

Artificial Intelligence (AI) will revolutionise and disrupt practically every industry. It will impact products and services but also the everyday lives of citizens worldwide, bringing about both socio-economic opportunities and challenges which need to be addressed early on. Governments (and industries) around the world are already engaged in a fierce AI arms-race in an early attempt to dominate the field. While global jurisdictions differ significantly in their regulatory approaches towards AI, they all share the ultimate goal of securing for themselves a top spot in this emerging field.

FTI Consulting's global AI Taskforce reviews the regulatory landscape surrounding AI in key policy hubs and provides a set of recommendations for its effective uptake But first, what is AI? While the concept was first coined in the late 1950s, it has only recently achieved buzzword status. In simple terms, it describes the application of technology to replicate cognitive processes in machines – allowing them to learn, and adapt on their own. There are multiple forms of AI but two broad categories:

- Weak AI: refers to machine intelligence able to perform a specific narrow task;
- Strong AI: refers to a machine that can apply intelligence to any task.

Al's promising future is mainly due to the growing availability of big data sets (and the capacity to analyse them) combined with significant increases in computing power and connectivity. From the East (i.e. Alibaba, Baidu, and Tencent) to the West (i.e. Google, Amazon, Microsoft, and Apple), established corporates and start-ups alike are prioritising Al. The global market for Al is projected to reach \$37 billion in revenue by 2025 and contribute up to \$16 trillion to the global economy by 2030 as this technology transforms more and more sectors.

As this snapshot shows, governments across the globe are now shifting gear, taking a more active role. Until recently, the predominant approach by governments on AI policy issues focused on providing funding opportunities for research. Now they are setting regulatory boundaries (e.g. data protection in the EU) and providing incentives (e.g. "Made in China 2025" industrial plan) in an effort to protect the socio-economic fabric of their societies while also creating certainty for businesses. As with all things

new, regulatory attention and intervention can be a blessing or a curse.

In our view, industry itself will bear the significant burden of shepherding authorities through the intricacies and implications of this new technology. In the absence of a sophisticated understanding of the realities of AI, there is a real risk that policy will be guided by uninformed prejudices rather than technological realities.

European Union

Europe has a growing AI industry presence, with the UK taking the lead followed by Germany, France, Spain, Sweden, the Netherlands, and Italy. Inevitably, AI's growing prominence has garnered considerable attention from European regulators; both at Member State and European Union (EU) levels. Currently the EU does not have an overarching legislative approach towards AI. To date, it has mainly focused on ensuring that some of its funding schemes benefit AI-related R&D (around €1 billion 2014-2020). However, there are certain EU legislative and policy initiatives which impact AI indirectly, such as the General Data Protection Regulation, the free flow of nonpersonal data, as well as research and funding into algorithms and supercomputing.

EU leaders recognise the growing prominence of AI and are eager to ensure that Europe plays a leading role. Last year, the European Parliament adopted a report calling for a designated "European Agency for Robotics and Artificial Intelligence", an assessment of legal liability issues in the field, and urged the EU to take the lead in establishing the "basic ethical principles to be respected in the development, programming and use of robots and AI". Most recently EU Heads of State jointly called on the EU's executive arm, the European Commission, to produce "a European approach to artificial intelligence by early 2018".

Consequently, the Commission is expected to publish in April 2018 a strategy that will lay out the first steps of an EU approach on AI. The proposed strategy will not set any regulatory boundaries because the Commission recognises that AI is still evolving rapidly. To attempt to harness the unknown would be impractical and would impede the EU's desire to take the lead and sculpt the field into one that follows EU values. Instead, the Commission's Vice-President in charge of the Digital Single Market, Andrus Ansip, stated that the upcoming proposal will "look at how best to promote AI to benefit Europe's people and businesses, our society and economy. It will also address

ethical, legal and socio-economic aspects". In practical terms the strategy will focus on:

- Encouraging collaboration amongst industry stakeholders (i.e. an EU platform for AI);
- Coordinating EU and local funding;
- Addressing liability rules on automation and big data;
- Pursuing a voluntary industry charter on ethics;
- Launching a communication campaign raising awareness of the benefits of AI and fending off fear mongering;
- Promoting the necessary digital skill sets.

Even though the upcoming proposal will not be overly burdensome for industry, it could serve as a precursor for further legislative and regulatory initiatives down the line.

United Kingdom

The UK enjoys a reputation of being an attractive destination for innovation and technology start-ups. Recently, the Oxford Institute published the world's first Government AI Readiness Index, in which the UK tops the ranking, thanks to its strong lead in research, quality of data and a well-established tech landscape. With all the right ingredients in place, British policymakers are now beginning to realise that action is needed to make this a recipe for long term success.

Al policy discussions intensified in 2017. Al featured extensively in the most recent budget, and a series of parliamentary inquiries were launched as well as independent industry reviews that the government commissioned. These initial evaluations are broadly finding that the UK is well-placed to harness the power of Al but that it is too soon to regulate.

The government's response to these findings has centered on preparing the economy and the workforce for change by investing in R&D and encouraging industry collaboration with universities. The government's recent Industrial Strategy is the flagship policy directive. It adopts many of the independent reviews' structural recommendations including creating a Centre for Data Ethics and Innovation a world-first advisory body – as well as a government AI Policy Unit. Establishing an industry AI Council will also provide an opportunity to participate more actively in AI policy discussions and the All Party Parliamentary Group on AI has also made the recommendation for a Minister for AI to sit within the Cabinet. Governance structures for these bodies are vet to be announced however. While no specific regulation has been proposed, the Government will give regulators funding to experiment with ways to regulate emerging technologies.

In terms of what future regulation will look like, Prime Minister Theresa May told the World Economic Forum in Davos that it will be "innovation-friendly", designed to make the UK the best market for start-ups to invest in; but she cautioned that safety and ethics would be at the forefront of the Government's technology policy agenda, arguing that the market should not be left to regulate itself. Meanwhile, Chancellor Philip Hammond has indicated that the UK will adopt a lean approach to regulation around driverless cars. In stark contrast, Leader of the Opposition Jeremy Corbyn has hinted he would support a "robot tax" being introduced to address fears that jobs will be displaced by automation.

Despite the UK's strong position to harness the potential of AI, the broader policy debate is often stifled by the perception of AI as a looming employment problem rather than an opportunity to address pressing productivity challenges. This is partly the result of ongoing concerns over transparency and the perceived monopolisation of consumer data by the world's largest tech companies.

By global standards, the UK's approach to AI policymaking can therefore be described as measured. There is no official governance just yet, but AI is beginning to feature more prominently in life sciences, financial services and defence sector policy agendas. It will not be long before caution gives way to more tangible policy action. In 2018, we will see the UK Government's AI strategy take shape and create opportunities for greater industry engagement in the policy discussion.

United States of America

The United States has historically left technology companies relatively unimpeded by oversight or stringent regulation. As an approach, it has been observably successful: tech has serially transformed entire industries, and the world's five largest technology businesses - with a combined market capitalization of over \$3 trillion – are all US companies (e.g. Apple, Amazon, Facebook, Microsoft and Alphabet).

This era of permissiveness may be coming to an end: significant advances in AI, machine learning and neural networks made by high-profile organisations have generated substantial negative publicity, triggering heightened fear and confusion amongst everyday consumers and insiders alike. Elon Musk himself recently called AI a greater risk to the U.S. than North Korea, and headlines across the country frequently cite the risk of major job losses due to the rise of automation.

This environment frames a difficult challenge for U.S. policy makers and industry participants alike: to promote the development and benefits of innovative technologies such as AI, while carefully considering potential negative impact on consumers and society at large.

Given these heightened sensitivities, policy-makers are under public pressure to demonstrate their commitment to protecting Americans from the potential negative impact of technology. However, when it comes to taking the step of actually passing laws, the Republican-controlled Congress is more hesitant: doing so runs counter to the accepted orthodoxy that new regulations impede the ability to create jobs and drive economic growth. In addition, any new technology (certainly including AI) can be difficult for policy-makers to grasp, let alone regulate. As such, they are looking for industry experts to play an important role in shaping the regulatory environment of the future. Already, lawmakers are creating formal channels of communication between innovators and the ultimate decision makers.

Specifically, a bipartisan group of lawmakers led by Representatives John Delaney (D-MD) and Pete Olson (R-TX) established the Artificial Intelligence Caucus last year. The purpose of the caucus is to create more dialogue between industry professionals and policy-makers as they collectively work to make technology safer and more sustainable. This year, the caucus is planning to address hot-button issues, including healthcare and cyber security.

In addition, a group of bipartisan lawmakers recently introduced legislation, the FUTURE of AI Act, which aims to establish an advisory committee - made up of industry leaders, academia, small business leaders, etc. - to provide insights and recommendations on an appropriate regulatory framework for AI. While the legislation is in its early stages, there is some optimism that it could become law later this year.

Greater China

For the first time, AI was specifically mentioned in a Communist Party of China (CPC) work report — the country's most important political document — at the 19th Party Congress in 2017. Included in President Xi Jinping's grand vision for China, developing the sector is now deemed a national priority and crucial to China's goal of becoming the world's dominant technological and innovative powerhouse. A New Generation of AI Development Planning, a government document released in July 2017, outlined its strategy of how to become the

leading Al power by 2030, involving as many as 15 government agencies. Progress in Al is strongly encouraged under the 13th Five-Year Plan released last year, as well as in notable state-driven industrial plans such as "Made in China 2025" which actively promote and support the development of advanced industries and technologies.

Government-led subsidies at central and local levels are at the core of the plan and will help China's AI industry expand speedily over the coming years with little sign of slowing down. Now with official government backing - the opportunities for developing AI in China seem endless, what with the conveyor belt of computer-science trainees, huge amount of available capital and many petabytes of data to train machines with.

Success in AI will not be accomplished by public entities alone. China's top tech companies in November 2017 teamed up with the government to set up China's very own AI 'national team' to assist with the country's bid to become the leading global AI innovator. The corporate sector is now driving significant investment in AI R&D. Baidu itself invests 15% of its revenue in R&D – around US\$1.5 billion – all of which "is AI related", whilst other major players including Alibaba and Tencent have established their own AI-dedicated labs. Further, a distinct advantage in gathering data lay in the hands of these Chinese technology firms, as the Chinese tend to use their mobile devices for online transactions far more often in their daily lives.

From a cross-border perspective, many top tech companies in China also continue to acquire AI-related technology and "know-how" through notable investments abroad. Collaboration with overseas companies is increasingly commonplace, with the US NVIDIA recently partnering with Alibaba and Huawei to build an AI city platform, as well as Google setting up an AI research centre in Beijing in early 2018.

Turning to the research and education sectors, Chinese universities and institutes are increasingly conducting specialist academic exploration on Al. A Nikkei and Elsevior list released in November 2017 ranks two of China's universities among a global top 10 in producing the most frequently cited research papers on Al. Chinese academics even surpass their American peers in terms of sheer volume of Al research.

Despite these reasons for optimism, the Chinese AI sector suffers from an allocation of resources – particularly in relation to funding and subsidies – that has hindered their progress. Reports that some leading companies depend on government funding for 30 to 68 per cent of their profits

reveals an issue with over-reliance on subsidies – a problem that has historically plagued a number of sectors promoted top-down by the Chinese government.

In this same vein, some domestic companies are reportedly cheating the system in order to secure subsidies, with many local authorities lacking the industry-specific expertise necessary to regulate the market. It's also suggested that some SMEs lacking the right connections are struggling to access subsidies that are instead being directed to local state owned enterprises (SOEs) regardless of technological capability.

Finally, there is a cloud of apprehension over the government's intentions concerning AI. Concerns have been expressed that China's tech firms may not have the power to prevent the government from using the pools of data amassed in the development of AI. While fears can be overblown in the West on occasion, the likelihood is that Chinese AI will continue to reflect the desires of an increasingly controlling CPC under President Xi.

Hong Kong

In 2017, Asia Business Council's Asian Index of Artificial Intelligence analysed the top eight economies across Asia to identify their level of preparedness for a fourth industrial revolution. Hong Kong, despite its competitiveness as a financial and business centre in the region, placed seventh in their efforts to establish Alfocused initiatives for the future.

While innovation in fintech, from a corporate and retail banking perspective, continues to thrive, Hong Kong is losing out to its rivals in both attracting quality AI talent and investing in developing its own AI initiatives. While the focus on evolving its financial markets makes sense, sectors such as retail, logistics, insurance and hospitality form the bulk of Hong Kong's employment pool and are ripe for AI-led change. A stronger ecosystem, consisting of more corporate funding for internal initiatives and in conjunction with technology start-ups, along with partnerships with larger markets such as China would increase opportunities for home-grown and overseas AI talent.

However, the Hong Kong Government has signalled its intention to kick start this change with officials openly discussing the need for innovation. Its smart city strategy has seen technology start to underpin many of the Administration's moves, with a team of digital experts deployed to advise departments on the possible adaption of technology solutions in all their disciplines. Initial plans for a joint innovation and technology park in collaboration with neighbouring Shenzhen have also been shared.

Along with financial and tax incentives to attract technology firms to Hong Kong, particularly those focused on IoT, big data and AI, the Government's allencompassing initiatives should help the Harbour City on its way to realizing its smart city vision.

Asia Pacific (APAC)

Whilst regulatory progress has been made in fragmented pockets in APAC, (e.g. Australia, Singapore, Indonesia, Vietnam, Thailand) AI remains nascent with Singapore and Australia leading the bulk of AI experimentation. AI is largely viewed as a means to expedite the process of generating new ideas and breakthrough innovation, spurring economic growth in Asia Pacific. On the regulatory front, the majority of policymakers in the region appear to be more focused on promoting the adoption and growth of AI, with no comprehensive regulatory framework currently in place. The growth of AI requires nations to create more robust data ecosystems, and to better develop talent and capabilities if it wants to realise its full potential.

Several governments have been focusing their efforts in promoting 'blueprint' strategies, supporting legislation (i.e. cybersecurity and data protection regulation) and data-led policies to ensure sustainable economic growth in Asia Pacific over the longer term, with AI envisaged to provide a major boost to productivity as a means of innovation. In Malaysia, the government has also announced plans to develop a National Artificial Intelligence Framework, as an expansion of the existing National Big Data Analytics Framework. Prime Minister Najib Razak also proposed setting up value innovation centres and the post of chief innovation officers at all ministries and agencies, and is currently looking at the possibility of introducing a secure Digital ID platform to be used by both the public and private sectors to enhance trust. Indonesia is fast-tracking the passing of its personal data protection bill as one of its 2018 national priority legislation programme, which seeks to balance the prioritisation of consumer privacy and the public sharing of data for use in Al.

APAC governments are actively investing in AI, but long-term solutions will take time to come into effect, owing to structural reasons such as insufficient data for machine learning (e.g. due to a lack of data-collecting infrastructure and privacy concerns) and a shortage of AI professionals. As a result, progress in the implementation will be largely driven by private sector innovation and at the same time their ability to work with local governments to tackle the infrastructure challenges and the availability of the necessary skillset among the local work force.

Singapore

Al is one of four frontier technologies identified by the Singapore government as essential in realising the country's Smart Nation vision through a Digital Economy. In 2017, Singapore's Committee of the Future Economy outlined seven mutually-reinforcing strategies to grow its GDP by 2-3% on average, with AI referenced in its innovation strategy. In May the same year, Al.SG - a national initiative bringing together related agencies to develop deep AI capabilities - was set up by the government to invest up to \$\$150m in AI for the next 5 years¹. Al.SG aims to address major challenges affecting society and industry, invest in readiness for the next wave of scientific innovation, and to encourage more companies to use AI and machine learning in Singapore. It focuses on three key industry sectors: finance, city management solutions and healthcare.

In Singapore, the increasing use of AI and machine learning by financial institutions and fintech companies has also led the country's regulator, the Monetary Authority of Singapore (MAS), to call on a collaborative approach with the industry for consultations on potential ethical pitfalls, which aim to result in future regulatory guidelines maintaining ethicality, accountability and transparency.

In November 2017, the Info-communications and Media Development Authority (IMDA) unveiled the Industry Transformation Map (ITM) for the Info-communications Media (ICM) sector, committing to grow the Singapore's ICM industry by 6% annually, double the current rate. This was closely followed by the January 2018 launch of the Professional Services ITM, which aims to drive innovation in Singapore's professional services industries (architecture, engineering services, consulting, accounting, legal and advertising) by equipping the industry workforce with specialised skillsets in AI, data science and analytics.

Singapore's bid to catalyse AI adoption and create a pervasive AI ecosystem has been supported by its successful parallel efforts in creating a controlled yet thriving financial technology ecosystem, led by its financial regulator. While it is clear that the government has a broad AI strategy in place, future success is ultimately reliant on a capable AI talent pool able to adapt quickly and thrive in the digital economy.

¹ The National Research Foundation (NRF), the recently founded Smart Nation and Digital Government Office, the Economic Development Board, the Infocomm and Media Development Authority (IMDA), SGInnovate, and healthcare IT firm Integrated Health Information Systems (IHiS)

Australia

While Australia has a long track record of technological innovation, policies to support the widespread adoption and regulation of AI remain fragmented. At the same time, businesses and their workforces are preparing for automation.

In a landmark report released in 2015, the influential Committee for Economic Development of Australia (CEDA) estimated that almost five million Australian jobs – equivalent to around 40 per cent of the workforce – faced the high probability of being replaced by computers in the period to 2030.

Now, three years down the track, researchers estimate that major Australian businesses are actively embracing automation, with the most common uses being machine learning, automated reasoning, robotics, knowledge representation and natural language processing.

In a policy sense, the Australian Government has a range of initiatives operating under the broad umbrella of a national Innovation Strategy, including support for smart cities and smart network programs, while state and territory Governments are variously testing and adopting policies to encourage automation in the transport sector.

The challenge now for policymakers is how to accelerate a consistent national policy framework for AI.

Middle East

One of the common denominators across the Middle East region is an increasingly young, well-educated and techsavvy population that is eager to stay at the forefront of technological innovation. And innovation, as is usually the case, is a step ahead of regulation.

A recent PwC report concluded that two-thirds of consumers in the Middle East were ready to replace human doctors with AI and robots. Healthcare is not the only sector opening up to such developments in the region. With heavily populated cities, the Middle East is also looking into other areas such as new infrastructure development, smart city solutions, and the Internet of Things (IoT), amongst others, to solve some of its most pressing challenges.

The United Arab Emirates (UAE)

While Saudi Arabia made international headlines for granting citizenship to Sophia (the robot), the UAE has more quietly - yet also more determinedly - continued to

assert its leadership when it comes to innovation in general and AI in the Middle East.

In October 2017, H.H. Sheikh Mohammad Bin Rashid Al Maktoum, the Vice President and Prime Minister of the UAE and Ruler of Dubai, launched the UAE Artificial Intelligence Strategy 2031 - the first of its kind in the region. A major part of the UAE's longer-term plans to become "the best country in the world", the AI strategy will seek to integrate AI into nine sectors of the economy, namely transport, health, space, renewable energy, water, technology, education, environment, and traffic.

The exact details on the 'how' and the 'when' are still unclear at this stage. But, the launch of the strategy was followed shortly after by the appointment of the country's first Minister of State for Artificial Intelligence, Omar Bin Sultan Al Olama, as part of a broader Cabinet reshuffle (announced via Twitter). The 27-year-old, who was previously Deputy Director of the Future Department at the Ministry of Cabinet Affairs and the Future, now has the mandate to position the UAE as a major hub for the development of Al technologies. A key objective for Al Olama will be to enhance government performance.

Al Olama has announced that his team will focus on developing legislation around AI, training the local workforce and attracting the right skills from abroad and locally to implement AI across different sectors in the economy. "We will add clear laws, framework and roadmap for implementing AI to serve humanity, not control humanity," said AI Olama.

Conclusion

- Al holds significant promise, but industry leaders in the field will face challenges when integrating such technologies into today's highly regulated sectors (e.g. health, finance) due to the immature state of the Al policy environment where ethical and regulatory boundaries of tomorrow have yet to be set.
- Al's growing applications will necessitate a rethinking/retooling of existing rules and regulations.
 With no regulatory precedent to follow, regulators across the globe are looking for ways to unpack the issues as they relate to both businesses and societies.
 Regulators are currently doing this in a competitive and uncoordinated manner.
- Now, more than ever, governments need to proactively seek out support and guidance from industry, academia and civil society to guide them through the intricacies.

Our Advice Securing the right regulatory approach to AI

Below we have outlined the key pillars to a successful campaign around the uptake of AI to ensure its place in both corporate infrastructure as well as wider society.

1. Educate

- Educate decision makers (and those who influence them) on how AI benefits their constituents and priorities. Address misinformed claims, and present credible solutions to ensure future policies are conducive to innovation while addressing societal concerns. The fear of the unknown that surrounds AI is the single biggest challenge, and it could lead to the impediment and/or mishandling of future policy.
- Policy working groups and new industry-led organisations are being set up around the world to advise decision-makers on AI (e.g. World Economic Forum's new council on Artificial Intelligence, European Commission's upcoming AI platform, etc). These present prime opportunities for innovators to participate in the policymaking process and also

mitigate regulatory and legislative risks.

2. Adopt a global focus

- Secure a global view of regulatory developments and promote convergence and best practises. Protect your investments by ensuring that global regulatory competitiveness in the field does not lead to a fragmented regulatory landscape.
- Understand the nuances of different jurisdictions for effective policy engagement. Whether it's D.C., Brussels or Beijing, it is imperative to apply consistent messaging, delivered in a well-coordinated campaign.
- 3. Ensure an inclusive debate outside legislative chambers
- Maintain ongoing dialogue with the public, civil society, and academia. Their opinions will be crucial in swaying policy makers' opinions and actions.
- Apply consistent and well-evidenced messaging to clearly articulate complex, and at times controversial, issues. Offsetting concerns quickly and proactively brings about trust and legitimacy.

How FTI can help you

- 1. Cross sectoral team of seasoned experts
- 2. Global reach from D.C. to Beijing able to ensure coordinated campaigning
- 3. Proven track record engaging on complex issues to achieve impactful, and long-lasting results for clients every day

FTI Consulting's global Strategic Communications team can provide you with public affairs, government relations, and reputational advice to help you navigate the complex regulatory issues surrounding Al. We provide early insights to help you understand and anticipate political, legislative and reputational threat and opportunities as well as positioning and messaging advice to bring your views to the table. We work with you to develop and implement stakeholder engagement strategies, including connections to a diverse range of local experts across jurisdictions, bringing to bear our extensive networks and track-record in all key industry sectors.

FTI's Global AI Regulatory Taskforce

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