand the reasons behind why a model makes certain predictions.

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AI AND THE CONSUMER EXPERIENCE

AI and consumer intention

The continued development of AI and ML will deliver 'hyper-personalisation', determining and presenting tailored options to the customer. 'At the moment, we estimate these personalisation engines get it about 40% right. They capture the 'shadow' of the person on the internet, but they do not yet capture the person's intentions. In the next five years we will see this accuracy greatly improve where the machines know you better than yourself. As Yuval Noah Harari states, "The most important thing for we humans is to know ourselves. For the first time in history we will be in competition with who knows us better. It is likely to be the organisations with personalisation engines who know us better than we know ourselves."'

What customers experiencing biased AI can do and the lessons for organisations

Consumers should know that they have the right to contest a decision if they think that an AI has made a biased, discriminatory or wrong decision about them. 'The current consumer rights will sit within the domain that the organisation is in,' Dr Wallace explains. 'So, for example, a customer who is interacting with a bank should find recourse in laws and regulations relating to the banking sector, rather than to the technology.'

Under the AI & Ethics Framework, the consumer would be able to contest the decision and ask the organisation to be transparent with the AI, algorithms and data that the AI used. The organisation must be able to explain how the AI came up with the decision, and then the organisation (and potentially the AI vendor) will be held accountable for the decision.

'You can imagine en masse this would pose significant problems for an organisation,' says Dr Wallace. 'For example, recently Apple released its Apple Card which provided credit for consumers. In a marketing campaign, Apple invited people to submit their

financial details and then they would be offered a credit card and limit. The results were that on average Apple offered 10 times more credit to men than to women even if it was a man and a woman married with exactly the same financial data.

'Another example is an AI called Babylon that registers people's vital signs and notifies medical help if the person is about to have a heart attack. It registered symptoms for men as being 'heart attack' and for women of the same age as 'panic attack'.'

While there is currently little legal recourse to the consumer when a biased decision is made about them, Dr Wallace stresses that it is important the consumer contest a biased decision: 'The more consumers who do this, the more likely we are to see legislation put in place.'

Dr Wallace has recently joined the board of a not-for-profit called 'Responsible Technology Australia' which has been set up to:
1. lobby government for better, more responsible technology that minimises social harm; and
2. create a consumer movement to agitate for laws and regulation to ensure responsible technology.

'Australia is actually quite progressive when it comes to data privacy and security, compared with other countries,' she says. There are various agencies set up to monitor data privacy. Some of these include:

• The Office of the Australian Information Commissioner (OAIC)
• The Australia Communications and Media Authority (ACMA)
• The Commonwealth Attorney General's Department under the Telecommunications Act
• The National Health and Medical Records Council
• The Australian Transaction Reports and Analysis Centre (ATRAC).

AI has the potential to greatly improve the human condition. Dr Wallace says, in particular, AI-driven Bio Tech, Medical Tech, Climate Tech and Agri Tech will be hugely beneficial to humans. There is also great scope for AI to support people with disabilities.

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At the same time, she warns, there is a huge potential for AI to be used to harm humans, be it through mass manipulation of people during elections, the powering of harmful social media, or the coming of autonomous weapons.

'Elon Musk noted, "Inviting AI into the world is like summoning the demon." I, however, am very hopeful that AI will help humans become free from the mundane to focus on things that make us more human, including creativity, a return to science and art and to facilitate better care of the environment. My family lost our farm during the Summer 2019 Bushfires – so I would like to build firefighting robots as there should be no reason that a human should stand between their house and a 30-foot inferno. A robot would be happy to do this,' Dr Wallace concludes.