## Executive summary

My response to the Issues Paper is a modern risk perspective on Human Rights and technology. Rather than focusing, as most countries do, on the opportunity and benefit of technology, I have looked at how other Australian industries are managing with advancements to their sector and how citizens are informed about other complex topics.

This submission is compiled through research and discussion with leading professionals in fields such as medicine, education and policy reform. Close attention was paid to marketing activities during the submission period as a key aspect of any regulatory program will be how to educate parents about the choices they are making on behalf of their children.

Responses to the AHRC's questions have been grouped under the same section headers the questions featured within the Issue's Paper. Refer appendix 1 for page references.

Background to the issues, risk assessment and recommendations are made to support the advancement of human rights within technology and to assist the AHRC in making recommendations to the Government regarding the development and adoption of technology. While also considering how to support citizens to both:

- make informed and free choices regarding technology consumption and use, and
- be able to use technology forced on them by all levels of government as governments seek to address cost pressures and improve service delivery.


## About me

I have been keeping pace with the changes in technology since I was a child. I grew up in a household with fax machines, computers and the early internet. Screen time was balanced with outdoor and social play time.

At school and throughout my Bachelor's degree I modelled databases, macros and coded in C++ while learning about commerce and management. The formative years of my career developed skills in risk assessment and mitigation strategies. Working across federal and state government as well as the NFP sectors such as education, international development and disability services.

I currently lead innovation nationally for PwC's Assurance practice. Leveraging the skills attained during an MBA and working closely with leading technology organisations and researchers. Outside of work I volunteer with Surf Life Saving and designed the concept for UBank's 'Free2spend ™' application which supports personal finance management.

The society I am part of does not typically share my level of involvement with technology. The Commission has noted the relative disadvantage of the over 65 age group but has not reviewed the under 65 and socially/economically disadvantaged age group with limited access to technology other than a mobile phone. The potential for this group to know their human rights and have the incentive to be in a position to exercise them is limited.

# 1. Threats and opportunities arising from new technology

The use of technology is already prevalent throughout society and with the increasing pace of technological advancements this question allows for a never ending, always evolving answer. I noted the word technology(ies) was used approx. 300 times throughout the issues paper without a definition or parameter.

This leads to confusion around how to respond. For example "Hello Barbie ™" was recently launched by Mattel. The toy features "speech recognition and progressive learning features" and is "equipped with a microphone". Is the encompassing toy the type of technology that could raise human rights concerns or is it the technological components of the toy?

I believe that in order to effectively answer the question about what types of technology raise particular human rights concerns, a framework is required to identify the primary type of technology (or purpose) and to categorise key components of technology. This will help to identify the implicated human rights to understand impact and enable measurement of human rights risk. For example categories of technology could include:

- Devices / machines e.g. vehicles (autonomous or not), phones and toys.
- Digital e.g. phone or desktop applications, webpages, augmented reality and virtual reality.
- Marketplace technology e.g. blockchain, facebook and uber.
- Communication technology e.g. WiFi, VOIP, messaging and stethoscopes.
- Data collection and storage e.g. databases, instruments, sensors, IoT, forms and touch panels.
- Data transformation and intelligence e.g. analytics, machine learning and artificial intelligence.
- Persuasive technology e.g. video games, rewards and loyalty, and gamification.
- Psychographic technology e.g. Cambridge Analytica and other marketing.

Continuing the "Hello Barbie ™" example, the purpose of the technology would be a device with a specific audience of children. The device includes communication and data collection technologies. The right to privacy, access to information and safety for children are the human rights of greatest concern for protection and promotion. An assessment can then be made regarding Australians' exposure to human rights risk and optimal ways to manage that risk e.g. prohibition of data collection from minors; scope for parents and guardians to approve general or specific data collection by the device from minors and whether the toy should be sold in Australia.

Following the assessment, if the level of risk is determined to be unacceptable, the technology developer, manufacturer or distributor could apply safeguards for the protection or promotion of impacted human rights.

Another major threat to the protection of human rights is the rise in psychographics and persuasive technologies as components of a technology.

Psychographics is an extension of demographics. Instead of classifying and targeting people based on general attributes such as gender, age or location, psychographics introduces cognitive attributes such as emotions, values and attitudes. It is able to do this by monitoring behaviour of people through platforms such as Google analytics, Facebook, Instagram and Snapchat etc. This deeper understanding of human motivations and opinions enables new forms of messaging and marketing tactics to manipulate an action. As such threatening humans' ability to make *free* choices.

Persuasive technologies take a different approach to manipulate an action from a user. Persuasive technology is prevalent in the development of social media platforms and video games. The technology is designed to change attitudes or behaviours of the users through persuasion and social

influence.  An example is Snapchat rewards users for longer streaks of use by activating new emojis.   Enticing users (predominantly teens) to invest an inordinate amount of time keeping streaks alive, resulting in the creation of a new form of addiction.

While there are cases to for the positive application of psychographics and persuasive technologies to protect and promote human rights, it is the *nature* of the technology to reduce a person's ability to make a free choice. This is why in assessing technology from a human rights risk perspective, the primary purpose of the technology needs to be determined before assessing component technology.  If the purpose is to deliberately or inadvertently to reduce the scope of a person's free choice where there is no harm to third parties from that free choice then could be a prima facie case of reduced human rights that needs to be addressed through  a public process.

Recommendation one

The AHRC develop a framework to facilitate a consistent approach to the assessment of technology from a human rights risk perspective.  The framework should include definitions for types of technology, risk matrix and scale for assessing impact.

In assessing technology from a human rights risk perspective, the primary purpose of the technology needs to be determined before assessing component technology.  If the purpose is to deliberately or inadvertently reduce the scope of a person's free choice where there is no harm to third parties from that free choice, then could be a prima facie case of reduced human rights that needs to be addressed through  a public process.

## 2. Reinventing regulation and oversight for new technologies

Australia has a unique culture and way of life. This is evident in how human rights are protected in Australia in a number of ways. Through our Constitution, domestic legislation, common law, executive bodies and civil society bodies etc. The strengths and weaknesses of this approach need to be compared to other societies which may adopt a singular federal bill or charter of rights. The benefits of a national approach to ensure equitable rights and uniform treatment of technologies across Australia as well as provide a base for international application of remedies and systems need to be established.

The need for regulating new technologies in Australia is reinforced through the development of international policies or guidelines such as China's Next Generation Artificial Intelligence Development Plan or Germany's guidelines for self driving cars. However, their application is in its infancy and ahead of the adoption of the technology, meaning learnings are largely theoretical.

In the evolution of regulatory oversight to technology it would be beneficial to learn how existing oversighting bodies determine their need and approach for regulating technologies, then apply a human rights lens to their experience. However it would also be beneficial to consider revolution in the regulatory oversight to seek to place initial control in the hands of primary data owners. Consideration could be given to creating property rights in data ownership with individuals from whom data is collected. The property right would incentivise the individual to manage that right to its best value and application rather than permit its free collection through technology. Blockchain technology can provide an avenue for tracking ownership and application.

## Existing oversight frameworks

In order to identify the gaps in Australian law for the protection of human rights in the development, use and application of new technologies, we need to look more broadly at where technologies are already regulated in Australia and how human rights are currently being protected.

Mature industries are likely to have oversight bodies with principles in place that already guide the development, use and application of technology for those under their influence. Those principles may inherently protect human rights without having been explicitly called out. Refer Table 1 below for an example of existing bodies and principles applied, it is not meant to be an exhaustive list. Without a complete listing of oversight bodies, it is hard to identify gaps (or overlap) in Australian law.

| Oversight body | Domain / industry coverage | Principles |
|---|---|---|
| Office of the Australian Information Commissioner | Privacy | Covering the notification, collection, management, use, access to, correction, security, integrity and disclosure of solicited or unsolicited personal information. |
| Civil Aviation Safety Authority | Australian airspace and aircraft, capturing the complete aviation ecosystem from pilots, operators, craft, maintenance and traffic control. | Maximise aviation safety covering safety standards, industry oversight, risk analysis, industry consultation, education and training. |
| Food Standards Australia and New Zealand | Ingredients, composition and labelling of food for use in Australia. | Creating a safe food supply protecting and supporting the health of people in Australia and New Zealand. |

| | | |
|---|---|---|
| Therapeutic Goods Administration | Use of medical devices or products in Australia with a therapeutic claim. | Ensuring that, on balance, the benefits outweigh any known risks. |
| Real Estate Institute of Australia | Real estate | Promote and encourage a high standard of ethical practice by members and their employees in their real estate dealings.  This should include dealings via technological means. |
| Chartered Accountants Australia and New Zealand | Accountants | Sets expectations for professional conduct and behaviour such as integrity, objectivity, confidentiality, competence and due care.  Principles should include service via technological means. |

**Table 1. Example of oversight bodies currently addressing the development, use or application of new technologies**

My key concern is where emerging industries or markets and overseas entrants are not being held to minimum standards or principles.  Appropriate oversight arrangements may not exist over technology practices and Australia lacks a common framework to guide the development, use and application of new technology.

For example, when the Uber technology entered the Australian market, if the technology was looked at through a human rights lens, a different conclusion may have been reached regarding its continued practice in Australia. Refer Table 2 below for an example of human rights that may be impacted by distinct technology components of the Uber technology.

| Technology component | Potential advancement or restriction of human rights |
|---|---|
| Algorithms determining surge pricing and / or job allocation. | The right to equality and non-discrimination |
| Accessibility of the technology via a smartphone device. | The right to equality and non-discrimination<br><br>The rights of persons with disabilities |
| Collection of personal information, including the initial visibility of phone numbers when contacting either the driver or consumer. | The right to privacy |
| Driver and passenger rating system. | The right to procedural fairness |

**Table 2. Uber technology from a human rights perspective**

Recommendation two

If not already prepared, I recommend the AHRC compile a more exhaustive list of oversight bodies in Australia and prepare a gap analysis to identify where the focus for any proposed legislation is best applied to protect human rights in the development, use and application of new technologies.  Responses to the Issues Paper may assist the AHRC in compiling this list.

Once compiled, the AHRC could engage with existing oversight bodies as to how they are protecting human rights when it comes to the development, use or application of technology in their domain.  It

may be that education is required to assist existing bodies to incorporate a human rights lens into their existing frameworks.

The list could also be used to identify the scope to merge oversight bodies to reduce the risk of regulatory gaps and overlap. Reducing the potential for confusion over the appropriateness of particular bodies protecting human rights in the development, use and application of new technologies.

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## Reinventing technology transparency

Without a common law or set of principles regarding the development, use and application of technology, the standards to which organisations are creating technology are being set by developers, organisations or industry bodies (refer table 1) and gaps in this area are widening.

While regulation may be a key element of protecting human rights in the development, use and application of technology, transparency should also be considered to enable Australian citizens to make informed choices regarding their technology use.

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**Learning from product transparency frameworks - The Department of Health and food safety and nutrition**

As an Australian citizen you may take for granted regulated content found on all food products sold in Australia. Ingredients listing, food expiration or manufacturing dates, nutrition information and country of origin are all mandated requirements for food manufacturers to assist consumers in making choices regarding diet.

Without a standardised framework labels would be confusing, difficult to understand and non-comparable as they would not be consistent. Without an appointed monitoring body, in this case Food Standards Australia and New Zealand, labels would have limited integrity and trust in the information would be difficult to achieve.

From an education perspective, having one frame of reference for complex nutritional information (calories, sugars, carbohydrates etc by energy, serving and weight) facilities a common understanding of food products, health benefits and risks.

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Regardless of whether existing bodies oversee the development, use or application of technology, a means of labelling technology should be considered to help educate citizens about their technology consumption. Depending on the nature of the technology a digital or physical label could be utilised to highlight necessary information such as primary purpose, component technologies and human rights risk from Recommendation one (above).

A different, but less educative and consistent, approach could be to require companies who develop technology to prepare a technology transparency report. It could address how companies develop, monitor and oversee technology applications. A potential risk to its application is that smaller entities may be exempt from reporting until reaching a certain size which may be too late to unwind harmful technology development practices.

> **Learning from entity transparency frameworks - the Australian Taxation Office and voluntary tax transparency**
>
> In 2016 medium and large Australian businesses, including multinationals with operations in Australia, were encouraged to voluntarily report additional public taxation disclosures.   There is no prescribed template or format for tax transparency content making it hard for citizens or investors to compare information.
>
> While the Voluntary Tax Transparency Code encourages a minimum standard for information content and principles for suggested reconciliations, a citizen or investor would require a level of sophistication in tax understanding and analysis to understand the impact of what is being reported.
>
> Voluntary reports can be access via data.gov.au.  For 2016-17 only 48 entities had disclosed voluntary tax information and this listing did not appear to include privately held companies.

<u>Recommendation three</u>

The AHRC complement any proposed legislation with a transparent reporting mechanism that assists citizens to make informed choices regarding their technology consumption and use.

Citizens be made aware of their rights over data ownership and use, both authorised and by third parties.

Government bodies at all levels of government be required to map citizen capability to use new technology, prior to its introduction, and to identify appropriate training and support mechanisms for citizens to use and access to the technology.

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# 3. Artificial intelligence, big data and decisions that affect human rights

Decisions that affect human rights have increasingly been informed by artificial intelligence (AI). Device assisted techniques have existed since the invention of the calculous and computer driven information has been evolving since World War II.

To understand how human rights can be protected through AI, first we need to understand the components required to achieve AI and how bias may influence the AI-informed decision making.

Let's use Google Maps as an example.

**Data inputs:** In order to get from A to B a human (let's call the user Charlie) needs to input at least one location.  While GPS (if switched on) can help locate where Charlie is starting from, it cannot predict where they are going (yet) or if they are researching for a future trip.

For the route to be of use to Charlie, Google needs to have already input the map (street and satellite view), roads, pathways, transport options, tolls and other fields, such as the availability and price of Uber, that might be of value, into the map application.

The *accuracy* of inputs is dependent on a few things – Charlie confirming A to B; the labelling of landmarks and pathways on maps (aka classification); GPS sensors, both up in the sky and Charlie's phone; the reliability of the communication channels for data transference; and other sources such as public transport timetables.

**Calculations:** In the milliseconds it takes Google Maps to plot Charlie's route, the system has assessed "known" and "estimated" data.  Distance, street options and tolls are relatively static or "known" data sources.  Fairly straightforward distance or price calculations can be recalculated or reperformed if needed.

More complex are the judgemental or "estimated" data sources such as a Charlie's route preference, traffic patterns and accidents.  These can be predicted based on prior behaviour and to a degree of statistical confidence.  The models used can be reviewed if required but the actual driving experience (time) may not align to the initial assessment.

**Data outputs:** Various route options are overlaid on a map for Charlie to choose from. Considerations such as tolls, distance and driving time are displayed.  The route decision is informed by AI but it is not made by the AI.

Once a route decision is made, Charlie can also decide to leverage GPS for real-time route options as they drive.  However, interference to GPS signals can impact the timing of information (cut-off) and accuracy of the "route recalculation".

**Professional scepticism**:  While Google Maps is incredibly convenient technology (the ability to carry all the worlds maps in one application), questions should still be asked about the veracity of the AI.

- Completeness of the options presented.  Why are toll roads preferred? Is it a factor of time or is it 'advertising' for the toll companies?  Would Charlie be better off, financially or timewise, to take public transport?  How is sustainability factored into the application?

- Integrity over the data use.  When the application is not in use, but GPS is enabled, travel data can continue to be captured.  For what purpose?  Who else can access this information?  How is Charlie's identity protected?

In breaking down a relatively simple example of AI, it highlights the various sources of information that are required for 'intelligence', raises questions and highlights limitations of today's AI. Advancements in AI are escalating.  The framework above can be used to document what is happening behind the screen.  It is also important to recognise that industries are already dealing with how AI

will impact, and can be leveraged, within their profession.

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**Learning how to protect human rights in the development, use and application of new technologies from the adoption and acceptance of technology in mature industries**

The audit profession has existed long before technology advancements. For any audit practices, the development, use and application of any new technology that assists an auditor to undertake their responsibilities needs to adhere to the requirements of our profession which are set out by the Australian Auditing Standards Board.

The fundamental principles to which assurance practitioners are required to comply are:
- Integrity
- Objectivity
- Professional competence and due care
- Confidentiality, and
- Professional behaviour.

These principles do not limit the adoption of technologies, rather they ensure measured steps are taken to protect clients and citizens who rely on financial information. The above principles help guide the development, use and application of new technologies for audit business. Operationally this means technology needs to be designed so its outputs:

- **Are supported by evidence.** When designing technology solutions that perform audit procedures we need to consider the relevance and reliability of information, including the accuracy and completeness of information, that is *input* to the technology. This reduces the risk of bias.

- **Can be independently reperformed**. Client information can involve significant assumptions, estimates and professional judgements that are inherently imprecise. Not only do evaluations over our client's information need to be made to reach a conclusion, the auditor's own work may be independently evaluated as part of quality reviews. This means that any outputs from audit procedures, including analytical procedures and computer assisted audit techniques, need to be explainable.

- **Are adequately disclosed.** Matters, that may affect the use and understanding of information, need to be clearly explained. This includes ensuring a minimum level of disclosure is met to ensure essential information is not withheld, while balancing the potential burden of over disclosure distracting from key messaging.

- **Respect privacy**. Auditors are trusted to aggregate sensitive personal and commercial data. Therefore any technology in use for audit must ensure that confidentiality is maintained.

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Recommendation Four

Develop a set of principles that technology developers must adhere to when developing new technologies.

Consumers of technologies are too be made aware of these principles, and technologies can be certified that they have been developed based on the principles. The set of principles would help to protect consumers from unscrupulous developers.

# 4. Accessible technology

When first exploring this topic, I considered universal design principles to be in conflict with principles of innovation. To focus on a niche market, test hypotheses, iterate and expand. If considering a universal design in the early stages, surely it would dilute the innovation advancement through being too generic.

However, in learning that universal design was originally coined following the application of automatic doors into design of buildings, I came to understand the key word is universal *design*. Automatic doors, as a concept, was to benefit wheelchair access, yet the design feature also benefitted many other community members e.g. mothers with prams.

Development of new technology through design is one aspect of development but the other side of the development is the application of the technology. Many technological advances have been realised through unanticipated application to issues both existing and new in society. It is not in society's interest to limit the application of technology to both existing and new issues despite it not being first envisaged as a purpose for the technology. Equally the application of new technology to issues subsequent to its development needs to be monitored for human rights impacts.

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**Google glasses**

Around 2013 Google embarked on a research program to develop an "ubiquitous computer" known as Google Glass. Google recognised people could benefit from handsfree displays of information and commands could be communicated via natural language voice command[1]. Viewing information (computer vision, facial recognition, GPS etc) everyday and could benefit from labelled perspective. A prototype was developed and in 2015 production ceased (to later be reinstated in 2017 under Google Glass Enterprise).

From a personal consumer point of view, the use of Google Glass could be viewed as an imposition and breach of privacy. While handy to be informed about the names and background of people met in passing and 'seamless' access to information about my surroundings it would take a significant leap in useability and security for me to adopt the use of Google Glass.

However, in attending the conference, when hearing from one of the speakers, I learned that the similar technology has a very different and important application to the blind community. The ability to put on glasses and show someone something you are struggling to make sense of without other visceral features is a great advancement in accessibility.

While there was not an immediate consumer incentive for Google to continue developing Google Glass, in sharing their research and undertaking an enterprise angle, others have and will continue to benefit from the innovation.

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Recommendation Five

Consider whether incentivisation mechanisms are required to encourage the sharing of 'failed' or attempted technology developments.

Recommendation Six

"Cheat sheets" from the Inclusion Institution about what features would benefit members of the community, mindful of both physical and cognitive abilities.

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[1] Wikipedia: Google Glass

**Conclusion**

While it is appropriate that the conversation on human rights and technology is being discussed by Government, retrofitting foreign practices and continuing to create confusion about types of technologies will not enable Australia to support citizens to make informed and free choices regarding technology consumption and use.

The regulatory framework adopted in Australia needs to recognise the multi-tiered government structure we live under and the benefits of reducing that to a single tier when it comes to, not only, human rights. Including integration with the wider international system as our economy and society becomes increasingly integrated with the world economy.

Ideally the framework will incentivise individuals to manage and utilise their own data and the technologies that can utilise that data.

Legislation that underpins human rights and the use of technology will be framed in such as way as to be capable of application to the impacts and outcomes of the use case(s) of new technologies rather than be bound to past, known situations, as the technology(ies) develop and evolve.

New technologies will not be hampered or stifled due to human rights risks but those risks will be assessed and appropriate remedies put in place to maintain human rights.

So called "disruptive" technological changes will be assessed to determine if the disruption is simply due to the development of more efficient ways to provide services for citizens than presently legal based systems e.g. uber v taxi or Airbnb v the hotel industry. Where the industry incumbent is seeking to protect its market position, against truly disruptive changes. Such as the development of the motor car's impact on the horse and farrier industries. The role of Government in facilitating change and social advancement through training and social welfare support needs to be clearly established.

Suggestions of a regulator does not reflect the maturity of existing industries in dealing with technological advancements, nor would it likely cover the emergence of new businesses established around a technology application or foreign companies.

There is an opportunity to reinvent Australia as the trusted market for technology development, use and application. As a global leader in respecting human rights, Australia can capitalise on this position and lead a new order of human rights risk assessment in regards to technology development, use and application. I offer my assistance to help AHRC further if required.

**Appendix 1**

| Feedback questions on AHRC Human Rights and Technology issues paper | Page reference |
|---|---|
| **Threats and opportunities arising from new technology**<br><br>1. What types of technology raise particular human rights concerns? Which human rights are particularly implicated?<br><br>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)? | 3-4 |
| **Reinventing regulation and oversight for new technologies**<br><br>3. How should Australian law protect human rights in the development, use and application of new technologies? In particular:<br>a) What gaps, if any, are there in this area of Australian law?<br>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?<br>c) What principles should guide regulation in this area?<br><br>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? | 5-8 |
| **Artificial Intelligence, big data and decisions that affect human rights**<br><br>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?<br><br>6. How should Australian law protect human rights in respect of AI-informed decision making? In particular:<br>a) What should be the overarching objectives of regulation in this area?<br>b) What principles should be applied to achieve these objectives?<br>c) Are there any gaps in how Australian law deals with this area? If so, what are they?<br>d) What can we learn from how other countries are seeking to protect human rights in this area?<br><br>7. In addition to legislation, how should Australia protect human rights in AI-informed decision making? What role, if any, is there for:<br>a) An organisation that takes a central role in promoting responsible innovation in AI-informed decision making?<br>b) Self-regulatory or co-regulatory approaches?<br>c) A 'regulation by design' approach? | 9-10 |
| **Accessible technology** | 11 |

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| 8. What opportunities and challenges currently exist for people with disability accessing technology?<br><br>9. What should be the Australian Government's strategy in promoting accessible technology for people with disability? In particular:<br>a) What, if any, changes to Australian law are needed to ensure new technology is accessible?<br>b) What, if any, policy and other changes are needed in Australia to promote accessibility for new technology?<br><br>10. How can the private sector be encouraged or incentivised to develop and use accessible and inclusive technology, for example, through the use of universal design? | |

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