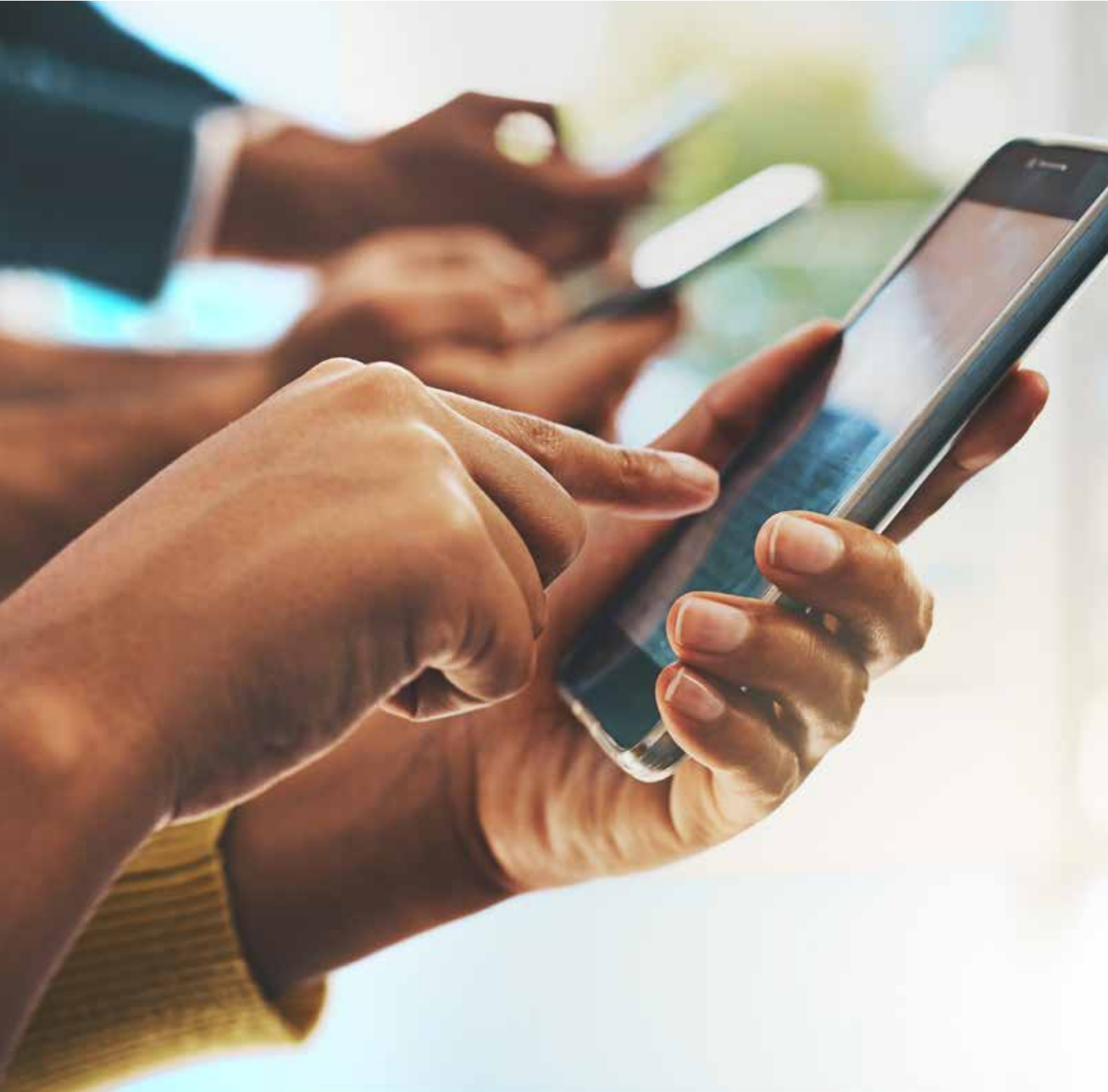# 4.1 Data and Digital Literacy

An informed perspective around data, and how it is acquired and used, increases public confidence, overcomes misunderstanding, and aids better decision-making.

Context

At a time when a plethora of technologies are both augmenting and replacing human capabilities, many in our workshops believe there is a pressing need to ensure greater public, political, and organisational understanding of the value and use of data. Regulators need to be more informed; workers need better technical skills; and citizens need to be equipped to manage their digital footprints to better engage with public services and protect themselves from possible abuse. How to address this and counter what was seen to be an increasing digital divide, sparked nineteen separate discussions on Digital Literacy during the Future Value of Data project.

These discussions focussed on three different debates around data literacy:

- **Regulatory preparedness:** Is there sufficient understanding amongst policy makers to manage the transition to and the impact of digital technologies successfully? Can regulators better support digital literacy?

In the main, it was acknowledged that regulation will probably always trail technology, and therefore in order to be as prepared for the expected transition to a more automated working environment, closer collaboration between business and policy makers is essential. In Lagos, Nairobi, and Bangkok in particular, there were concerns that, without greater technical understanding, policy makers will find it difficult to truly comprehend and manage the social and economic changes ahead. To address this one option, which was given widespread support, was the idea of greater collaboration between national regulators; many suggested that a global, or more likely, regional body could establish an education framework, set clear literacy standards, and share best practice.

Level of Workshop Debate

- High
- Medium
- Low

Most in our workshops felt that greater understanding of the potential that data has to drive economic growth will shape what and how we learn. In London, it was observed that teaching basic logic and reasoning and providing a backbone for training computer-literate adults is already priority for a number of governments.[27] Indeed, a commonly held view is that, such is its significance, a basic understanding of coding will soon become a part of the core curriculum, like maths and languages. In Madrid, the recommendation was that alongside practical skills, better understanding of ethics, control, and privacy is also important. They observed that the millennial generation is likely to be the first to benefit from policy changes, and given this, we may face a generational divide, as there will be those who are unable to adjust to the changes that technology will bring. Governments will have to prepare for this.

- **Active workers:** Does our economy/society/ workforce have the skills needed for a digital age? Do we need to train or retrain workers so they can actively participate in the digital economy?

Having and maintaining the right skills is critical to deal with technological change.[28] As technology is very adaptable, the ability of machines to see patterns and outperform humans at recognising images is expected to affect high and low skilled employees alike. As a result, the workers of tomorrow, including the most educated elite, may need to ensure the skills they learn complement those that are easily replicated by a machine, and remain flexible and open to learning new skills.[29] Many in our workshops felt that there is insufficient public awareness of how quickly change is coming upon us, and therefore little understanding of the new skills which will soon be needed.

A number of corporations already have their own learning platforms to keep staff up to date; IBM, for example, has an AI Academy that recommends courses from a curriculum provided by Coursera. However, some felt that, although useful, this form of "up-skilling" will merely increase the divide between those already in the professional elite, and those with fewer opportunities. The real need, they argued, is a "re-skilling" of the wider workforce. Lack of digital literacy may mean that unskilled workers may find themselves locked out of the workplace completely, with their roles performed more efficiently and cost effectively by machines. Given this, there was widespread support for corporates to get more actively involved in training programmes.

- **Informed citizens:** How best to ensure citizens can understand and manage the benefits and risks of using and sharing data? How can education help them to navigate the internet and digital platforms, and engage with social media?

In Madrid, Copenhagen, San Francisco, and Singapore, it was felt that the priority for any public digital literacy programme should not be about enabling individuals to master a particular skill or to become proficient in a certain technology platform, but rather it should be about equipping them to thrive in an increasingly digital society. Teaching citizens to manage their digital shadow, and helping them to better understand how to protect themselves from fraud, they argued, should be a national priority.

What We Heard

The Digital Divide

From Washington DC to Tokyo, Bangkok to Sydney, and Manila to Johannesburg, concerns about those who will not have access to digital education were raised. In Tokyo, the perspective was that *"the divide between the technology literate and the technology illiterate will be a huge challenge, and will have grave consequences if not addressed."*[30] Similarly in Washington DC, they said, *"in 10 years, society will be more digitally literate overall, but adoption will be lumpy – in part because of public appetite, and in part because of lack of opportunity. Consequently, the threat of increasing inequality remains a strong possibility."* [31] There is already a significant literacy gap to address. A number of countries we visited still cannot guarantee even a basic education for everyone. This was observed in Pretoria, where they pointed out that, although there is a huge need for digital literacy, the priority in some areas should be to begin with the roll-out and mainstreaming of Early Childhood Development programmes. Only once young people can read and write, can digital literacy be addressed; *"a computer is just a box if you don't know how to use it."* In India, it was observed that technology can also help to reach those who were previously cut off from education, and that more should be done to introduce mobile literacy programmes.

A Global Approach

Most agreed that there is a need to establish some common global standards; *"we need harmonised regulation,"* or, at least, best practice around data literacy, but there is little expectation that this will happen any time soon.[32] Some think time will sort this out. First articulated in Bangkok, but echoed in other markets, there was an assumption that *"we will eventually figure out the educational requirements necessary to deal with a data-driven world, and go on to build ethical education platforms which will be accessible to all."* Not everyone shared this view. Instead they argued that it will be difficult for citizens to truly understand how best to manage their personal data without a change in the way data is managed. They called for regulation to clarify how personal data is used.

Corporate (In)action

In Washington DC, the judgement was that *"we need to find ways to connect data literacy to people, in real terms. Business needs to understand this too, and Big Tech in particular may need to take some responsibility. Without a universal approach to this, there is a risk that inequality will increase."* In Copenhagen, they pointed out that *"there must be various entry points to digital education, both through schools and also available to those returning to the education system."* To address this, future policy should *"enable lifelong learning (covering more technical skills, interdisciplinary, improved research methodology, and better networks), and then fuller integration of digital cross-domain knowledge."* Failure to address the problem risks the damaging scenario of suffering higher unemployment and a skills shortage at the same time.

"There must be various entry points to digital education, both through schools and also available to those returning to the education system."

Copenhagen workshop

In Bogota, it was observed that, as jobs of the future are going to change, so too will our educational needs. Given technology will likely replace many of the traditional jobs, rather than focus on purely academic achievements, they recommended that there should also be a focus on the skills we will need to work in the future; *"the way that we educate our children will have to change to adapt to the needs of a more technical society where skills such as collaboration, and softer qualities such as integrity and compassion, not just better maths and coding skills, will have greater value. As yet, there is little understanding of this in the public sector, so it is difficult for regulators to develop appropriate policies that will offer long-term benefits."*

In Dakar, the outlook was optimistic. They felt that with the right kind of political support, investment in data literacy presents an opportunity for African economies to catch up with the likes of China, Korea, and Singapore, which have already had great success in data innovation. *"We must be ready to build a generation of digital culture. Our young people should start learning to code. They must learn to work digitally and more effectively."* This perspective was echoed in Lagos; such is the pressing need for development, they argued that the priority should be *"to teach Nigerians how to use, access, and navigate the Internet. Education about safety and security is less important."* Conversely, in Washington DC, there was concern that policy makers do not currently see digital literacy as a priority; *"support for greater digital literacy would benefit from a "moment" which demonstrates how it can be a vehicle for social change."*

The Generation Game

Looking ahead, some suggested that greater digital literacy will simply come with time. *"The next generation is inherently more sophisticated. They understand a data-driven society implicitly, and know how to protect themselves. Similarly, next generation policy makers will be more sophisticated."*[33] However, in Madrid, it was felt that, although technically able, young people may not have the emotional maturity to deal with the social implications of new technologies. To address this, they suggested that *"young people should have to prove their emotional maturity before being allowed to participate in social media sites."*[34] They argued that public education, therefore, should have a stronger emphasis on philosophy, critical theory, ethics, and anthropology, in order to provide students with the necessary skills to participate in a new social contract.

"Support for greater digital literacy would benefit from a "moment" which demonstrates how it can be a vehicle for social change."

Washington DC workshop

Truth and Illusion

Provenance and authenticity of data were major concerns in our discussions, and the debate on who has liability and is accountable for ensuring truth and accuracy was often raised. Some argued that it already threatens democratic values and confidence in government, and therefore there should be increased public awareness about it. Initiatives to address this include digital literacy programmes, the creation of safe spaces online, and controversially, as in Uganda, taxing social media use – although in the same Nairobi workshop, this was also described as a way to limit free speech.[36] The Madrid workshop proposed *"clearer labelling and better terms and conditions, to help people understand how their personal data is used and managed. We could even consider labelling content by using colour-coded schemes, as found in the food/energy sectors."* Those in Singapore agreed in principle with this, but pointed out that *"labelling helps to identify truth, and perhaps branded news is a way to help the public identify responsible channels. However, all of this is dependent on maintaining public trust in the established media."*

Awareness and understanding

The hope is that growing data literacy will mean greater public engagement online, which will in turn give citizens greater access to a range of public services, such as health and social care, education, and transport. In Santiago, it was also argued that higher transparency, greater accountability, and public awareness about the importance of data and government use of it will act as a way of monitoring corporate behaviour, particularly around the use of AI; *"when the public is more involved, accountability becomes "horizontal" rather than vertical."* As awareness grows, the ability to *"watch the watcher"* and *"critically understand"* will mean that large organisations of all kinds will be obliged to temper their actions and be more considerate of what is considered to be acceptable – both off and online.

Implications For Data Value

None of the issues highlighted by our research - the need for policy makers and regulators to better understand new technologies and their implications, for workers to improve their digital skills, and for citizens to better understand the potential consequences of how their data is collected and used - can be addressed by 'a quick fix'. They need time to develop and mature. But growing recognition of their importance represents a step forward. The triple agenda for improved digital literacy represents an important plan for action and improvement; necessary pre-requisites of a healthy data-driven economy - essential underpinnings of effective functioning - just as the '3Rs' became an essential underpinning of the industrial age.

"When the public is more involved accountability becomes 'horizontal' rather than 'vertical'."
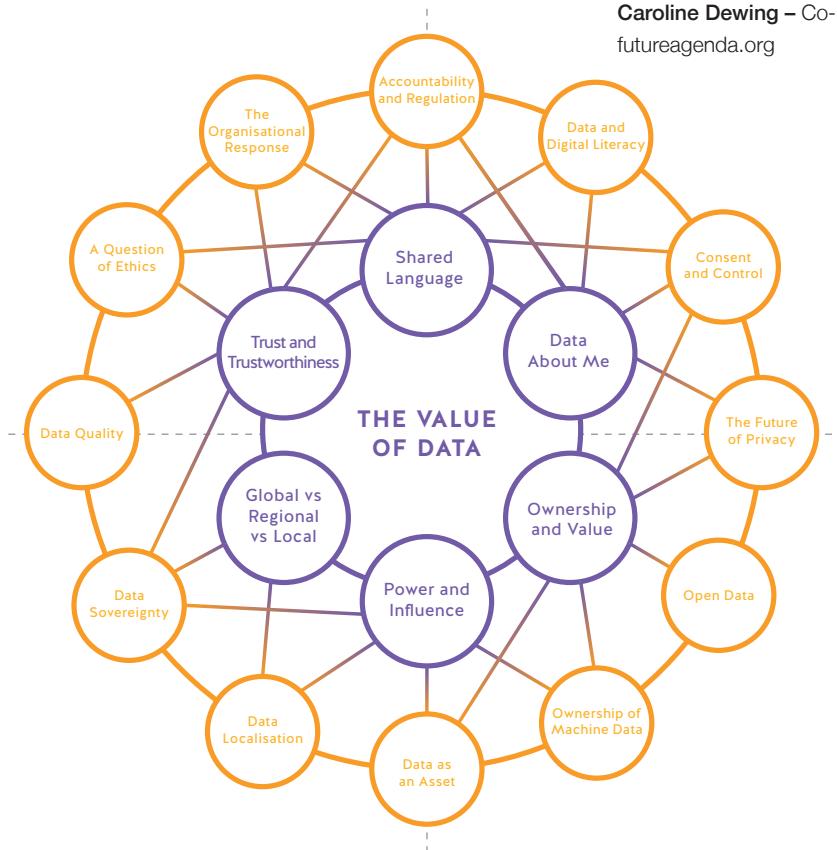
Santiago workshop

Context

This is one of 18 key insights to emerge from a major global open foresight project exploring the future value of data.

Throughout 2018, Future Agenda canvassed the views of a wide range of 900 experts with different backgrounds and perspectives from around the world, to provide their insights on the future value of data. Supported by Facebook and many other organisations, we held 30 workshops across 24 countries in Africa, Asia, the Americas, and Europe. In them, we reviewed the data landscape across the globe, as it is now, and how experts think it will evolve over the next five to ten years.

The aim of the project was to gain a better understanding of how perspectives and priorities differ across the world, and to use the diverse voices and viewpoints to help governments, organisations, and individuals to better understand what they need to do to realise data's full potential.

From the multiple discussions 6 over-arching themes were identified alongside 12 additional, related future shifts as summarised in the diagram below.

About Future Agenda

Future Agenda is an open source think tank and advisory firm. It runs a global open foresight programme, helping organisations to identify emerging opportunities, and make more informed decisions. Future Agenda also supports leading organisations, large and small, on strategy, growth and innovation.

Founded in 2010, Future Agenda has pioneered an open foresight approach bringing together senior leaders across business, academia, NFP and government to challenge assumptions about the next ten years, build an informed view and establish robust growth strategies focused on major emerging opportunities. We connect the informed and influential to help drive lasting impact.

For more information please see:
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THE VALUE OF DATA

Accountability and Regulation · The Organisational Response · Data and Digital Literacy · A Question of Ethics · Consent and Control · Shared Language · Data About Me · Trust and Trustworthiness · Data Quality · The Future of Privacy · Global vs Regional vs Local · Ownership and Value · Data Sovereignty · Open Data · Power and Influence · Data Localisation · Data as an Asset · Ownership of Machine Data

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