WORLD TRAVEL & TOURISM COUNCIL

Microsoft

RESPONSIBLE ARTIFICIAL INTELLIGENCE (AI)

OVERVIEW OF AI RISKS, SAFETY & GOVERNANCE

April 2024

FOREWORD

Who has a say in the design of intelligent machines? How do we make sure data is used responsibly? Can algorithms exhibit unintended bias?

This is the third publication in our four-part initial series on artificial intelligence (AI) from the **World Travel & Tourism Council (WTTC)**, in partnership with global technology leader **Microsoft**. In this report, we explore the world of AI risks and governance, competing definitions of 'responsibility' when using AI, and the various attempts that are on-going to establish a global standard for the ethical use of AI.

As this report series has shown, AI has come a long way in recent years. Today we can use AI to find personalised holiday ideas at the touch of a button. We can make restaurant queues shorter and reduce hotel food waste. As we cross borders, algorithms can optimise everything from airport traffic, to passenger flow rates. Just imagine how transformative this technology could be at scale, with the ability to spot patterns, make predictions, or fine-tune operations for improved safety and efficiency to levels that were previously unthinkable.

But this progress is not without its dangers. Companies now hold huge amounts of information. We're more aware than ever of cyber threats, breaches of privacy, data bias and an alarming gap in digital skills around the world. The unfortunate truth is that AI legislation and digital education has simply failed to keep pace with the rapid development of AI.

At the World Travel & Tourism Council, we are incredibly optimistic about the possibilities of AI in the decades to come. But we also believe that any technology must be used safely, fairly and responsibly. At present, different systems of governance have emerged in different places, with no global standard yet for the safe and responsible use of AI. That is why we are making sure the voice of Travel & Tourism is heard - along with other sectors, policymakers, and civil society - as we figure out the answers to these era-defining questions.

I hope you find this report valuable and insightful. As the AI and technology field evolves, we will be paying close attention and updating you along the way. But ultimately, AI is simply a tool. People - not machines - are responsible for our future. Travel & Tourism is by no means the only voice in this conversation. But it should be a vocal one.

Julia Simpson
President & CEO
World Travel & Tourism Council

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AI GOVERNANCE

Artificial Intelligence (AI) is an exciting technology that opens up many possibilities for society, businesses and the Travel & Tourism sector, but as **AI systems become more advanced, it is important they remain under human control and are aligned with our ethical values**. There are risks that AI could be misused, or that it may behave in unintended ways, with unintended consequences, if not properly designed and monitored. It is therefore crucial that researchers, companies and governments consider both the upsides and downsides of AI when developing and using AI, so that the world can successfully harness the huge potential of AI, while addressing valid concerns about its risks.

AI Risks

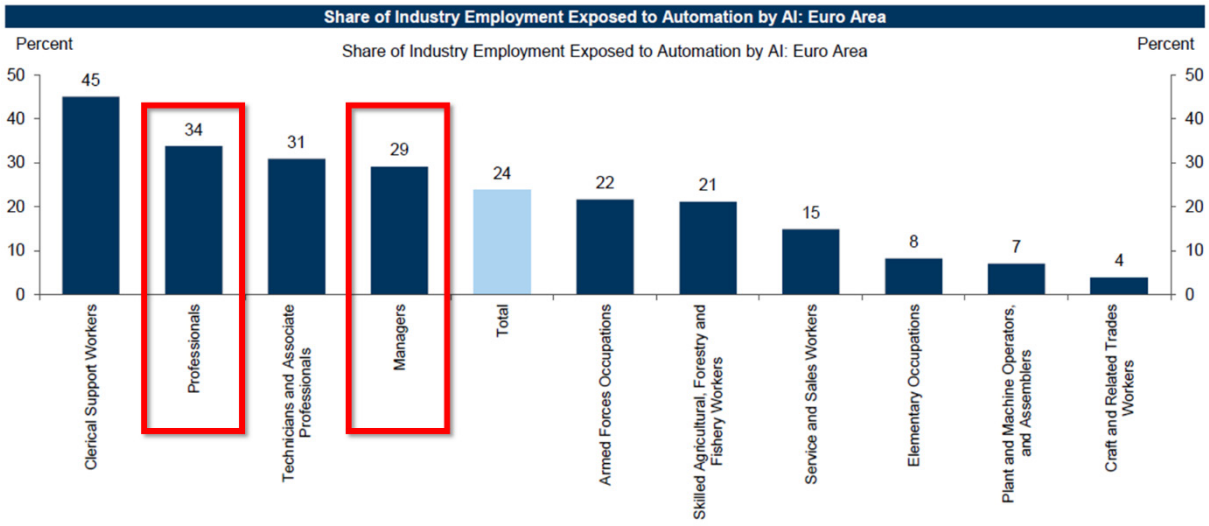
There could be many potential risks of AI, often unique to each situation and use case, but below are five strategic level AI risks that would be useful for all business leaders to be aware of and understand.

	Risk	Description	Potential Mitigations
1	**Bias**	AI systems are trained on data, and if the data is biased, the AI system could lead to discrimination. Bias could include being in favour (or against) a particular idea, person, or thing. This could occur, for example, if an AI system was only trained on either left-leaning, or right-leaning media articles.	Datasets for training AI systems should endeavour to include a broad and fully representative set of data relevant to their use case and the approval of AI systems could include testing for bias.
2	**Job Replacement**	AI systems could automate many jobs currently performed by humans, potentially leading to significant unemployment and the loss of human skills in certain areas.	Workers should be trained to be able to work alongside AI and job transition plans considered for the most affected employment areas.
3	**Disinformation**	Generative AI systems could be used to maliciously create false or misleading content (such as fake text and images) that is deliberately shared to deceive, or cause harm.	Watermarks, or other similar features, could be included with AI generated content to show that it was created by AI.
4	**Safety & Security**	AI systems could cause safety and security risks, with the most severe risks impacting national security or critical infrastructure, such as electrical grids, or transportation and traffic systems	AI used in safety critical systems (such as driverless cars) and where there may be security risks should be robustly tested, approved for use by an appropriate authority and have regular oversight
5	**Existential Risk**	AI systems could become so intelligent that they surpass human control.	AI systems should be developed that align with our human values and appropriate guardrails should be internationally agreed and implemented to control the development and use of AI.

Recently there have been several high profile media stories about the risks of AI, including a study from Goldman Sachs investment bank into the impact of AI on the global economy. They estimated that **AI and automation could replace up to 300 million jobs over the next 10 year, but also drive a 7% (or almost $7 trillion USD) increase in global GDP** [1]. For context WTTC data shows that pre-pandemic the global Travel & Tourism sector accounted for nearly 300 million jobs, so this is equivalent to the loss of every single Travel & Tourism job over the next decade. Some workers' unions have therefore expressed '*deep worry that employment law is not keeping pace with the AI revolution*' and called for regulation on the use of AI for hiring, firing, performance reviews and setting working conditions.

Goldman Sachs go on explain that in history, jobs displaced by automation have historically been offset by the creation of new jobs, and the emergence of new occupations. They cite that 60% of today's workers are employed in occupations that didn't exist in 1940, following many technological innovations since the Second World War. **Goldman Sachs therefore propose that AI could dramatically change the working landscape, rather than lead to mass unemployment**.

However they also note that unlike the previous automation revolutions which predominantly affected manual (so called 'blue-collar') workers, such as factory workers being replaced by machines, the AI revolution would predominantly affect skilled (or 'white collar') workers, with managers and professionals some of the most likely to be impacted. The below diagram from the Goldman Sachs report shows that in Europe they estimate that **29% of managerial jobs and 34% of professional jobs (across all industries) could be replaced by AI and automation over the next 10 years**.



Goldman Sachs Global Economic Analysis : Potentially Large Effects of AI on Economic Growth [2]

In early 2023 an open letter was published by the Future of Life Institute [3] calling for a pause on AI development for at least 6 months. The letter argued that the risks of AI are so great, the world needs to take more time to understand and mitigate them. The letter received considerable media attention as it was signed by over 30,000 interested parties, including Elon Musk (Owner of X, Tesla and SpaceX) and Steve Wozniak (Co-founder of Apple). One of the main concerns raised in the letter was the risk of AI becoming 'too smart' and taking control of our lives. While the risks of AI are noted by many, the open letters recommendation was not taken forward as a global pause on all AI research and development was widely considered impractical and impossible to enforce.

A few months later, the Center for AI Safety (CAIS) also raised concerns about the existential risk of AI, with a succinct public statement that "*Mitigating the risk of extinction from AI should be a global priority alongside other societal-scale risks such as pandemics and nuclear war*" [4]. This too was co-singed by several notable figures including Bill Gates (Founder of Microsoft) and academics Geoffrey Hinton & Yoshua Bengio (who have been nicknamed the 'Godfathers of AI' due to their pioneering research in the field).

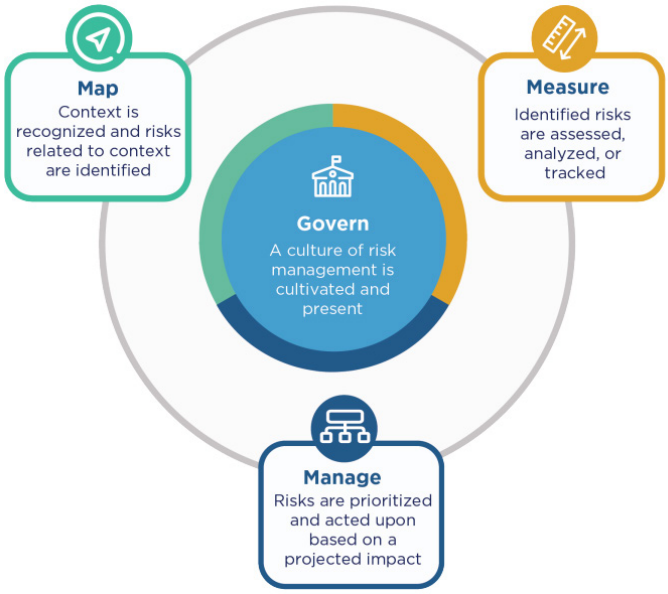
While many of these public statements emphasised the negative risks of AI, an open letter from the UK Chartered Institute for IT, also published in 2023 and signed by over 1300 academics, was issued to counter the 'AI doom narrative' and called for governments to recognise AI as a "*transformational force for good, not an existential threat to humanity*" [5]. The letter argued that AI will enhance every area of our lives, as long as the world gets critical decisions about its development and use right and called for professional and technical standards for AI, supported by a robust code of conduct, with international collaboration and fully resourced regulation.

UN Secretary General, Antonio Guterres (post on X, 18th July 2023)

In July 2023, the United Nations Security Council (UNSC), also met for the first time to discuss the issue of AI, illustrating the seriousness of the technology. The session was chaired by the UK who described AI as a "*momentous opportunity on a scale that we can barely imagine. We must seize these opportunities and grasp the challenges of AI decisively, optimistically, and from a position of global unity on essential principles*". The chair went on to announce that in late 2023 "*the UK will host the first major global summit on AI Safety with world and industry leaders, where our shared goal will be to consider the risks of AI and decide how they can be reduced through co-ordinated action*" [6]. This AI Safety Summit was held in the UK on 1-2 November 2023

Other international diplomats and officials at the UN Security Council also urged the world to take the emergence of this new technology seriously. UN Secretary General Antonio Guterres announced that he "*welcomes calls from some Member States for the creation of a new United Nations entity to support collective efforts to govern this extraordinary technology*" and "*as a first step, I am convening a multistakeholder High Level Advisory Board for Artificial Intelligence, that will report back on the options for global AI governance*". This board submitted its interim report on **Governing AI for Humanity** to the UN Secretary General in October 2023, with the final report to be published in September 2024

To help address the risks from AI, the US standards setting organisation, NIST, has released an **AI Risk Management Framework (AI RMF)** [7] to assist all organisations that are designing, developing, deploying, or using AI systems. The Framework is intended to be voluntary, rights-preserving, non-sector specific, and use-case agnostic to provide flexibility to organisations of all sizes, in all sectors and throughout society. Its aim is to help all AI stakeholders manage the many risks of AI, while promoting the trustworthy and responsible development and use of AI systems. Though voluntary at this time, some have called for this to form the basis of a global regulatory framework for managing AI risks.



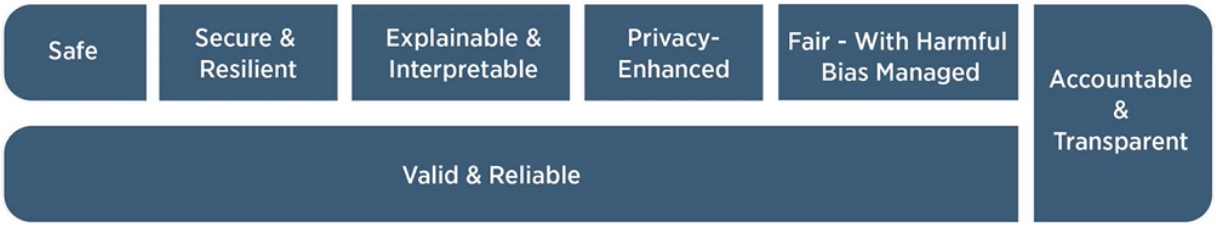
The NIST AI Risk Management Framework has four core functions (Govern, Map, Measure, Manage) which contain 19 categories and 72 sub-categories

Responsible AI

'Responsible AI' is about ensuring AI systems operate appropriately, and is sometimes also called Safe AI, Trustworthy AI or Ethical AI. Although these terms can each mean slightly different things, they are often used interchangeably to recognise the need for AI systems to align with human values. WTTC industry members Microsoft, IBM and Google have each developed a set of responsible AI principles that guide their AI research and use, as illustrated below:

Microsoft	IBM	Google
1. Inclusiveness - AI systems should empower everyone and engage people	**1. Explainability** - An AI system should be transparent, particularly about what went into its algorithm's recommendations, as relevant to a variety of stakeholders with a variety of objectives	**1. Be socially beneficial** - As we consider potential development and uses of AI technologies, we will take into account a broad range of social and economic factors, and will proceed where we believe that the overall likely benefits substantially exceed the foreseeable risks and downsides.
2. Fairness - AI systems should treat all people fairly	**2. Fairness** - This refers to the equitable treatment of individuals, or groups of individuals, by an AI system. When properly calibrated, AI can assist humans in making fairer choices, countering human biases, and promoting inclusivity	**2. Avoid creating or reinforcing unfair bias** - We will seek to avoid unjust impacts on people, particularly those related to sensitive characteristics such as race, ethnicity, gender, nationality, income, sexual orientation, ability, and political or religious belief
3. Reliability & Safety - AI systems should perform reliably and safely	**3. Robustness** – AI powered systems must be actively defended from adversarial attacks, minimising security risks and enabling confidence in system outcomes	**3. Be built and tested for safety** - We will design our AI systems to be appropriately cautious, and seek to develop them in accordance with best practices in AI safety research
4. Transparency - AI systems should be understandable	**4. Transparency** - To reinforce trust, users must be able to see how the service works, evaluate its functionality, and comprehend its strengths and limitations	**4. Be accountable to people** - We will design AI systems that provide appropriate opportunities for feedback, relevant explanations, and appeal
5. Privacy & Security - AI systems should be secure and respect privacy	**5. Privacy** - AI systems must prioritize and safeguard consumers' privacy and data rights and provide explicit assurances to users about how their personal data will be used and protected	**5. Incorporate privacy design principles** - We will give opportunity for notice and consent, encourage architectures with privacy safeguards, and provide appropriate transparency and control over the use of data
6. Accountability - People should be accountable for AI systems		**6. Uphold high standards of scientific excellence** - We will work with a range of stakeholders to promote thoughtful leadership in this area and we will responsibly share AI knowledge by publishing educational materials, best practices, and research that enable more people to develop useful AI applications
		7. Be made available for uses that accord with these principles - Many technologies have multiple uses. We will work to limit potentially harmful or abusive applications

The NIST AI Risk Management Framework (mentioned earlier) has also developed 7 characteristics for trustworthy and responsible AI that aim to reduce negative AI risks.



The NIST AI Risk Management Framework defines 7 characteristics for 'Trustworthy AI'

If a Travel & Tourism business does not yet have an approach to the responsible and ethical use of AI, the above frameworks from NIST [6], Microsoft [8] , Google [9] and IBM [10] can offer a good starting point to ensure the values most important to the company are maintained when using AI.

As AI is expected to swiftly become more critical to companies and an everyday business tool within organisations, adopting responsible AI principles should be considered as a high priority. This is to:

1) **Manage Risk & Reputation**: no organisation wants to be in the news for the wrong reasons. Incorrect or biased actions based on the inappropriate use of AI could result in lawsuits and customer, stakeholder or employee mistrust. This could lead to damaging the organisations reputation.

2) **Maintain Corporate Values**: ethical decisions are important to all organisations and requires monitoring of the AI system over time to ensure it continues to meet organisational values as corporate strategy, or behavioural patterns change. This may require retraining, or rebuilding, of the AI system over time.

3) **Protect & Scale against Government Regulations**: AI regulations could change at a rapid pace as AI technology advances. Non-compliance could lead to costly audits or fines, but by adopting responsible AI principles, it is more likely that organisation will be able to adapt and comply with any new or changing government regulations, as they too are likely to be built on similar (if not the same) responsible approaches to AI.

There is no single guide or definition for '**Responsible AI'**, but it could be considered as a principles based approach to the research, design, development, deployment, use, maintenance and governance of AI systems, across all sectors, that considers the effects (both positive and negative) that AI may have on organisations, individuals, communities and society at large.

A survey in May 2023 of 439 business executives from across multiple industries participated in a **'Responsible AI Index'** [11] which found that:

- 82% of businesses believed they were applying best practice approaches to responsible AI, but on closer inspection, only 24% were taking deliberate action to ensure their AI systems were developed and operated responsibly.

- Organisations where the CEO was responsible for driving the company AI strategy had a higher responsible AI index score, but only 34% of organisations had an AI strategy where the CEO was personally involved.

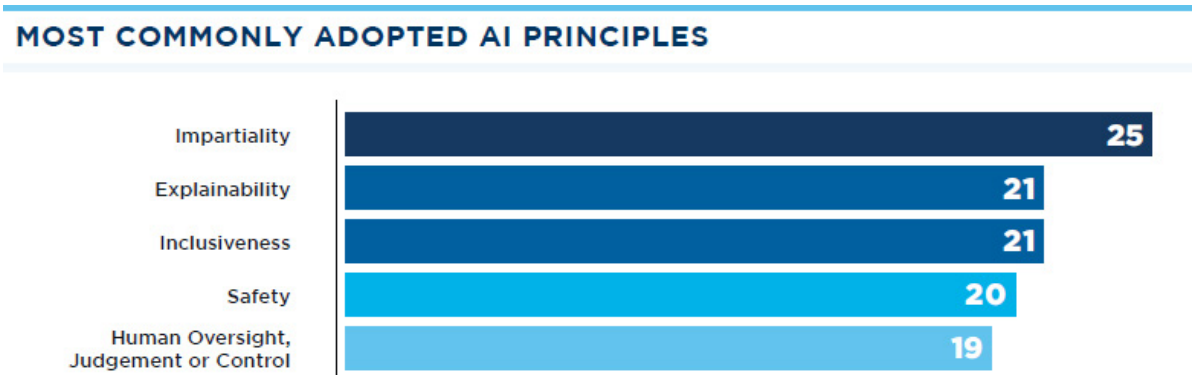
The survey authors concluded there was a '*worrying action gap*' between what organisations thought they were doing and what they were actually doing to ensure their use of AI was safe and that '*the results suggest businesses may be struggling to know how to practically implement responsible AI principles*'.

To support the implementation of responsible AI practices, several universities now offer comprehensive training for business leaders such as the University of Sydney one day course on **'Ethical AI : From Principles to Practice'** [12], or the MIT three day course on **'Ethics of AI'** [13]. However the **University of Helsinki offers two free courses on the basics of AI and AI Ethics**, which can be a useful starting point for all business leaders.

- University of Helsinki : Introduction to AI (https://www.elementsofai.com)
- University of Helsinki : Ethics of AI (https://ethics-of-ai.mooc.fi)

As interest in AI is exploding around the world, **many intergovernmental organisations and countries are also now developing (or have developed), ethical AI principles and frameworks, but there is no universally agreed 'global standard' for the responsible use of AI at this time**, as each of these approaches applies a slightly different emphases on issues such as fairness, the moral use of AI, data ethics or citizen privacy.

A 2023 study by UNIDIR (United Nations Institute for Disarmament Research) to explore the military use of AI, mapped the responsible AI principles adopted by 26 UN Member States and 11 intergovernmental organisations in an effort to define a common taxonomy for responsible AI. They found 26 different principles across the group they examined, with the **5 most common responsible AI principles** to be **Impartibility, Explainability, Inclusiveness, Safety** and **Human Oversight, Judgement or Control**, but with some regional differences.



UNIDIR study into 'Responsible AI' principles [14]

The Organisation for Economic Cooperation & Development (OECD) was the first intergovernmental organisation to issue recommendations for countries to promote the innovative and trustworthy use of AI [15]. Their non-binding recommendations were adopted by the 38 OECD Member States in May 2019 and in June 2019 the leaders of the G20 countries 'welcomed' the OECD recommendation at the G20 Summit in Japan [16], stating that *"the responsible development and use of Artificial Intelligence (AI) can be a driving force to help advance the UN SDGs and to realise a sustainable and inclusive society. To foster public trust and confidence in AI technologies and fully realise their potential, we commit to a human-centered approach to AI, and welcome the non-binding G20 AI Principles, drawn from the Organization for Economic Cooperation and Development (OECD) Recommendation on AI."*

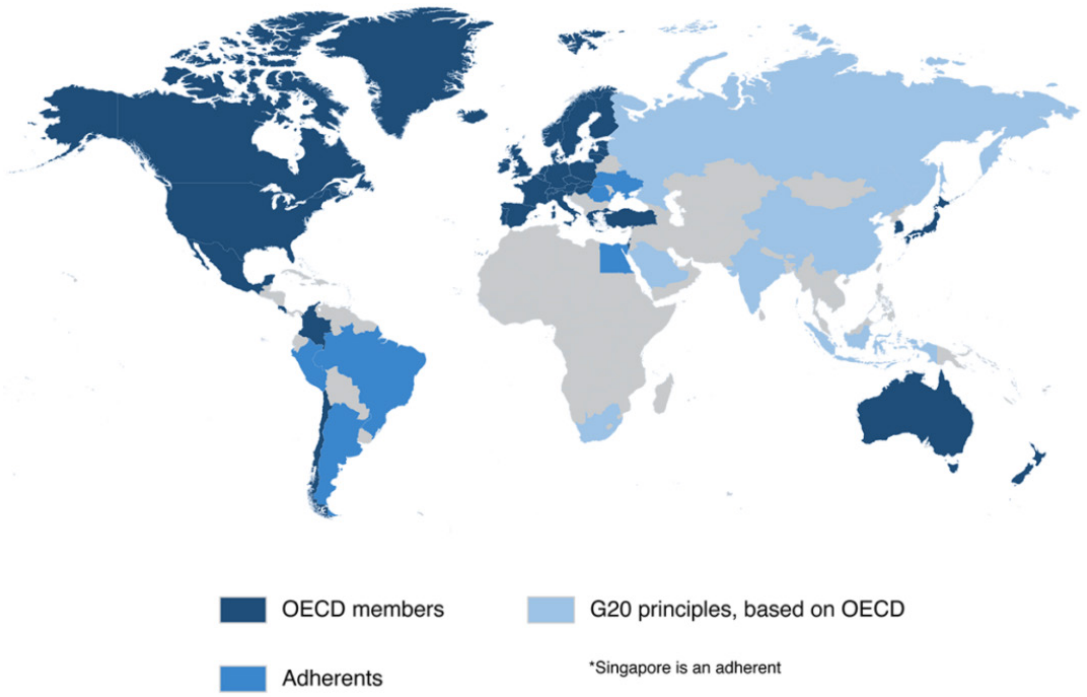
The OECD recommendation identified **five principles for the responsible stewardship of trustworthy AI**, along with **five policy recommendations**

AI Principles

1) Inclusive growth, sustainable development and well-being
2) Human-centred values and fairness
3) Transparency and explainability
4) Robustness, security and safety
5) Accountability

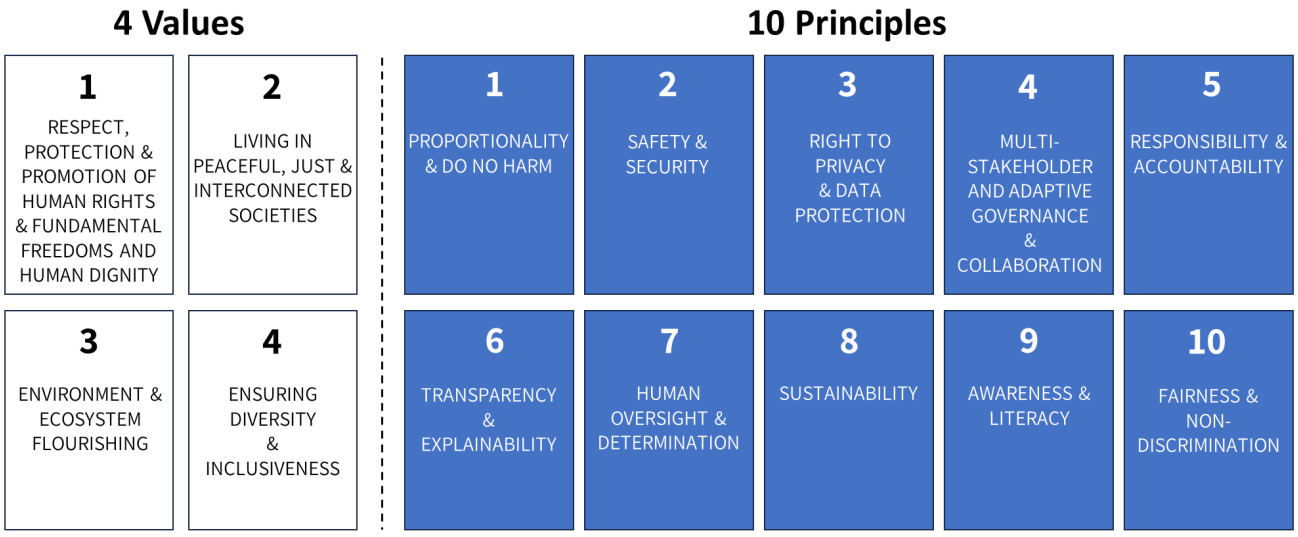
AI Policy Recommendations

1) Investing in AI research and development
2) Fostering a digital ecosystem for AI
3) Shaping an enabling policy environment for AI
4) Building human capacity and preparing for labour market transformation
5) International co-operation for trustworthy AI



Governments that have embraced the OECD and G20 AI Principles

The UN Educational, Scientific and Cultural Organisation (UNESCO) has also championed the protection of human rights and dignity with AI. In 2021 their 193 Member States adopted the **UNSECO recommendations on the ethical use of AI** [17], with the UNESCO Assistant Director General for Social & Human Sciences, Gabriela Ramos stating *"AI technology brings major benefits in many areas, but without ethical guardrails, it risks reproducing real world biases and discrimination, fuelling divisions and threatening fundamental human rights and freedoms"*. **The UNESCO ethical recommendations include four core values and ten principles**:



While values and principles are crucial to establishing any ethical AI framework, recent AI developments have emphasised the need to move beyond high-level beliefs and towards practical strategies. **UNESCO therefore also include 11 'Policy Action Areas' to translate the ethical recommendations into tangible action** and **UNESCO committed to support 50 countries in 2023 to design their national ethical AI policies based on the UNESCO recommendations**.

UNESCO has also formed a **Business Council for AI Ethics**, which is co-chaired by Microsoft and Telefonica for Ibero-America[18]. This will promote and support the implementation of the recommendations on the ethics of AI with the private sector. Specific activities include the exchange of experiences and perspectives between a multi-stakeholder community, the use of ethical impact assessment tools, the generation and sharing of knowledge on the responsible use of AI, and the dissemination of awareness campaigns focused on the UNESCO Ethical Recommendations.

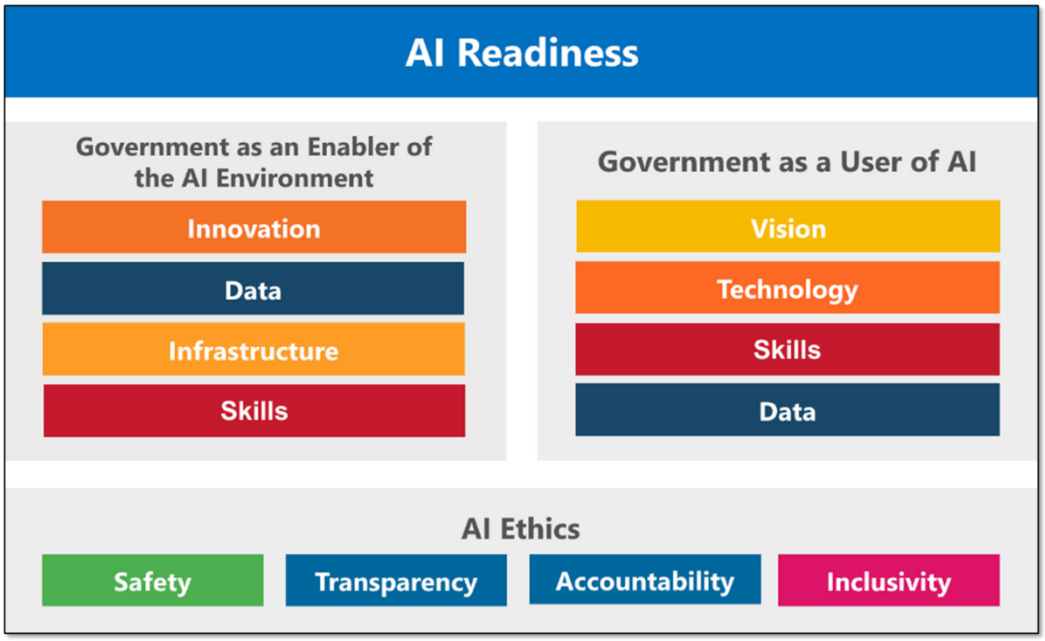
Natasha Crampton, Microsoft Chief Responsible AI Officer said *"AI has the potential to transform societies around the world, and it's essential that we guide this technology proactively toward outcomes that are beneficial, equitable, and inclusive. To do this, we need to bring together experiences and perspectives across societies to better inform decisions around the responsible development and use of AI. We are looking forward to partnering with UNESCO on this vital global effort"*

UNESCO AI Policy Action Areas

UNESCO will also support countries by using an **'AI Readiness Assessment Methodology (RAM)'** which will assess a country's legal, social, cultural, scientific, educational, technical and infrastructural AI capacities and alignment with the UNESCO AI ethical recommendations. **UNESCO has been publishing the details of these country assessments in an 'AI Ethics and Governance Observatory' from 2024**[19] which is an online transparency portal for the latest data and analysis on the ethical development and use of AI around the world, and a platform for sharing examples and best practices.

A fellow UN agency, the UNDP (UN Development Programme) also observed that many governments around the world are engaged in a continual, never ending game of catch up with technological developments. **The UNDP is therefore supporting developing countries with their digital transformation, including for AI.** They are conducting this in partnership with another UN agency, the ITU (International Telecommunications Union), to combine the UNDP's extensive country presence, with ITU's technical expertise.

In 2023, UNDP launched an **'AI Readiness Assessment'** [20] as a set of tools that enable governments to get an overview of their AI readiness across various sectors. The framework is focused on the dual roles of governments as 1) facilitators of technological advancement and 2) users of AI in the public sector. The assessment also prioritises AI ethical considerations from the UNESCO recommendations. **The UNDP aims to support countries so they may implement AI powered technologies at population scale, which will enable them to meet national priorities and contribute to achieving the UN Sustainable Development Goals (SDGs)**.



Another framework, the 2022 **Government AI Readiness Index** [21], from Oxford Insights, assessed 181 countries readiness to implement AI in the delivery of public services and found that the top five countries were the **U.S., Singapore, UK, Finland and Canada**, with all of those countries already embracing AI for government public services.

But it is not only the AI technology industry, individual countries and intergovernmental organisations that are establishing responsible AI principles and approaches – so are religious leaders.

In January 2023, religious leaders from the Christian, Jewish and Islamic faiths met at the Vatican in Rome to sign a Charter on AI Ethics, known as the 'Rome Call' [22], alongside technology companies including Microsoft and IBM.

Signing of the 'Rome Call for AI Ethics' [23]

Archbishop Vincenzo Paglia, President of the Pontifical Academy for Life said, *"we have gathered with our Jewish and Muslim brothers in an event of great importance to call upon the world to think and act in the name of brotherhood and peace – even in the field of technology".*

Pope Francis renewed his interest in the ethical development of artificial intelligence, stating: *"I am glad to know that you also want to involve the other great world religions and men and women of goodwill so that "algor-ethics", that is ethical reflection on the use of algorithms, be increasingly present not only in the public debate, but also in the development of technical solutions. Every person, in fact, must be able to enjoy human and supportive development, without anyone being excluded"*. On 1st January 2024, Pope Francis dedicated his 'World Day of Peace' message to AI, where he called for "the global community of nations to work together in order to adopt a binding international treaty that regulates the development and use of artificial intelligence in its many forms" and released a short video on AI and Peace[24].

The '**Rome Call' contains six ethical principles** and is also currently being considered by Eastern religious leaders.

Rome Call for AI Ethics [20]

As has been shown in this chapter there is **considerable on going activity in the safe and responsible development of AI**, with strategic interest ranging from the Pope, to the UN Secretary General, with a large (and increasing) array of voluntary ethical, responsible and trustworthy AI principles developed in both the public and private sectors, but no universal agreement on a common set of principles at this time. **WTTC therefore recommends Travel & Tourism organisations considering AI in their business should use any of the above frameworks best suited to their organisation**, whilst WTTC advocates in parallel for international agreement to a common set of responsible AI principles.

But whilst this may align the world on the correct use of AI, there is also a challenge to define "who is responsible" for safe AI (also covered in the accompanying WTTC report on **'AI in Action'**) and the issue of liability for any misuse, or negative consequences that could result from using an AI system. Should liability for damage, or harm, be with the AI software programmer, the AI system manufacturer, the business running the AI system, an individual user, or another party?

This question, sometimes called the 'responsibility gap', is unresolved at this time and being considered by AI and legal experts around the world, but is especially important in safety critical scenarios (such as AI powered driverless cars). For example, in some countries where there are laws for self-driving vehicles, the AI's action (or inaction) is in most cases the legal responsibility of the vehicle owner/driver, but should a driver be responsible for the autonomous decisions of a car? Or for more general AI systems that learn from their environment and adapt over time, the programmer, manufacturer, or operator of an AI system may be unable to fully predict an AI's future behaviour as it will be based on many unknown variables. Can they therefore be legally, or morally, responsible for its actions? Complex legal questions such as these are still being considered by governments around the world as they develop their regulatory regimes for AI.

AI Strategies & Regulation

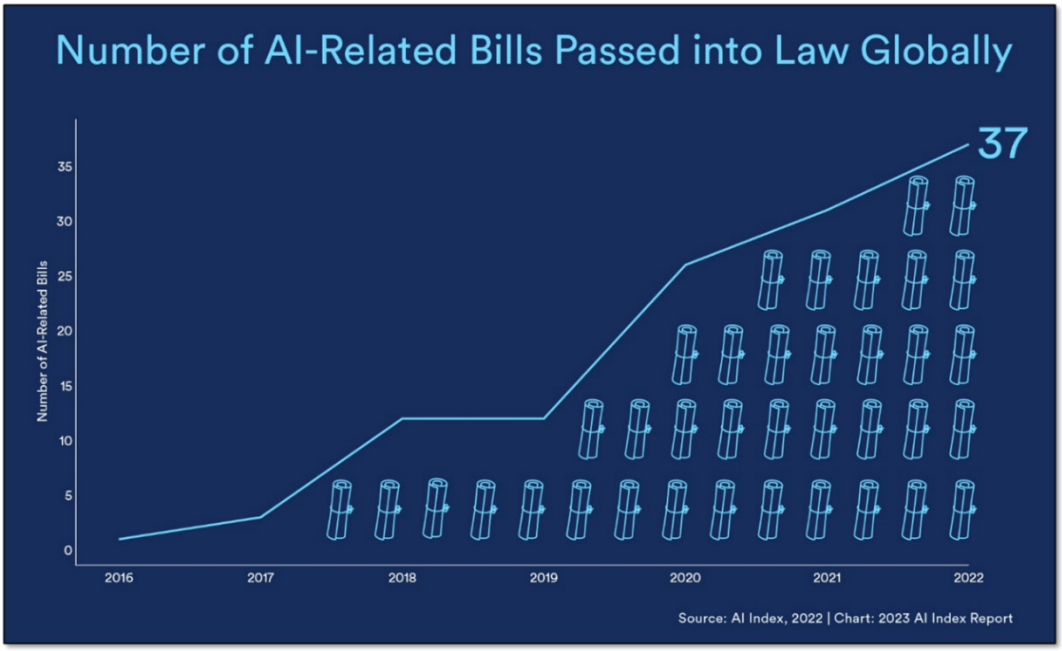
AI has captured the attention of the world with its potential to radically transform our economy, our society and humanity. But there are legitimate concerns about the power of this technology and its potential to be used to cause harm, rather than good.

Governments around the world are therefore looking at how existing laws and regulations can be applied to AI and considering if new legal frameworks are required.

At the international level, as previously mentioned in this report, some countries are calling for a new UN agency to oversee AI. A UN appointed High Level Advisory Board on AI was therefore formed in 2023 and has issued an interim report on options for the global governance of AI to the UN Secretary General.

At the national and regional level, governments are also considering how they can encourage and embrace the economic and social benefits of AI, whilst managing the potential risks through both voluntary guidance and regulation. **There are two main approaches to AI governance being considered by governments at this time.** The first is **'principles led'** (following the responsible AI approaches discussed in the previous section), while the second is **'rules led'** with prescriptive actions that must be taken, **with an additional two approaches to AI regulatory oversight also under consideration**. These are either **'centralised' through a dedicated government agency for AI, or 'decentralised' with AI oversight responsibilities split between existing government departments**.

In the 2023 **AI Index** [25] report from the Stanford University Human Centered AI (HAI) faculty, they analysed the legislative records of 127 countries and found that the number of bills that have been put into law around the world containing the words "artificial intelligence" has grown from just one a year in 2016, to 37 a year in 2022. In **six years (2016-2022) countries around the world passed 123 AI related laws**. A complementary analysis of the parliamentary records from 81 countries also found that mentions of **AI in legislative proceedings had increased by nearly 6.5x since 2016**.



In 2022, legislative bodies in 127 countries passed 37 laws that included the words "artificial intelligence". Since 2016, countries have passed 123 AI related bills

These regulations cover a range of issues, from data privacy and security, to algorithmic transparency and accountability. However despite the recent increase in AI regulatory activity, most government oversight around the world continues to be through voluntary guidance at this time.

The following table and short descriptions summarise the status of AI oversight in 2023 for a few countries that have leaned into AI regulation and guidance as they seek to balance their economic, social, and public priorities with AI innovation.

WTTC has also produced an accompanying document to this report called "**Global AI Strategies, Policies & Regulations**" which provides much more detail and will be periodically updated by WTTC to include more countries and up to date information as the global regulatory environment for AI changes and evolves.

	Status of AI Regulations (in 2023)		Regulatory Oversight (in 2023)	
	AI specific legislation	AI regulated with existing laws	Using existing regulatory bodies	New office for AI oversight
EU	✓	✗	✗	✓
UK	✗	✓	✓	✗
USA	✓ (State & City level only)	✓	✓	✗
Canada	✓	✗	✗	✓
China	✓	✓	✓	✗
Japan	✗	✓	✓	✗
Singapore	✗	✓	✗	✓
Australia	✓ (State level only)	✓	✓	✗

European Union (EU) : Artificial Intelligence Act (AIA)

As part of the EU's Digital Strategy [26], the European Union intends to regulate artificial intelligence (AI) and is advancing an Artificial Intelligence Act (AIA), which is expected to be adopted in early 2024, with a transitional implementation period that could see it fully enforced 24 months later, with some parts applicable sooner. The European Aviation Safety Agency (EASA) has also published a roadmap which outlines their vision for the safety and ethical areas that must be considered for the use of AI in European aviation.. The EU-US Trade & Technology Council is also developing a voluntary 'code of conduct' to guide the responsible development and use of AI whilst official laws are still being developed on both sides of the Atlantic.

United Kingdom (UK)

The UK believes its existing laws, regulators and courts already address some of the emerging risks posed by AI (such as discrimination, product safety and consumer rights) and is therefore taking a different approach to the EU. The UK plans to empower its existing regulators (such as the UK Health & Safety Executive and the UK Competition & Markets Authority) to come up with tailored, context specific governance approaches that best suit the way that AI can be used within their sectors. Following a very successful first international AI Safety Summit, hosted by the UK in November 2023, the UK established an AI Safety Institute (AISI)[27]. The Institute

aims to advance the worlds knowledge of AI systems by carefully examining, evaluating and testing new types of AI to understand what they are capable of. It makes this work widely available to the world, enabling an effective global response to both the opportunities and risks presented by advanced AI systems

USA

The United States does not currently have a national level framework for regulating AI and is following a similar path to the UK, with individual US government departments providing recommendations and guidance. However the White House has published an 'Executive Order on Safe, Secure & Trustworthy AI' which commits US Federal Agencies to a broad range of measures designed to stimulate innovation in AI, as well as a 'Blueprint for an AI Bill of Rights' which offers guidelines for the responsible design and use of AI. In addition, US States (including Colorado & Illinois) and City governments (including New York) are also pursuing their own AI regulations and task forces, with AI oversight therefore targeting specific use cases and locations, rather than seeking to regulate AI technology nationally, or across all industries. Similarly to the UK, the USA has also established a national U.S. AI Safety Institute (USAISI)[28] hosted at the US National Institute of Standards and Technology (NIST), along with a U.S. AI Safety Institute Consortium, which brings together more than 200 organisations to develop science based guidelines and standards for AI measurement and policy.

Canada

Canada was the first country in the world to issue a national AI strategy in 2017, which was updated in 2022 [29]. Also in 2022, the Canadian government introduced Bill C-27, which included the Artificial Intelligence and Data Act (AIDA). This is still under negotiation in the Canadian Parliament in early 2024 and aims to standardise the rules regarding the design, development and use of AI across Canada.

China

In 2017 China issued an AI Development Plan [30] which set a goal for the Chinese AI industry to be generating more than 1 trillion (RMB) annually by 2030, and in mid-2023 China announced it was preparing a national Artificial Intelligence Law. Up to this point China has focussed on AI regulations relating to specific AI applications, including AI regulations for recommendation algorithms and synthetically generated material (such as 'deepfakes') and in 2023 China released draft measure for managing generative AI services [31]. At the provincial and city level, Shanghai and Shenzhen have also enacted their own local AI regulations.

Japan

In 2016, Japan introduced Society 5.0 which envisions a sustainable and economically successful future for Japan, powered by advanced technologies such as AI. To achieve this Japan has published seven social principles for human centric AI and issued its first National AI Strategy in 2019, with updates in 2021 and 2022, to focus on AI's ability to tackle pandemics, natural disasters, and climate change. In 2023, Japan also chaired the G7 group of nations, where the G7 Digital & Technology Ministers endorsed a G7 AI Action Plan to enhance 'global interoperability of Trustworthy AI' and the G7 agreed to convene further discussions on the international governance of generative AI systems.

Singapore

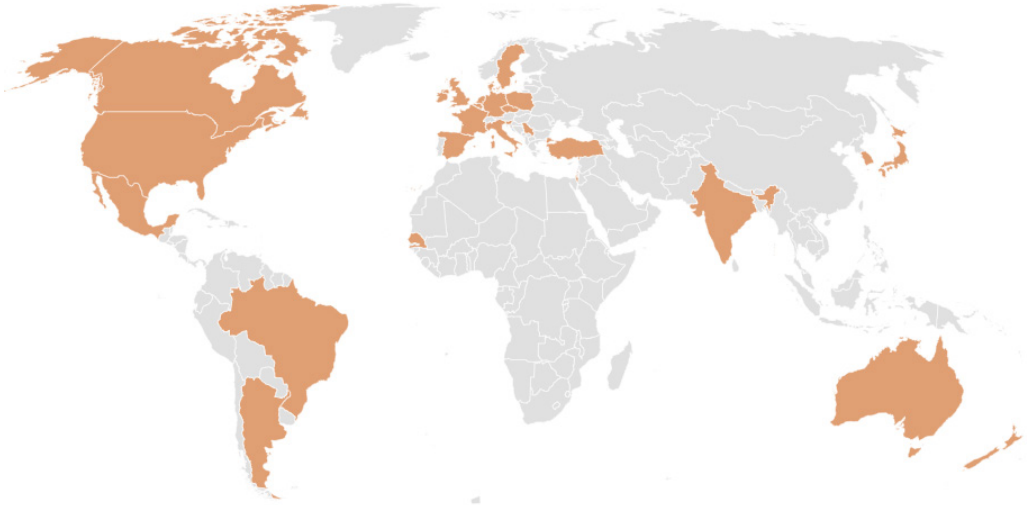
In 2014 Singapore launched its Smart Nation [32] initiative so that "*Singapore will be a nation where people can live meaningful and fulfilled lives, enabled seamlessly by technology*". Since then, Singapore has made significant investments in AI research and development, surpassing many other countries in AI spending as a percentage of GDP. A National AI Office oversees the delivery of the National AI Strategy, which focuses on the deployment of AI in seven specific sectors. Singapore has also launched an 'AI Verify' Framework & Toolkit which enables companies to measure and demonstrate their responsible AI practices, ensuring transparency, fairness, and accountability in their AI systems.

Australia

The Australian Government is backing critical and emerging technologies to strengthen Australia's future, including a focus on AI. The Australian AI Action Plan published in 2021 (prior to the national election) was archived by the new incoming government and a new consultation on Safe & Responsible AI was issued. In early 2024 the government published its interim response to the consultation which proposed a risk based approach to regulating AI and an advisory group to support the development of options for mandatory safeguards in high risk scenarios. Australia has also issued a voluntary AI Ethics Framework and in 2023 established a 'Responsible AI Network'. At the state level, New South Wales (NSW), which contains the cities of Syndey and Melbourne, has also issued an AI strategy and implemented an AI assurance framework for NSW government agencies.

Global Partnership on Artificial Intelligence (GPAI)

A Global Partnership on Artificial Intelligence (GPAI) [33] was first announced by Canadian Prime Minister Justin Trudeau and French President Emmanuel Macron at the 2018 G7 Summit in Canada as an international and multi-stakeholder initiative to support cutting edge research and applied activities for AI priorities, which includes the responsible development and use of AI. It was officially launched in 2020, with 15 founding member countries and brings together experts from governments, industry, academia and civil society. In 2023, this had grown to 28 countries, plus the EU and more than 100 experts.

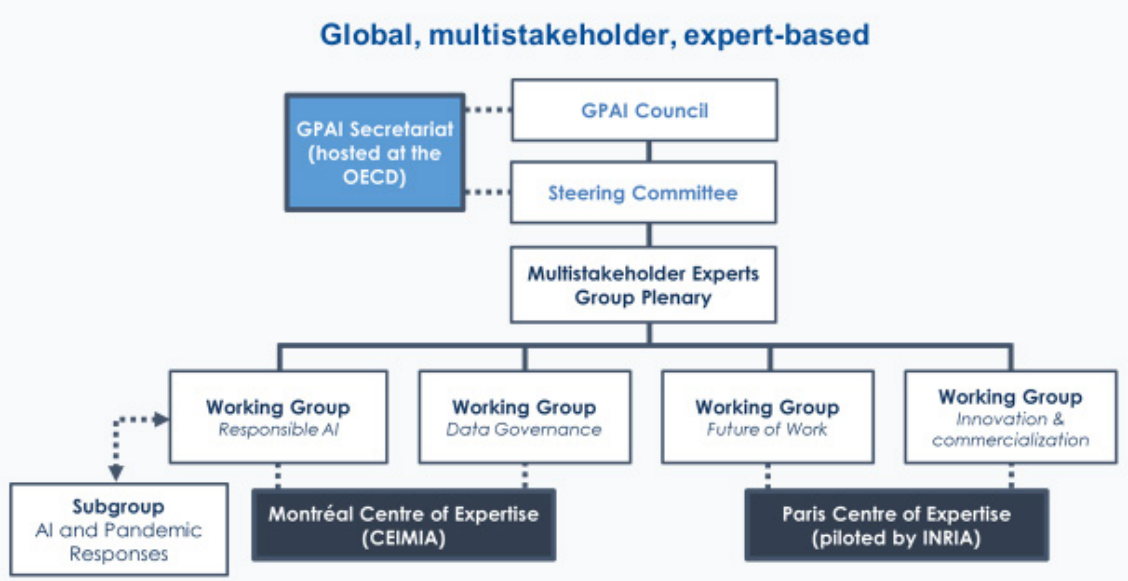


The GPAI is hosted with a permanent secretariat at the OECD in Paris, who oversees a **GPAI Council** and **GPAI Steering Committee**. The GPAI Council are Ministers from all of the member countries and provides strategic direction to the GPAI, whilst the GPAI Steering Committee is an elected body comprised of five government and six non-government representatives, who develop the work plans and establish the working groups and is supported by a Multistakeholder Expert Group (MEG).

The GPAI is also supported by two Centres of Excellence, in Montreal and Paris, which facilitate the working groups with their research and practical projects. The two Centres of Excellence are **CEIMIA** (International Centre of Expertise in Montreal for the Advancement of AI) in Canada and **INRIA** (French National Institute for Research in Digital Science & Technology) in France.

The working groups are initially focussed on four themes, which are:

Responsible AI [34] (Montreal)
Data Governance [36] (Montreal)
Future of Work [35] (Paris)
Innovation & Commercialisation [37] (Paris)



Global Partnership on AI Structure

The 2022 GPAI annual report [38] states that "*during this time of escalating geopolitical tensions and economic instability, countries cannot afford to withdraw and make their own rules. We need a united front, and we need to speak with one voice on AI*". The annual report also made 12 recommendations for GPAI members in 2023, under four pillars which are to:

1. Initiate practical actions that can responsibly leverage the potential of AI to advance the UN Sustainable Development Goals (SDG's)

2. Nurture and adopt participatory governance tools that support the inclusion of communities impacted by AI systems (from AI design to deployment)

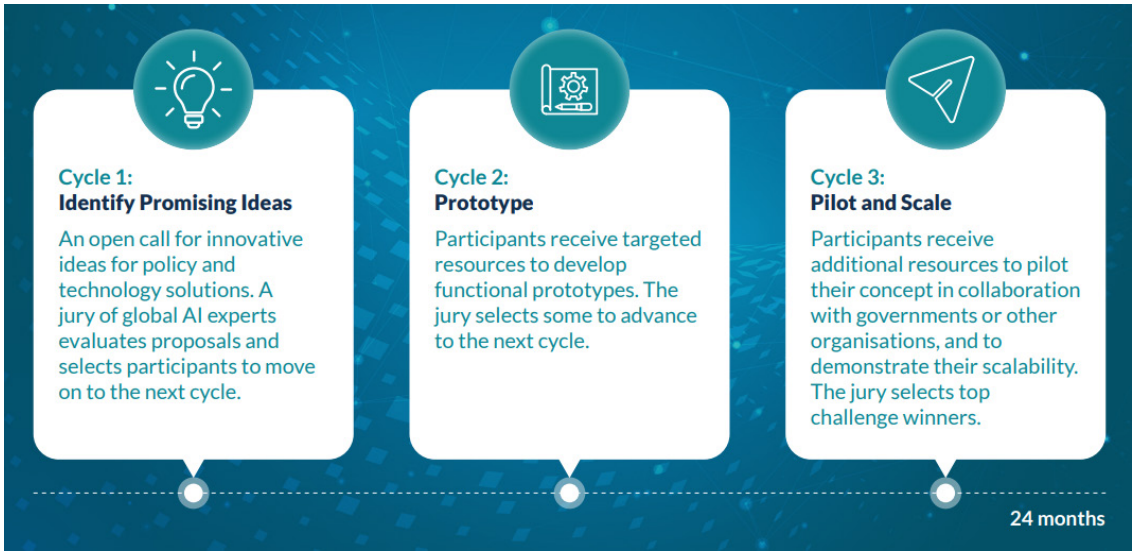
3. Steer emerging technical frontiers towards the public interest and the protection of rights

4. Support broader access to the economic benefits of AI and data technologies

Trust in Generative AI Global Challenge

In July 2023 a **'Global Challenge to Build Trust in the Age of Generative AI'** [39] was jointly launched by GPAI, OECD, UNESCO, IEEE Standards Association, AI Commons (a partnership of AI stakeholders focussed on bringing the benefits of AI to everyone) and VDE (a technology company focussed on science, standards and testing).

Over a two year period, the challenge aims to bring together technologists, policy makers, researchers, experts and AI practitioners to propose and test innovative ideas that promote trust in generative AI systems and counter the potential spread of disinformation which could be enhanced by generative AI tools. The challenge hopes to provide tangible evidence about what works and promote approaches that could be implemented and scaled around the world.



AI Industry Voluntary Governance Measures

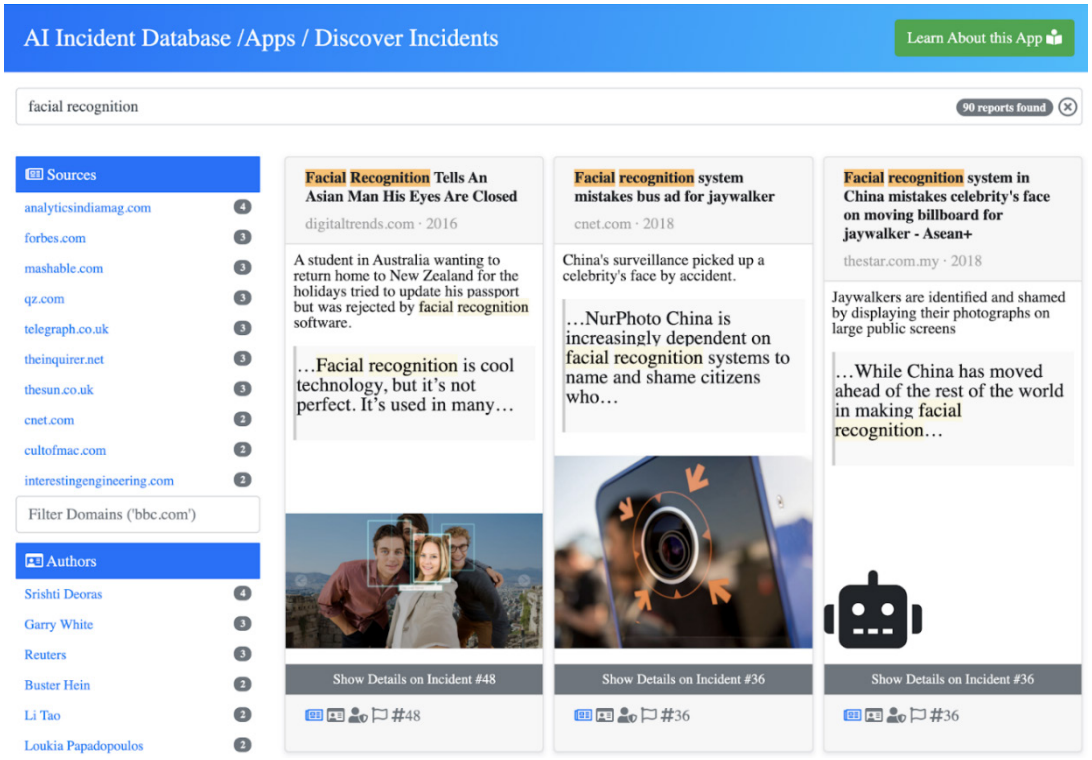
While governments around the world develop their laws and regulations for AI, the private sector has also developed a series of voluntary guardrails, organisations and approaches.

The **World Ethical Data Foundation** has over 25,000 individuals as members, from a variety of technology companies and has produced a voluntary framework for AI developers to use when making AI products and services [40]. **The framework contains a checklist of 84 questions to guide the development of safe and responsible AI solutions**. For example, the framework helps developers to consider the data protection laws of various countries and whether it is clear to the user of an AI system that they are interacting with AI. Some example questions from the framework include:

- Is there any protected or copyrighted material in the training data such as Personally Identifiable Information (PII), Payment Card Industry (PCI) data, and Protected Health Information (PHI)?
- Is the team of people who are working on selecting the training data from a diverse set of backgrounds and experiences to help reduce the bias in the data selection?
- What are the possible dangers of the model? Is there a plan for the worst case scenarios?

Other groups are emerging too. **MLCommons**[41] is a collaborative organisation of engineers and scientists working together to make AI machine learning systems better for everyone and the **Partnership for AI (PAI)** [42] is a collection of industry, academic, civil society and media organisations working together to share insights and develop actionable guidance material which can be used to inform government policy and advance public understanding of AI. The Partnership for AI group comprises of more than 100 organisations from 17 countries and is organised into five workstreams. In 2023, Microsoft joined PAI's collective action promoting responsible practices in the development, creation and sharing of media generated by AI – often called synthetic media[43]. This first of a kind effort was prompted by a belief among many industry experts that the evolving landscape of AI generated media represents a new and exciting frontier for creativity and expression, but also holds the troubling potential for misinformation and manipulation if left unchecked. **Eric Horvitz, Microsoft Chief Scientific Officer** said "We applaud and support PAI's initiative to build a strong, collaborative community dedicated to protecting the public from malicious actors who aim to manipulate, sow discord, and to erode trust in the digital information we consume."[44]

The 'Safety Critical AI' workstream is developing an AI Incident Database (AID), to track when AI systems fail and aims to be a useful global repository of problems experienced in the real world as a result of using AI. This can help to better anticipate and manage future risks.



Partnership for AI : AI Incident Database (AID)

The Partnership for AI is also developing **'Shared Protocols for the Responsible Deployment of Large Language Models (LLMs)'** which is the underlying technology powering sophisticated AI chatbots (such as Microsoft Copilot and Google Gemini). These protocols will be an outcome from their **'Global Task Force for Inclusive AI'** [45] which was supported at the 2023 Summit for Democracy by the Director of the US White House Office for Science & Technology (OSTP) [46] who said *'this will be a first of its kind coalition, with partners from the private sector, academia, and civil society, focused on developing research and design methods for AI that will root out algorithmic discrimination, safeguard rights, and promote equitable innovation. This global task force responds to the call of the AI Bill of Rights, and we're happy to see this important work getting underway'*. The White House and US President have also held meetings with the AI Industry and in July 2023, the White House and seven leading AI companies (including WTTC industry members, Microsoft and Google) agreed to voluntary measures that would help manage the risks of AI and move towards the safe, secure and transparent development of AI systems [47]. In September 2023, eight other companies agreed to join the voluntary measures, including WTTC industry member IBM. As part of this agreement the companies committed to (among other measures):

- **Security test their AI systems (by internal and external experts) before their release**
- **Ensure that people can spot AI by implementing watermarks**
- **Publicly report AI capabilities and limitations on a regular basis**
- **Research the risks such as bias, discrimination and the invasion of privacy**

The White House noted that one of the aims of the voluntary agreement was to make it easy for people to tell when content is created by AI, with 'watermarking' of AI generated content also an important topic for the EU, with EU Commissioner Thierry Breton tweeting after the announcement that he was looking forward to "*pursuing discussion – notably on watermarking*". In late 2023 the White House also issued an Executive Order on AI and is pursuing legislative options to help America lead the way in responsible AI innovation.

A week after the White House and AI industry voluntary agreement was announced, four AI companies (Microsoft, OpenAI, Google and Anthropic) launched the **'Frontier Model Forum'** [48,49] as the founding members of a new industry body that will focus on the safe and responsible development of 'frontier AI models', which they defined as '*large-scale machine-learning models that exceed the capabilities currently present in the most advanced existing models, and can perform a wide variety of tasks*'.

The Frontier Model Forum's four core objectives are to:

1. Advance AI safety research
2. Identify best practices (for the development & implementation of frontier AI models)
3. Collaborate with policy makers, academics, businesses & civil society (to share knowledge about trust and safety risks)
4. Support AI applications that can address the world's greatest challenges (such as climate change, early cancer detection and combating cyber threats)

The **Frontier Model Forum**[50,51] has appointed Chris Meserole as its first Executive Director who comes to the role with deep expertise in technology policy, governance and safety having most recently served as Director of AI & Emerging Technologies at the Brookings Institution.

In October 2023, the Frontier Model Forum also announced a **new AI Safety Fund, of more than $10 million (USD) to promote research in the field of AI safety**. The AI Safety Fund will support independent researchers from around the world affiliated with academic institutions, research institutions, and startups. The initial funding comes from Microsoft, OpenAI, Google and Anthropic, with additional philanthropic donations from the Patrick J. McGovern Foundation, the David & Lucile Packard Foundation, Eric Schmid, and Jaan Tallinn. Together this amounts to over $10 million (USD) in initial funding.

The voluntary AI commitments made at the White House, included a pledge to facilitate third-party discovery and reporting of vulnerabilities in AI systems. The AI Safety Fund is therefore an important part of fulfilling that commitment by providing the external community with funding to better evaluate and understand frontier systems.

The **primary focus of the fund will be to support the 'red teaming' of AI models** which will help develop and test evaluation techniques for the potentially dangerous capabilities of frontier systems. Red Teaming is an ethical attempt to 'play the enemy' and simulate the tactics and techniques of those who may attempt to use AI for wrong and dangerous reasons. The members of the Frontier Model Forum believe that funding in this area is critical to raising safety and security standards for AI systems. It will also provide valuable insights into the mitigation and control measures that industry, governments, and civil society may need to adopt for very advanced AI systems.

The Fronter Model Forum also committed to continue working with other collaborative organisations such as the 'Partnership for AI' and 'MLCommons', and plans to feed its work into other government and multilateral activities such as UN AI initiatives, OECD work on AI risks and the G7 recommendations on AI, which includes a voluntary **Code of Conduct** [52] for AI developers and **International Guiding Principles on AI** [53] which were adopted by the G7 countries in late 2023.

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DISCLAIMER

Artificial Intelligence (AI) is a fast evolving area and the information in this document is correct up to the date of publication of this report.

A separate document from WTTC entitled "**Artificial Intelligence: Global Strategies, Policies & Regulations**" accompanies this report. This provides useful additional detail on international government approaches to AI and will be periodically updated by WTTC as AI develops and expands around the world.

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