

19 October 2018

***Submission to the Australian
Human Rights Commission***

***Human Rights and Technology
Issues Paper***





PwC's Indigenous Consulting

Private & Confidential

Edward Santow
Human Rights Commissioner
Australian Human Rights Commission
Level 3
175 Pitt St
Sydney, NSW, 2000

19 October 2018

Dear Commissioner

Submission to Human Rights and Technology Issues Paper

This submission is made by PwC's Indigenous Consulting (PIC) to provide information to the Australian Human Rights Commission (AHRC) Human Rights and Technology Issues Paper (Issues Paper).

The purpose of PIC's submission is to present an **Aboriginal and Torres Strait Islander lens and voice** to this important discussion. PIC's submission **highlights unique issues** which face Aboriginal and Torres Strait Islander peoples and their interface with technology.

PIC draws upon our collective knowledge from PIC staff subject matter experts, including our **experiences** through our extensive work with Aboriginal and Torres Strait Islander communities, and insights from Aboriginal and Torres Strait Islander subject matter expertise in this field. To date, PIC has completed over 350 projects across 600 communities around Australia.

In the main, PIC supports practical and innovative approaches that:

Enable and facilitate accessibility: working with our clients and communities to assist in facilitating solutions which enable improved technology accessibility for Aboriginal and Torres Strait Islander communities.

Respect and protect Indigenous Data Sovereignty: the ownership, collection and use of Aboriginal and Torres Strait Islander peoples' data and information.

Value Indigenous knowledge: values the sustainability principle at the heart of many Aboriginal and Torres Strait Islander cultures, and be mindful of the particular value of Indigenous knowledge in relation to the natural environment (lands, waters, seas, flora and fauna) and how this worldview might assist with responsible technology development.

Embed Techno ethical inquiry frameworks and approaches: demonstrates ethical approaches to design, implementation and management of technology as they relate to Aboriginal and Torres Strait Islander peoples.

Respect and protect Indigenous Cultural Intellectual Property (ICIP): of Aboriginal and Torres Strait Islander peoples with regards to data and information.

Drive toward solutions: to addressing the digital and technology needs of Aboriginal and Torres Strait Islander peoples.

There are a number of positive areas where Aboriginal and Torres Strait Islander peoples are actively involved in the creation and use of technology however, we provide a strong focus on highlighting the complexities and important considerations when considering the safeguarding of human rights in the Fourth Industrial Revolution (4IR).

Aboriginal and Torres Strait Islander peoples have specific inherent human rights and it is imperative that PIC ensures the voice and perspectives of Aboriginal and Torres Strait Islander peoples are expressed through the process being driven by AHRC.

We have considered the Issues Paper questions and how they relate to Aboriginal and Torres Strait Islander communities in four high level themes of:

- **Providing an Aboriginal and Torres Strait Islander lens** on human rights and technology
- **Highlighting some of the social, cultural and economic impacts** of technology on the lives of Aboriginal and Torres Strait Islander peoples
- **Highlighting some context around the technology decisions that affect** Aboriginal and Torres Strait Islander peoples' human rights
- **Providing some ideas around reinventing regulation and oversight** for new technologies as they related to Aboriginal and Torres Strait Islander peoples.

We thank the AHRC for the opportunity to provide a written contribution to this important area of work and for the forward thinking towards a national focus on technology and innovation.

Yours sincerely

A black rectangular box redacting the signature of Gavin Brown.

Gavin Brown
Co-CEO
PwCs Indigenous Consulting

About PwC Indigenous Consulting



PIC Co-CEOs Jodie Sizer and Gavin Brown

“We believe that real change happens when it is created by Indigenous people, not for Indigenous people. Our desire to create this firm reflects our belief in the rights of our communities to create and determine their own futures.”

PIC is a national Indigenous consulting business resulting from a unique partnership between a group of Indigenous Australians and PwC, one of the world’s largest professional services firms. The unique power of PIC is the combination of Indigenous expertise and experience, with PwC’s world-leading consulting capability.

PIC is majority owned, led and staffed by Indigenous Australians. We are 51% Indigenous owned, 49% PwC owned, and are Supply Nation certified. We collaborate formally with a number of other Indigenous business through sub-contractual arrangements and working to increase Indigenous presence in the economic supply chain.

PIC specialises in providing advice to a range of clients and developing strategies to help realise the commercial and community potential of Indigenous policies, programs, projects, organisations and businesses.

We are renowned for our high quality delivery, ability to build collaboration quickly, inspire practical innovation and our focus on outcomes.

Our way of working with Aboriginal and Torres Strait Islander people and communities

Our work is underpinned by the core principles of Truth, Respect and Self-Determination.

We have a passionate belief that Aboriginal and Torres Strait Islander peoples should have the opportunity to fulfil their aspirations. All of our employees are committed to improving the lives of Aboriginal and Torres Strait Islander peoples and supporting self-determination through empowering Aboriginal and Torres Strait Islander led models and solutions. We work alongside Aboriginal and Torres Strait Islander communities with respect for all and an understanding of the importance of truth and Indigenous knowledge.

We believe in, and bring to all of our projects:

- **Quality** in all aspects of our work
- Supporting and empowering **Indigenous-led solutions** and initiatives
- Respecting local knowledge and understanding through **Place based solutions**
- **Human centred** processes and projects that respect culture and knowledge
- Promoting and **enabling Custodianship** so that our work builds on and grows the strength of communities and passes this on for future generations.

Definitions

Terms, abbreviations and acronyms	Meaning
4IR	Fourth Industrial Revolution, represents new ways in which technology is becoming embedded within society and the human body.
ABS	Australian Bureau of Statistics
ADII	Australian Digital Inclusion Index
AI	This term is officially referred to being ‘Artificial Intelligence’ however in this area, PIC uses the term ‘Aboriginal Intelligence’ to emphasise the natural based knowledge solutions embedded into AI.
EO	Earth Observation is the gathering of information about planet Earth's physical, chemical and biological systems. It involves monitoring and assessing the status of, and changes in, the natural and man-made environment.
FPDN	First Peoples Disability Network
ICIP	Indigenous Cultural Intellectual Property
Indigenous Estate	The Indigenous Estate refers to Aboriginal and Torres Strait Islander lands, waters and seas – collectively managed as per the cultural, social and economic aspirations of traditional owners/custodians.
Indigenous peoples	Wherever possible, this submission uses the term Aboriginal and Torres Strait Islander peoples however in some cases uses the term ‘Indigenous’ to refer to Aboriginal and Torres Strait Islander peoples as it is a term used as it relates to Indigenous peoples of the world. We also use the term Australia’s First Peoples to emphasise the long continual connection of Aboriginal and Torres Strait Islander cultures in this country.
Issues Paper	Australian Human Rights Commission Human Rights and Technology Issues Paper
NTV	Native Title Vision, a geospatial tool used to map the Indigenous Estate (land, waters and sea country), as well as cultural heritage sites.
PIC	PwC Indigenous Consulting
SDGs	Sustainable Development Goals of the United Nations 2030 Sustainable Development Agenda
STEM	Science, Technologies, Engineering, Mathematics
ST&I Forum	Multi-stakeholder Forum on Science, Technology and Innovation for the SDGs

Definitions

Terms, abbreviations and acronyms	Meaning
Techno ethics	The study of moral, legal and social issues involving technology.
Technology	In the context of this paper, Technology also means Digital
TFM	UN Technology Facilitation Mechanism
The Centre	The Centre of Excellence for Aboriginal and Torres Strait Islander Statistics and Community Engagement
The Declaration	United Nations Declaration on the Rights of Indigenous Peoples

Acknowledgement

PIC Acknowledges the Aboriginal and Torres Strait Islander peoples of the many traditional lands and language groups across Australia. We honour the wisdom of Aboriginal and Torres Strait Islander Elders past and present and embrace those Elders who are yet to come.

Acknowledgement of Indigenous technology knowledge holders

We also deeply appreciate and acknowledge the Aboriginal and Torres Strait Islander people who provided their time, knowledge and perspectives in this submission. Our collective voices are actively engaged in a range of areas of technology and we stand on the shoulders of our ancestors, the very early innovators, in this field.

PIC thank the following persons:

Prof Bronwyn Carlson, Head of Indigenous Studies, Macquarie University

Prof Peter Radoll, Director Ngunnawal Centre, University of Canberra

Mr Luke Briscoe, Owner and Founder of Indigi Lab



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1 Introduction

1. Indigenous principles of sustainability, collective good, and custodianship, represent crucial concepts for responsible and ethical technology development in this Fourth Industrial Revolution (4IR).
2. With more than 60,000 years of sustained knowledge and innovation, Australia's First Peoples are among the early creators and users of technology. For example, the physics and aerodynamics of the Boomerang, created by Aboriginal people long before modern platforms of technology, is now widely used in human creation of flight.¹ Similarly, the need to adapt and change to the wider environment, trends and drivers, has been a hallmark of Indigenous Australians' continuing connection to this country.
3. Responsibly developed and harnessed, technology undoubtedly has a strong role to play in providing new and exciting opportunities for Aboriginal and Torres Strait Islander peoples. The tenets of sustainability and the good of the collective, offer galvanising principles around which modern technology developers might operate, in ways that deliver great public value. The Indigenous use of storytelling to embed these and other important principles likewise provide an analogy for modern technologists, who need a clear narrative in order to drive home the value of responsible technology development and usage.
4. PIC notes that as the field of technology is broad, we acknowledge that this submission is not a comprehensive identification of all issues related to Aboriginal and Torres Strait Islander peoples and technology. Wherever appropriate, our submission provides **practical examples** and draws **on existing literature** to provide context to the key points of discussion.
5. PIC have considered the ten questions outlined in the Issues Paper and due to the overlapping in the narrative of some of these questions, PIC has themed responses to the consultation questions. Table 1 outlines how the chapters within the submission align to the Issues Paper consultation questions.

Chapter	Consultation Questions
2. An Aboriginal and Torres Strait Islander lens on human rights and technology	1. What types of technology raise particular human rights concerns? Which human rights are particularly implicated?
3. The social, cultural and economic impacts of technology on the lives of Aboriginal and Torres Strait Islander peoples	1. What types of technology raise particular human rights concerns? Which human rights are particularly implicated? 2. Noting that particular groups within the Australian community can experience new technology differently, what are the key issues regarding new technologies for these groups of people (such as children and young people; older people; women and girls; LGBTI people; people of culturally and linguistically diverse backgrounds; Aboriginal and Torres Strait Islander peoples)?
4. Technology decisions that affect Aboriginal and Torres Strait Islander peoples' human rights	5. How well are human rights protected and promoted in AI-informed decision making? In particular, what are some practical examples of how AI-informed decision making can protect or threaten human rights? 6. How should Australian law protect human rights in respect of AI-informed decision making? In particular: a) What should be the overarching objectives of regulation in this area? b) What principles should be applied to achieve these objectives? c) Are there any gaps in how Australian law deals with this area? If so, what are they? d) What can we learn from how other countries are seeking to protect human rights in this area? 7. In addition to legislation, how should Australia protect human rights in AI-informed decision making? What role, if any, is there for:

¹ Including by NASA who are modelling a boomerang shaped space craft to fly to Mars. NASA, Could this become the first Mars airplane?, *NASA Armstrong Flight Research Center*, 30 June 2015 (online news). https://www.nasa.gov/centers/armstrong/features/mars_airplane.html (accessed 21 September 2018).

Chapter	Consultation Questions
	a) An organisation that takes a central role in promoting responsible innovation in AI-informed decision making? b) Self-regulatory or co-regulatory approaches? c) A 'regulation by design' approach?
5 Reinventing regulation and oversight for new technologies	3. How should Australian law protect human rights in the development, use and application of new technologies? In particular: <ul style="list-style-type: none"> a) What gaps, if any, are there in this area of Australian law? b) What can we learn about the need for regulating new technologies, and the options for doing so, from international human rights law and the experiences of other countries? c) What principles should guide regulation in this area? 4. In addition to legislation, how should the Australian Government, the private sector and others protect and promote human rights in the development of new technology?

6. Through this submission PIC highlights the following key observations which are having a direct impact and will continue to be a barrier for Aboriginal and Torres Strait Islander peoples to benefit from technology advancements and also to maintain their inherent human rights according to their cultural practices and obligations.

1.1 *PIC's key observations for Issues Paper*

PwC Indigenous Consulting makes the following observations for consideration within this Issues Paper:

Observation 1: Indigenous digital inclusion continues to be a barrier due to access, affordability and Aboriginal and Torres Strait Islander peoples' exposure to technology. Especially in the context of where many Aboriginal and Torres Strait Islander peoples live around the country, in outer regional, remote and very remote areas.

Observation 2: Digital literacy and advancements in technology can be barriers for Aboriginal and Torres Strait Islander peoples in advancing educational and health and wellbeing outcomes.

Observation 3: There remains an underrepresentation of Aboriginal and Torres Strait Islander peoples and their perspectives in STEM and the broader technology advancement dialogue.

Observation 4: The unregulated use of new technologies are impacting and threatening cultural intellectual property and safety of sacred stories.

Observation 5: Aboriginal and Torres Strait Islander consumers continue to be exploited in the consumption of technologies.

Observation 6: The unique rights of Australia's First Peoples are at risk in technology advances and associated laws and policies with the absence of international human rights standards underpinned by the United Nations Declaration on the Rights of Indigenous Peoples.

Observation 7: There is a need for a national body that safeguards, advocates and maintains data sovereignty of Aboriginal and Torres Strait Islander people.

Observation 8: There is an urgent need for the development of a techno-ethical protocol framework and national standards setting in ethical technology development as it relates to Aboriginal and Torres Strait Islander peoples.

2 *An Aboriginal and Torres Strait Islander lens on human rights and technology*²

7. The consideration, inclusion and preservation of Australia's First People's rights is absent in the current role out of technological design and developments, unless these designs are being driven from Aboriginal and Torres Strait Islander knowledge holders in these fields. The key human rights, principles and frameworks which this submission will particularly focus on are those that are outlined in the:

- United Nations Declaration on the Rights of Indigenous Peoples (the Declaration)
- United Nations Guiding Principles on Business and Human Rights
- United Nations Sustainable Development Goals

2.1 *United Nations Declaration on the Rights of Indigenous Peoples*

8. The accessibility, design, implementation and impacts of technology on the lives of Aboriginal and Torres Strait Islander peoples is central to this discussion and we believe should be underpinned by international human rights standards.

9. A fundamental international human rights framework that recognises and protects the unique and collective rights of Indigenous peoples across the world is the United Nations Declaration on the Rights of Indigenous Peoples³ - in the Australian context, this instrument relates to Aboriginal and Torres Strait Islander peoples' rights.

10. PIC supports the declaration in its entirety and actively applies the declaration in our business operations and how we work with Aboriginal and Torres Strait Islander peoples, communities and clients.

11. We acknowledge the significant work of many Aboriginal and Torres Strait Islander people, along with other Indigenous peoples across the globe, on advocating to give effect to the Declaration and for their work in developing practical approaches to embed our rights into everyday life.

12. The foundational principles of the Declaration can be applied to guide the development, implementation and measure the effectiveness of laws, policies, programs and projects that may impact the lives of Aboriginal and Torres Strait Islander peoples. Furthermore, they can be applied to any industry area, including in all areas of the digital and technology industries.

13. The four foundational principles of the Declaration are:

² Relating to Question one of the Issues Paper.

³ United Nations Declaration on the Rights of Indigenous Peoples, GA Resolution 61/295, UN Doc A/61/L.67 (2007).

- *self-determination*⁴
- *participation in decisions that affect Aboriginal and Torres Strait Islander people based on free, prior and informed consent and good faith*⁵
- *respect for and protection of culture*⁶
- *equality and non-discrimination*⁷.

14. The Declaration specifically stipulates the Aboriginal and Torres Strait Islander peoples have the right to maintain, protect and develop technologies:

Article 11: Indigenous peoples have the right to practice and revitalize their cultural traditions and customs. This includes the right to **maintain, protect and develop** the past, present and future manifestations of their cultures, such as archaeological and historical sites, artefacts, designs, ceremonies, **technologies** and visual and performing arts and literature.⁸

Article 31: Indigenous peoples have the right to **maintain, control, protect and develop** their **cultural heritage, traditional knowledge and traditional cultural expressions**, as well as the manifestations of their sciences, **technologies** and cultures, including human and genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs, sports and traditional games and visual and performing arts. They also have the right to **maintain, control, protect and develop** their **intellectual property** over such cultural heritage, traditional knowledge, and traditional cultural expressions.⁹

15. In order to safeguard these rights it is imperative that the unique challenges Aboriginal and Torres Strait Islander communities face in regards to the 4IR are documented and addressed.

2.2 United Nations Guiding Principles on Business and Human Rights

16. PIC supports practical steps to embedding Indigenous peoples' rights within digital and technology businesses and in their operations.

17. Global standards for addressing and preventing human rights impacts associated with business activity were adopted by the United Nations in 2011. The *Guiding Principles on Business and Human Rights* require that:

- governments **protect** human rights of their citizens through legislation, policy, and regulation, and this includes against violations by third parties including business

⁴ United Nations Declaration on the Rights of Indigenous Peoples, GA Resolution 61/295, UN Doc A/RES/61/295 (2007), arts 4, 5, Preamble 16, 17; International Covenant on Economic, Social and Cultural Rights, opened for signature 16 December 1966, 993 UNTS 3 (entered into force 3 January 1976), art 1; International Covenant on Civil and Political Rights, opened for signature 16 December 1966, (entered into force 23 March 1976), art 1.

⁵ *United Nations Declaration on the Rights of Indigenous Peoples*, GA Resolution 61/295, UN Doc A/RES/61/295 (2007), arts 18, 19, 5, 10, 11(2), 27, 28, 29, 32(2), 41, 46.

⁶ United Nations Declaration on the Rights of Indigenous Peoples, GA Resolution 61/295, UN Doc A/RES/61/295 (2007), arts 1, 31, 11(1), 11(2), 12(1), 13(1), 15(1), Preamble 3, 7, 10, 11.

⁷ United Nations Declaration on the Rights of Indigenous Peoples, GA Resolution 61/295, UN Doc A/RES/61/295 (2007), arts 8(1)(e), 9, 15(2), 21(1), 22(1), 44, 46(3), Preamble 5, 9, 18, 22.

⁸ United Nations Declaration on the Rights of Indigenous Peoples, GA Resolution 61/295, UN Doc A/RES/61/295 (2007), art 11.

⁹ United Nations Declaration on the Rights of Indigenous Peoples, GA Resolution 61/295, UN Doc A/RES/61/295 (2007), art 31.

- businesses have a responsibility to **respect** the human rights of those who may be impacted by business operations, and
- that grievance procedures are in place to mitigate adverse impacts and human rights violations – and that where they have already occurred – that appropriate **remedy** is achieved.¹⁰

18. Furthermore, the UN Global Compact Business Reference Guide to the Declaration [on the Rights of Indigenous Peoples], developed by the UN Global Compact in 2013 was designed to assist companies to understand, respect, and support the rights of Indigenous peoples by illustrating how they are relevant to business activities.¹¹

19. Digital and technology businesses, regardless of size and ability to scale their products, should be considering these international business principles within their operations.

2.3 United Nations Sustainable Development Goals

20. The United Nations 2030 Sustainable Development Agenda is supported by a Technology Facilitation Mechanism (TFM) aimed at achieving effective implementation of the Sustainable Development Goals (SDGs). An interagency task team leads the TFM and facilitates ‘multi-stakeholder collaboration and partnerships on science, technology and innovation through the sharing of information, experiences, best practices and policy advice among Member States, civil society, the private sector, the scientific community, United Nations entities and other stakeholders’.¹² Each year, an annual multi-stakeholder forum on Science, Technology and Innovation (ST&I) for the SDGs is held. The 2018 ST&I Forum noted that,

‘If everyone is to enjoy a future of peace, dignity and opportunity, then science, technology and innovation need to be at the heart of the race to reach the SDGs by 2030.’¹³

21. With a number of countries, including Australia now voluntarily reporting data on how they are implementing and tracking against the SDGs, businesses are also understanding how they are able to contribute to achieving the SDGs through data, information and technology.¹⁴ It is estimated that the SDGs ‘will open up \$12 trillion of market opportunities by 2030’.¹⁵

22. The objective of the United Nations 2030 Sustainable Agenda is to ‘leave no one behind’.¹⁶ Indigenous peoples are explicitly mentioned six times within the SDGs and associated indicators however the lives of Indigenous peoples are impacted in some way by all 17 SDGs.¹⁷

¹⁰ United Nations Office of the High Commissioner of Human Rights, Guiding Principles on Business and Human Rights: implementing the United Nations ‘Protect, Respect and Remedy’ Framework, (2011). At: https://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf (accessed 30 August 2018).

¹¹ United Nations Global Compact, *Business reference guide to the United Nations Declaration on the Rights of Indigenous Peoples* (2013).

¹² United Nations Sustainable Development Platform, *Technology Facilitation Mechanism*. At: <https://sustainabledevelopment.un.org/tfm> (accessed 23 September 2018).

¹³ United Nations Sustainable Development Knowledge Platform, *Science, technology and innovation crucial to transformative impact of Global Goals, UN forum hears* (online), 5 June 2018. At: <https://sustainabledevelopment.un.org/?page=view&nr=1504&type=230&menu=2059> (accessed 24 September 2018).

¹⁴ Department of Foreign Affairs and Trade, *Tracking Australia’s Progress on the Sustainable Development Goals* (2018). At: <https://dfat.gov.au/aid/topics/development-issues/2030-agenda/Documents/sdgs-data-report-tracking-progress.pdf> (accessed 23 September 2018)

¹⁵ Leslie P. Norton, *The United Nations wants big business to get more sustainable*, (Barrons online media), 24 September 2018. At: <https://www.barrons.com/articles/united-nations-sustainable-development-goals-1537750678> (accessed 26 September 2018).

¹⁶ United Nations General Assembly, Resolution adopted by the General Assembly on 25 September 2015, 17th sess, (A/70/L.1) 2 October 2015.

¹⁷ Indigenous peoples are specifically mentioned in the United Nations 2030 Agenda for Sustainable Development (Target 2.3 and 4.5 and Indicators 1.42, 2.32, 4.51 and 5.a.a). The General Assembly encourages Member States to “give due consideration to all the rights of indigenous peoples in fulfilling the commitments undertaken in the 2030 Agenda for Sustainable Development”. United Nations General Assembly, Resolution adopted by the General Assembly

23. From an Aboriginal and Torres Strait Islander perspective, generational sustainability, the connection to lands, languages, cultures and all forms of wellbeing balance together and contribute to achieving all the SDGs, so their active involvement and participation is critically important.¹⁸

24. PIC advocates that while corporate consciousness about human rights generally is on the increase, the majority of companies are yet to address Indigenous rights within their frameworks promoting good corporate citizenship and corporate social responsibility.

25. In applying international human rights and sustainability development standards and principles, businesses should consider embedding Aboriginal and Torres Strait Islander peoples' rights into the fabric of their businesses, this would include considering how Aboriginal and Torres Strait Islander peoples' human rights can be embedded into the development, implementation and use of technologies.

26. We believe businesses should take a leadership role on protecting, respecting Indigenous Peoples Human Rights and remedying any adverse impacts caused as a result of their business operations. The practical aspects for businesses of implementing policy and due diligence in this area is important and we believe that businesses have much to gain from engaging in a rights based approach in all aspects of how they operate. Some benefits may include:

- **Building Trust:** with their customers and staff
- **Enable appropriate engagement:** understand how their operations may impact on the rights of Indigenous peoples and communities and secure a social licence to operate in those communities
- **Manage associated risk:** minimise the risk of adverse impacts that require remedy down the track, including market, financial, reputational and legal risk in their supply chains and human rights violations
- **Demonstrate leadership:** beyond their current Reconciliation Action Plan initiatives and other Indigenous engagement commitments and take a market leading position.

on 19 December 2016, 71st sess, (A/RES/71/178) 31 January 2017; United Nations General Assembly, Resolution adopted by the General Assembly on 19 December 2017, 72nd sess, (A/RES/72/155) 17 January 2018.

¹⁸ United Nations Sustainable Development Goals, *Indigenous peoples share hopes for the SDGs* (24 May 2016). At: <http://www.un.org/sustainabledevelopment/blog/2016/05/indigenous-peoples-share-hopes-for-the-sdgs/> (accessed October 2018).

3 *The social, cultural and economic impacts of technology on the lives of Aboriginal and Torres Strait Islander peoples*¹⁹

27. The marginalisation of Aboriginal and Torres Strait Islander people in this country continues to impact on the ability to fully exercise their rights. Historic laws, policies and actions have prohibited Australia's First Peoples to live self-determining lives. The right to self-determination is enshrined in international law and is recognised as a collective right within the Declaration.²⁰

*'Indigenous peoples have the right of self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development.'*²¹

28. While Aboriginal and Torres Strait Islander people are overrepresented in numerous social and economic indicators and are faced with significant digital inclusion barriers, technology presents an incredible opportunity.

29. The progress of technology and development without meaningful consideration of the situation, demographics and worldview of Aboriginal and Torres Strait Islander peoples is likely to exacerbate the gaps in social and economic indicators, and lead to further inequality.

30. At the same time, a technology-rich economy has the potential to help accelerate the involvement of Aboriginal and Torres Strait Islander people in new economies, leading directly to improved education, employment, enterprise and subsequent health related benefits. Properly harnessed, this paradigm shift could help 'Close the Gap' across a number of socio-economic inequalities.

31. PIC agrees with the AHRC Issues Paper that different minority groups within Australia experience and relationship with technology varies in comparison to the wider population. PIC's key observations in relation to Aboriginal and Torres Strait Islander experiences include:

- **Indigenous digital inclusion** continues to be a barrier due to access, affordability and the digital ability of Aboriginal and Torres Strait Islander people
- **Digital literacy** and advancements in technology continue to be barriers for Aboriginal and Torres Strait Islander people in advancing educational and health and wellbeing outcomes

¹⁹ Relating to Questions one and two of the Issues Paper.

²⁰ International Covenant on Economic, Social and Cultural Rights, opened for signature 16 December 1966, 993 UNTS 3 (entered into force 3 January 1976), art 1; International Covenant on Civil and Political Rights (ICCPR), opened for signature 16 December 1966 (entered into force 23 March 1976), art 1; United Nations Declaration on the Rights of Indigenous Peoples, GA Resolution 61/295, UN Doc A/61/L.67 (2007), art 3.

²¹ United Nations Declaration on the Rights of Indigenous Peoples, GA Resolution 61/295, UN Doc A/61/L.67 (2007), art 3.

- ***Underrepresentation of Aboriginal and Torres Strait Islander people and perspectives in STEM*** and the broader technology advancement dialogue
- ***Aboriginal and Torres Strait Islander consumers continue to be exploited in the consumption of technologies.***

These observations are explained further in this chapter, themed into three areas of focus; social, cultural and economic impacts.

3.1 Social

3.1.1 Indigenous digital inclusion

32. Aboriginal and Torres Strait Islander communities are diverse in their culture and customs as well as their exposure to western influences. This diversity within communities is reflected in a communities' development, infrastructures and the resource distribution.

33. While the majority (79%) of the Aboriginal and Torres Strait Islander population live in urban areas, they represent a significant population of Australians living in remote and very remote areas.²²

34. The **access** and **affordability** of technology and the **digital ability** of Aboriginal and Torres Strait Islander peoples are essential elements that impact the digital inclusion of Australia's First Peoples.²³

35. Digital inclusion is influenced by differences in socioeconomic factors such as income, education levels and geography. Aboriginal and Torres Strait Islander peoples are significantly marginalised in all of these spheres.

36. The 2018 Australian Digital Inclusion Index (ADII) identified that Aboriginal and Torres Strait Islander peoples' digital inclusion scores are well below the national average with factors of affordability scoring the lowest, noting that the cost for internet connectivity and mobile data expenditure are significant contributors.²⁴

37. Within Australia, the term 'digital divide' refers to the gap between demographics and regions that have access to modern information and communications technology, and those who have no or restricted access. Therefore, we know that reasons for digital exclusion are closely linked to geography.

38. The needs of Aboriginal and Torres Strait Islander people living in rural and remote Australia with regards to technology are particularly unique given the lack of infrastructure to support digital technology services and products, presenting barriers to accessing digital technology. The digital divide between regions reflects the often patchy, unreliable or absent internet and mobile coverage in many rural and remote areas.²⁵

39. In order to respond to this barrier, the existing infrastructure technology of rural and remote Aboriginal and Torres Strait Islander communities should be mapped and tailored to the individual needs of each community. When mapping these needs it is essential to include leaders from the local communities to input into the aspirations of the community in regards to introducing new technologies.

²² Australian Bureau of Statistics, Census of Population and Housing: Reflecting Australia - Stories from the Census, 2016, Aboriginal and Torres Strait Islander population (2016), CAT No. 2071.0.
At: <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/2071.0~2016~Main%20Features~Aboriginal%20and%20Torres%20Strait%20Islander%20Population%20Article~12>. (Accessed 12 October 2018); Jennifer Baxter, Alan Hayes and Matthew Gray, Families in regional, rural and remote Australia (2011), Australian Institute of Family Studies. At: <https://aifs.gov.au/publications/families-regional-rural-and-remote-australia> (accessed 12 October 2018).

²³ Measuring Australia's Digital Divide: Australian Digital Inclusion Index 2018, p. 15. At: <https://digitalinclusionindex.org.au/wp-content/uploads/2018/08/Australian-digital-inclusion-index-2018.pdf> (accessed 21 September 2018).

²⁴ Measuring Australia's Digital Divide: Australian Digital Inclusion Index 2018, p. 15. At: <https://digitalinclusionindex.org.au/wp-content/uploads/2018/08/Australian-digital-inclusion-index-2018.pdf> (accessed 21 September 2018).

²⁵ Anna Vidot, "Almost half of regional Australians report internet is 'very poor', 'inadequate': University of Canberra survey," *ABC News*, June 21, 2016. At: www.abc.net.au/news/rural/2016-06-21/almost-half-of-regional-australia-reports-internet-very-poor/7529734 (accessed 21 September 2018).

40. An effective example of the innovative projects that can come out of a better understanding of existing technology infrastructure is the Broadband for the Bush Alliance. The Broadband for the Bush Alliance is auspiced by the Indigenous Remote Communications Association and is committed to digital inclusion of rural and remote Australia. The alliance was established over 15 years ago and focuses on securing fixed internet and mobile services for rural and remote Australia.²⁶

3.1.2 Access and connectivity

41. Increasing access to digital technology and associated infrastructure for Aboriginal and Torres Strait Islander peoples and their communities can be an enabler to addressing a wide range of issues that impact upon the areas of health, education, employment, housing and opportunity to participate on issues that impact on the wider community and country.

42. To increase the use of technology within Aboriginal and Torres Strait Islander communities consideration needs to be given to:

- The access and retention of internet connection and accessibility
- The types of devices available to Aboriginal and Torres Strait Islander people
- The potential risks and safety issues that are directly related to technology
- The success of community led initiatives.

Access to the internet

43. Access to technology and the internet is a mechanism that when implemented correctly can have a significant influence to improve the social equity for Aboriginal and Torres Strait Islander peoples. It provides a platform for an often excluded cohort of peoples to actively participate in society at the same level as all other Australians. The 2016 census reported that the proportion of Aboriginal and Torres Strait Islander households able to access the internet from their dwelling was highest in urbanised areas and lowest in the Northern Territory.²⁷

44. Aboriginal and Torres Strait Islander people face increased barriers in both accessing and retaining the internet. Professor Radoll identifies this as a uniquely Aboriginal problem, with Aboriginal communities in very remote areas experiencing a decrease in internet retention of up to 40% between 2006 and 2011.²⁸ Income and access to employment and education were the key drivers of the drop in internet retention.²⁹

45. Without access to the internet, Aboriginal and Torres Strait Islander communities are incapable of enjoying many of the opportunities that technology can provide, such as online health and education resources.

²⁶ See, Broadband for the Bush website. At: <http://broadbandforthebush.com.au/> (accessed 5 October 2018).

²⁷ [Australian Bureau of Statistics](http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/2071.0~2016~Main%20Features~Aboriginal%20and%20Torres%20Strait%20Islander%20Population%20Article~12), Census of Population and Housing: Reflecting Australia - Stories from the Census, 2016, Aboriginal and Torres Strait Islander population (2016), CAT No. 2071.0.
At: <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/2071.0~2016~Main%20Features~Aboriginal%20and%20Torres%20Strait%20Islander%20Population%20Article~12>. (Accessed 12 October 2018).

²⁸ P Radoll and B Hunter, 'Dynamics of the Digital Divide' (2017) *ANU Caepir Working Paper* 120, 2.

²⁹ P Radoll and B Hunter, 'Dynamics of the Digital Divide' (2017) *ANU Caepir Working Paper* 120, 2.

Use of mobile phones to access the internet

46. The prevalence of mobile only use amongst Aboriginal and Torres Strait Islander peoples is relatively high which presents both positive factors and barriers to digital inclusion.³⁰

47. The internet connectivity on mobile phones presents issues of:

- affordability of mobile data costs which are generally higher than fixed broadband data
- less functionality than a laptop or desktop computer, especially in regards to some online education courses
- the internet on a mobile phone is generally slower than on a laptop connected to wifi.³¹

Therefore, improved technology infrastructure in communities remains the most desirable response, with mobile phone technology being the second, or alternative option.

Community owned and publically available internet connectivity

48. There is a growing presence of Aboriginal and Torres Strait Islander communities who have led the charge to provide better internet access and connection to their region through shared internet access points that are available to their community or locality under government provision or other sources.

49. These communities are actively establishing community knowledge centres or hubs, providing safe communal spaces for community members to go to access local and cultural knowledge through books, the internet and other forms of digital technology.

50. The Wujal Wujal Aboriginal Shire in far north Queensland have secured government funding and established their own wifi mesh net. While its purpose is quite specific, it is increasingly used as a source of innovation for the community with plans to broaden the community connection, access and use underway.³² This ensures that access to the internet is inexpensive and available to all members of the community, thereby limiting the potential for technology to exacerbate socio-economic divides.

51. There are examples of governments rolling out free public wifi to promote internet access. The Northern Territory Office of Aboriginal Affairs approved Easbyweb to deploy Free Public WiFi systems at four Aboriginal communities. The 'project objectives were to address some of the remote communications challenges for the people living in the communities and for their visitors.'³³ Emphasis was placed on local community member's accessing the free wifi internet service. In an attempt to reduce the cost of internet access, this provided an opportunity for individuals to switch between 3G mobile networks to free community wifi. It was also an opportunity for improved tourist experience, allowing connection to people on a national and global scale.

³⁰ Measuring Australia's Digital Divide: Australian Digital Inclusion Index 2018, p. 15. At: <https://digitalinclusionindex.org.au/wp-content/uploads/2018/08/Australian-digital-inclusion-index-2018.pdf> (accessed 21 September 2018).

³¹ P Radoll and B Hunter, 'Dynamics of the Digital Divide' (2017) ANU Caepir Working Paper 120, 12.

³² Wujal Wujal Aboriginal Shire Council, Wujal Wujal Emergency Management wireless network, (online). At: <https://www.wujalwujalcouncil.qld.gov.au/community/local-wifi/> (accessed 20 September 2018).

³³ Easy Digital, *Public wifi in Indigenous communities: case study, Northern Territory – Office of Aboriginal Affairs* (2016). At: <https://easywebdigital.com/public-wifi-in-indigenous-communities> (accessed 20 September 2018).

Online risks

52. Issues around online risks and cyber safety are widely discussed in a range of national dialogues and platforms around technology which may include, issues of privacy such as social media hacking, online bullying and insecure banking, to name a few.

53. There are a number of real risks associated with using the internet for Aboriginal and Torres Strait Islander peoples, particularly given mobile only usage is prevalent. Mobiles are easily lost, stolen or able to be hacked, sometimes creating unsafe behaviours and conflict between families and within communities.

54. From a safety perspective, cyber safety concerns have serious implications on the mental wellbeing of young people. Radoll's research gives evidence of Elders experiencing issues within their community due to the increased use of mobile phones and the internet. Elders gave specific examples of Aboriginal and Torres Strait Islander youth using social media in harmful ways, such as to threaten suicide, prostitute themselves and engage in substance abuse.³⁴ Social media platforms and internet service providers do not have procedures in place to prevent this harmful behaviour. This means that while increased technology access offers opportunities to Aboriginal and Torres Strait Islander youth, it may also cause harm that would be avoided without internet access.

55. Aboriginal and Torres Strait Islander communities have their own ways of dealing with conflict however technology and social media platforms are forcing communities to manage this differently to limit the impact of associated risks, for example communities have chosen to turn off their wifi to disconnect from extensive cyberbullying.³⁵ Age appropriate guidance surrounding internet use should be provided to ensure that Aboriginal and Torres Strait Islander youth are educated about the dangers of cyberbullying.

3.1.3 Indigenous digital literacy

56. As the 4IR consumes the world, young people of today will be the ones most capable of advancing new technologies into new realms. The population demographics of Aboriginal and Torres Strait Islander people is younger than the non-Indigenous population, with the median age of Aboriginal and Torres Strait Islander people 23 years,³⁶ presenting a unique opportunity for Australia's First Peoples to drive innovations and advancements in technology.

57. Technology presents an opportunity for improved education outcomes and presents new career opportunities to young Aboriginal and Torres Strait Islander people. In order for young Aboriginal and Torres Strait Islander peoples to leverage the opportunities the 4IR presents, it is important that they are technologically literate.

*'Rapid and continuing advances in information and communication technologies (ICT) are changing the ways people share, use, develop and process information and technology. In this digital age, young people need to be highly skilled in the use of ICT. While schools already employ these technologies in learning, there is a need to increase their effectiveness significantly over the next decade.'*³⁷

³⁴ Peter Radoll, 'Cyber-Safety and Indigenous Youth' (2014) *Indigenous Law Bulletin* 8.12, 2.

³⁵ Tyson Yunkaporta, *Aboriginal communities embrace technology, but they have unique cyber safety challenges*, National Indigenous times (online), 29 November 2016. At:

<https://www.sbs.com.au/nitv/article/2016/11/29/aboriginal-communities-embrace-technology-they-have-unique-cyber-safety> (accessed 12 October 2018).

³⁶ Australian Bureau of Statistics, *Census: Aboriginal and Torres Strait Islander population*, media release, 27 June 2017. At: <http://www.abs.gov.au/ausstats/abs@.nsf/MediaReleasesByCatalogue/02D50FAA9987D6B7CA25814800087E03?OpenDocument> (accessed 12 October 2018).

³⁷ Australian Education Ministers. Melbourne Declaration on Educational Goals for Young Australians.

58. There is no doubt that the advancement of technology has had an impact on classrooms. A vast range of digital and non-digital learning resources throughout Australia exist, from the emergence of electronic whiteboards, to the development of a vast range of online learning resources, designed to increase the literacy and pre-literacy of Aboriginal and Torres Strait Islander children. Many of these tools and resources have been designed by community, involve the use of first languages, and are matched to learning curricula.

59. PIC is currently working with the Commonwealth department of education and training on a digital project which seeks to increasing the literacy of Aboriginal and Torres Strait Islander preschool aged children. A number of key ethical considerations have been made including,

- ensuring that first languages are supported
- ensuring the age appropriateness of content for children
- ensuring the cultural appropriateness and safety of content and use for Aboriginal and Torres Strait Islander children.

60. Aboriginal and Torres Strait Islander communities are relatively new users of modern technology platforms and measures need to be instilled to ensure that all members of the community are competent in technological literacy, especially the elderly.

3.1.4 STEM (Science, Technology, Engineering and Mathematics)

61. STEM education is now included within the Australian Curriculum, ³⁸ and implemented from 2016 to 2026 through the development of the *National STEM School Education Strategy*. Aboriginal and Torres Strait Islander children should be encouraged and viewed as the next generation of innovators and critical thinkers, especially in STEM discipline areas. The involvement of younger generations provides an opportunity for Indigenous ways of being and knowing to be incorporated in solving issues that face humanity in relation to technology, health and education.

62. In 2015, the Aboriginal and Torres Strait Islander Higher Education Advisory Council (ATSHEAC) released a departmental document that stated,

*'Science, technology, engineering and mathematics (STEM) disciplines are the gateway to many professions and Indigenous people are consistently underrepresented in these disciplines.'*³⁹

63. Blending Indigenous knowledge into STEM curriculum is a way forward to ensuring Aboriginal and Torres Strait Islander students are creators of digital technology rather than only users of digital technology.

64. By placing emphasis on Aboriginal and Torres Strait Islander peoples' contribution to STEM it will provide financially viable options for economic participation and independence for Aboriginal and Torres Strait Islander individuals and communities, whilst contributing to the economic growth within Australia.

³⁸ Australian Curriculum, Assessment and Reporting Authority (ACARA). (2010 to present). "STEM Report". Retrieved from <https://www.australiancurriculum.edu.au/resources/stem/stem-report/?searchNodeId=46495&searchTerm=STEM#dimension-content>. Accessed 13 September 2018.

³⁹ Australian Government, Department of Education and Training. (2015). "Aboriginal and Torres Strait Islander Higher Education Advisory Council recommendations: accelerating the pace of change in Indigenous higher education". Retrieved from <https://docs.education.gov.au/documents/atsihec-final-advice>. Accessed 13 September 2018.

65. With STEM incorporated via the national curriculum in primary and secondary level education, it is proposed that it will increase the number of Aboriginal and Torres Strait Islander people enrolling into STEM degree programs at university. Thus will enhance the digital literacy within Aboriginal and Torres Strait Islander communities.

3.1.5 Health and wellbeing

66. It is estimated that social determinants of health are responsible for at least 34 percent of the health gap between Aboriginal and Torres Strait Islander people and non-Indigenous Australians.⁴⁰ PIC believes that technology plays an important role in the health and wellbeing of Aboriginal and Torres Strait Islander people and should be considered as being a social (technological) determinant of health. This would describe the contributing socio-economic factors technology, or lack thereof, may have on a person's life, family or community.

67. Technology also presents opportunities for improved physical health outcomes through enabling access to services such as online doctors, nurses on call and through providing improved medical technology.⁴¹ This indicates that effective use of technology could help close the health gap between Aboriginal and Torres Strait Islander people and non-Aboriginal and Torres Strait Islander people.

68. Other areas of concern to consider are:

- Aboriginal and Torres Strait Islander people are new users of technology and have limited experience in operating various devices
- investing in the technological literacy of Aboriginal and Torres Strait Islander people in order for communities to use advanced medical technologies
- the cost of accessing the equipment and connecting to the internet. The cost of accessing equipment is high, in relation to individual's income and other competing expenses.

3.2 Cultural

69. The early beginnings of technology arise from the earliest forms of human innovation, such as creating fire. Australia's First Peoples were among these early inventors, creating hunting tools such as the boomerang, spears, shields, axes, woomera, among many other traditional tools.

70. Modern platforms of technology presents opportunities for Aboriginal and Torres Strait Islander communities to manage, protect and preserve their culture. As well as highlighting the positive impacts this can offer, there are concerns, these include:

- digital appropriation
- preserving the integrity of Aboriginal culture.

⁴⁰ Australian Institute of Health and Wellbeing, Australia's health 2018: in brief, 20 June 2018, Cat. no: 222. At: <https://www.aihw.gov.au/reports/australias-health/australias-health-2018-in-brief/contents/all-is-not-equal> (15 October 2018).

⁴¹ Javier Mignone, 'Implementation of Information and Communication technology in Aboriginal Communities: A social capital perspective' (2010) *The Journal of Community Informatics, Special Issue: CI & Indigenous Communities in Canada - the K-Net Experience*, 10.

3.2.1 Digitising cultural knowledge

71. There are opportunities for technology to advance the capturing of Indigenous Knowledge in digital form so that it can be systematically documented, shared and re-used.⁴² This is especially important in light of the tradition of oral storytelling in Aboriginal and Torres Strait Islander communities and national bodies such as the Australian Aboriginal and Torres Strait Islander Studies (AIATSIS) are mandated to keep cultural materials and expressions alive and safe.

72. However, there are some very fundamental legal gaps in the safeguarding of cultural knowledge and expressions. Oral stories and cultural knowledge are not capable of legal copyright security unless they are recorded in material form under the *Copyright Act 1968* (Cth). Through digitisation of cultural knowledge, such as voice recordings and camera recordings, individual Aboriginal and Torres Strait Islander people are (or should be) the legally recognised owners of their cultural intellectual property (ICIP).

73. Digitising cultural knowledge promotes cultural continuity and enables younger generations to have a strong grasp of their Aboriginal and Torres Strait Islander culture as works in the digital form are less likely to be destroyed, forgotten or damaged.⁴³ Further, younger generations may be more likely to engage with their culture when it is presented in the digital form with sound and imagery.

74. Importantly, as Aboriginal and Torres Strait Islander histories are generally passed down through oral storytelling, recording oral histories in the digital form is a relatively new concept. Consequently, there are problems Aboriginal and Torres Strait Islander communities face in recording histories in the digital form, these include:

- **confirming their Free, Prior, Informed Consent** (FPIC) and safeguards on how the information will be used
- **selecting the most appropriate form of digitisation** is important for protecting the integrity of Aboriginal and Torres Strait Islander culture. The issues surrounding this consideration are twofold. Firstly, some mediums distort the authenticity of culture and secondly sensitivities around recording secret/sacred matters

For example, taking photos of cave drawings that have faded over the years could be enhanced in the digital form through adding colours or rinses to the photo through mediums such as Photoshop. While this would produce a higher quality digital copy of the cave drawing, the community may not consider this culturally appropriate and may want the drawing represented in its truest form.

- digitisation of culture presents is the **risk of digital appropriation**, the more Aboriginal and Torres Strait Islander communities digitise cultural forms of expression, the more at risk of digital appropriation communities
- **current intellectual property (IP) laws do not protect ownership of knowledge**. The Our Culture: Our Future Report highlights the lack of legal safeguarding of community owned cultural expression. When Aboriginal and Torres Strait Islander communities express their culture it is very difficult for the community itself to be the legally recognised owner of that work under current IP law.⁴⁴ If the Aboriginal and Torres Strait Islander community digitises this knowledge it will be widely available for people to access.

⁴² Jane Hunter, 'The Role of Information Technologies in Indigenous Knowledge Management' (2013) *Australian Academic and Research Libraries* 36.2, 2.

⁴³ Javier Mignone, 'Implementation of Information and Communication technology in Aboriginal Communities: A social capital perspective' (2010) *The Journal of Community Informatics, Special Issue: CI & Indigenous Communities in Canada - the K-Net Experience*, 11.; Helen Verran et al., 'Designing digital knowledge managements tools with Aboriginal Australians' (2007) *Digital Creativity* 18.3, 130.

⁴⁴ Terri Janke and Michael Frankel, *Our Culture: Our Future: Report on Australian Indigenous Cultural and Intellectual Property Rights* Australian Institute of Aboriginal and Torres Strait Islander Studies and the Aboriginal and Torres Strait Islander Commission, 1998.

75. Professor Radoll highlights the only way to fully protect Aboriginal and Torres Strait Islander IP is to educate communities about the risks involved with the digital age. Communities should be taught about the consequences of putting expressions of culture online and the risk of digital appropriation.

76. Determining how to digitise culture should be informed and guided by Aboriginal and Torres Strait Islander Elders. Elders will have the expertise as to which expressions of culture are secret and/or sacred. The technological form that the work is expressed in should also be informed by Aboriginal and Torres Strait Islander Elders.⁴⁵

3.2.2 *The use of technology in managing the Indigenous Estate*

77. As well as using technology to preserve Aboriginal and Torres Strait Islander culture, technology can be used for managing lands, waters, seas and cultural heritage sites. Traditional owners and custodians are increasingly using spatial and geospatial tools to manage their Indigenous Estate as per their social, economic and cultural aspirations.

For example, land councils and traditional owner bodies, such as Prescribed Bodies Corporates, and Indigenous rangers use geospatial mapping tools to map their estate and identify land management priorities. Such tools include Native Title Vision, owned by the National Native Title Tribunal which is a geospatial tool used to map tenures related to native title claims, determinations, Indigenous Land Use Agreements and Future Acts.⁴⁶ The tool can overlay tenures related to native title and land rights and identify cultural heritage sites. The geospatial data is stored in a 'cloud' system and can be made public or private depending on the privacy aspirations of the traditional owner group.

78. While local land councils are increasingly establishing their own geospatial and mapping teams, there are concerns around ownership, access and appropriate use of data and information about country, stories and cultural heritage sites logged on mapping tools and databases.

79. Furthermore, Aboriginal and Torres Strait Islander peoples could benefit from gaining access to more accurate earth observation (EO) data to enable better monitoring of the Indigenous Estate and modelling of land management solutions.

80. Australia's investment in EO data equates to more than \$5 billion per year and plays a vital role in many aspects of society and is used by governments and industries alike.⁴⁷ EO data is captured from satellites, aircrafts, remotely piloted systems and other platforms. Some common applications of EO data include:⁴⁸

⁴⁵ Jane Hunter, 'The Role of Information Technologies in Indigenous Knowledge Management' (2013) *Australian Academic and Research Libraries* 36.2, 13.

⁴⁶ National Native Title Tribunal, Native Title Vision, website. At: <http://www.nntt.gov.au/assistance/Geospatial/Pages/NTV.aspx> (accessed 20 September 2018).

⁴⁷ Stuart Phinn, *Australia relies on data from Earth observation satellites, but our access is high risk*, *The Conversation* (online), 21 September 2017. At: <https://theconversation.com/australia-relies-on-data-from-earth-observation-satellites-but-our-access-is-high-risk-82985> (accessed 20 September 2018); Earth Observation Australia website. At: <https://www.eoa.org.au/> (accessed 2 October 2018).

⁴⁸ Stuart Phinn, *Australia relies on data from Earth observation satellites, but our access is high risk*, *The Conversation* (online), 21 September 2017. At: <https://theconversation.com/australia-relies-on-data-from-earth-observation-satellites-but-our-access-is-high-risk-82985> (accessed 20 September 2018).



81. There is no doubt that EO data and information collected is extremely useful for Aboriginal and Torres Strait Islander peoples and communities however they have limited access to EO technology and associated data, which reduces opportunities for Aboriginal and Torres Strait Islander communities to enjoy its benefits.

82. To encourage self-determination, ongoing geospatial mapping training and support is required for Aboriginal and Torres Strait Islander groups. The technology required to create and access geospatial and EO data and the interpretation of the results may be hindered by Aboriginal and Torres Strait Islander groups who have limited technology literacy.

3.3 *Economic*

83. A holistic approach is often taken by Aboriginal and Torres Strait Islander peoples regarding economic development. The focus is on improving circumstances for the wider community, rather than just the individual.

84. Australia is rated very high on the United Nations Human Development Index, however the situation of Aboriginal and Torres Strait Islander peoples is likened to developing countries, all whilst being located within Australia as a first world country.⁴⁹

85. A recent report jointly published by PwC and PIC on '*The contribution of the Indigenous business sector to Australia's economy*' estimated that Indigenous businesses added between '\$2.2 billion and \$6.6 billion to the Australian economy in 2016 -representing 0.1 per cent to 0.4 per cent of the nation's gross domestic product (GDP).⁵⁰

86. Technologies can provide an opportunity for Aboriginal and Torres Strait Islander communities by providing access to global markets and efficiencies in practices that can enhance efficiencies however the current

⁴⁹ United Nations Development Programme, *Human Development Index Report: Australia* (2018). At: <http://hdr.undp.org/en/countries/profiles/AUS> (access 8 October 2018).

⁵⁰ PwC and PwC's Indigenous Consulting, *The contribution of the Indigenous business sector to Australia's economy* (2018), p iii.

relationship between First Nations people and the economy from a technology perspectives, there needs to be consideration to:

- A large number of Aboriginal and Torres Strait Islander businesses have limited access to capital which can inhibit them from capitalising of technology advancements
- Integrity and ethical challenges of Aboriginal and Torres Strait Islander culture becoming a commodity
- First Nations people continued to be exploited as consumers of technology.

3.3.1 Indigenous businesses

87. Technology can open Indigenous businesses to the global economy and strengthen Aboriginal and Torres Strait Islander governance practices. However, limited access to technologies may produce economic inequalities for Aboriginal and Torres Strait Islander peoples. It prevents the participation by marginalized groups and the ability to be innovators of new technologies. Economic development requires opportunity and the ability to learn, adapt and create technology, whereby Aboriginal and Torres Strait Islander peoples are the creators and owners of their own economic development.

88. A majority of Aboriginal and Torres Strait Islander peoples are first generation business owners, therefore recognition of the limited cultural capital in the business space, including its associated technologies, should be acknowledged and addressed through mentoring and joint venture opportunities and acquiring formal qualifications.

89. It is essential that Aboriginal and Torres Strait Islander peoples are knowledgeable and skilled in business technology to ensure self-determination and that they are owners rather than the participants in business ventures, therefore encouraging a new generation of Aboriginal and Torres Strait Islander enterprises. Financial literacy, governance and business management expertise are necessary for Indigenous business and individual commercial ventures to succeed economically.

90. We would like to reiterate the recommendations made in *The contribution of the Indigenous business sector to Australia's economy* to support the continued growth of the Indigenous business sector.⁵¹

3.3.2 The risk of Indigenous culture becoming a commodity

91. While many benefits exist, digitisation runs the risk of turning Aboriginal and Torres Strait Islander knowledge into a commodity.

92. Aboriginal and Torres Strait Islander communities' value ownership over their culture, however this is not viewed in proprietary terms.⁵² Understanding of ownership in terms of property and commodities is a Western way of thinking that does not accurately reflect the relationship Aboriginal and Torres Strait Islander peoples have to their culture and cultural expressions.⁵³

93. Reducing Aboriginal and Torres Strait Islander knowledge to a commodity that can be bought, sold and licensed is incompatible with Aboriginal and Torres Strait Islander culture, as it denies the sacred nature of each and their continual communal ownership over it.

⁵¹ PwC and PwC's Indigenous Consulting, *The contribution of the Indigenous business sector to Australia's economy* (2018), p iv-vi.

⁵² Michael Christie, 'Aboriginal Knowledge on the Internet' (2001) *Ngoonjook: A journal of Australian Indigenous issues* 19, 47.

⁵³ Michael Christie, 'Aboriginal Knowledge on the Internet' (2001) *Ngoonjook: A journal of Australian Indigenous issues* 19, 47.

94. Further, trading digitised representation of Aboriginal and Torres Strait Islander culture will often result in Aboriginal and Torres Strait Islander knowledge that is part of a wider story only being received in part. This is not an accurate representation of the people that own the culture.⁵⁴ Trading Aboriginal and Torres Strait Islander cultural knowledge as a commodity therefore has serious implications on the integrity of Aboriginal and Torres Strait Islander communities.

95. In light of Australia's history of institutionalised racism, special measures should be in place to limit the potential for misrepresentation of Aboriginal and Torres Strait Islander culture. The issue is amplified by the internet as it enables quick access to content thereby limiting scope for a contextual understanding of the Aboriginal and Torres Strait Islander knowledge being expressed.⁵⁵

96. In order to prevent Aboriginal and Torres Strait Islander culture being reduced to a mere commodity through the use of digital technologies Aboriginal and Torres Strait Islander informed management tools need to be in place. The approach taken in digitising Aboriginal and Torres Strait Islander cultures needs to be embedded in Aboriginal and Torres Strait Islander ways of doing and grounded in Aboriginal and Torres Strait Islander collective memory making.⁵⁶

97. Practically, when assisting Aboriginal and Torres Strait Islander communities to use digital technology, the best approach is to understand how technology can best support the ordinary lives and cultural practices of Aboriginal and Torres Strait Islander peoples. Importantly, technology should include Aboriginal and Torres Strait Islander values, as it is our world view that new knowledge is not of more worth than old knowledge.⁵⁷

3.3.3 Aboriginal and Torres Strait Islander consumers

98. There are real concerns of Aboriginal and Torres Strait Islander people signing contracts without understanding the precise terms have come to the fore, presenting legal and financial consequences for Aboriginal and Torres Strait Islander people.

99. This very issue has arisen in the recent Banking Royal Commission Inquiry and recently arose in reports where more than \$360,000 in Telstra phone bill debt has been accrued across only 74 users from remote Aboriginal and Torres Strait Islander communities.⁵⁸ Individuals reported going into a Telstra store and asking for a mobile phone, only to then be put on a mobile phone plan without any concept of the bills involved or the payments required if they go over their data allowance.

100. Increased use of mobile phones and the internet in remote communities therefore presents the potential for telecommunication companies to sign Aboriginal and Torres Strait Islander people onto lock in contracts without first educating them about the terms of contracts and making enquiries into their financial position.

101. In order to protect Aboriginal and Torres Strait Islander consumers' telecommunication companies should be educated about how to appropriately trade with Aboriginal and Torres Strait Islander people in remote communities. Telecommunication companies should make undertakings to deal with Aboriginal and Torres Strait Islander clients ethically. This may involve making enquiries about the client's financial literacy and their understanding of the terms of the contract before finalising a sale. The Australian Communications Consumer Action Network (ACCAN) have suggested that telecommunication companies should also make inquiries about a customer's individual income before assessing what plans and/or products they market to the customer.⁵⁹

⁵⁴ Michael Christie, 'Aboriginal Knowledge on the Internet' (2001) *Ngoonjook: A journal of Australian Indigenous issues* 19, 45.

⁵⁵ Michael Christie, 'Aboriginal Knowledge on the Internet' (2001) *Ngoonjook: A journal of Australian Indigenous issues* 19, 45.

⁵⁶ Helen Verran et al., 'Designing digital knowledge managements tools with Aboriginal Australians' (2007) *Digital Creativity* 18.3, 130.

⁵⁷ Michael Christie, 'Aboriginal Knowledge on the Internet' (2001) *Ngoonjook: A journal of Australian Indigenous issues* 19, 33.

⁵⁸ Jesse Thompson, *Telstra debts in the hundreds of thousands accrued by just 74 remote users* (6 September 2018) ABC News <<http://www.abc.net.au/news/2018-09-29/telstra-debts-in-the-hundreds-of-thousands-accrued-by-just-74/10289686?pfmredir=sm>>

⁵⁹ Jesse Thompson, *Telstra debts in the hundreds of thousands accrued by just 74 remote users* (6 September 2018) ABC News. At: <http://www.abc.net.au/news/2018-09-29/telstra-debts-in-the-hundreds-of-thousands-accrued-by-just-74/10289686?pfmredir=sm> (accessed 12 October 2018).

3.4 Accessibility for Indigenous peoples with disability⁶⁰

102. PIC would like to highlight that the First Peoples Disability Network (FPDN) have conducted and produced a number of research pieces to highlight the unique needs of Aboriginal and Torres Strait Islander people with a disability.

103. Aboriginal and Torres Strait Islander people with a disability face the unique issue of experiencing discrimination in two-fold. FPDN explain this concept as an intersection of discrimination that is both related to identity as an Aboriginal and Torres Strait Islander person and having a disability.⁶¹

104. Alarmingly, the FPDN found that this intersectional inequality is acute across all support services that Aboriginal and Torres Strait Islander people with a disability access.⁶² This includes transport, employment and education, indicating that technology has not yet been effectively leveraged to support the needs of Aboriginal and Torres Strait Islander people with disability.⁶³

105. New technologies can assist people with disabilities and enable them to contribute more in the workplace.⁶⁴ For example, bio-electronics are enabling people with missing limbs to enjoy extra functionality, opening up opportunities for them to contribute to the workplace in ways that were previously not possible.⁶⁵ The impact of Aboriginal and Torres Strait Islander communities experiencing lower levels of technology access and participation therefore has serious implications for Aboriginal and Torres Strait Islander people with a disability.

106. The FPDN's position is that cultural inclusion is a moderating force that can mitigate the impact of intersectional discrimination.⁶⁶ While intersectional discrimination is generally a pathway to social isolation, Aboriginal and Torres Strait Islander people with a disability actively participate in their community's cultural activities.⁶⁷ This indicates that Aboriginal and Torres Strait Islander communities maintain a culture of inclusion that is an effective moderator of intersectional inequality.

107. In light of this finding, the FPDN suggest a model for inclusive policy and practice that aims to ensure Aboriginal and Torres Strait Islander people with a disability are included in all areas of society. This submission supports the FPDN's position and iterates that increased access to advanced technology for people with a disability will support a more inclusive society.

⁶⁰ Relating to Questions eight, nine and ten of the Issues Paper.

⁶¹ Scott Avery, *Culture is inclusion: A narrative of Aboriginal and Torres Strait Islander people with disability*, Executive summary of research findings, First People Disability Network Australia.

⁶² Scott Avery, *Culture is inclusion: A narrative of Aboriginal and Torres Strait Islander people with disability*, Executive summary of research findings, First People Disability Network Australia.

⁶³ Scott Avery, *Culture is inclusion: A narrative of Aboriginal and Torres Strait Islander people with disability*, Executive summary of research findings, First People Disability Network Australia.

⁶⁴ Pdraig Belton, *The tech giving people power to deal with disability* (29 January 2016) BBC News. At: <https://www.bbc.com/news/business-35427933> (accessed 12 October 2018).

⁶⁵ Pdraig Belton, *The tech giving people power to deal with disability* (29 January 2016) BBC News. At: <https://www.bbc.com/news/business-35427933> (accessed 12 October 2018).

⁶⁶ Scott Avery, *Culture is inclusion: A narrative of Aboriginal and Torres Strait Islander people with disability*, Executive summary of research findings, First People Disability Network Australia.

⁶⁷ First People Disability Network Australia, *Community-driven research*. At: <https://fpdn.org.au/community-driven-research/> (accessed 8 October 2018).

4 Technology decisions that affect Indigenous peoples human rights⁶⁸

108. In order for Aboriginal and Torres Strait Islander people to enjoy their human rights in all spheres of their lives, the ability to actively participate in, and make their own decisions about, matters that affect them is essential. Therefore the interaction between technology and Aboriginal and Torres Strait Islander people needs to be more closely monitored in this regard.

The Declaration affirms that,

*‘Indigenous peoples have the right to participate in decision-making in matters which would affect their rights, through representatives chosen by themselves in accordance with their own procedures, as well as to maintain and develop their own indigenous decision-making institutions’.*⁶⁹

109. There is an understanding in Western society that people should progress as science and technology progresses. Western culture focuses on being modern and efficient and therefore adapting past ways of doing to fit in with new technologies available. This approach may not be compatible with Aboriginal and Torres Strait Islander cultures and ways of doing.

110. Instead, PIC’s research and consultation process has found that the human rights of Aboriginal and Torres Strait Islander peoples will be best protected when technology is adaptable to the communities’ ways of doing. Specific examples of how technology can infringe human rights for Aboriginal and Torres Strait Islander peoples include:

- the value and insights Aboriginal and Torres Strait Islander people longevity in using technology
- the risks associated with collection of Artificial Intelligence (AI)
- authentic engagement with Aboriginal and Torres Strait Islander peoples in the 4IR narrative
- the ethical practices and evidence to capture Aboriginal and Torres Strait Islanders peoples’ Free, Prior and Informed consent.

111. To ensure technology is adaptable to Aboriginal and Torres Strait Islander ways of doing and their human rights are protected, it is essential that Aboriginal and Torres Strait Islander peoples are involved at all stages of technology design and implementation.

4.1 An adaptable approach: Aboriginal Intelligence (AI) informed decision-making

112. Entering the 4IR, there is a prevalent perception that technology is separate to, and sometimes competing with, humanity. Instead, we should understand that technology is an expression of humanity and that Aboriginal and Torres Strait Islander peoples, as the longest surviving people on earth have been using technology since the

⁶⁸ Relating to Questions five, six and seven of the Issues Paper.

⁶⁹ United Nations Declaration on the Rights of Indigenous Peoples, GA Resolution 61/295, UN Doc A/61/L.67 (2007), art 13.

dawn of time. In this way, all technology can be viewed as a cultural artefact; a technological representation of a society at that time, that reflects the cultures and values of the society that created it. Thus, when it comes to making decisions around technology, the question is not whether it should be used or not, but rather how it will be used, and to what degree.

113. The integration of modern technologies into the lives of Aboriginal and Torres Strait Islander people, is about a cross-cultural technology transfer; taking technology developed by one culture and implementing into the culture of another. If this transfer is enforced, it is essentially another form of colonialism.

“This process of colonisation did not end with the arrival of European people but persisted as European goods, European technology and European beliefs perpetuated the process of invasion. Globalisation threatens to accelerate this process of colonisation. Networks that were once restricted to individual communities, nations or continents are becoming globalised through the latest innovations in communication technologies.”⁷⁰

114. A key consideration is, how will Aboriginal and Torres Strait Islander people use technology, and to what degree can they appropriate it to their own cultural needs and values, so that it may become theirs?

A simple example of this can be seen in Yolngu Matha, the language of the Yolngu people. While Western culture might consider that every computer behaves similarly, the Yolngu people invented a way to include their language, a written dialect not represented by the English alphabet, onto any computer. This highlights the potential for Aboriginal and Torres Strait Islander communities to domesticate technology to reflect the needs of their community.⁷¹

115. When technologies are able to be controlled by Aboriginal and Torres Strait Islander people, they can be customised for the benefit of communities. The decision on how to implement technologies within First Nations communities can only ever be in the hands of those people - and the tools need to be adaptable to the purposes and uses that they see fit. If not, technology simply becomes a conduit to globalisation.

116. Therefore, when considering ICIP, technological products and solutions must be flexible, and entirely owned by the rightful owners of the information stored within them. They must clearly demarcate where it is stored, how it is stored, how it can be accessed, and how all of the above is managed.

117. For companies to manage technology in a way that better promotes the human rights of Aboriginal and Torres Strait Islander peoples. Luke Briscoe, founder of Indigi Lab, suggests a less hierarchical approach be adopted. Strict hierarchies result in non-Aboriginal people making decisions for Aboriginal people and/or projects developed for Aboriginal communities. This prevents Aboriginal and Torres Strait Islander people from being involved in all aspects of the 4IR and limits their right to control and develop technologies.

118. Additionally, when considering any technological implementation, Dr Nichols posits four key questions that should be asked:⁷²

- To what extent does a technology strengthen cultural identity and interconnectedness?
- To what extent does the community value the characteristics of a technology?
- To what extent does a technology enhance educational opportunities?
- To what extent does the implementation of a technology empower the community?

⁷⁰ Heather Burke, Claire Smith and Graeme Ward, ‘Globalisation and Indigenous Peoples: Threat or Empowerment’ in Claire Smith and Graeme Ward (eds) *Indigenous Cultures in an Interconnected World* (Allen and Unwin, St Leonards NSW, 2000) 1, 1.

⁷¹ Charles Darwin University, *Yolngu Font*. At: <http://learnline.cdu.edu.au/yolngustudies/resourcesFont.html> (accessed 11 October 2018).

⁷² Crighton Nichols, *Discovering Design: Enhancing the capability to design at the cultural interface between first Australians and western design paradigms* (Doctor of Philosophy, University of Sydney, 2015), 298.

4.1.1 Artificial Intelligence

119. The scope and reach of artificial intelligence (AI) is rapidly expanding. It has a role in most sectors and is being leveraged by governments to deliver improved services.

120. While this section focuses on the issues pertaining to AI and human rights, PIC acknowledges that AI presents many opportunities to Aboriginal and Torres Strait Islander communities, including improved health outcomes and preservation of Aboriginal and Torres Strait Islander culture. However, the serious concerns outlined below do need to be considered in order for the benefits of AI to be fully realised.⁷³

Privacy and Free, Prior and Informed Consent

121. Specifically, there is limited ability for Aboriginal and Torres Strait Islander communities and individuals to **request what data AI has access to**. AI combines pieces of seemingly non-personal information to produce what can be very personal information about an individual or a community.⁷⁴

122. AI often operates through identifying patterns and analysing these patterns to form predictions about individuals or groups. In the analysis process AI can create new information that is difficult to collect or did not already exist, resulting in AI collecting and using information that extends beyond what was knowingly disclosed by the individual.⁷⁵ Further, it is difficult for individuals to prevent companies using data gathered through AI for secondary purposes that have not been disclosed to the individual.⁷⁶

123. This issue has proved so problematic that the EU has recognised a ‘right to be forgotten’. This gives individuals the right to have their personal data immediately erased when it is no longer needed for the original purpose it was gathered.⁷⁷ In light of issues of identity fraud this right may need to be more closely considered in Australia to reduce the potential of stored data being used in the future for identity theft. This challenges a human rights based approach that is founded on Free, Prior and Informed Consent.

124. Furthermore, AI is often utilised to generate decisions based on the data it collects and synthesises. The issue with decisions made by AI is that the decisions are generally a ‘yes or no’ conclusion with no scope for explanation or reasoning.⁷⁸ This limits the **ability of individuals to challenge decision made by AI**.

Discrimination

125. PIC believes that individuals and groups should have a right to explanation about decisions that directly impact them. The right to reasons or explanations is important so that individuals and groups understand why a decision was made and have grounds to challenge that decision if it is incorrect or unjust.

126. In order to form conclusions, AI may require access to information, such as an individual’s ethnic origin.⁷⁹ This may result in **AI forming discriminatory conclusions** that are unevenly based on a person’s appearance or cultural background.⁸⁰ AI therefore may exacerbate existing inequalities.⁸¹

127. An example in the US illustrates the potential for AI to produce unjust decision: a software developed to predict the likelihood of defendants re-offending if granted parole was almost twice as likely to identify a person

⁷³ Joanna Batstone, *Can Artificial Intelligence help close the Indigenous healthcare gap?* (24 April 2017) The Australian <<https://www.theaustralian.com.au/business/technology/opinion/can-artificial-intelligence-help-close-the-indigenous-healthcare-gap/news-story/f384bde92c520e59d98413f21a91a55f>>; Abbie O’Brien, *How AI is helping preserve Indigenous languages* (31 May 2018) SBS News <<https://www.sbs.com.au/news/how-ai-is-helping-preserve-indigenous-languages>>

⁷⁴ Office of the Victorian Information Commissioner, *Artificial Intelligence and Privacy*, Issues Paper (2018), 9.

⁷⁵ Office of the Victorian Information Commissioner, *Artificial Intelligence and Privacy*, Issues Paper (2018), 9.

⁷⁶ Office of the Victorian Information Commissioner, *Artificial Intelligence and Privacy*, Issues Paper (2018), 11.

⁷⁷ General Data Protection Regulation, Article 17.

⁷⁸ Office of the Victorian Information Commissioner, *Artificial Intelligence and Privacy*, Issues Paper (2018), 12.

⁷⁹ Office of the Victorian Information Commissioner, *Artificial Intelligence and Privacy*, Issues Paper (2018), 12.

⁸⁰ Office of the Victorian Information Commissioner, *Artificial Intelligence and Privacy*, Issues Paper (2018), 12.

⁸¹ Office of the Victorian Information Commissioner, *Artificial Intelligence and Privacy*, Issues Paper (2018), 12.

with dark skin as being likely to reoffend.⁸² This was not built in the software system, but over time it learnt to correlate race with other generated information, such as postal codes.⁸³

128. In Australia, the historical relationship between Aboriginal and Torres Strait Islander people and Police has led to significant mistrust and real issues of racial discrimination. The use of AI in policing has been identified as furthering discrimination through racial profiling. For example,

- the Victorian Police are currently trialling a body-mounted camera system that will assist in identifying wanted individuals on the street, partially assisted by facial recognition. There is a known lack of accuracy within facial recognition technologies for darker skinned individuals with up to 35% inaccuracy in identifying correct gender in darker skinned women, compared to less than 1% inaccuracy in white males.⁸⁴
- racial profiling of Aboriginal and Torres Strait Islander youth by NSW Police under the Suspect Target Management Plan (STMP) is also of some concern. According to the Public Interest Advocacy Centre (PIAC), the STMP is a police intelligence tool that uses risk assessment to identify suspects and a policing program that guides police interaction with individuals who are subject to the program.⁸⁵ Data analysis of the STMP indicates that more than half of young people targeted by the STMP are Aboriginal or Torres Strait Islander, which includes young people under the age of 15 years.⁸⁶

129. These examples indicate that without appropriate explanations, there is no check and balance, transparency or accountability on decisions made through AI, and therefore there is potential for racist rationale to be unnoticed. Where AI forms a decision without an explanation, Aboriginal and Torres Strait Islander people will have no way of knowing whether that decision was made fairly. Lack of transparency and accountability surrounding reasoning will limit the ability for humans and AI to have a relationship of mutual trust.⁸⁷

Unconscious bias

130. Further, **human AI developers may unknowingly introduce their own biases** into an AI system.⁸⁸ This presents grave concerns to all minorities, including Aboriginal and Torres Strait Islander people. Historically, new technologies have been limited by the biases of their developers. For example, the standard for how colour calibration on photographs was conducted throughout the 1960s and 1970s was based on choosing colours that would work best with a white complexion.⁸⁹ As a result, photographs of people with darker skin were of a much worse quality. This indicates racial bias does have an impact on how technologies are developed.

131. Josh Lovejoy, a designer for Google's AI products, explains that this bias occurs because developers are making decisions that they perceive to be the default decision, or the "norm."⁹⁰ AI technologies therefore have to be designed and developed following careful process to avoid biases and racism. If AI is developed effectively and free from bias, removing humans from the decision making process does have the potential to minimise discrimination.⁹¹

⁸² Josh Lovejoy, *Fair is not the default* (15 February 2018) Google Design. At: <https://design.google/library/fair-not-default/> (accessed 8 October 2018).

⁸³ Josh Lovejoy, *Fair is not the default* (15 February 2018) Google Design. At: <https://design.google/library/fair-not-default/> (accessed 8 October 2018).

⁸⁴ Joy Buolamwini and Timnit Gebru, 'Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification' (2018) *Proceedings of Machine Learning Research* 81.

⁸⁵ Sentas, Vicki. & Pandolfini, Camilla, *Policing Young People in NSW: A study of the Suspect Targeting Management Plan*, Public Interest Advocacy Centre (2017). At: <https://www.piac.asn.au/2017/10/25/policing-young-people-in-nsw-a-study-of-the-suspect-targeting-management-plan/> (accessed 12 October 2018).

⁸⁶ Claudianna Blanco, 'Racist policing': NSW Police slammed as data reveals more than half of youth targeted by secret blacklist are Indigenous, NITV (online), 19 April 2018. At: <https://www.sbs.com.au/nitv/nitv-news/article/2018/04/18/racist-policing-nsw-police-slammed-data-reveals-more-half-youth-targeted-secret> (accessed 12 October 2018).

⁸⁷ Office of the Victorian Information Commissioner, *Artificial Intelligence and Privacy*, Issues Paper (2018), 11.

⁸⁸ Office of the Victorian Information Commissioner, *Artificial Intelligence and Privacy*, Issues Paper (2018), 12.

⁸⁹ Josh Lovejoy, *Fair is not the default* (15 February 2018) Google Design. At: <https://design.google/library/fair-not-default/> (accessed 8 October 2018).

⁹⁰ Josh Lovejoy, *Fair is not the default* (15 February 2018) Google Design. At: I:\3. Market - Business Development\Client-Led Agendas\Innovation, Connectivity & Entrepreneurship\Technology & Digital\Human Rights and Tech Submission\Research Papers\Fair Is Not the Default - Library - Google Design.html (accessed 8 October 2018).

⁹¹ Office of the Victorian Information Commissioner, *Artificial Intelligence and Privacy*, Issues Paper (2018), 12.

Cultural Safety Framework

For a past project PIC developed a cultural safety framework that highlighted the need to have measures in place that respond to unsafe cultural practices. The framework explained the detrimental impact cultural bias can have on Aboriginal and Torres Strait Islander people. It provided tools for people to measure and improve their cultural proficiency so that an individual's own standard of "normal" did not interfere with the way they interacted with Aboriginal and Torres Strait Islander people.

4.2 Underrepresentation of Aboriginal and Torres Strait Islander people in technology

132. As this new world of technology is shaping our environment and human growth, it is important to understand who is driving the evolution and design of technologies in the 4IR. Specifically, what role Aboriginal and Torres Strait Islander people have in the 4IR and the level at which they have a voice in conversations within the technology space.

133. Technology strategies aimed to future proof businesses are integrating emerging technology of the 4IR. According to the Australian Financial Review, businesses could yield some of the expected \$15 trillion of GDP opportunity over the next decade.⁹² They expect the most advanced companies around the world today are paying closest attention to 'cyber security, blockchain, AI, additive manufacturing and synthetic biology.'⁹³

134. This poses questions about who is in this talent pipelines and who will benefit from the opportunities arising in this space over the coming decades. While there has been recent pushes for Aboriginal and Torres Strait Islander people participation in the technology industry, the numbers of employed Aboriginal and Torres Strait Islander people in the field is expected to be low yet is relatively unknown.

135. Founder of Indigi Lab, Luke Briscoe highlights that while Aboriginal and Torres Strait Islander people might be consulted for cultural knowledge on technology projects, they are rarely involved in the coding and design of the technology itself. This poses serious concerns to the right Aboriginal and Torres Strait Islander communities have to protect their culture as once they provide cultural knowledge for a project that they have no control over, the community becomes incapable of protecting how that knowledge is used and represented. Briscoe suggests that to circumnavigate this risk, the technology community needs to accept that Aboriginal and Torres Strait Islander people contributed to technology long before the first industrial revolution.

136. There is a real risk that the talent pipeline in the Australian technology industry over the next decade will include an underrepresentation of Aboriginal and Torres Strait Islander peoples. This limits the opportunity to include their unique perspectives and contribute to decisions pertaining to technology that represents elements of cultural knowledge.

⁹² Adrian Turner, *5 technology strategies to future proof your company*, Australian Financial Review (online), 6 June 2017. At: <https://www.afr.com/brand/boss/business-leaders-have-quarters-not-years-to-implement-digital-strategy-and-avert-irrelevance-20170518-gw7jhy> (accessed 23 September 2018).

⁹³ Adrian Turner, *5 technology strategies to future proof your company*, Australian Financial Review (online), 6 June 2017. At: <https://www.afr.com/brand/boss/business-leaders-have-quarters-not-years-to-implement-digital-strategy-and-avert-irrelevance-20170518-gw7jhy> (accessed 23 September 2018).

4.3 Big data

‘Aboriginal people are the most researched group of people in the world’.⁹⁴

137. The right of Free, Prior and Informed Consent is a foundational right and principle within the Declaration. It should be applied in relation to the collection and use of the individual, and collective information and data of Aboriginal and Torres Strait Islander people.

138. PIC notes that the use of various data and information on and about Aboriginal and Torres Strait Islander peoples can be both beneficial and a barrier to improving the lives of Australia’s First Peoples.

4.3.1 Access, sharing and managing information

139. Technology and big data can be used as a tool to enable communities to manage and share information.⁹⁵ However it is worth noting, the concept around the term ‘knowledge is power’ best describes how limited or poor communication and information can impact structural aspects of human society.

140. This is especially relevant in light of the Office of the National Data Commission implementing a new data sharing and release framework. Specifically, the framework involves arrangements around the use of sensitive data and how this is shared and held by the Government.⁹⁶

141. There are currently over 175 pieces of legislation relating to data secrecy and confidentiality which limits efficient data sharing and re-use of data within the public sector. The framework aims to promote better sharing of public sector data.⁹⁷ This can have positive implications for Aboriginal and Torres Strait Islander communities as it enables government services interacting with Aboriginal and Torres Strait Islander communities to have access to relevant data so that the highest quality service can be provided.

142. It also presents opportunities for the community itself to have access to data that may not have been previously available to them. This will drive self-determination as the community can leverage this data to respond to issues it is facing. Importantly for Aboriginal and Torres Strait Islander communities, the framework proposes measures to preserve the integrity of sensitive data. Before release of data there is a series of steps that need to take place to determine if the data should be accessible to those outside the agency that holds it.⁹⁸ These steps should be closely monitored for information relating to Aboriginal and Torres Strait Islander peoples as it is imperative that sensitive data is only shared when it is in the best interest of the Aboriginal and Torres Strait Islander community.

143. Technology and big data can be leveraged for improved data collection on information pertaining to Aboriginal and Torres Strait Islander communities. Current available data on Aboriginal and Torres Strait Islander people is often inaccurate as it fails to be representative of the entire Aboriginal and Torres Strait Islander population.

144. PIC would like to emphasise our support for the appropriate implementation of the Australian Government’s second open government national action plan 2018-2020 aimed to improve government accountability, transparency and engagement. In particular, we support the government’s commitment in the following areas to:

⁹⁴ Jenny Brands and Mick Gooda, *Putting the users of research in the driver’s seat: the Cooperative Research Centre for Aboriginal Health’s new approach to research development*, The Lowitja Institute (2006). At: <https://www.lowitja.org.au/putting-users-research-driver%E2%80%99s-seat-cooperative-research-centre-aboriginal-health%E2%80%99s-new-approach> (accessed 22 September 2018).

⁹⁵ Tahu Kakutai and John Taylor ed, ‘Indigenous Data Sovereignty: Towards an Agenda’ (2016) *Australian National University Press* 38, 51.

⁹⁶ Commonwealth, *New Australian Government Data Sharing and Release Legislation: issues paper for consultation*, Issues Paper for Consultation (2018), 3.

⁹⁷ Commonwealth, *New Australian Government Data Sharing and Release Legislation: issues paper for consultation*, Issues Paper for Consultation (2018), 8.

⁹⁸ Commonwealth, *New Australian Government Data Sharing and Release Legislation: issues paper for consultation*, Issues Paper for Consultation (2018), 13.

- Improve public service practices using place-based approaches
- Improve the sharing, use and reuse of public sector data
- Engage states and territories to better understand information access
- Expand open contracting and due diligence in contracting.⁹⁹

145. Aboriginal and Torres Strait Islander face challenges around how they can safeguard their systems and data collections. PIC would like to emphasise that there is scope for Aboriginal and Torres Strait Islander people and their communities to be in charge of their own information, enabling their control over how it is used and accessed.¹⁰⁰ This conversation will be expanded on in the next chapter in relation to supporting a model to enable Aboriginal and Torres Strait Islander data sovereignty.

4.3.2 National population and related data

146. Aboriginal and Torres Strait Islander people have long advocated for appropriate collection and use of data and information as it relates to them and have actively influenced improving data in this regard.

National Census data

147. Following the 1967 Referendum, the Australian Bureau of Statistics (ABS) have included Aboriginal and Torres Strait Islander people in their population and other data sets they manage. The ABS are aware that there is an under reporting of Aboriginal and Torres Strait Islander people in the census. PIC are currently working with ABS in this regard to better understand how Aboriginal and Torres Strait Islander people participate in the Census.

148. The wider Aboriginal and Torres Strait Islander community have expressed concern regarding data sovereignty and how this relates to the Census. Concerns have raised questions in relation to

- Who owns the data?
- How will it be analysed and by whom?
- What is the purpose of the data being collected?
- How will the data be used, and how does this benefit Aboriginal and Torres Strait Islander peoples?
- How will the data be stored, how long will it be stored for and who can access this?
- Can the Aboriginal and Torres Strait Islander communities access the data related to them and utilise this to improve the social, educational and health outcomes for their communities?

National Closing the Gap data

149. With its origins built around the right of Indigenous peoples to enjoy equal health standards as other Australians, PIC notes that appropriate collection and use of data related to the health and socio-economic situation of Aboriginal and Torres Strait Islander peoples are core aspects of this national agenda.¹⁰¹

⁹⁹ Productivity Commission, *Data availability and use inquiry report* (2017), report no.82. At: <https://www.pc.gov.au/inquiries/completed/data-access/report/data-access.pdf> (accessed 22 September 2018).; Australian government, *Australia's second open government national action plan 2018-2020* (2018). At: <https://ogpau.pmc.gov.au/commitment/australias-second-open-government-national-action-plan-2018-20/improve-sharing-use-and> (accessed 22 September 2018).

¹⁰⁰ Tahu Kakutai and John Taylor ed, 'Indigenous Data Sovereignty: Towards an Agenda' (2016) *Australian National University Press* 38, 100.

¹⁰¹ Tom Calma, *Social Justice Report 2015*, Aboriginal and Torres Strait Islander Social Justice Commissioner, Australian Human Rights Commission (2015).



150. As more than a decade has passed since the Australian government's commitment to Closing the Gap in Indigenous health inequality, we understand the Australian government have progressed national consultations to refresh the approach and data sets which inform the Closing the Gap targets and indicators.

151. PIC would like to reiterate what AIATSIS and other Aboriginal and Torres Strait Islander stakeholders have already advised the government, that the targets or measures of success are co-designed and developed in partnership with Aboriginal and Torres Strait Islander peoples according to their own priorities.¹⁰²

¹⁰² Department of Prime Minister and Cabinet, *Closing the Gap refresh: a joint initiative of the Council of Australian Governments* (2018). At: <https://closingthegaprefresh.pmc.gov.au/what-others-think> (accessed 8 October 2018).

5 Reinventing regulation and oversight for new technologies¹⁰³

152. In responding to questions three and four of the Issues Paper, PIC has considered how human rights, specifically the rights contained within the Declaration can be used as a tangible way of guiding regulation, government and the private sector in the development and use of technology. The Declaration specifically affirms that:

*States, in consultation and cooperation with Indigenous peoples, shall take the appropriate measures, including legislative measures to achieve the ends of the Declaration.*¹⁰⁴

153. Through our observations in this area, it is clear that there needs to be significant consultation and consideration on how best to protect the unique rights of Aboriginal and Torres Strait Islander people within the 4IR. Our observations include:

- the United Nations Declaration on the Rights of Indigenous Peoples be included in the definition of human rights in the Human Rights (Parliamentary Scrutiny) Act 2011 to allow for legal safeguarding of rights
- the absence of a national set of standards of ethical considerations within this space
- the need for a governance model that protects and maintains data sovereignty of Aboriginal and Torres Strait Islander peoples
- the private sector have a critical role in this advancement however, PIC caution the use of incentives in this space without having the appropriate mechanisms in place to oversee and regulate.

Each of these considerations are explored in further detail below.

5.1 *Protocols and ethical considerations with regards to Aboriginal and Torres Strait Islander peoples and Technology*

154. By its very nature, innovation and development progress ahead of regulation. Technology is rapidly expanding and as it does it continues to have a more pronounced impact on Aboriginal and Torres Strait Islander communities, making ethical management of technology essential.

155. Appropriate techno ethical frameworks (i.e. examining human processes and practices connected to technology embedded within social, political, and moral spheres of life), and national standard setting in ethical technology development and implementation as it relates to Aboriginal and Torres Strait Islander peoples is an identified gap in Australia. While a number of international and industry specific ethical frameworks exist, there are few notable examples of ethical frameworks with regards to Indigenous peoples and technology.

156. Currently, the technological space is largely unregulated in terms of how to work ethically with Aboriginal and Torres Strait Islander communities and in accordance with cultural protocols. There is no regulatory framework or body that oversees assessment and standards of technology projects and products that use Aboriginal and Torres Strait Islander knowledge or are designed to benefit Aboriginal and Torres Strait Islander

¹⁰³ Relating to Questions three and four of the Issues Paper.

¹⁰⁴ United Nations Declaration on the Rights of Indigenous Peoples, GA Resolution 61/295, UN Doc A/61/L.67 (2007), art 38.

people. Through consultations with experts in the technology field, PIC understands there is a need to create stringent guidelines to govern the relationship between technology and Aboriginal and Torres Strait Islander communities.

157. National conversations around embedding Aboriginal and Torres Strait Islander voice and perspective into Australia's national political and governing structures need to also consider how our unique and collective rights are embedded into national infrastructure and standards focused on the creation, use and delivery of technology.

158. The establishment of a National Indigenous Cultural Authority (NICA) proposed by Terri Janke and others more than a decade ago could be an approach for further consideration.¹⁰⁵ Terri Janke states,

'It is time for Indigenous people to take the lead and set up their own infrastructure using existing intellectual property tools, contracts, trademarks and protocols'.¹⁰⁶

159. Terri Janke outlines that within this sphere, the main rights Indigenous people want include:

- the right of Free, Prior and Informed consent
- the right to protect against derogatory treatment
- the right of attribution
- the right to share in the benefits of the appropriate use of their cultural material.¹⁰⁷

160. Some efforts have been made by AIATSIS in relation to establishing the *National Guidelines on Ethical Research in Australian Indigenous Studies* which comprise of a number of principles within six categories:

- Rights, respect and recognition
- Negotiation, consultation, agreement and mutual understanding
- Participation, collaboration and partnership
- Benefits, outcomes and giving back
- Managing research: use, storage and access
- Reporting and compliance.¹⁰⁸

161. These are some ideas for ethical frameworks and principles that could be translated into establishing national ethical standards and oversight of technology with regards to Aboriginal and Torres Strait Islander peoples.

162. PIC understands that embedding international human rights standards as the foundation of techno ethical frameworks provides the best possible path forward. We would encourage an approach that is underpinned by the United Nations Declaration on the Rights of Indigenous peoples as it is an existing, considered and agreed framework for how rights based approach to engagement between Indigenous peoples and technology might take place.

¹⁰⁵ Terri Janke, *Guarding ground: a vision for a National Indigenous Cultural Authority* (2008); Terri Janke, *Beyond Guarding Ground: a vision for a National Indigenous Cultural Authority* (2009).

¹⁰⁶ Terri Janke, *Guarding ground: a vision for a National Indigenous Cultural Authority* (2008); Terri Janke, *Beyond Guarding Ground: a vision for a National Indigenous Cultural Authority* (2009).

¹⁰⁷ Terri Janke, *Guarding ground: a vision for a National Indigenous Cultural Authority* (2008); Terri Janke, *Beyond Guarding Ground: a vision for a National Indigenous Cultural Authority* (2009).

¹⁰⁸ Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) in relation to establishing the *National Guidelines on Ethical Research in Australian Indigenous Studies* (2012).

5.2 Indigenous Data Sovereignty

163. Indigenous peoples worldwide are weighing in on the discussion around data sovereignty, asserting for ownership, control, access and possession of their own data.

Underpinned by the Declaration, Indigenous peoples have inherent and inalienable rights relating to the collection, ownership and application of data about them, and about their lifeways and territories.¹⁰⁹

164. In Australia, a number of key forums have specifically focused on this matter. The Australian National University, has progressed to some extent, a national discussion towards the development of an Indigenous data sovereignty agenda, leveraging international instruments such as the Declaration.¹¹⁰

165. Furthermore, in its submission to the Productivity Commission's Data Availability and Use Issues Paper (2016) the Indigenous Governance Institute,

- identified the particular data needs, rights and interests of Indigenous Australians and their governance entities that are created by Australian law;
- expressed the need for culturally-based Indigenous jurisdiction over a range of knowledge's and related contemporary data sets;
- expressed the broader practical implications of giving effect to Australian Government commitments under international law, most notably in regard to its endorsement of the United Nations Declaration on the Rights of Indigenous Peoples in 2009.¹¹¹

166. PIC would support a governance model that protects and maintains data sovereignty of Aboriginal and Torres Strait Islander peoples, whether this is in the form of a National Indigenous Cultural Authority or another similar governing body owned and led by Australia's First Peoples.

167. PIC also reiterates past recommendations made by the Australian Human Rights Commission that the United Nations Declaration on the Rights of Indigenous Peoples be included in the definition of human rights in the *Human Rights (Parliamentary Scrutiny) Act 2011*, so that national technology and data related laws consider how such laws may impact on the rights of Australia's First Peoples.¹¹²

5.3 The role of the private sector

168. It is the position of this submission that both the public and the private sector have a role in ensuring Aboriginal and Torres Strait Islander people do not get left behind in the technological age. Aboriginal and Torres Strait Islander people will have the best prospects of enjoying the benefits of the 4IR when they have ease of access to technology and have the opportunity to be involved in its design and development. It is therefore important for the private sector to have an understanding of technology issues as they relate to Aboriginal and Torres Strait Islander communities.

169. There are a range of innovative mechanisms to encourage the private sector to engage with Aboriginal and Torres Strait Islander people in this area. For example,


- Reconciliation Australia's, Reconciliation Action Plan framework (RAPs) have become, for some businesses, a strategic organisational document to enable engagement with Aboriginal and Torres Strait Islander Australians

¹⁰⁹ Tahu Kukutai and John Taylor, *Indigenous Data Sovereignty: towards an agenda* (2016), CAEPR Research Monograph No. 38, ANU Press.

¹¹⁰ Tahu Kukutai and John Taylor, *Indigenous Data Sovereignty: towards an agenda* (2016), CAEPR Research Monograph No. 38, ANU Press. At: <http://press-files.anu.edu.au/downloads/press/n2140/pdf/book.pdf?referer=2140> (accessed 5 October 2018).

¹¹¹ Australian Indigenous Governance Institute, Submission to the Productivity Commission Data Availability and Use Issues Paper, 29 July 2016. At: https://www.pc.gov.au/_data/assets/pdf_file/0014/203234/sub060-data-access.pdf (accessed 23 September 2018).

¹¹² Gillian Triggs and Robynne Quiggin, *Social Justice and Native Title Report 2016*, Acting and Deputy Aboriginal and Torres Strait Islander Commissioner Australian Human Rights Commission, (2016) recommendation 10.



and embed a range of cultural diversity and inclusion practices within their organisation. RAPs play a role in contributing to cultural change within organisations and to some extent, society generally. PIC believes that for organisations that are ready, embedding the Declaration within RAPs demonstrates a level of leadership and maturity in reconciliation.

- The Department of Prime Minister and Cabinet's Indigenous Procurement Policy (IPP) launched in 2015, is a mandatory procurement policy which sets a target number of contracts to be awarded to Indigenous businesses. It sets aside \$80,000 to \$200,000 for contracts and sets a minimum Indigenous participation requirement in contracts valued above \$7.5 million in certain industries.¹¹³ This works as an incentive for the private sector to involve Aboriginal and Torres Strait Islander businesses.

170. Critically, a relationship between the private sector and Aboriginal and Torres Strait Islander communities needs to be **founded on mutual respect**. While it is important for technology to be accessible to Aboriginal and Torres Strait Islander people, the private sector need to respect that not all Aboriginal and Torres Strait Islander communities will want to engage with technology in the same way western society would anticipate.

171. PIC would caution that incentives for the private sector to include Aboriginal and Torres Strait Islander people in technology development in the absence of strict guidelines risks infringing the right Aboriginal and Torres Strait Islander people have to control and develop their sciences, technologies and cultures.¹¹⁴ Therefore, there needs to be strong guidelines and protocols in place to protect the rights of Aboriginal and Torres Strait Islander people to engage with technologies in ways that best suit them.

172. In light of the lack of legal surety surrounding Aboriginal and Torres Strait Islander cultural IP, the private sector will have to rely on best practice guidelines when engaging with Aboriginal and Torres Strait Islander people in this area. Ideally, these guidelines would be informed by Aboriginal and Torres Strait Islander leaders, organisations and Elders. Furthermore, companies should commit to engage with Aboriginal and Torres Strait Islander communities with reference to these predetermined protocols and guidelines before incentives are rolled out.

¹¹³ Department of the Prime Minister and Cabinet, *Indigenous Procurement Policy* (2018) Australian Government < <https://www.pmc.gov.au/indigenous-affairs/economic-development/indigenous-procurement-policy-ipp> >

¹¹⁴ *United Nations Declaration on the Rights of Indigenous Peoples*, Article 31.

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