

Trust, transparency and technology: **The Government View**

UNDERSTANDING PUBLIC SECTOR ORGANISATIONS'
DIGITAL ETHICS MATURITY

Foreword

The role digital technologies play in positively transforming public services cannot be understated. From improving decision-making through better use of data, making services faster and more accessible with human-centred design, to ensuring greater security and safety at borders, technology has radically changed the way government works.

With this change has come a growing awareness of the importance of taking a responsible approach to data and technology, with digital ethics moving up the agenda for organisations across all sectors.

At Sopra Steria we want to harness the power of innovation to drive positive change in public services and society. To deliver this, we are firmly committed to working alongside our public sector clients to design, implement and manage digital services with ethics at their heart.

Since embarking on this mission back in 2018, I've seen some very positive steps forward in the digital ethics space. More organisations have moved from conversation to action and this report reflects that. While it's still early days for most of us, the public sector organisations that took part in this research have all made significant progress – even in just the last 12 months.

It is fascinating to hear the real life experiences the participants shared with us, and I hope that by launching this report we ignite more conversations and further develop our shared knowledge on best approaches to digital ethics.

I'd like to thank all the organisations and individuals who participated; in doing so you are helping all of us find better pathways towards using data and technology for the good of society.

Adrian Fieldhouse

Managing Director, Government & Transport, Sopra Steria

Executive Summary

During our research we were very pleased to note that government organisations are taking increased action on digital ethics. However, maturity levels remain fairly low, which is perhaps unsurprising given the infancy of the concept across the sector.

While we witness increasing maturity in data ethics, digital ethics has not kept the same pace. Taking steps to enhance the approach to digital ethics will drive better outcomes for citizens and government alike, with robust strategies helping to build and sustain trust amongst citizens. There are strong examples of good governance materialising, and an emerging awareness of the importance of 'people and culture' in embedding ethics.

The challenge is much wider than data. For example, public procurement processes may be unwittingly providing a backdoor to unethical technology and, in certain cases, government organisations are yet to consider environmental sustainability within their use of technology (both internal and external), despite the clear benefits.

There are some good examples of digital ethics governance materialising, such as digital or data ethics committees, with more room for growth in terms of policy and process to link the committees' activities to the rest of the organisation. Likewise, there is an emerging awareness of the importance of 'people and culture' in embedding ethics.

As well as much needed governance, it is critical that government organisations establish a culture that drives digital ethics forward. Our research shows organisations recognise the need to act in this area. Likewise, most organisations don't yet have the specialist in-house capability to act decisively on digital ethics, although there are emerging communities within the workforce that are championing it.

Engaging stakeholders – especially service users – is central to digital ethics best practice, and critical to mitigating risks, such as bias or inaccessibility. Most organisations have work to do in implementing consistent approaches to stakeholder engagement.

Safe, ethical and effective data sharing – critical to driving better outcomes for citizens, achieving efficiencies and making better policy – is still also a challenge for all organisations.

Organisations are seeking ways of better understanding and verifying what data ethics guardrails are in place at third party organisations they share data with. We also found that digital ethics maturity is driven, in part, by the proximity to the citizen, the organisation's purpose, and the potential for risk. Ethical practice is more embedded when the link to the citizen is closest – making it easier to appreciate the potential impact on an individual.



Introduction

Research Methodology

This report is based on research undertaken by Sopra Steria with senior government decision-makers in the UK, to explore how digital ethics is being addressed in digital strategies and programmes in UK public services.

Through a series of one-hour semi-structured interviews, researchers sought to ascertain how digital ethics was perceived, and how it was being acted upon in each organisation. Interviews were based on 'keystone' questions within Sopra Steria's Digital Ethics Maturity Model, covering seven areas critical to organisational Digital Ethics Maturity, described below.

Our intention is to complement the ongoing efforts by many in government, such as the Central Digital and Data Office (CDDO), and the Centre for Data Ethics and Innovation (CDEI), to drive progress in digital ethics adoption.

Through the interviews, various themes emerged, creating a picture of the current state: the differences between - and the similarities among - these organisations' approach to digital ethics.

The organisations involved in this research were:

- Department for Business, Energy and Industrial Strategy (BEIS)
- Department for Environment, Food and Rural Affairs (Defra)
- Department for International Trade (DIT)
- Department of Health and Social Care (DHSC)
- Home Office
- Scottish Government - Agriculture and Rural Economy Directorate
- Scottish Government - Digital Citizen Unit
- UK Statistics Authority

The Open Data Institute (ODI) supported this project by reviewing research design and interview methodology.

Digital Ethics

What is Digital Ethics?

Over the last decade there has been a growing recognition that technology, and the trend towards more sophisticated uses of data, have potential consequences for society, for individuals and for the environment. Privacy concerns arising from smart home cameras, issues over the effects of social media on young people (leading to the proposed Online Safety Bill for example), and worries of so-called [“mutant algorithms”](#) being used in the public education system, have increased.

These headlines, and many more like them, have started to shake what has traditionally been a relatively firm foundation of trust in technology. With trust in public institutions already on the decline (according to reports like the Edelman Trust Barometer) and growing public expectations around ethical use of data (as described for example in this [ODI report](#)), it is increasingly concerning for organisations that use data and technology to provide effective public services.

In the past four years, digital ethics concepts have risen up the government agenda and have focused almost exclusively on data ethics. This is largely through the introduction of the Centre for Data Ethics and Innovation along with the

[Data Ethics Framework](#), published by the Central Digital and Data Office in 2018. This has been complemented more recently by continued efforts across government organisations towards developing data maturity more broadly, such as the [Government Data Maturity Model](#) from the Government Data Quality Hub or the work being undertaken on the Algorithmic Transparency Standard, part of the UK’s National Data Strategy.

Sopra Steria has been working with government organisations to take these complex, and somewhat daunting, issues out of the abstract and provide a structured approach to digital ethics to make them approachable and manageable.





To that end, we use this definition of digital ethics:

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Digital ethics is a continual process of identifying, prioritising and managing the risks and opportunities that technology and data use pose to humans, society and the environment.

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Digital ethics is active. It is not a passive set of principles or a code of conduct. It requires policy and governance, but also tools, skills and culture adaptation.

To make digital ethics both accessible and manageable, and to start that continual process of identification, prioritisation and management, we use our Digital Ethics Categories. The categories act as lenses organisations can use to identify ethical risks and opportunities within their own unique strategic and cultural context. These categories have been defined by drawing on myriad technology ethics standards and guidelines published across the world in the last decade.

Digital Ethics Categories



Privacy

Digital services are typically fed and improved by access to data about individuals. The costs of mishandling personal information can be considerable.

For example, [TikTok were recently issued a notice of intent](#) (precursor to a fine) for £27m by the UK's Information Commissioner's Office for failing to protect the privacy of children. It is believed TikTok may have processed the data of children under the age of 13 without appropriate parental consent and processed special category data without legal grounds to do so.

This articulates a crucial element of privacy: consent. Through this category we seek to achieve a balance between utility of data and individual privacy when designing the delivery of public services.



Safety

Digital technology comes with new and sometimes increased threats to people, businesses and national security. While this category considers issues of cybersecurity it also considers the wellbeing of individuals.

Technology typically reduces human touch points, where risks can be spotted and mitigated quickly. Adding in rigorous and continual testing will support robust safety standards.



Displacement, Skills and Work

Technology has the potential to create new and interesting careers, and to enable people to live more fulfilling lives. However, digital technology has been changing how we work, the types of jobs available, and how work is valued and remunerated for decades.

The transition to the new world of work is accelerating as companies undergo digital transformation, which is raising fear of unemployment or poor working conditions. This category asks what the impact of digital technology will be on an organisation's own workforce and the wider world of work, which is a key consideration when implementing change.



Transparency

Digital solutions offer the potential to provide services more quickly and effectively than ever before, and to a greater number of people. However, increasing digitisation may make it more difficult for users to understand what they are agreeing to and how decisions are made.

Our experience shows that transparency builds trust, so organisations will have to improve the transparency of their digital services to be more trustworthy. They will also feel pressure from regulators with legislation such as the US Blueprint for an AI Bill of Rights and the EU's AI Act likely to require more of organisations.

Digital services often mask the ethical responsibility for a given act and create networks of "distributed responsibility". To ensure transparency over decision-making and the reversibility of outcomes impacting humans, organisations will have to address the assignment of responsibility for their digital technology.

¹Ess, C. Digital Media Ethics. Cambridge, UK: Policy Press, 2014

Digital Ethics Categories



Fairness, Equality, Diversity & Accessibility

Digital technologies can be used to create a more diverse and inclusive world. By using digital technology to connect people, we can expand access to services across the globe, creating empathy through shared experiences. To achieve greater inclusion and accessibility, however, we must not reinforce and amplify human bias in a digital platform. For example, we need to avoid datasets which use unreliable, biased data. Such data can create bias in technology, such as facial recognition that does not recognise certain groups of people.

Special care and attention must be taken towards vulnerable individuals and those who may be left behind by technology. We must work to break down barriers rather than introduce new ones. Furthermore, simply mitigating technology's ability to exclude is not enough – organisations must act to empower marginalised groups.



Environmental Sustainability

Digital technology has the potential to help solve some of the world's biggest challenges, such as climate change, air and water pollution, and resource shortages.

But it can have environmental costs too, in the forms of resource consumption and depletion, earth and water pollution, and its own energy and carbon footprint. These consequences need to be recognised and captured as part of any project involving the use of technology or data.



Delivering Social Value

[More people expect businesses to play a positive role in society](#), and organisations have responded with greater focus on [ESG programmes](#) and new products and services.

This shift is coupled with increasing scrutiny on technology businesses from regulators, the public, consumers and employees.

Recent years have seen organisations holding back technology which could be used for dangerous means, as when [IBM withdrew its facial recognition technology](#) due to concerns of racial profiling in the policing market.

This category of digital ethics seeks to anticipate and mitigate negative consequences at scale, and to encourage the design and use of technology for the public good.

The difference between digital and data ethics

Data ethics and digital ethics, though they are often conflated, are two distinct areas.

Data ethics falls under the umbrella of the wider topic of digital ethics. It can be understood as an aspect of ethics that evaluates data practices which impact on people, society and the environment.

While they share the same goals, such as mitigating harm to individuals and driving positive social benefits, the scope of data ethics is much narrower. Digital ethics, by contrast, evaluates and mitigates the effects of both technology and data on individuals, society and the environment.

Taking into consideration the elements outlined above, digital ethics has the capacity to be more impactful than data ethics. Data ethics does not usually, for example, consider issues

of accessibility, environmental sustainability or displacement of jobs. To consider only data ethics could lead to oversight when designing a service.

In short, digital ethics considers all aspects of technological impact, not just data. This is explored in greater detail in this report. It should be acknowledged that data does not have to be personal in order to raise ethics concerns, but in the context of this report, data is assumed to relate to individuals unless otherwise stated. This was articulated by organisations included in the research. They recognised the identification of individuals is possible, even in the handling of data that does not directly pertain to personal information, such as data on businesses or the delivery of government services.



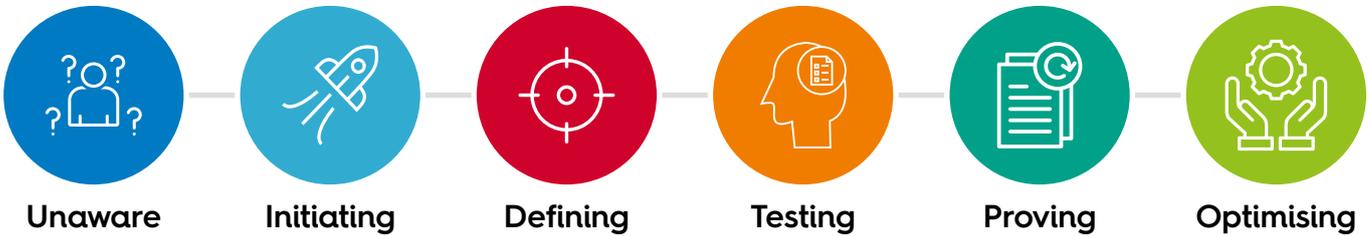
Digital Ethics Maturity Model

Sopra Steria's Digital Ethics Maturity Model establishes where organisations are on their journey towards embedding digital ethics. It provides a framework for evaluating the extent to which an organisation has integrated digital ethics into its strategy and operations, and how it is deriving value from digital ethics.

The model examines seven main maturity components of digital ethics, with a spectrum spanning six levels of maturity.

- Strategy
- Governance, tools, methodologies and processes
- Targets and performance
- People and culture
- Compliance and verification
- Stakeholder engagement
- Procurement and supply chain engagement

The six levels of maturity:



Organisations optimising digital ethics across all seven maturity components will experience the greatest benefits in the forms of risk mitigation, reduced duplication of effort (and costs), alignment with and reinforcement of other corporate policies, and the ability to derive value from digital ethics by, for example, improving understanding of digital service users and building trust with them.

The maturity model

This maturity model was used as a foundation for the direction of questioning throughout the research interviews, enabling a broad yet deep appraisal of digital ethics across government.

Assessment Categories	Level of Maturity					
	0 Unaware	1 Initiating	2 Defining	3 Testing	4 Proving	5 Optimising
Strategy 	No strategy in place	Strategy and programme being defined; limited resources	First strategy published; limited scope; gaps present; programme started; further resources applied	Effectiveness of strategy reviewed; learning from initial scope; refining resource requirements	Refined strategy in place; better alignment to corporate strategy; more comprehensive scope; resources reflective of strategic ambitions	Effective data ethics strategy, fully aligned to corporate strategy; updated in line with corporate strategy
Governance, Tools, Methodologies and Processes 	No governance, tools, methodologies and processes in place	Some governance, tools, methodologies and processes in place, but not joined up	Defined, joined up approach to data ethics governance, tools, methodologies, and processes; known and unknown gaps	Effectiveness of governance, tools, methodologies and processes reviewed and addressed	Refined governance, tools, methodologies and processes in place; better alignment to corporate approaches	Effective governance, tools, methodology and processes, fully aligned to corporate approaches; continually improved
Targets and Performance 	No targets or performance management	Some targets or metrics in place, not joined up across the organisation	First measurement framework defined, linked to data ethics strategy; some gaps	Effectiveness of measurement framework and OKRs reviewed and framework and OKRs updated/expanded/refined	Refined measurement framework and updated OKRs; alignment to corporate OKRs	Measuring the right things at the right time; insights feed into corporate strategy
People and Culture 	No awareness of levels of data ethics skills; no specialist teams; no awareness of cultural ethical enablers/blockers	Some data ethics skills and skills needs identified; limited action on cultural factors	Initial formal data ethics roles in place; first cultural initiatives underway	Review of data ethics skills deployed and further skills needs identified in both specialist and generalist areas; lessons from cultural initiatives gathered and plans refined	Data ethics skills outside of specialist areas defined; data ethics culture change plans created; skills and culture change programmes underway	High levels of data ethics literacy; role-appropriate data ethics skills; cultural enablers in place to drive data ethics continual improvement
Compliance and Verification 	No awareness of data ethics standards; no internal or external verification	Data ethics standards used in some areas but standards used may vary; limited internal verification	Relevant data ethics standards identified and documented; guidelines for use in place for limited scope; internal verification against documented checklists	Guidelines for compliance updated; external verification underway	Data ethics guidelines provided to other teams; internal and external verification processes established	Compliance guidelines provided to all relevant areas of the business; verification incorporated into corporate governance processes
Stakeholder Engagement 	No data ethics stakeholders identified	Some data ethics stakeholders identified; limited engagement, often one-way	Initial mapping of internal and external data ethics stakeholders; initial engagement planned	Stakeholder engagement plan executed; lessons incorporated into future plans; other stakeholders identified	Stakeholders fully mapped and engagement plans established	Fully defined stakeholder map and defined two-way engagement processes implemented
Procurement and Supply Chain Management 	No data ethics requirements in procurement standards	Awareness of need for ethics requirements in procurement of data-driven technology, but no defined evaluation approach	Requirements defined and initial evaluation criteria established	Refining requirements and evaluation approaches	Consistent approach to evaluating technologies and vendors; procurement teams have appropriate skills	Vendors and procurement teams collaborating to improve data-driven technologies for data ethics

Our findings

1. Government organisations have started to take action on digital ethics.

With the introduction of the Data Ethics Framework, it was clear even before this research began that digital ethics had permeated the agendas of at least some parts of the public sector.

Unsurprisingly, given the infancy of the concept of digital ethics, maturity levels are still fairly low. Here we provide a high-level summary of the current state of digital ethics maturity against the Sopra Steria Maturity Components.

The purpose of this overview, and indeed this research, is not to provide a maturity score

for the UK Government as a whole, but to describe how a number of central government organisations are approaching the digital ethics agenda. We also aimed to identify some commonalities, as well as specific practices and challenges that, by sharing information about them, may help others determine a better way forward.

Strategy

What we look for	What we saw
A clear and documented indication of what digital ethics means for the individual organisation, the main risks and opportunities, the changes it wants to make, and the end state it wants to achieve.	No organisation participating in the research had a digital ethics strategy.
Additional considerations The lack of documented strategies is unsurprising at this stage of digital ethics awareness and adoption. Defining a strategy early on - even at a high-level - can help organisations identify risks, set clear priorities and reduce duplication of effort.	

Governance, tools, methodologies and processes

What we look for	What we saw
Policies, defined roles and responsibilities, technological and non-technological tools for managing digital ethics initiatives.	Some organisations had creative and effective points of governance. Some use specific tools - usually ones they have created or adapted from third parties. Often these are not used across the organisation, but for specific purposes or in specific teams. All of this is explored in more detail in the later sections of this report.
Additional considerations Participating organisations with more mature governance and tools recognised the need to expand their efforts to have greater reach and impact within their organisations, and to join it to a coherent strategy.	

Targets and performance

What we look for	What we saw
Objectives and key results (metrics) to measure progress against strategy, and to assess the value of digital ethics initiatives.	Some organisations measure some of their activities, such as frequency of use of tools. One organisation, however, had an even more sophisticated approach in which it evaluated the ethical impacts of carrying out or not carrying out a project.
Additional considerations Although setting objectives based on a clearly defined strategy is preferable, it is not strictly necessary. It is possible to start with rudimentary and inward-focused objectives, such as 'all technology projects worth over £10,000 have a digital ethics impact assessment by end of 2023'. Subsequently, organisations can move towards more strategic and outward focused objectives, such as 'year-on-year improvement in service user trust'.	

People and culture

What we look for	What we saw
Organisational values and cultural indicators enable people to raise and act on ethical issues. Appropriate levels of skills and expertise throughout the organisation.	Several organisations have introduced digital ethics expertise and are exploring ways to create an enabling culture for digital ethics.
Additional considerations This is explored in more detail in later sections of the report.	

Compliance and verification

What we look for	What we saw
Compliance with regulations, as well as alignment with government and non-government standards and guidelines, to help guide organisations' digital ethics activities and demonstrate to stakeholders what action is being taken. Internal or external verification to validate compliance.	A few organisations use the guidelines set out in the Data Ethics Framework, but no participants were aware of other ethical technology standards or guidelines being used. No participants were aware of internal or external verification taking place.
Additional considerations More than in the private sector, where firms are more likely to draw on a variety of standards to guide their programmes, public sector organisations will seek to align their work with standards and guidance produced and mandated by central government or policy-making divisions. The lack of use of and alignment with responsible technology standards produced outside government is therefore unsurprising, but suggests more guidance on ethics could be useful.	

Stakeholder engagement

What we look for	What we saw
<p>Stakeholder engagement – particularly with communities affected by an organisation’s digital programmes – to establish an understanding of user needs, expectations, beliefs and values. This engagement underpins digital ethics strategies and enables organisations to demonstrate ethical principles, such as transparency, safety and inclusion.</p>	<p>Some organisations have formal and structured ways of engaging stakeholders. This engagement is primarily driven by data ethics, not digital ethics.</p>
<p>Additional considerations</p> <p>There were very few feedback loop mechanisms in place even where stakeholder engagement did occur. In other words, while data subjects or data users might be engaged at the outset, their feedback once a project went live was not consistently brought back into projects.</p>	

Procurement and supply chain engagement

What we look for	What we saw
<p>Digital ethics embedded into the commissioning of technology in order to avoid procuring technology that does not align with an organisation’s ethical standards and introduces risk. Requirements in procurement and contract management processes. People who select and purchase technology and manage the vendor contracts with the right expertise and skills.</p>	<p>None of the participants were aware of digital ethics requirements in commissioning, procurement and contract management.</p>
<p>Additional considerations</p> <p>This is explored in more detail in later sections of this report.</p>	

The following sections explore the main themes from our research in more detail.

2. There is more maturity in data ethics, but improving on digital ethics could help drive better outcomes

All the participants in our research recognised that the ethical use of data was important, and most were at least taking some early steps to manage data ethics. However, many did not have any formal or informal mechanisms for considering digital ethics.

All the participants in our research recognised ethical use of data is important, and most were taking some early steps to manage data ethics. However, many did not have any formal or informal mechanisms for considering digital ethics.

Organisations have been grappling with the issues of bias, discrimination and privacy in data use for some time, especially as a result of GDPR. The international regulation of data protection standards has elevated the importance of the ethical treatment of data. However, there are differences between data ethics and data protection and privacy issues, although they are often conflated.

Compliance with GDPR is necessary but not sufficient to establish data ethics practice.

In the case of GDPR, the law does not cover data protection for the recently deceased, nor does it protect groups from privacy harms from lawfully gained data. Some organisations in this study have data ethics approaches that went beyond compliance with data protection legislation; for example, data projects being evaluated for their potential benefits or harms to society.

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I would say that probably data ethics is more mature. I think that's because, in the public sector, we have been understanding and appreciating the value of data for longer.

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“ Digital ethics... seems more complicated, a bit more messy. ”

Interestingly, despite the relative maturity of data ethics approaches in several organisations, there was little adoption of existing tools, such as the Government’s Data Ethics Framework. The organisations which had exceptional data ethics maturity, in many cases, had created their own tools and processes for assessing ethical risk and making decisions about the validity of certain data use cases.

Even amongst organisations with relatively mature data ethics approaches, no organisation had an established strategy.

One organisation said it did not plan to create a digital ethics strategy but expected one to be created by the Cabinet Office. This is an understandable view given most organisations ‘receive’, rather than define, policy from central government. However, digital ethics requires an understanding of specific risk and need: the risk of specific technologies in specific use cases, for example, or the specific need of different citizens.

More mature organisations also had established some good – if limited in reach – governance.

While compliance with GDPR and data ethics were recognised as important, the broader issues of digital ethics went largely unaddressed. While maturity in data ethics is essential, expanding ethics initiatives to encompass digital ethics is critical to identifying and mitigating risk in the design and implementation of digital programmes. A key part of this is understanding precisely what is meant by digital ethics. In some cases, data and digital ethics were used interchangeably, depending on the context.

Public procurement processes may be a backdoor to unethical technology

By establishing digital ethics strategies and initiatives, rather than ones focused only on data ethics, organisations are more likely to reduce supply chain risk and obtain an ability to assess risks associated with partners and suppliers.

Like many organisations in all sectors, most public sector organisations buy most of their digital technologies (or co-create them with partners), therefore commissioning and procurement have a significant role to play in digital ethics.

Organisations have broadly improved their ability to manage sustainability and ethics risk in their supply chains, driven by legislation such as the Modern Slavery Act, or awareness of the potential for harm and reputational damage, for example, following tragedies such as [the Rana Plaza collapse in Bangladesh](#) which killed over 1100 garment factory workers. Steps now need

to be taken to avoid technology-related harms, such as were seen in [the Post Office scandal](#).

Procurement guidelines should also include digital product or service-specific ethical requirements. Contracts should incorporate provisions for regular reviews and audits, as well as continual improvement.

Procurement and contract management professionals should be equipped with the skills they need to evaluate the ethical risks and benefits of the technologies they are commissioning.

No participants in our research were aware of these kinds of initiatives within their organisations. However, many thought procurement colleagues would be open to new approaches which consider digital ethics.

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I'd say 90% of the time, when we go out to engage with [procurement teams], they're not thinking ... 'you're trying to stop me from doing things', they actually welcome the support because they want the assurance that they're doing so in a way that isn't going to land them in hot water... And they want to ensure that they're doing it in a way that would satisfy ... the requirements around the potential impact.

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This sentiment was echoed by almost every interviewee when asked about digital ethics in procurement; they saw the value of improving tender specifications around it.

To make a start, organisations can incorporate requirements in tender specifications, such as vendor digital ethics self-assessments and reporting as a contractual requirement. This could enable buyers and suppliers to begin important collaboration and create value for both parties.

Government organisations should consider environmental sustainability as part of their use of technology because of the clear benefits

Environmental sustainability is not considered as part of any participating organisation's approach, although the benefits were recognised by interviewees. Environmental sustainability, though a core component of ethical approaches to technology and one represented in many digital ethics and responsible technology guidelines (such as the Ethics Guidelines for Trustworthy AI), is the most frequently overlooked area of digital ethics.

Government policymakers recognised this with the updated Greening Government: ICT & Digital Services Strategy, which recognises the challenge public sector organisations still face in aligning sustainability goals with digital strategies, and provides new guidelines.

Our research shows there may be a residual disconnect between organisations' sustainability policies and programmes, and their digital and ICT policies and programmes.

There will be benefits in addressing this disconnect. For example, an organisation that replaces an in-person service with a hybrid service, where those who are digitally excluded have to drive to a different service location, may cause service users to drive petrol and diesel vehicles over greater distances or more frequently, introducing more environmental harm than the organisation had originally captured in assessments of the project.

Incorporating environmental sustainability and making use of government guidelines in digital ethics approaches to digital services,

ensures there is no conflict in the outcomes of digitisation. It could even help public sector organisations achieve multiple goals at once, such as improving sustainability while supporting disadvantaged people in accessing public services.

Unsurprisingly, the research participants whose remit it is to protect the environment are leading when it comes to thinking about how technology and data can be used in support of that mission.

For example, Defra's programme to encourage farmers to undertake environmental sustainability initiatives is using data to enable incentivising payments to be made. Departments in Scottish Government have also looked at how the National Digital Strategy and the Environment Strategy can be combined to use data to tackle issues such as biodiversity or the nature crisis.

Incorporating environmental sustainability into digital service design could also help organisations address other objectives – for example, reducing their own energy consumption at a time when energy costs have skyrocketed.

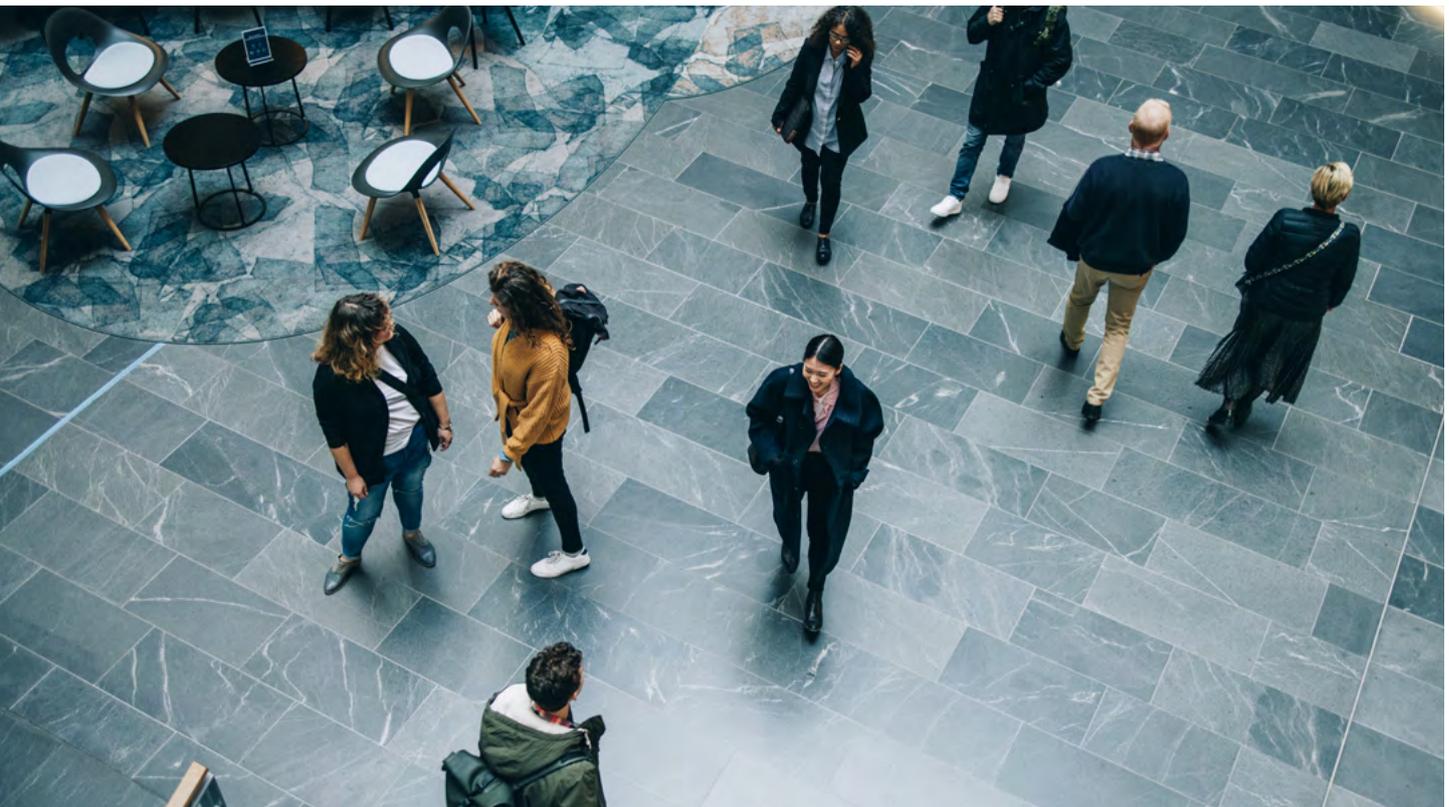
Taking a digital ethics approach ensures unintended consequences are always considered.

Digital ethics applies to the use of technology internally

While the focus of this report has largely been concerned with the citizen impact of ethical approaches to digital technology, or lack thereof, a key aspect of digital ethics is its effect on internal workforces

One example stood out. A newly refurbished government departmental building was built with the capability to monitor the number of times people enter and leave the building. Employees would have been aware of the monitoring, but it would not have been clear in which areas of the building they were being monitored. This issue was discussed by an ethics committee within the department, concluding the system couldn't be implemented until an equality impact assessment was carried out as the impact wouldn't be equal for everyone.

The impact of technology on employees is encompassed in a digital ethics perspective. Factors such as displacement and the need for potential re-skilling of employees can be captured, whereas, when thinking about technology and ethics from a purely data ethics position, they may be missed. The value automation and technology can bring to a workforce will also be recognised through a digital ethics lens; one interviewee described how technology allows employees to focus on elements which add value and facilitate them to provide a better quality service.



Digital ethics helps build and sustain trust

While data ethics is essential to building and sustaining the trust between citizens and government, digital ethics provides a more robust approach to developing trust by closing some of the ethical risk gaps in technology. In addition to the examples given above, research (including research soon to be published by Sopra Steria) shows citizens are concerned not just about how their data is used, but about the role technology plays in society and its impact on them. [The Edelman Trust Barometer](#) describes the public's concern over jobs displacement driven by developments in technology and automation.

Trust is widely recognised as integral to effective digital services. People won't use – or will engage in more limited ways with – services they do not trust. Being able to demonstrate that, throughout the design, implementation and management of a digital service, ethical principles have been incorporated is part of making a service trustworthy. New approaches to transparency, in particular, could unlock ways to build citizen trust. And, organisations should develop new, more accessible ways – such as through in-service communications – to tell people how their data is being used, how it informs decisions, and what to do when there is a problem with the service, especially with regards to services direct to individual citizens.

Furthermore, good digital ethics practice also requires organisations to better understand user needs, expectations, values and beliefs with

regards to digital technology and data use. This is to ensure trustworthiness can be designed and managed through digital ethics. Establishing trust metrics and performance management to build and sustain trust over time is part of an optimised digital ethics approach.

Despite the widespread conversations about trust and technology in the public sphere, very few participating organisations were actively looking at how their work on ethics impacts trust. This is despite recognising the importance of citizen trust to their work. In forthcoming research carried out by Sopra Steria UK, it was identified that, if citizens understand what information is collected by government and trust it is shared and used in an ethical manner, they are more likely to be comfortable providing their data. The government could collect more data if citizens trusted and understood the use of such information, highlighting that trust can help drive effective decision making.

This is echoed by [the ODI](#) which, in its research with Frontier Economics, found trust is crucial if we want to create value. It discovered an increase in trust correlates with an increase in data flow, leading to increases in value created. This research also highlighted the opposite is true – a decrease in trust correlates with reduced data flow, and a reduction in the potential value created.

There are shining examples of good governance materialising, and an emerging awareness of the importance of ‘people and culture’ in embedding ethics

Some of the organisations we interviewed had gone further in defining digital or data ethics governance (for example, formal ways of identifying and managing ethical risk, defined role and responsibilities for ethics, policies, and processes) and were in the process of establishing stakeholder engagement mechanisms. However, most do not include initiatives that consider the role their people and cultures need to play in embedding digital ethics.

Encouragingly, several organisations recognised this gap and saw the need to address it. This section explores these themes, and how governance, and people and culture intersect in conversations about digital ethics maturity.



Governance

Some departments have created committees responsible for providing advice on the ethical implications of projects in the digital space.

The creation of an ethics committee is one approach that can be effective in identifying, evaluating, and acting on digital ethics risks. For example, one government department has a committee which reviews projects for unintended consequences – primarily on data use – and can recommend the use of equality impact assessments for those using data.

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We now have an Ethics Committee that covers everything ethics and most of the discussions we have are about data and digital ethics, ... particularly around collecting personal information when people won't really be aware that you're collecting that information, but also about the boundaries between an individual, and how we handle business data.

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However, this organisation recognised the influence of the committee was somewhat limited and hoped to change that over time. The people involved in the committee are passionate about the role of ethics, and the committee has good levels of senior representation from across the organisation, but there is work to do to raise its profile and demonstrate its value – something which is now starting to be recognised by other stakeholders as individuals are “coming to the ethics committee earlier because it is making life easier.”

While this organisation's ethics committee is now regularly approached for review of projects, some projects do not get oversight, largely due to its lack of visibility.

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You need to know someone who knows about the ethics committee in order to... find out about it and bring items forward.

”

This is a strong example of emerging good governance that will be stronger as initiatives addressing the role of people and culture in embedding digital ethics are introduced. Another organisation mentioned the existence of a data governance board which assesses how the organisation manages risk in the use of data. Members of this particular data governance board said, “ethics and accessibility are a part of [the board] but [are] light touch”.

Finally, other departments mentioned they have a digital strategy setting the outline of why digital and data ethics is important. This department also has a team sitting within digital transformation which produces recommendations on the ethical use of technology – these recommendations are usually driven on a programme-by-programme basis. Again, while a digital strategy that advocates ethics and project specific recommendations for the ethical use of technology is a good start, it doesn't signify digital ethics has been fully embedded into governance across the organisation.

Some organisations want more or different guidance tools

Most participants had few or no tools for identifying and managing digital ethics. When asked about the government's Data Ethics Framework participants said they found the Framework too long and difficult to apply to their organisation's specific context, and too geared at data scientists. Others talked about the Technology Code of Practice or drew the link between the Equality Act and digital ethics but wanted more specific and detailed guidance.



Culture

There is concern the purpose of digital ethics will become just another tick-box exercise.

Alongside the emergence of governance such as committees, many participating organisations described their concern that too much, or the wrong kinds, of governance could lead to a thoughtless and low-effort/low-reward compliance exercise.

“

I think there's maybe sometimes a bit of a divide between what... ethical principles mean and how they can be used by [staff] for their own benefit, ... and so a lot of what we find is that ethics becomes a bit of a checkbox exercise. And we're trying to ... move away from that perception and encourage people to think ethically[also] throughout the whole life cycle of their research.

”

There was a general recognition amongst participants that ethical standards across the board needed to improve, but that attempts to embed ethics purely through governance would not succeed. As one of our interviewees pointed out, it is not desirable or feasible for every data or technology project to be scrutinised by an ethics committee.

When asked about approaches to embedding digital ethics into culture, some participants spoke of ways to make ethics evaluations more accessible and diffusing responsibility across the organisation.

For example, in discussing culture, two organisations described tools they had created in order to help people at all levels document and/or evaluate ethical risk in projects.

This approach could help spread awareness of and responsibility for digital ethics - critical to operationalising ethics - while preserving the role experts and senior decision-makers must have to review projects with the most complex ethical considerations. However, these tools will only be effective if individuals have the necessary skills to accurately capture relevant information, and they believe the organisation will act on findings and values their contribution.

Interestingly, one organisation observed the difference in attitudes towards ethics within a team, whereby the younger staff seemed to be more engaged and proactive in evaluating ethical issues than the older, more experienced staff. The research participant attributed this both to different expectations about the role organisations play in society and also hypothesised more university courses included ethics, and that new graduates were bringing this knowledge into their work.

Some stakeholders are reluctant to embrace digital ethics

Numerous interviewees described difficulties in engaging all, especially senior, stakeholders in digital ethics.

One department in particular, when asked whether senior stakeholders had bought into issues around data, digital ethics and transparency, the response was “no”. It’s not just senior stakeholders who are not engaging; there are others who perceive ethics as a hindrance to project and programme work.

This is unsurprising, given the potential for complexity of digital ethics without a clear understanding of risks and opportunities, and, as previously described, a lack of focused strategies. To overcome this obstacle, organisations should focus on reducing risk and leveraging digital ethics value, for example by identifying how digital ethics can improve outcomes of departments’ specific digital programmes.

To address this issue, ethics self-assessment tools, such as those mentioned above, if designed to help project owners evaluate how ethical concerns align with the strategic needs of their project (and if paired with sufficient training

and additional governance mechanisms to ensure findings are responded to), could help make ethics assessments more meaningful and enable more people to take action. This reduces the likelihood of ethical issues being missed because of a lack of capacity (such as a single, under-utilised ethics committee). One department using a self-assessment tool stated it regularly monitors the tool’s use, which helps it understand its take-up in the organisation.

Implementing monitoring mechanisms such as this alongside distributed toolsets is important to ensure digital ethics monitoring is taking root in organisational culture and more organic forms of governance.

There was evidence of stakeholders embracing digital ethics after initial hesitations, though. One department explained how its lawyers were initially sceptical of expanding an existing ethics group’s remit to look at large and complex data sets. However, at a later point, the same stakeholders expressed their appreciation of the group and their work as there were now identified policy experts able to assist them with issues.

The digital ethics agenda is sometimes seen to compete with other priorities, even when it could be a critical enabler for those priorities

Digital ethics has the potential to be a positive catalyst for policy outcomes as it ensures new policy carefully considers subjects like transparency, sustainability and discrimination, to name but a few. Despite this, many organisations aren't yet using digital ethics as an enabler to achieve other objectives.

Rather, there is a persistent perception digital ethics is its own agenda, with many organisations telling us other issues, such as the UK's departure from the EU and the cost-of-living crisis, took focus away from digital ethics. One interviewee told us:

“
With all the ministerial changes and policy changes we've experienced as a department, and COVID... things like [digital ethics] just aren't a priority for our leaders
”

By adopting digital ethics strategies and implementing joined-up policy, process, governance and training programmes, digital ethics can become an enabler for other areas by reducing risk.

For example, identifying and reducing bias from algorithms reduces the possibility of unintentional discrimination. Adopting this approach increases the likelihood of its acceptance by users, and reduces the need to replace when the bias is recognised at a later stage. This was evidenced in the A-level algorithm controversy of 2020, in which pupils from smaller, traditionally high-performing schools were privileged over those from larger, traditionally low-performing schools, irrespective of the students' actual grades.

Pockets of skills and expertise

Where governance is absent, some organisations have emerging ethics communities.

Some organisations without any assigned ethics experts or formal committees described informal networks of champions which discuss ethics in their work through, for example, government-wide Slack channels, departmental Microsoft Teams channels or internal internet pages. This helps to spread expertise and experience, and to flush out risk in the absence of more formal approaches. It also points to a desire amongst employees to progress digital ethics in their work.

It could make more formal approaches easier to build in, by harnessing the enthusiasm and organically grown skills and awareness within organisations. While a good starting point, the work of these communities does not necessarily lead to sufficient dissemination of knowledge, or adequate management of risk. When discussing formal skills training opportunities, some interviewees referred to the government library of training and skills modules accessible for

staff in all departments, but they also described a shortage of ethics content – especially technology and data ethics.

Making digital ethics learning material widely available, as well as introducing targeted upskilling initiatives, is critical to maturing it. One department has encouraged upskilling and peer-to-peer learning to develop knowledge within the organisation, so this could be applied in an ethics context. There was also an example of increasing data literacy becoming a key part of a broader transformation programme.

Moreover, if such training materials and skills initiatives are to be taken up, and if ethics is to be considered consistently in digital projects, programmes and strategies, adequate time and a culture conducive to raising sometimes challenging ethical issues are critical.



Stakeholder engagement in digital ethics issues is patchy

A core tenet of digital ethics is stakeholder engagement, especially engagement with the end users of digital programmes. Without an understanding of users' needs, expectations, beliefs and values, organisations cannot implement effective digital ethics strategies and demonstrate transparency, safety and inclusion.

More and more organisations have stakeholder engagement mechanisms for evaluating ethics.

A few organisations described the mechanisms in place for engaging with key stakeholders, including service users. These usually took the form of community or user groups where stakeholders could give their views on planned changes to services, or, in some cases focusing on data and the needs of data users (i.e. other organisations who make use of data provided by some departments).

Accessibility issues were often considered. Although, aside from guidance from the Equality Act and Web Content Accessibility Guidelines (WCAG), there was limited use of guidance or tools. Interestingly, stakeholder engagement mechanisms did not, for the most part, constitute full feedback loops, in which user experiences would be periodically evaluated against desired ethical outcomes.

“

[One large project] went through a large User Engagement Panel for feedback to ensure that [the data provided] could be easily read and understood by as many users as possible. Where we have data sets that are available to the public this is something we would look to do – and take the lessons from this project to some of our other products.

”

One example of stakeholder engagement is a matrix tool which helps identify people potentially impacted by a service who have not yet been spoken to.

There is an opportunity to develop more inclusive and accessible technology, and more representative and effective data, through direct stakeholder engagement.

A primary reason for stakeholder engagement is to reduce the risk of bias and discrimination, and to develop more inclusive and accessible technologies. Whilst many participants discussed the importance of diversity – particularly gender diversity – there were only a few who described direct stakeholder engagement as a way to bring ‘the voice of the user’ into the design, build and management processes.

One participant told us they have started engaging with a diverse range of stakeholders to ensure they understand the potential impact of the department’s services on different kinds of service users. This means they can mitigate issues where possible, driven by an awareness of the importance of their services to those individuals.

“

We’re conscious that there is work that we’re doing that has ‘real-life’ impact on people and therefore, we should be applying a certain amount of rigour and scrutiny around the way in which we approach the development of those products.

”

Another participant we spoke to stated they conduct both accessibility testing internally, as well as external audits. This department also provided digital support through a contact centre where users can be walked through online applications.

3. Data sharing is essential to creating public good, but is still challenging

Organisations that use data collected by others need mechanisms for checking and using data ethically.

Where departments or teams received data collected and processed by other public sector organisations, some worked on the assumption the data had been treated with a formal and structured approach to data ethics. Frequently, they were right, but there was no formal process for checking.

Furthermore, there was minimal evidence of ethics being fully considered once the data had been passed on to other parties. Some organisations referred to professional groups, like data scientists – who are known to have data ethics expertise – to explain the ethical implications. When using data from other sources, teams should evaluate the extent to which data ethics has been applied in the collection and processing of that data.

When sharing data, some departments had established a rigorous application process, requiring those wanting to use the data to provide justification and explanation, describing the types of data required and the purpose for which it needed to be shared.

Other organisations boast expert teams working to make an ethical approach more widely adopted, such as the UK Statistics Authority's Centre for Applied Data Ethics. Helping other data users adopt ethical practices, it has developed tools, training and other resources for other data users.

“

We have the technology, we have the data, we've got the skills, but there is also appropriate consideration of how we use that data – so it is not just a 'what' but a 'how' from an ethical point of view.

”

Sharing data across departments has been described as challenging by a number of respondents, with some commenting that there is insufficient legislation to support this activity. Many research participants described the challenges, although one pointed to the Digital Economy Act as a tool to help overcome troubles. The use of this legislation to share data, with the intention of delivering research approved to be undertaken for the public good, is an area we at Sopra Steria will explore in subsequent reports.

4. Digital ethics maturity is driven by proximity to citizen organisational purpose and potential for risk

Participating organisations that demonstrated more maturity (e.g. by having dedicated expertise or more formal governance, such as defined and operationalised tools and methodologies) have reached these levels of maturity for any or all of the following reasons.

Their services are directly accessed by citizens or use primary sources of citizen data.

The most prevalent driver was linked to the proximity of the citizen to the department. Departments that collect, model and process citizen data directly tend to be more mature in digital ethics than those who use data from other sources.

In other cases, the individuals leading on data or digital ethics programmes had previously worked in areas where the data was directly linked to the citizen. This experience made them aware of potential ethical challenges in their new roles. This is also reflected in feedback from departments working with data more removed from the citizen. These teams tend to be less mature in their approach to digital ethics, treating data ethics as a procedural gate, rather than a way of working.

One respondent pointed out those who conduct qualitative research, and, in particular, those working directly with users had ethics ingrained into their approach. However, this is not the case for more statistical researchers who often don't have a clear view on how ethics might apply to the work they do.

“

I think maybe because they're not working face to face with participants and they're not collecting data, and because a lot of the data is secondary, there is [a]... misunderstanding of how ethics applies to them.

”

The link to the citizen makes it easier to appreciate the potential impact on an individual, leading to embedded ethical practices.

Where there is a direct and visible impact on citizens, there is an inherent focus on building ethics into the way things are managed.

Organisations involved in projects resulting in unintended negative impacts on citizens had responded to these experiences, applying ethics to ways of working and often including greater focus on stakeholder engagement in service design.

Ultimately, proximity to the citizen, coupled with an understanding of the wider impact of technology or data collection, are key to embedding digital ethics as an approach.

The organisation's purpose requires it to embed formal approaches to other kinds of ethics.

Organisations with more maturity often had to grapple with other ethics disciplines, such as research or health ethics. Having established governance and expertise in these disciplines, it was easier for them to develop approaches to digital and data ethics.

For example, participants described how prior experience in other areas of ethics allowed them to understand the need for user engagement panels in the development of public digital tools.

A number of interviewees mentioned previous roles held in organisations across government where maturity was at different levels. They cited a difference in the criticality of the service, the levels of risk to the citizen, or the sensitivity of the types of personal data being shared, as factors driving the difference in maturity between their current and previous organisation.

They have experienced digital ethics issues.

There were several examples where the driver for action has been more explicit. Government departments have learned from projects which had unintended consequences for citizens.

Such consequences have also led to the development of specific tools. For example, one department has developed an operating model for a data ethics service, which incorporated an assessment to ensure a project had the necessary resource to be ethical, in order to embed it into existing processes and governance. This has the potential to operationalise digital ethics and make responsibility for it more widespread than in a designated committee.

Of all the drivers described here, this is the one which, ideally, should enable more effective risk identification and mitigation, which is one of the core benefits of optimised approaches to digital ethics. If more risks can be identified and mitigated before they become a problem, there would be less potential for negative impact on citizens.



Conclusion

Concepts of digital ethics have begun to permeate government organisations in ways that suggest they are being viewed as increasingly important. Even in discussions with organisations not taking steps to address digital ethics (as opposed to solely data ethics), participants were aware they should be looking at the broader ethical implications of digital.

GDPR and greater awareness of the important relationship between data and the citizens from which it is generated, have advanced data ethics. There is more to be done though to ensure ethics does not stop at compliance.

The most mature organisations did not describe defined approaches to digital or data ethics. We advocate for organisations to create digital ethics strategies as way of ensuring clarity, to identify material risks and opportunities related to digital technology and data use, and to create more joined-up, effective approaches. There are still important questions to answer on how digital ethics strategies could work in public sector organisations.

As discussed throughout this report, digital ethics requires an understanding of specific risk and user need. We therefore recommend that organisations implement digital ethics strategies, whilst recognising that ethical considerations may not stop at their organisational boundary. For example, a digital ethics strategy must incorporate aspects of (personal and non-personal) data sharing with other government organisations, businesses and civil society groups.

A more comprehensive approach to digital ethics can also help the government in mitigating serious risk and increasing citizen trust levels. By taking action to embed digital ethics capability and governance in procurement, the risk of inadvertently procuring technology that

results in negative consequences for users is reduced. By using digital ethics best practice to engage with service users and better understand how data and technology impact citizen trust, organisations can in turn increase that trust.

The research shows that there are some strong foundations in place for public sector organisations to build on; namely the expertise some individuals are providing from other ethics disciplines, effective ethics committees, and new tools being created, tested and iterated. Organisations at different stages in their development, can review these initiatives, select the best fit for their own contexts and adapt accordingly.

The importance of establishing a culture enabling responsiveness to ethical technology and data questions, and of equipping people to operate effectively in such a culture, cannot be overstated.

Drawing on lessons learned about other facets of ethics (such as safety and anti-corruption), both in the private and public sector, this research highlights the need for organisations to examine how their cultures equip people to act responsibly with regards to data and technology. Creating cultures in which ethical concepts can be discussed and argued over openly, in which there are effective review mechanisms, and in which people have the time and skills to participate, is critical to the embedding – and ultimately the optimising – of digital ethics.

This research offers a snapshot in time of a wide range of government departments and their progress in addressing the complex issues surrounding responsible use of technology and data. It covers a period whereby many organisations, of all kinds, all over the world, are just starting to explore and test new approaches.

We see encouraging signs of progress and, perhaps more importantly, consistently high levels of commitment from the senior leaders we interviewed across government. We hope this report proves to be valuable for those looking to take the next steps with digital ethics, regardless of where they are on their journeys.



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