TIGTECH

TRUST & TECH GOVERNANCE

Towards a more
engaged, collaborative,
communicative approach

Society Inside®
People Shaping Innovation

Fraunhofer

ABOUT TIGTECH

Benefits, risks and public trust in technology innovations are usually the focus of political and societal attention. Almost entirely overlooked is the need for the governance of these technologies, in its own right, to be trustworthy and to earn trust. We thought this an important question to be explored.

Our research and consultation sought to understand the drivers of trust and sources distrust and use that knowledge to consider how tech governance may differ, and in what ways, if trustworthiness and the earning of trust were considered and systematically incorporated into governance institutions and governance design.

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By **GOVERNANCE** we mean the institutions, processes, applications and outcomes of the rules, regulations, standards, procedures or decisions which provide a framework for the development and use of these technologies.

By **NEW AND EMERGING TECHNOLOGIES** we mean the development and applications of diverse technologies: including digital tech such as data analytics, machine learning, artificial intelligence and internet of things; quantum computing; robotics and autonomous systems; neurotechnologies; biotechnology, including genetic modification/gene editing of humans, animals and plants and synthetic biology; nanotechnologies and advanced materials.

TIGTech is an independent initiative supported by the World Economic Forum and funded by Fraunhofer Gesellschaft – Europe's largest group of applied sciences research institutions. The Fraunhofer Institute for Systems and Innovation Research is our academic partner.

The concept of earning trust in the governance of tech was first introduced at World Economic Forum Global Future Council (GFC) meeting in 2017 by Conrad von Kameke, then Director of BioInnovators Europe and Member of the Biotechnology GFC. The TIGTech initiative was formally set up by Conrad von Kameke and Hilary Sutcliffe, Director of SocietyInside, then co-chair of the World Economic Forum GFC on Values, Ethics and Innovation and most recently a member of the GFC for Agile Governance.

Hilary Sutcliffe is the lead author of this report.

WHAT IS THE PURPOSE OF THIS DOCUMENT?

Our aim was to synthesise the diverse thinking on trust into practical knowledge and applied concepts which may be useful to those developing tech governance. Our intent is to help tech governance and its designers earn the trust of wider society; including citizens as well as those participating in the design and application processes.

It is designed as a collection of insights, some practical ideas, a stimulus for new thinking and a starting point for discussion.

WHO IS IT FOR?

For anyone involved in tech governance. Perhaps a regulator reflecting on the evolving governance landscape or designing a new law, or a group of stakeholders creating a multi-stakeholder initiative, a business participating in a 'sandbox', an NGO or academic exploring ways to constructively engage with governance.

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Hilary Sutcliffe, Director
TIGTech & SocietyInside

Why trust matters to tech governance

We make many trust-based decisions each day. Every time we pay for something, choose what to eat, what to buy, or who's advice to act upon, dismiss or endorse – we consciously and unconsciously place trust in institutions, information, people, processes. Without these generalised and specific acts of trust our societies simply wouldn't work.

A great many of these decisions also show an implicit trust in governance – in the effectiveness of the rules, regulations, standards, procedures and institutions which help ensure products are safe, elections are fair, values are upheld and institutions of all types do what they are supposed to.

A trustworthy governance system for technology which we can (and do) trust will allow us to get on with our lives, confident in the belief that risk of harm to people and the environment is managed and complex values and ethical trade-offs resolved in the wider public interest.

> **"I don't know what all the fuss is about. If something bad happens, I will hear about it on the news".**
>
> TIGTech conversation with citizen demonstrating trust in governance.

It is perhaps only when it is visibly not working well do concerns about governance take a high profile in the mind of citizens, which we are seeing now – for example difficulties policing the impacts of algorithms, data privacy, facial recognition, concerns about the direction of neurotech, gene editing and others.

Citizens start to question – how is this allowed to happen? Where is the regulation? Who's job is it to get this right? Who is looking out for us? The question for governance then becomes focused on whether it is even worthy of trust if it is not effective in doing the job society expects it to do. Trust is eroded and potentially lost. Trust promotes cooperation, collaboration, compliance. It allows organisations to innovate to adapt to changing circumstances. Distrust does the opposite. Fundamental societal distrust of regulators and governance would have many damaging repercussions for policy making, tech innovation, even social cohesion.

> **"The question 'How can we restore trust?'... is on everyone's lips. The answer is pretty obvious. First be trustworthy. Second provide other's with good evidence of your trustworthiness"[1].**
>
> Baroness Onora O'Neill

Trust is an outcome. It is based on our perception of the trustworthiness of others. So, inspired by this understanding we considered for tech governance first what it is to be seen as trustworthy and then what it may look like to provide evidence of trustworthiness. This is obviously a complex subject, not easily reduced to simple answers. However we identified three ideas for governance institutions to consider in trying to earning trust and shine a spotlight on three new competencies which may be required.

New opportunities

1. **Be more engaged, more visible – show your impact**
2. **Detach governance from hype and ideology – build trusted environments to focus on the public interest**
3. **'Nothing about us without us' – get good at ethics, values and stakeholder involvement**

New competencies

1. **Evidence of trustworthiness – a new approach to communication**
2. **Building trusted environments for collaborative governance**
3. **'Nothing about us without us' – Involving citizens**

1 Be more engaged, more visible – show your impact

Citizens trust governance most when they can see it is working – when governance institutions visibly stand up for the public interest; when they can see values upheld, laws enforced, breaches published. They are most likely to lose trust where they see regulation failing in that role – in the governance of the financial sector or recent issues with governance of the digital space for example.

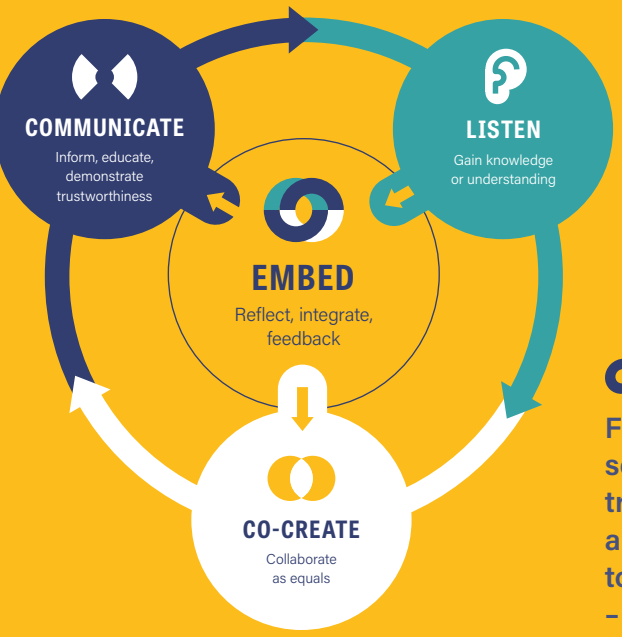
Traditional regulation and regulators appear to be largely trusted by citizens, though data on trust in regulators of tech innovation is scarce. It is often bundled with statistics on trust in government or social justice (such as that from OECD TrustLab[2]) or focused on trust in technology itself, not the governance (such as Edelman Trust Barometer[3]).

In the UK for example, 83% of citizens see regulation as a force for good; both for themselves and for business. But at the core of this trust is an expectation and a belief in the effectiveness of traditional regulation – mandatory & enforceable rules and laws.

What citizens want from regulators:

- Be more visible, show your impact
- Be more inclusive, listen to us
- Be more human, talk to us
- Help us help ourselves, educate and empower us

TECHTech analysis of public dialogues on tech and governance.



For more detail see Evidence of trustworthiness – a new approach to communication – page 35

New governance challenges brought about by the speed of development, complexity and international reach of new tech is severely testing this traditional approach, with regulations potentially out of date before the ink is dry. As part of the response, new 'agile' or soft law governance approaches are proposed to fill the gaps and provide the flexibility which may be needed – for example multi-stakeholder initiatives, professional guidelines, private standards and codes of conduct, sandboxes and policy labs. These new forms of governance can set frameworks and create expectations but are not directly enforceable by governments. They may struggle to earn (or even deserve?) public trust when one of the biggest drivers – the sign of governance working in the public interest through evidence of assertive enforcement – is absent.

The 7 Drivers of Trust on pages 16–32 provide a framework for understanding the basis for these governance instruments to be seen as trustworthy and be trusted. It is not a trivial task to develop effective governance in these challenging circumstances. Shaping the development of these powerful technologies in a way which upholds the public interest without causing more problems than they solve is perhaps one of the biggest challenges of our time. But our research shows that where trustworthiness and trust are absent so are the trust drivers. Where it is present they are clear to see.

2

Detach governance from hype and ideology and focus on the public interest

The main cause of distrust in tech governance, particularly of citizens and civil society groups, is the perception that governance is more concerned with smoothing the path of tech, prioritising economic development for political purposes and making money at the expense of societal values, people and planet.[4] This problem is not helped by political and media hype about technology progress – *electricity too cheap to meter* (Nuclear Power[5]), *an end to hunger* (GMO's[6]) *elimination of cancer by 2015* (Nanotechnology[7]) *the end of work and melding our minds with machines* (AI[8]). When – surprise, surprise – these wonders fail to materialise, public trust in the tech may be challenged (though citizens are surprisingly sanguine about the over-promise and under-deliver nature of most of tech development[9]). But the more corrosive problem this brings for trust is that this can 'infect' governance processes with an inflexible ideology about technology benefits and even a sense of immunity against challenge.

> **Promising 'an end to hunger', GMO's were positioned as a juggernaut powering through the food system – with Monsanto in the driving seat. The only way to stop a juggernaut is to step in front of it and make it put its brakes on. As it turned out, if I'd have known GM was going to be such a nonevent I wouldn't have wasted the last ten years campaigning against it"**[10]
>
> (Prominent anti-GM NGO, personal conversation)

This hype reinforces perceptions that a gung-ho view – 'tech's the answer, now what's the question' – is the driving force of policy and governance. This can easily appear unalienable, with anyone who thinks otherwise seen as too precautionary; a luddite, selfishly depriving society of transformational benefits.

To help avoid what can sometimes appear a valid perception, a clear and visible focus on the public interest is essential. Furthermore governance has to be, and clearly seen to be, independent of tech hype and the potentially narrow interests of any one stakeholder group – business, politicians, scientists, or the simply the loudest voices of civil society groups or citizens.

To achieve this, process matters. An important component of success will be the development of a trusted environment for governance design which will inspire a mutually held view by all stakeholders that a fair and inclusive process will be and was undertaken and outcome achieved.

See Building Trusted Environments for Collaborative Governance page 40–45

3

Get comfortable with navigating ethics, values

The greatest concern of citizens, civil society groups and many academics focuses on the ethical, moral and social aspects of new technologies. Concerns not just about different applications – 'should it be allowed to do this or that,' or 'is that safe', but rather 'should we use this tech at all?' 'What is it doing to society?' and 'How do we prevent these potential harms while retaining the benefits?'

These are complex challenges and often involve conflicting ethical or values-based decisions – privacy and human rights in artificial intelligence for example, naturalness and business models with GMOs, the fundamentals of what it is to be human in neurotechnologies, to name just a few. Big stuff. Rarely with clear or right answers often requiring uncomfortable trade offs, and with strong and heartfelt opinions from many different perspectives. Navigating these choppy waters is not just for politicians, it is increasingly part of the job of governance. It's not easy and requires new skills that assessing safety and risk did not really prepare regulators for.

Furthermore, citizens and civil society groups are increasingly demanding their views are incorporated in governance of technologies that are changing society – 'nothing about us without us' to borrow a phrase from the accessibility community.[11] This requires trusted processes which are inclusive, collaborative, designed to build consensus and do not allow conflict to escalate or the loudest voices to dominate. This also means embedding deep listening and co-creation, including with business and citizens – beyond simply looking at data or passive requests for written contributions.

Perhaps the most valuable finding of the TIGTech project is the importance of respecting and taking seriously the views of others – particularly those we don't agree with or whose values and beliefs clash with our own. Not just to demonstrate respect and understand concerns, but also gain new knowledge, diversity of input and spot early warnings of potential problems.

> **"The ability to listen, understand and interpret the attitudes, behaviours and values of the people we serve is essential if one is seeking to deserve the trust of citizens, customers, employees, members, shareholders and other stakeholders."**[12]

See 'Nothing about us without us' – Involving citizens page 45–55

Finding the right balance is not easy – but trust is worth it

It is not simple to get the right balance between collaboration and independence, inclusion and forward momentum, evidence of trustworthiness and pure self-promotion, being more open whilst maintaining confidentiality, remaining respectful and potentially making what to some will be unpopular decisions in the public interest. It takes a conscious commitment and considerable effort. But then things worth having – like trust – most often do.

We conclude that the earning of trust is both a science and an art.[13] The 'science' focuses on institutional alignment with the values and competencies which drive trustworthiness and trust, and the 'art' is the self-reflection, humility and compassion required to engage and align technologies and their governance with the shifting (and sometimes conflicting) ethics, values and beliefs of innovators, citizens and cultures.

5 THINGS TO KNOW ABOUT TRUST

The following collection of insights is derived from a helicopter view of trust from branches of psychology, evolutionary psychology, neuroscience, behavioural and risk sciences, sociology, science and technology studies. Some are well known, some are new and arose from the research. They are intended as a 'primer' about trust which can be consider in relation not just to tech governance but other areas of life.

(Further information can be found in TIGTech Academic Anchor Document from Fraunhofer ISI, available here.

Trust is an outcome, best achieved by focusing on others

Trust is the outcome of others perceiving trustworthiness and so bestowing their trust. But perhaps similar to love and happiness, the more doggedly trust is pursued for its own sake, the more elusive it may become. Also like love and happiness, it is more likely to result from turning one's attention outwards towards the needs of others than focusing only on personal objectives.

It is a hope about expectations fulfilled

A decision to trust signals a hope that an organisation or individual will fulfil an expectation we have of them. People trust individuals and institutions for specific reasons related to this hope and expectation – we don't lose trust in our plumber because he/she can't mend our computer or the Civil Aviation Authority for a failure to regulate the banks.[14]

Trusting people first makes them more likely to be trustworthy and to trust you back

Taking a proactive step to trust first, with the hope and belief, though no guarantee, that you will be trusted back, significantly increases the likelihood of being trusted. It also increases the likelihood of the other party acting in a trustworthy way themselves.[15,16,17,18] Automatically distrusting and so exhibiting more defensive, uncooperative or disrespectful behaviour is, unsurprisingly, less likely to generate trust in return.

> **"Government officials who act in a trustworthy manner are more likely to elicit compliance, and virtually all agree that government regulators who trust the people they are regulating are more likely to evoke trustworthy behaviour and compliance"** [19]

Trust is a spectrum not an either or judgement

Trust is not the simple black and white decision it is so often portrayed as – you either trust or you don't. It can be viewed on a spectrum of trust states from Passionate Trust to Passionate Distrust. These gradations may indicate different levels of confidence that the hope behind the trust decision will be fulfilled and correlate to different states of mind and potential actions. The speculative Trust Spectrum on page 56 is an attempt to begin to map these different aspects of trust and corresponding behaviours.

Seeing trust in this more granular way opens up the potential for a richer understanding of the perspectives and related actions of stakeholders.

PASSIONATE TRUST

ACTIVE TRUST

PASSIVE TRUST

RESIGNED TRUST

PASSIVE DISTRUST

ACTIVE DISTRUST

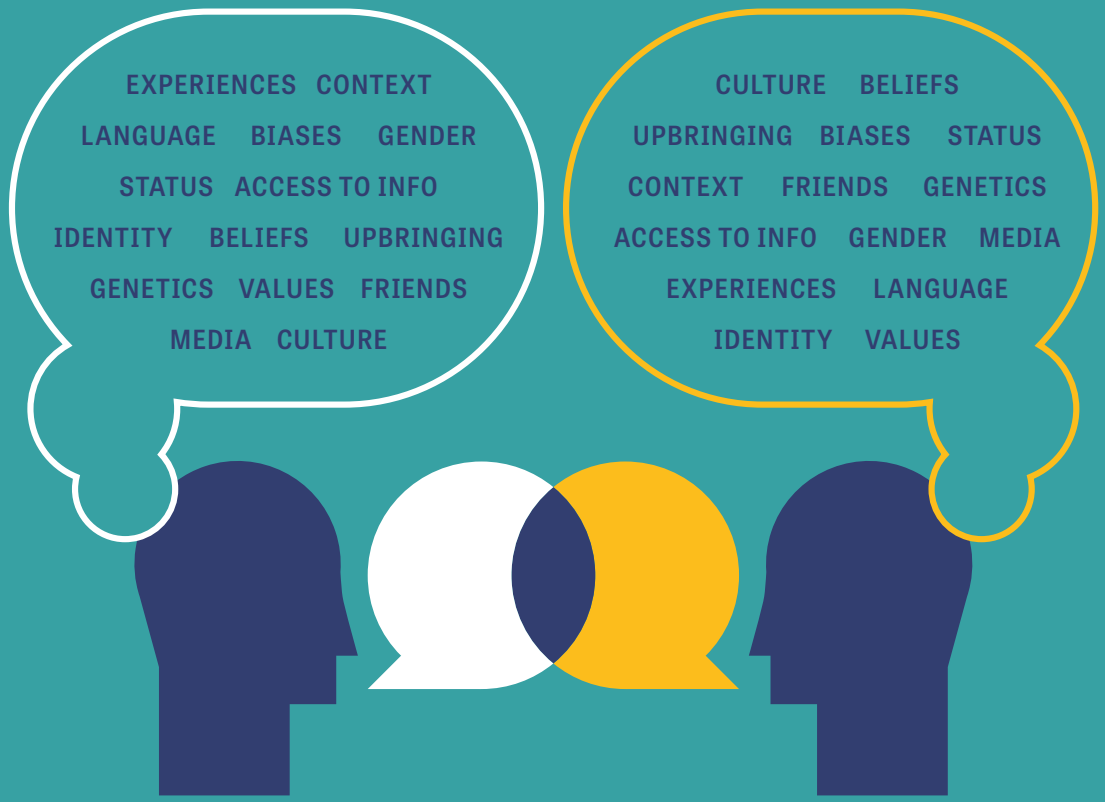
PASSIONATE DISTRUST

Trust is dynamic, messy, personal and two way

Trust decisions are a two-way process. The perspectives and views of those seeking trust shapes their actions as do the perceptions of those potentially bestowing it. There appear to be three interconnected elements, which may consciously or unconsciously shape our interactions and who we trust and who we don't:

1. The world view and subsequent communications and actions of the trust seeker.
2. The context in which the decision is being made.
3. The world view (genetics & personal traits, experiences, context and world view) of the trust giver.

Awareness of the messiness of this trust dynamic is important in stimulating the empathy for others and self-reflection required to earn trust. (See page 60 for more insights into the Dynamics of Trust).



TIGTECH
7 TRUST DRIVERS ARE CORE

For such diverse fields of research there was an unusual and remarkable consensus on the qualities which are important for trust – intent, competence, respect, integrity, inclusion, fairness and openness. Our research made it very clear that these are not just abstract concepts, or academic theories. These 7 Trust Drivers are deeply rooted in our individual and collective psychology and the fundamental ways our societies work and have evolved.

Though there may be different cultural interpretations, they are in some form or another at the heart of national and international justice systems, in most organisational values statements, culture change programmes, good governance frameworks, 'tech for good' guidelines, codes of conduct and more. And it is pretty much common sense that if you do the opposite of these you won't be trusted.

They are familiar almost to the point of banality. Perhaps this very familiarity may mean their importance can easily be underestimated and may explain why they are often overlooked?

Trustworthy organisations will use them as 'guides to live by'; aligning leadership, culture, decision-making, metrics and reward systems to embed them and signal internally and externally how seriously they are taken. To many others however, they are more "hocus-pocus spells, bits of primitive word magic that are trying to make something true merely by incanting it."[20] This approach is where the seeds of distrust are sown.

Trustwatch
A fun spotting game!

It is quite eye-opening to see the clear correlation between the Trust Drivers and governance, political, business or personal problems. Similarly on the positive side, with trustworthy organisations the Trust Drivers are clear to see. Try it, it's a fun and enlightening game.

TIGTECH
7 TRUST DRIVERS EXPLAINED

INTENT – PUBLIC INTEREST

upheld through purpose, process, delivery and outcomes

COMPETENCE

delivering against expectation effectively, reliably, consistently, responsively

RESPECT

seeing others as equals; listening to and taking seriously their concerns, views and rights. Considering the potential impact of words & deeds on others

INTEGRITY

operating honestly, being accountable, impartial and independent of vested interests

OPENNESS

being transparent and accessible in processes, communications, explanations and interactions

FAIRNESS

enshrining justice and equality in governance processes, application, enforcement, and outcomes

INCLUSION

being collaborative, inclusive, involving others

INTENT – PUBLIC INTEREST

The intent and role of tech governance is to protect citizens from the negative impacts of technology whilst shepherding its use for social good. This is upheld through purpose, process, delivery and outcomes.

Why Public Interest is so important to trust:

This core purpose for governance provides the guide rails or compass to help navigate the different interests and values inherent in technology development and governance and demonstrate the trustworthiness of governance institutions and processes. Our research showed that perhaps the most important driver of trust and distrust was the belief that governance was focused on the public interest.[21]

> **"It's reassuring and empowering to know when someone with good intent has a role."**

Citizen comment in Food Standards Agency deliberative forums on trust[22]

Changes to the governance landscape which reinforce its importance:

Complex ethical challenges, conflicting values decisions and difficult trade-offs come with the territory of many new tech – privacy and human rights in artificial intelligence for example, the replacement of jobs by robots or algorithms and concerns about the move from medical applications to human enhancement using genetic technologies, to name just a few. Governance needs to navigate these complex challenges and a relentless focus on the public interest is the best way to do that. Surveys show that the citizen's greatest concerns are focused on these ethical, moral and social aspects of technologies and they expect governance to manage these effectively.[23]

Trust tip

Good intent is central to trust

People are more likely to trust an organisation or process, a decision or outcome, even if it is not in their favour, if they can see the intent is for the general good. Explicit attention and communication about the public interest intent of governance design, application and enforcement is an important driver of trust.[24]

Watch-outs

Focusing on money and technology development causes distrust

The perception (and sometimes reality) that making money is prioritised over people and planet is the leading cause of distrust in tech and its governance.[25] Balancing the 'triple bottom line' of economic, social and environmental good in line with societal values is one of the greatest challenges of governance which a public interest focus helps to navigate.

COMPETENCE

Delivery against expectation; effectively, reliably, consistently, responsively

Why competence and delivery against expectation is so important to trust:

Competence – doing what is expected and what you say will do is a baseline of trust. So as not to undermine trust in this competence for tech governance it needs to be delivered in a reliable and consistent way and be responsive to the expectations of others. As the OECD Trust and Public Policy Report says:

> **"Competence is a necessary condition for trust – an actor, whether a business or a government agency, with good intentions, but without the ability to deliver on expectations cannot be trusted."** [26,27]

Changes to the governance landscape which reinforce its importance:

On-going research into "The future of regulatory systems in a disruptive world"[28] explores the changing nature of governance, in which issues combine high complexity, deep uncertainty, ever-shorter decision time frames and conflicting societal views. These dynamics are vastly different to what many existing regulatory or governance systems are designed for or used to. New competencies will be needed, with responses having to take more of a systems perspective, to deploy a wide range of tools in combination, and to excel in making use of diverse thinking. This is easier said than done. Citizens may have limited patience with the transition or the need to be adaptive – "'The system is complicated' isn't a good enough excuse for lack of action – find the way to do your job properly."[29]

Trust tip

Trust is context specific and about expectation fulfilled[30]

A decision to trust is a hope that an organisation or individual will fulfil an expectation we have of them. Sometimes this expectation is appropriate, sometimes misplaced. Distrust can occur in the case of a mismatch. Understanding the mandate and competencies expected by stakeholders, and taking steps to rectify misperceptions or respond more effectively to expectations, may be important starting points for earning trust.

Watch-outs

Beware shifting expectations of competence – 'from Watchdogs of Industry to Champions of the Public'[31]

To respond to the potential shift in expectation of governance institutions from *'watchdogs of industry to champions of the public'*, governance organisations may have to adapt their competencies and values if they are to remain effective, relevant and earn trust.[32] This also encourages a more assertive 'shepherding' role for governance to help steer companies towards social and environmental goals through innovative and inclusive governance mechanisms: such as Design thinking for Policy,[33] Safety By Design[34] or Responsible Research and Innovation[35,36] to achieve the Sustainable Development Goals,[37] or European Green Deal.[38]

RESPECT

Seeing others as equals; listening to and taking seriously their concerns, views, and rights. Considering the impact of words & deeds on others.

Why Respect is so important to trust:

Think about when you have felt disrespected. It might have been an angry online interaction, when an employer treated you badly, someone didn't do as they promised, or your concerns or beliefs were dismissed or ignored. Not nice was it? Did you feel like trusting that person or institution after that? Probably not.

The 'science of disrespect' is a huge field which shows we carry the feelings of anger generated by being disrespected with us for a long time. Disrespect and 'slights' are even a significant cause of violence, particularly in young men.[39] These feelings are tough to ignore or overcome and colour our judgement of the person or institution and significantly alter our interest in cooperating with a person or institution in future interactions.

Conversely, perceived respect is a powerful driver of trust and satisfaction in institutions and processes. For example, in civil disputes, litigants believe that their case has been handled in a respectful manner was the single most powerful determinant of preference for one type of procedure over another.[40] In the design of citizen dialogues, the decisions taken, even if they don't align with the desired outcomes, are more likely to be accepted if participants feel they have been respected in the way they have been treated and that the design of the process has been respectful of their views and concerns.[41]

Changes to the governance landscape which reinforce its importance:

The governance of many emerging technologies involves judgements which navigate conflicting views, incentives, values and beliefs. Sometimes there are no right answers. Lessons from the past show the important of taking seriously all perspectives, or opportunities for understanding may be missed and collaborative solutions lost. The governance of GMOs provides an important lesson.

Trust tip

Respect those you disagree with

Perhaps the most valuable finding of the TIGTech project is the importance of respecting and taking seriously the views of others – particularly those we don't agree with or whose values and beliefs clash with our own. The perceived disrespect generated by a failure to do this can potentially undermine even the most trustworthy processes. How do you respect people whose opinions and values conflict with your own? You decide to. Then commit to the actions that go with it.

> **"The language of science was the only one allowed. Concerns about the purpose of GMOs & societal values were ignored or blocked. This was seen as 'not the job of governance'. Had they been more open to and respectful of these concerns initially, before opinions became entrenched, who knows where this might have gone".**
>
> Doug Parr, Chief Scientist Greenpeace. (TIGTech consultation)

Watch-outs

Early warnings missed by 'wilful blindness' [42]

Many examples of failed governance – such as those catalogued in the European Environment Agency's Late Lessons from Early Warnings report[43] – show that someone, somewhere, has been drawing attention to a problem, often for a considerable time. These warnings are usually provided by citizens, civil society groups or academics who sit outside the mainstream policy or industry setting. But institutional and personal 'wilful blindness' prevented these from being recognised as important. Wilful blindness is what we human do to feel safe, avoid conflict, reduce anxiety, and protect prestige, but if the perspectives of these individuals and groups had been respected and their concerns considered and acted on these, and so many other disasters, could have been averted.

INTEGRITY

Operating honestly and being accountable, impartial and independent of vested interests.

Why Integrity is so important to trust:

We are using integrity in broad terms to cover the honesty and accountability of governance institutions and processes but particularly seek to stress the importance of their impartiality and independence from vested interests.[44,45,46]

Changes to the governance landscape which reinforce its importance:

The 'pacing problem'[47] – "the gap between the introduction of a new technology and the establishment of laws, regulations, and oversight mechanisms for shaping its safe development" – places increased emphasis on anticipatory[48] 'agile'[49] 'soft law' self-regulatory approaches to governance. These approaches are not directly enforceable by governments,[50] they are often developed collaboratively with those being regulated, and they are considered by some to be at greater risk of undue influence by vested interests. These factors have the potential to undermine trustworthiness and trust.

Trust Tip

It's never the problem, it's the cover up

Trust can be lost and problems arise, not from a problem occurring, but from the cover up and contorted, yet often quite obvious, attempts to divert attention or rationalise it as something else.

Mistakes will happen and people understand this. SocietyInside's analysis of 19 citizen dialogues about emerging technologies showed that citizens[51] were positive about possibilities provided by all sorts of tech, but they were concerned about the governance and its honesty. When (not if, citizens weren't naive) things went wrong they wanted someone to have thought about it in advance and where problems still arise, take responsibility for them and respond quickly to put things right.

Watch-outs

Collaborative governance must avoid 6 conditions for 'Regulatory Capture'

Regulatory capture is an economic theory that regulatory agencies may come to be dominated by the interests they regulate and not by the public interest.[52] There are many reasons this may happen, but some of these may be exacerbated by the complexities of new technologies and the proposed new 'collaborative' approaches explored in this report and elsewhere. A number of conditions arise which allow regulatory capture to occur and mean regulators cease to be impartial or are unable to act in the public interest:[53,54]

a Regulators become too friendly with the firms they are regulating (a particular concern with new co-creation models such as 'sandboxes' or business-led governance initiatives).

b Regulators don't have sufficient technology expertise or resources in-house and have to rely too much on information from firms.

c Regulators are not as efficient as they need to be and short cuts result in too much reliance on firms for enforcement.

d Corrupt firms give 'bribes' to regulators to ignore breaches or 'bully' regulators by threatening jobs or economic repercussions.

e Regulatory arbitrage[55] occurs which describes the practice where those being regulated have such strong economic power they are able to avoid the jurisdictions of regulations they don't like.

INCLUSION

Being collaborative, inclusive, involving others

Why inclusion is so important to trust:

Inclusion is important for three reasons (1) because diverse perspectives result in better and wiser judgements, (2) giving genuine agency to others, including business and citizens, in shaping decisions that matter to them makes them more likely to trust those decisions, (even if they don't go their way) and (2) as OECD research found in relation to societal trust, citizens:

"are more likely to trust a decision that has been influenced by ordinary people than one made solely by government or behind closed doors."[56]

Changes to the governance landscape which reinforce its importance:

Collaborative governance[58] – an approach which involves business, civil society groups and citizens in a governance co-creation processes is being increasingly seen as an important tool in the governance tool box to govern fast-moving technologies, particularly those which need to navigate complex values and ethical trade-offs. This inclusive approach done well could not only deliver more effective governance of emerging technologies, but more trusted governance also.

Trust Tip

Trust first to get trust back

Taking a proactive approach and trusting people in the hope and belief that you will be trusted back increases the likelihood of being trusted. Taiwan's Digital Minister Audrey Tang says that the key to their success in combating Covid-19 is not (as commonly assumed) their track and trace tech or their culture – it was their approach to proactively trust citizens and prove they are worthy of their trust. "If the government trusts civil society then the citizens will eventually trust back, but the government has to make the first moves."

Counter-intuitively, given integrity concerns, this is also true of those organisations being regulated. An approach which starts with respect and an inclination to trust is more likely to generate compliance and trustworthy behaviour in return.[57]

Watch-outs

Tick box engagement wastes time and misses opportunities

Stakeholders (and regulators) have better things to do than waste their precious time on a pointless engagement exercise, where views are not taken seriously and where the rationale is mainly about ticking a box on the 'good governance checklist'. But more importantly, opportunities are missed. Assumptions about what people think are very often wrong and and initiatives designed based on incorrect assumptions more likely to fail.

> **"Assume...makes an Ass of U and Me"**
>
> Miss Rowe, Primary School Teacher, 1972

OPENNESS

Enshrining justice and equality in governance processes, application, enforcement, and outcomes

Why openness is so important to trust:

Openness and transparency help increase understanding, demonstrate accountability, prevent and expose wrongdoing and provide 'evidence of trustworthiness' to help earn trust. Closed processes leave a vacuum to be filled by speculation, but 'warts and all' transparency can make individuals and organisations reluctant to share opinions freely and difficult discussions to go even further underground.

'Goldilocks' transparency is required – a thoughtful, evidence based approach which delivers the right balance of openness and confidentiality to facilitate sharing and build external trust, whilst understanding where confidentiality may be important or effective in achieving public interest goals.

Changes to the governance landscape which reinforce its importance:

Distrust in tech governance is fuelled by the belief (and often the reality) that institutions are arrogant, secretive, aloof and their decision-making processes opaque.[59] If regulators and governance designers are indeed shifting to be 'Champions of the Public', it is important to their legitimacy that they are more transparent in their approach and public knows more about what they do.

Trust Tip

Be open about lack of openness

Be innovative and default to openness and transparency where possible. But where this is not desirable, provide clear explanations why this is in the public interest or the interest of participants in a trusted process.

> **"How can regulators protect consumers effectively if most don't even know what they do?... Regulators are used to being in the background, it's their comfort zone, but if they are going to communicate their value they need to overcome their instinctive reticence".[60]**

Watch-outs

Don't be coy; people can only judge you on what they see

Some governance organisations are very proud of the way they live their values, practice integrity and deliver their public interest mandate with skill. But they are coy about communicating this: 'we like to keep under the radar'.[61] They are right to believe that PR-style self-promotion of their good works could be counterproductive, but wrong to think that this 'keep your head down' strategy comes without a cost. How is anyone to deem you worthy of their trust without 'evidence of your trustworthiness'?

FAIRNESS

Enshrining justice and equality in governance processes, application, enforcement, and outcomes

Why fairness is so important to trust:

Perceived unfairness is one of the most powerful drivers of distrust. Even as tiny children we calibrate fairness and unfairness with great precision – 'it's not fair' we wail and feel the injustice viscerally. Conversely fairness is an influential driver of trust.

> **"When a governance process or outcome is seen as fair it leads to greater acceptance of decisions, better compliance with regulations, and more co-operative behaviour in dealing with agents of the government."** [62]

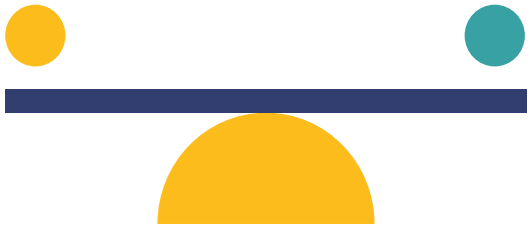
Changes to the governance landscape which reinforce its importance:

A proactive role in helping deliver fairness and equality in innovation is increasingly seen as the role of tech governance – particularly through new outcome-based instead of rules-based approaches. The history of innovation and technologies have always created unfairness by exacerbating injustice and inequality.[63] The newest technologies, such as artificial intelligence, gene editing and others already show little sign they will be any different. Thomas Piketty in his 2020 book Capitalism and Ideology[64] argues that inequality is a political choice based on a flawed ideology – the market will provide – and not the inevitable result of technology and globalization. He demonstrates that it is neither true, nor irreversible and that fairness in governance outcomes is key.

Trust tip

Fairness drivers and trust drivers are the same

The concept of fairness has been a core part of governance purpose and design for millennia. The focus on fairness in process, application, enforcement & outcome is enshrined in the term and practice of 'procedural justice' and the drivers are the same as those for trust: Intent, independence, inclusive, respect, consistency, transparency, openness and accountability.[65]



Watch-outs

Fairness is cultural and contextual with high risk of confusion and inconsistency

Much of new tech operates across borders limiting the potential for cultural interpretations of fairness in tech or governance. Individual nations are limited in how they can regulate, and with so many different approaches (sometimes even within one country), there is a high risk of creating confusion, inconsistencies and unfairness with how different issues in tech are dealt with. The IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems has been grappling with this – exploring different interpretations of fairness, ethics and cultural traditions to avoid a western ethics bias in tech development and governance – for example exploring interpretations according to Buddhist, Ubunto and Shinto traditions.[66]

THREE COMPETENCIES FOR A MORE COLLABORATIVE, COMMUNICATIVE TECH GOVERNANCE

Trust is an outcome best achieved by focusing on others. So attempts to earn trust should start with understanding and involving stakeholders, including citizens.

New skills will be needed. TIGTech research identified three which both embody and include the drivers of trust:

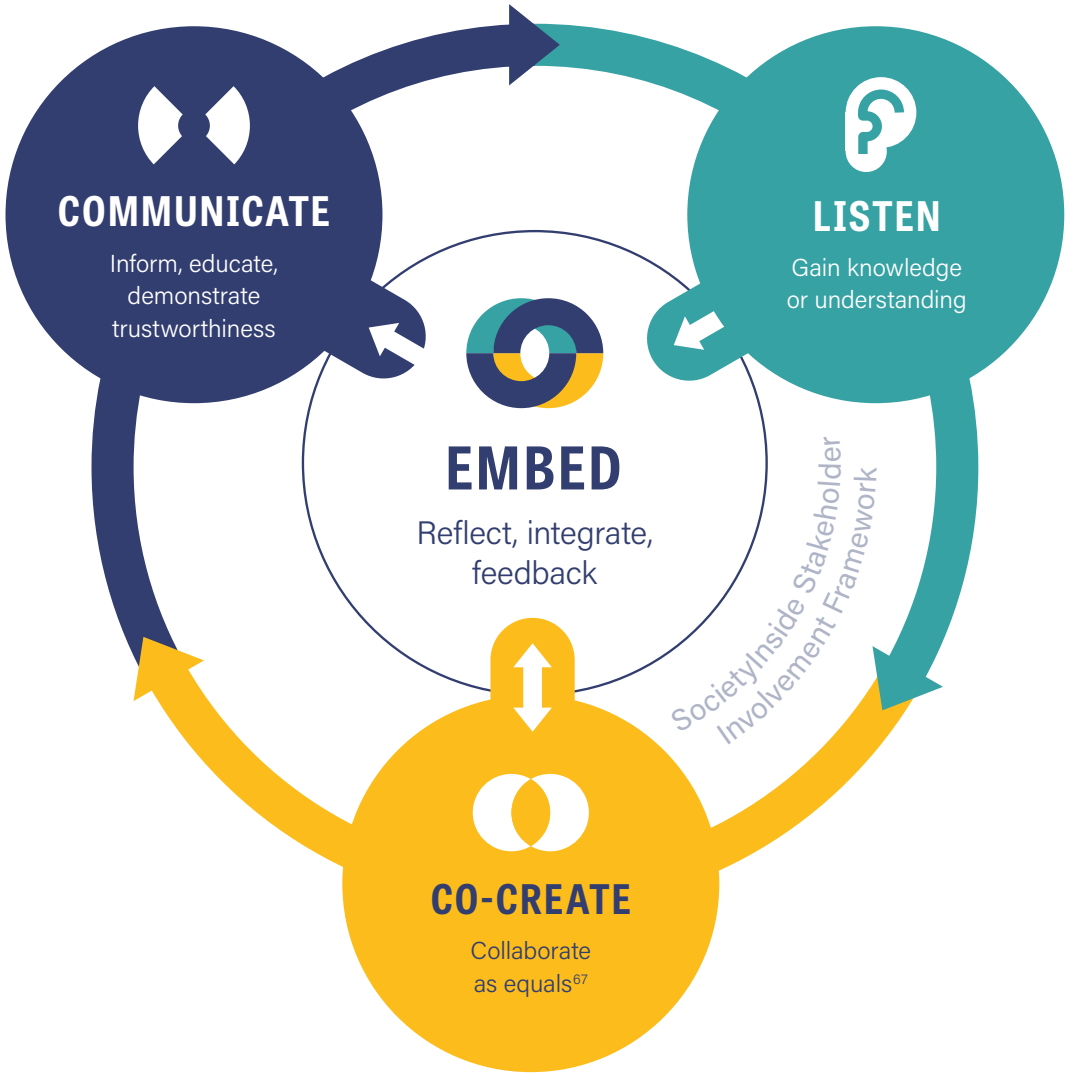
Showing evidence of trustworthiness – a new approach to communication

Building trusted environments for governance design

Involving citizens in governance design – 'Nothing about us without us'

Tech governance organisations engage with their stakeholders in three main ways – through listening, co-creation and communication. All for the overarching purpose of embedding the knowledge gained and the perspectives of those stakeholders into governance design, application, enforcement and outcomes.

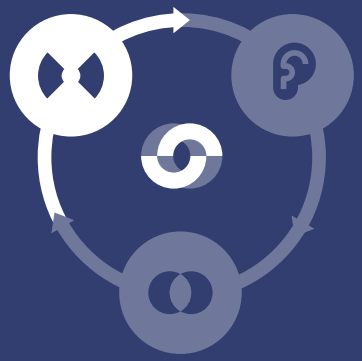
NB: The three skills outlined here focus on listening, co-creation and communication – we would like to have been able to find out more about the all-important process of embedding citizen and stakeholder views and priorities within governance design and decision making. Unfortunately this was not possible – partly because such information appears scarce and partly because of the time constraints of the project. (We are seeking funding for this in our next phase of work).



EVIDENCE OF TRUSTWORTHINESS

A new approach to communications

This new approach shifts communications from PR and broadcast mode to Evidence of Trustworthiness, where providing evidence of the Trust Drivers in use is the focus for communication to all stakeholders.



The 7 Trust Drivers show providing evidence of trustworthiness is important for trust:

- **Intent** – It shows your commitment to public interest in action
- **Competence** – It allows you to more clearly demonstrate delivery against expectation & competence
- **Respect** – By 'showing your workings' in plain language and in a more open way you demonstrate your respect for all stakeholders
- **Integrity** – Greater visibility of process and impact demonstrates integrity in action
- **Inclusion** – It allows demonstration of how different perspectives have contributed to decision-making
- **Fairness** – It demonstrates fairness and 'procedural justice' in action
- **Openness** – This more radical openness is an important way to uphold this trust driver

6 ways of demonstrating trustworthiness

These suggestions have come directly from citizens and business – via the Food Standard's Agency's Trust in a Changing World Deliberative Citizen Forums,[68] FSA Consumer Attitudes towards Emerging Technologies Research 2020,[69] PA Consulting citizen research report, 'Rethinking Regulation – from watchdogs of industry to champions of the public"[70] and SocietyInside analysis of 19 public dialogues in Building Confidence in Emerging Technologies – what stakeholders expect and how companies can respond.[71]

1

Be more Human – talk to us

- Present a more human and empathetic face – we want to hear from the real people who do the work
- Talk to us so that we can understand. Use everyday language, interesting visuals, videos, stories.
- Be accessible and responsive – answer the phone, be easy to contact, answer our questions, respond to our concerns.
- Don't be anonymous and faceless – how are we to feel confident in something we know nothing about?

"82% of Consumers feel more protected when they've heard of the regulator."

"67% of people would like to know more about what regulators do."

2

Be more visible – show your impact

- Make yourself as visible as possible – our belief in your intention is only as strong as your visibility.
- Be clearer and bolder about what you stand for – our confidence depends on seeing you in action.
- Get out there and show how you are standing up for citizens – use your voice.
- Be more specific about your role and actions. Tell us exactly what you've done so far, what you've learned, what you're doing next and what you expect the outcome to be.
- We want to know someone is on the case to ensure that tech is safe and that when things go wrong, there is a system in place to put things right & punish those liable. Tell us what you do.

"Trust in the Food Standards Agency rose to an all-time high when they were open about their handling of a series of problems within the food sector."

"When regulation makes the news, consumers are reassured that the regulator has their back."

"Citizens feel more protected when regulators publish all regulatory breaches – much less when only the big ones are published."

3

Be more inclusive – listen to us

- Listen to what we care about and let us see that you care about these things too.
- Build a direct relationship to understand what our concerns and issues are.
- If you listen more to what's happening on the ground, you will avoid many mistakes.
- We want to know these organisations share our values.

4

Help us help ourselves – educate and empower us

- Give us a balanced sense of risk; don't 'scare monger' and show us it's in hand if you can.
- Help us with clear and visible fact checks and rebuttals for misinformation.
- Educate us about important issues – don't leave it to the media.
- Help us understand what we need to do ourselves and give us informed choices.
- Empower us by telling us specifics about what we can do in the situation to keep safe.
- Give us consistent ways to judge companies.

5

Be independent and honest

- Work with industry by all means, but we want to see evidence of 'bite'.
- Own up to mistakes and say you are sorry when things go wrong.
- Show us you are impartial and are holding people to account.
- We feel more protected when we see you are independent of businesses.
- Explain uncertainty. Don't cover things up because you think we can't handle the truth.

"The reputation of the Human Fertilisation and Embryology Authority was enhanced when its CEO went on to the UK influential Today Radio programme to apologise for mistakes and explain what would happen next – 'at last a public servant who can apologise and admit something went wrong' callers told the BBC." [72]

6

No excuses – do your job

- 'The system is complicated' isn't a good enough excuse for lack of action – find the way to do your job properly.
- Be proactive – find and raise issues before they are harmful – think of things we haven't thought of.
- Where you need to work with other agencies, just do it. We want action not excuses.
- Learn to work together with other regulators – collaborate, don't compete.
- Don't pass the buck 'it's someone else's job' when you don't know what to do.
- Don't be slow, inactive or invisible when there are problems – it makes us question your ability to deliver.

"Changes in attitudes towards emerging food technologies (at least in the short-term) may be influenced by: information provision; discussion with others; increased understanding and familiarity with the technologies (in particular in relation to safety and the risk assessment process) and the benefits both to individuals and to the wider environment and society; belief that some technologies were becoming or would come to be regarded as 'normal'; and future sustainability challenges" [73]

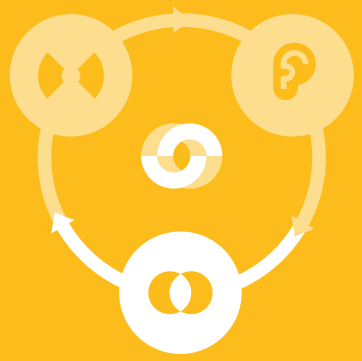
Conclusion

By designing the content of communications around evidence of what you are doing to be worthy of stakeholder trust, you are creating a communications strategy that will build a more resilient trust relationship between your organisation and its stakeholders.

But communications is not simply about output, it is about creating understanding. TV legend turned science communicator Alan Alda reminds us in his wonderfully titled book "If I understood you, would I have this look on my face", the responsibility of being understood lies firmly with the communicator and not the person being communicated to. It is not simply enough to communicate, mutual understanding is the goal.

BUILDING TRUSTED ENVIRONMENTS FOR COLLABORATIVE GOVERNANCE

(This thinking is the result of a collaboration between TIGTech and RIVM the National Institute for Public Health and the Environment, The Netherlands)



The 7 Trust Drivers show how the building of trusted environments is important for trust:

- **Intent** – Defining the public interest is a complex process, a TE is the bedrock of a trustworthy approach
- **Competence** – A TE is a core process competence, particularly valuable as tech development becomes more contested
- **Respect** – The key to this approach is the demonstration of respect for all participants
- **Integrity** – A TE, linked to 'goldilocks transparency', is a demonstration of integrity in action
- **Inclusion** – A TE effectively facilitates inclusion of even opposing views
- **Fairness** – The commitment to fairness in this approach is a demonstration of this Trust Driver in action
- **Openness** – The right balance of openness and confidentiality, 'Goldilocks Transparency' is a critical factor in creating a TE

Why is this important?

New forms of governance – multi-stakeholder initiatives, codes of conduct, industry guidelines, 'agile' processes such as sandboxes and PolicyLabs – often rely for their effectiveness on a collaborative approach to governance design with the contribution of multiple stakeholders. A significant barrier to the effectiveness of this more collaborative approach is a lack of trust in the process on the part of industry and other stakeholders, including other regulatory agencies. This hampers the appropriate collaboration, sharing of knowledge and information needed to assure health and safety.

A trusted environment (TE) is therefore needed where innovators, regulators and other stakeholders are motivated to understand each other's concerns, navigate difficult trade-offs and anticipate and address safety/ethical/legal/social issues whilst also facilitating the development of safe, sustainable and socially beneficial innovations.

The Horizon 2020 research project NanoReg2 (coordinated by RIVM) identified (primarily through discussion with innovators and regulators) some of the roots of this mutual distrust in relation to nanotechnology safety risk assessment:

Innovators distrusting regulators – fear of information misuse

The focus of distrust for innovators was a concern that information given to regulators would be misused, IP compromised or that regulators would use it against them in the process of enforcement. They did not trust regulators to respect their concerns and the challenges they faced. They also felt that regulators and the regulatory system did not have the necessarily tools, skills or understanding of the technology with which to effectively assess risk.

Regulators distrusting innovators – safety an after-thought

The focus of distrust for the regulator was the concern that innovators were so focused on their commercial or technological goals that safety was put on a back burner until the last moment, if it was even considered at all. This resulted in the potential for unsafe products being placed on the market.

What is a Trusted Environment?

A *trusted environment* could be an institution or a process, but it has at its heart two distinct components:

1. A relentless focus on the public interest
2. A trustworthy process, derived from the Trust Drivers, embedding an open, inclusive, respectful approach which results in a mutually held view by all stakeholders that a fair process has been undertaken and the outcome achieved.

In a trusted environment stakeholders and participants believe that their views, concerns, context, values and constraints will be heard and taken seriously. Everyone believes that a pathway to a solution can be reached which, although perhaps not perfect for all parties, has been developed fairly in the public interest and is mutually acceptable.

Building blocks for a trusted environment

1

Trust others first.

Taking a proactive step to trust someone first, with the hope and belief, though no guarantee, that you will be trusted back, significantly increases the likelihood of being trusted.[74,75,76] Counter-intuitively, this is also true of the organisations being regulated. An approach which starts with respect and an inclination to trust is more likely to generate compliance and trustworthy behaviour in return.

> **"Government officials who act in a trustworthy manner are more likely to elicit compliance, and virtually all agree that government regulators who trust the people they are regulating are more likely to evoke trustworthy behaviour and compliance".**[77]

The convenors of a process make a conscious commitment to trust participants to have good intent, be cooperative and participate in good faith. They keep an open mind about the potential actions, motivations, values and beliefs of all participants and will design processes and exhibit personal behaviours accordingly.

2

Seek out diversity of perspective, opinion and thought process – and be respectful of that diversity.

Distrust of governance processes and outcomes is often a result of alternative views and dissenting perspectives being ignored or silenced.[78] This reluctance to take seriously or incorporate the concerns of others can stem from a clash of values or fundamental beliefs, communication styles (e.g. 'emotional' vs 'rational') or organisational incentives & goals or other mismatches. The personal multifaceted nature of trust shows why it may be difficult to find common ground. Nobel Prize winning economist Daniel Kahneman proposes a way around this: 'don't try to persuade, understand the source of resistance and address that'.[79] Find out what is the root of any conflict or misunderstanding – a clash of values or beliefs, communication style, lack of residual trustworthiness of or trust in the organisation – and address that.

The process design actively seeks out diversity and designs processes and interventions which respects and takes seriously the views and perspectives of all stakeholders (including potentially citizens).

3

Provide regular opportunity for self – and collective reflection.

Reflection to respectfully uncover and share different starting points and engage in individual and collective exploration of the governance context, expectations, values and beliefs can be done both individually and collectively. This should be done with the aim of finding common ground, and building the collaboration out of that.

The process design provides regular opportunities for self-reflection, particularly at the start and at key stages.

4

Design processes which foster cooperation and mutual understanding, designing out polarisation and conflict.

Mistrust between individuals is often rooted in seeing people as 'other', not 'us'.[80] Governance process design can exacerbate this inclination, resulting in conflict, stand-offs and deadlock – or it can facilitate mutual understanding, cooperation and find areas of agreement.

Process design actively seeks to create mutual understanding, collaboration and cooperation and find areas of agreement whilst ensuring respect for diversity of perspectives, robustness of debate and ensuring all voices are heard. It actively designs out process which fosters conflict and polarisation. Though of course robust debate and disagreement are almost inevitable, a proactive approach for working these through will also be incorporated.

5

Design for 'Goldilocks' transparency – the right balance of openness and confidentiality – which facilitates sharing and builds external trust whilst safeguarding information and the personal privacy of participants.

The trust of participants and external stakeholders may hinge on the perceived and actual fairness of its process and outcome. Central to earning this trust will be openness and transparency – not just between those participating, but also in the eyes of external stakeholders. Closed processes fuel concern about capture by vested interests but 'warts and all' transparency can make participants reluctant to share opinions freely.

Process designers agree in advance with participants the desired approach to openness, transparency and communication.

6

Default to collaboration and co-creation.

It is challenging to deliver collaboration and co-creation whilst still maintaining focus and momentum.

Process design aims to default to collaboration without dramatic loss of momentum. Openness and clarity about definition of roles, dealing with disagreements and what decisions must be made together and what can be shared or delegated will be central to achieving this.

‘NOTHING ABOUT US, WITHOUT US’. INVOLVING CITIZENS IN TECH GOVERNANCE DESIGN

“People are more likely to trust a decision that has been influenced by ordinary people than one made solely by government or behind closed doors” [81]

The 7 Trust Drivers show how involving and taking seriously the views of citizens is important for trust:

- **Intent** – It brings greater depth to understanding of what constitutes the Public Interest
- **Competence** – It helps understand expectation and the issues that citizens consider important for governance to deliver
- **Respect** – It demonstrates respect; citizens can see that their views have been taken seriously
- **Integrity** – It helps ensure that one single stakeholder group does not have undue influence on a decision
- **Inclusion** – It gives agency to citizens to shape the technologies that are in turn shaping their lives
- **Fairness** – It demonstrates a commitment to fairness and ‘procedural justice’
- **Openness** – It opens up processes to wider scrutiny, incorporates a broader spectrum of views and helps provide evidence of trustworthiness

But why is involving citizens important to governance?

Here are five reasons why collaborating in governance design with citizens makes emerging tech governance better:

1. To access their diverse expertise
2. To spot real world gaps
3. Because 'more of us' are wiser than 'some of us'
4. It gives greater legitimacy to decisions
5. People deserve and may wish to have a say over issues that affect them

To explore these in more detail:

> **"There is a deep running fear of citizens in parts of government. Citizens are often seen as a baying mob or unruly mass. Often the metaphor that springs to mind for civil servants is that of a tidal wave of criticism and scorn, which will inevitably come crashing down if the 'floodgates' of active citizens are ever opened".**
>
> Myth 4 of citizen engagement with policy – Involve, Dialogue specialists.[82]

Engaging citizens is not about standing on a podium in a town hall getting shouted at (though sometimes respectful listening to heartfelt concerns in such a setting will be important). The almost 300 processes showcased in the OECD 'Innovative Citizen Participation and New Democratic Institutions – Catching the Deliberative Wave'[83] report show that when citizens are treated respectfully and when they are given time and agency to contribute, it is a valuable experience for all concerned.

As UK dialogue specialists Involve have found "...many civil servants find once they engage at a deeper level that the experience can be rewarding and even enjoyable. Examples of failure and discussions getting out of hand show what happens when government tries to be overly controlling...in short if you treat your participants like adults you'll get adult responses."

5 Reasons to Involve Citizens

1

Citizens have the expertise you need

A common concern is that tech and governance is far too complicated for ordinary people – and that it should be left to the experts and engagement should be reserved simply for education purposes. This misses the point. Citizens are involved for their knowledge, values and expertise as citizens. You don't need a PhD in Artificial Intelligence to be able to engage constructively about the issues arising from use of Facial Recognition in policing for example, or your views on pros and cons of personal data use in healthcare.

> **"The fundamental view of citizens is of them being not very bright, not very willing, not very able, helpful or productive,"**

says Professor Beth Noveck, director of TheGovLab at New York University.[84] In her book Smart Citizens, Smarter State, she demonstrates that if you trust citizens to contribute their particular knowledge, perspective or expertise in a structured way, you will not only empower them to become more involved in their communities and with government but also gain a huge bank of expertise in the process.

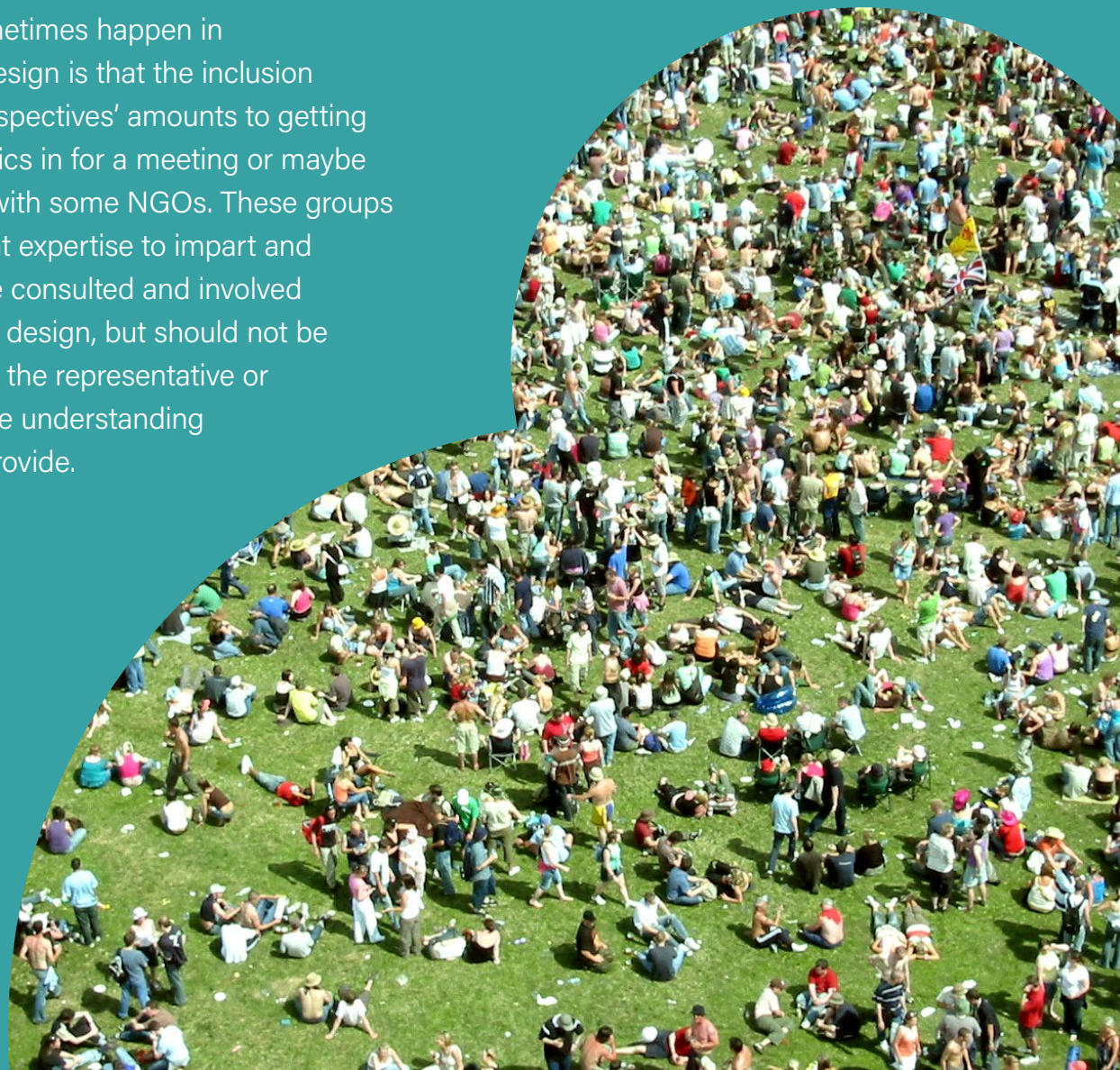
The UK government's ScienceWise[85] programme has involved citizens in deliberations about the most complex tech – Synthetic Biology, Genomic Medicine, Stem Cells, Mitochondrial Donation, Drone use, Data Ethics, Geoengineering, Nanotechnology (including regulation issues such as the potential lifting of a moratorium on nanoparticles in the environment) and many more. The often surprising perspectives uncovered by such engagements have made substantial contributions to decision-making and informed the design and governance of these technologies.

2

Because more of us are better than some of us.

In his book Rebel Ideas, Matthew Syed's[86] extensive research makes a compelling case that 'more of us are better than some of us'. The inclusion of diverse perspectives, he shows time and again, result in better and wiser judgements. The process highlights gaps in understanding, challenges assumptions and biases, punctures information bubbles and reveals the limitations of echo chambers. Many well intentioned initiatives have failed because they were developed without involving the people they are for or about. Perhaps they weren't what people wanted, had missed critical issues, or were designed by experts whose theories and models didn't understand how people really behave.

What can sometimes happen in governance design is that the inclusion of 'diverse perspectives' amounts to getting a few academics in for a meeting or maybe a roundtable with some NGOs. These groups have important expertise to impart and should also be consulted and involved in governance design, but should not be conflated with the representative or comprehensive understanding citizens can provide.



3

It can make decision-making about values and ethics better and with greater legitimacy

According to new research from the OECD,[87] citizen involvement works best when it is about "values-based decisions, those requiring trade-offs and areas demanding long term solutions beyond a single electoral cycle" – which are exactly the types of issues presented by emerging technologies.

New technologies are shaping our attitudes, our societies and even our brains. Their governance involves decisions on very complex values and ethical issues where there is no right answer. One of the greatest challenges regulators face is how to understand and navigate these issues within their frameworks.[88] Citizen involvement in these decisions is critical to getting to an approach which better services society, improves effectiveness and creates democratic legitimacy.

Spotlight on

ScienceWise dialogue on shaping regulation on Mitochondrial Replacement (3 parent babies):[89]

In 2012 a mixed-method dialogue commissioned by the Human Fertilisation and Embryology Authority (HFEA) sought to gain insight into public views on the ethical, social and regulatory considerations of Mitochondrial donation – a new technique which replaced unhealthy mitochondria cells in an egg or embryo with healthy cells from a donor parent to prevent hereditary mitochondrial diseases being passed from parents to their children. The dialogue findings directly informed HFEH advice to government which showed broad support for mitochondrial replacement being made available subject to strict safeguards and careful regulation. Most of the recommendations of the dialogue were implemented.

4

Involving citizens is fairer and better than the current way

Republican Senator Jim Gregory of Pennsylvania shows how the governance developed with and by citizens can be fairer and better than existing arrangements. Here it is used to strengthen democracy and help eliminate an important aspect of corruption of the electoral system which is so damaging to trust:

Gerrymandering'[90] in US (the corruption of the system for setting voting boundaries to ensure each district has an equal share of voters) has become a minefield of political manipulation in recent years. Big data and mapping techniques now make it even easier for politicians to anticipate how people will vote and so seek to tweak the boundaries to their advantage with diverse negative impacts. The 2019 report from Centre for American Progress[91] shows that using new technologies resulted in "unfairly drawn congressional districts which shifted, on average, a whopping 59 seats in the U.S. House of Representatives during the 2012, 2014, and 2016 elections. That means that every other November, 59 politicians that would not have been elected based on statewide voter support for their party won anyway because the lines were drawn in their favor – often by their allies in the Republican or Democratic Party".[92]

To help rectify that this problem, an Independent Congressional Redistricting Commission composed of non-elected officials and local citizens is being trialled. 'Creating districts that are drawn by the public, without being tainted by the powers of incumbency and party registration, will ensure competitive elections' and one may expect help just a little to restore trust in the democratic process.[93]

5

Because if you don't they will make you

Citizens dissatisfied with the status quo are increasingly demanding a say in policy and governance. Many grassroots movements, from Taiwan's Sunflower Movement to France's Gilet Jeune, demand a greater say in how political power is exercised.[94] The Covid 19 pandemic has provided real insights into the importance of treating citizens with respect and the downsides of not doing so[95,96] and the power of an approach which involves and takes seriously citizens' concerns. Out of such crises often emerge some of the most innovative forms of 'participatory democracy', generated not by governments but by citizens themselves – later to be adopted by governments. A compelling example of this, where citizens shape the outcomes of even the most complex regulatory decisions, comes from Taiwan:

Spotlight on

vTaiwan – citizens shaping tech governance

The finance ministry of Taiwan had been wrangling with manufacturers and social groups for 4 years to create the new rules to legalise online sales of alcohol.[97] They were getting nowhere trying to navigate the concerns of manufactures and e-commerce providers with concerns of social groups about the effects of greater access to alcohol, particularly for children.

With no end in sight, they decide to put this question to a new combined process of offline deliberation and online discussion through a platform[98] called vTaiwan. This was an idea born in response to the Sunflower Student Movement[99] designed to facilitate an 'open consultation process for the entire society to engage in rational discussion on national issues'.

Within weeks they had formulated a set of recommendations and in under two months the government had incorporated the suggestions into a draft bill that it sent to parliament.

The genius design element is that both online and offline parts of the programme have been designed specifically to develop areas of agreement, to build collaboration and not foster conflict and polarisation preventing the loudest voices or vested interests owning the debate and creating deadlock (the main reason collaborative governance fails at the moment).

Founder Audrey Tang observes "People spend far more time discovering their commonalities than going down a rabbit hole on a particular issue." The platform highlights the many issues of unity rather than the few that create division and conflict.

Over half of the 23 million citizens of Taiwan have contributed to the successful design of laws in over 18 areas, including the regulation of Uber, Self-Driving vehicles, Revenge Porn and FinTech Regulation with notable consensus and acceptance across society for the laws designed through this process.

This approach of trusting citizens to engage in complex decision making has also been pivotal to Taiwan's successful Covid-19 Containment strategy.[100,101] The designer of both strategies Digital Minister Audrey Tang says that it is neither a cultural phenomenon, nor a tech solution which is behind their success. The key is to trust citizens and prove you are worthy of their trust. Radical transparency and a commitment to trustworthiness is the focus, with respect and empowerment of citizens at the heart of the approach.

> **"If the government trusts civil society then the citizens will eventually trust back, but the government has to make the first moves".**[102,103]

Watch out

Using blunt metrics can embed bias

A Brookings Institute report on AI and public opinion in the US shows that "the public does not agree on the proper regulation of AI applications. Indeed, population-level support of an AI application may belie opposition by some subpopulations". As an illustration, 56% of American adults trust law enforcement using facial recognition technology, according to a survey by the Pew Research Center. Support is lower among those aged 18 to 29, Black Americans, and those who identify as Democrats or lean Democrat.

While useful for identifying starting points, these blunt metrics cannot be used to shape governance without further context. Metrics which are focused on broad 'market research style' approaches are limited. Much greater nuance into why, the nature of concerns and considerations, and how problems may be resolved in the public interest is required to inform trustworthy governance.

They may also embed damaging bias. Younger people or people of color, for example, may be more likely to be stopped by police and their reality of greater discrimination may bring awareness of the shortcomings of facial recognition, which older white populations could be totally unaware of. Using blunt metrics gives a distorted picture of the reality behind the opinions represented and can embed other biases against marginalized or hard to reach groups. They may, as here, be under-weighting groups who would be disproportionately affected by a technology because their views are compared to wider populations and general statistics used to gauge public trust or concern. The public interest is not served by these type of metrics for governance design and they should be treated with extreme caution.

Recap: Critical factors for trustworthy citizen involvement

1. A trustworthy process is one where citizen views really count towards a decision. Its purpose is clear and those commissioning the process are open about how it will contribute to the decision. In the OECD Deliberative Wave case studies, 36% had all recommendations implemented and 76% of public authorities implemented over half the recommendations.

2. The process is open about exactly how views have contributed. In the OECD Deliberative Wave Case studies, 66% of the public authorities discussed the final recommendations with participants, 24% followed up directly to let them know their response to the recommendations and 42% communication through government media and social media channels.

3. Open and honest explanations are given where different priorities meant that the decisions taken didn't conform to recommendations incorporate views or address concerns.

4. The process is respectful & fair: it gives adequate time for reflection; it is inclusive, including hard to reach groups and all of those affected by the decision; materials are created in plain language, it is rigorous about exploring many diverse perspectives (not just 'balance' – a polarised view of extremes) and its design and methodology is appropriate for the purpose. A referendum, for example, offers only a binary choice – in or out of the EU, in the case of the UK's Brexit referendum, where a more deliberative approach may have more effectively captured the nuances of the debate and allowed for a more effective response. It was effectively used in Ireland in concert with more deliberative approaches where a citizen's assembly and communication and engagement processes lead up to a referendum on the change to Ireland's Abortion laws.

5. If it's a tick box – don't do it. Citizens have better things to do (as do regulators) than waste their precious time on a pointless public engagement exercise, where their views are not taken seriously and where the rationale is mainly about ticking a box on the 'good governance checklist'. Find ways of involving citizens when their views matter.

2 NEW CONCEPTS FOR TRUST THINKING

Trust as a Spectrum

Trust is not black and white – you trust or you don't – as it is so often portrayed. It is nuanced and ranges across a spectrum from – for example – Passionate Trust to Passionate Distrust. These gradations may indicate different levels of confidence that the hope behind the trust decision will be fulfilled and correlate to different states of mind and potential actions. The speculative Trust Spectrum which follows is an attempt to begin to map these different aspects of trust.

Seeing trust in this more granular way opens up the possibility for a richer understanding of the perceptions and related actions of different stakeholders. Linking these beliefs and actions to the Trust Drivers then allows a further opportunity to understand how the actions of the organisation are influencing the perceptions of the stakeholders.

TIGTECH Trust Spectrum

	PASSIONATE TRUST	ACTIVE TRUST	PASSIVE TRUST	RESIGNED TRUST	PASSIVE DISTRUST	ACTIVE DISTRUST	PASSIONATE DISTRUST
States	Deep trust, wants others to place trust as well. Intolerant of alternative views.	Trust, but for specific reasons related to expectations.	Trust that is unengaged and related to expectations.	Dissatisfied and feeling forced into trust, trust due to lack of options or circumstances.	Distrusting and concerned, but not taking action.	Distrust, but for specific reasons, takes action related to this distrust.	Deep distrust, wants others to distrust as well. Intolerant of alternative views.
Trust							
Actions	Active campaigning, cooperation, endorsement; gathering the support of others and championing.	Takes steps to participate, collaborate, purchase or support.	Takes no actions either way, participates as required but is susceptible to events or opinions that would change trust level.	Takes actions that may seem like trust But are not. No loyalty, propensity to shift to more active distrust.	Skeptical, uncertain of the motives of others and ready for greater distrust.	Takes steps to make lack of participation known to others and to seed distrust.	Active campaigning and gathering of support for disruption.

Spotlight on

Resigned Trust

'Resigned Trust' may be more widely prevalent than the use of the term suggests. This was first coined in 2014 in relation to trust in science meaning 'I don't have much choice to trust or not, so I suppose I have to'. The state of mind is one of Active Distrust but the person exhibits the behaviours of Active Trust. It also shows the importance of context and expectation as a driver of trust.

An example of Resigned Trust might be someone who cares about data privacy, but uses social media. This person trusts social media in the context of effectively keeping them in touch with their friends, but not in the use of their data. To the platforms, because this person is an enthusiastic 'user', their behaviour and actions imply trust – but the person has a residual dissatisfaction with their choice.

Like other forms of distrust in tech, this may then shift to the governance system and individual regulators or politicians who are unable to effectively govern this concern that they have. In this way distrust in tech is a leading indicator of distrust in governance and if not adequately addressed may affect trust in individual companies spreading to governance systems more broadly.

Trust Mapping using the Trust Spectrum

A *'Trust Mapping'* exercise could be used by institutions or processes or governance instruments. A facilitation and consultation process may be used to consider these questions and use them for an evaluation of how the organisation and its stakeholders may interact better to earn each other's trust.

1. Who is trust is important?
2. Where do they currently sit on the trust spectrum? (Remembering resigned trust and that one person could trust an organisation in one area but not another).
3. What specific behaviours do/would they display in relation to this trust state?
4. What behaviours would change if they moved up or down the Spectrum?
5. How would that affect both the organisation and the stakeholder?
6. What could influence this move eg context changes, other actors, cultures, politics, legal changes as well as hopes, aspirations, opportunities values, beliefs, fears, assumptions, concerns, incentives?
7. How could the actions of the trust mapper influence the changes positively or negatively? (Consider the Trust Drivers individually as stimulus. Explore potential Watch-outs and actions to actively earn trust).
8. What would be the 'goldilocks zone' – the optimal level of trust and behaviour for key actors? (Consider the value of a healthy scepticism to aid accountability, and the potential for manipulating for trust).

The Trust Dynamic – personal, contextual and two-way

TIGTech research took a helicopter view of trust issues considered by various branches of psychology, evolutionary psychology, neuroscience, behavioural and risk sciences, sociology science and technology studies.

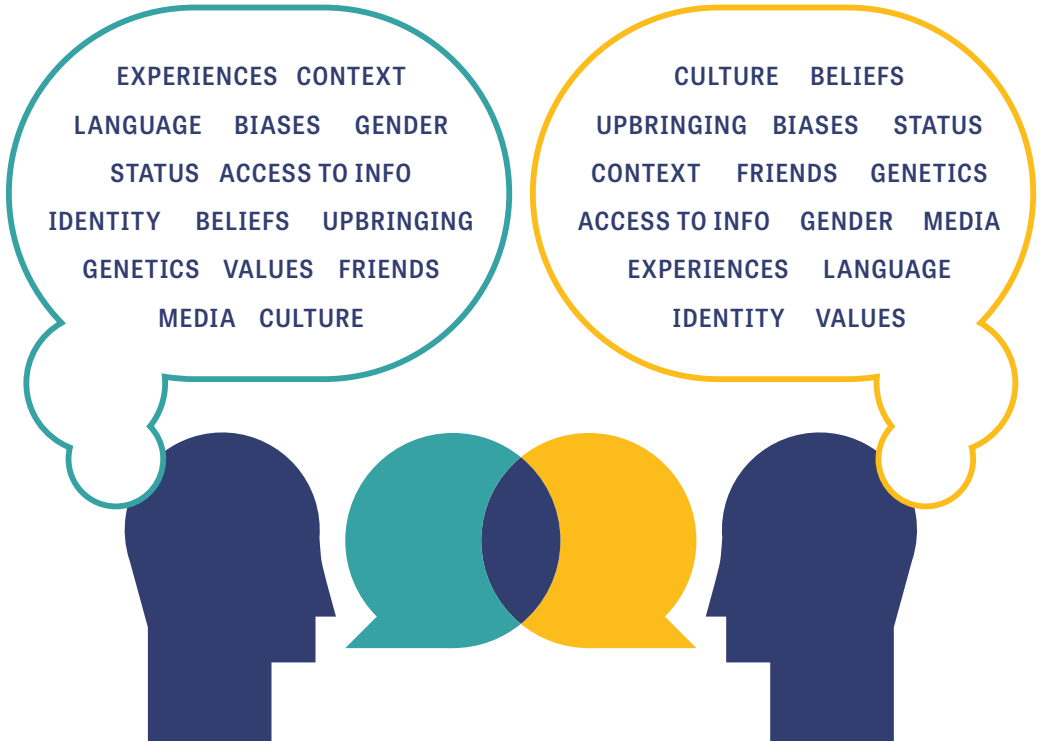
Many of these disciplines have different, sometimes contradictory views on trust. Each discipline brings its own strengths and perspectives into understanding how trust happens and how it fails, but also its unique focus, frame and assumptions about what matters.

A picture emerged of four factors which may influence who or what we trust and why – inherent Genetic Traits, Personal Experiences, Societal Context and World View. It shows that a trust judgement is messy, not simple to unpick the cause and effect. But it also highlighted how trust is a two-way street. The traits, experiences, context and world view of those seeking trust are just as influential as the perceptions of those potentially giving it.

Trust decisions have three interconnected elements, which may consciously or unconsciously shape our actions and who we trust and don't:

1. The world view and subsequent actions of the trust seeker.
2. The context in which the decision is being made.
3. The world view (genetics & personal traits, experiences, context and world view) of the trust giver.

TIGTECH Dynamics of Trust



Genetics and physical traits

Physical traits that influence our willingness to trust are hardwired into our bodies, meaning that those factors are on the whole unchangeable and thus difficult (or even impossible) to influence. For example:

- **Genetics may play a part** – The extent of genetic determinacy of tendencies to trust is much debated,[104,105] as is the evidence of the genetic roots of related characteristics like attitudes to risk, or optimism or pessimism tendencies. (Though our experience of, for example stubborn optimists and pessimists makes it tempting to consider it true.)
- **Hormones and body chemistry** potentially play a role – the influence of levels of oxytocin in the body is proposed as making us more trusting even when our trust has been misplaced.[106] Of speculative interest also perhaps, is the finding that oxytocin is inhibited by stress and conflict, making individuals less likely to trust others in such situations. Findings on the impact of the gut microbiome on human behaviour make it appear likely that even the microbes inside our digestive system may also have some influence on our willingness to trust and cooperate.

- **Cognitive biases and shortcuts** – Governance tends to be imagined and delivered as if all actors in a trust relationship are purely 'rational' agents. This include the people developing the technology or product, the public responding to and using it, and the governors themselves. But we know from psychology and neuroscience that our brains play tricks on us to simplify complex decisions, like those relating to trust. We call those shortcuts 'cognitive biases and heuristics', as popularised by Daniel Kahneman in his influential book, Thinking Fast and Slow[107] and illustrated compellingly in the Cognitive Bias Codex.[108] However, whilst cognitive biases show promise in relation to trust, they appear to have limitations which are rarely explored. For example, the concept that we over-inflate the importance of something that just happened is called a Proximity Bias.

  But potentially formative experiences, or events which are emotive or values based, which happened long ago may be far more influential in our inclination to trust than current happenings.

The challenge for governance is that it is one thing to know that biases and heuristics exist, another to put that knowledge into practice in governance design. The list of known influential heuristics is long; how and when our brains use them is fickle and context dependent. When we also add in flex and change in the other factors discussed here, it will be very difficult to 'behaviour science' your way into a heuristic-proof governance approach for trust.

More important perhaps, is to remember that those fixed traits exist, and that there is never a straight line between what you intend in your governance or structures, and how it will be interpreted and acted upon in real life. Testing things out in context, with real people & in real situations, remains critically important.

Experiences

The accumulation of our experiences and trust decisions seems very likely to influence who and what we trust and why. For example:

- **Our very earliest experience relating to attachment in our early years** and the feeling, or not, of safety during our upbringing is formative.[109]
- **Whether we have been trusted in the past** matters – trust seemingly begets trust. Being regularly trusted builds confidence and an inclination to reciprocate and allows us to bestow our trust more generously.
- **Whether our trust decisions have been well-placed** seems likely to have an effect. If we have been ripped off, discriminated against, or had our trust betrayed, we may be less trusting generally, especially in a similar situation.
- **The breadth (or not) of opinions we were exposed to in our formative years**[110] is influential because it constraints how broadly we cast our views of who or what we consider trustworthy. Cults, for example, have a very narrow view of those whose opinion can be trusted, where diverse, or multicultural upbringings may broaden our curiosity and tolerance of different perspectives and, potentially, our inclination to trust could be more widely dispersed.

Context

The importance of context makes sense when we remember that trust exists in great part to help us navigate our environments successfully. It functions as a signal that helps us cut through the noise and act – fundamentally tuning into one question – is this 'safe'? It makes sense, then, that our decisions to trust are highly context dependent.

Both personal context and cultural context matter; our decision to trust is influenced by our immediate circumstances and social influences. This perhaps feels obvious, publishing this piece in a post-Covid-19 world. Who would have thought that the decision of whether or not it was safe to pop to the shops for a pint of milk would suddenly be a matter of trust? Do you trust your Government's guidance on Covid-19

safety – in general, or this week? Do you trust the shop-keeper and your fellow customers to keep adequate social distancing? As the context changes, it can rapidly throw up new questions as matters of trust and shape our standards of proof.

In some ways, this feels like bad news for governors; context is a driver as wide as the sky – and equally uncontrollable. Where do you start in shaping governance that is a bit less fragile to context – without foolishly aiming to be context-proof? There are a few factors that deserve particular attention in our pursuit of trustworthy governance:

- **Trust is influenced by the context of our expectations.** Our inclination to trust is often specific to quite a narrow context and aligned to the expectations of the relationship or decision at hand; we don't lose trust in someone for failure to deliver something we don't expect of them. For example, we might trust a bank to keep our money safe, but not to run air traffic control. We might trust a regulator to ensure products are safe, systems are fair, the rules are proportionate – but may not trust them to arbitrate on ethics – or quite possibly not trust them if they don't effectively take ethics into consideration – these human factors adds complexity again.
- **Trust decisions are influenced by cultures and social norms.** Cultural attitudes, expected behaviours and the way things are done where we live affect general and personal approaches to trustworthiness and trust. The level of 'generalised trust' – the inclination of citizens to trust each other (sometimes called social capital) is part of this cultural context. This may influence, for example, attitudes to authority and civic institutions, tolerance of risk or uncertainty, views about science, technology or academia, social attitudes to innovation, nature or community. Understanding these dynamics is particularly challenging for technology and tech governance which is transnational.
- **The views and actions of our influencers.** Friends, colleagues, icons, chosen media can also be a hugely significant factor in the weighting of who or what to trust; our brain gives the actions of the people around us outsized influence in our decisions about risk and safety. Edelman's famous Trust Barometer shows fluctuations in who is most trusted in society, but as trust in institutions becomes more fragile 'someone like me' is growing in importance as a trusted source.

- **What's happening now plays a part.** Writing this report amidst the Covid-19 crisis, citizens, politicians, commentators are now much more present to the repercussions of trust and distrust and its components. Trust and distrust of institutions, individuals and sources of information is fluctuating as the virus and lockdowns strategies progress, each influenced by all of the factors in our list here and the drivers of trust to come in the next chapter. We don't just see it – we feel it; the ebb and flow and emergence of new trust challenges but also the rewards of being trusted are evident on a day by day, sometimes moment to moment basis.

Governance can learn multiple things from this list. Firstly, you must be aware of people's expectations and whether they are adequately met. Secondly, do not take for granted the aspect of culture and social norms as that is where many assumptions creep in, which might be damaging in the long term. They should be actively analysed; especially now when social change has accelerated during global lockdowns. Last but not least, in order to adapt governance to the moment, you have to know how common opinion is changing – or, for narrower issues, how the views of your audience of interest and their influencers are changing. That sounds far easier than it is – also requiring you to know what 'influencers' even matter to this group, and having a very clear view of who you are interested in understanding in the first place.

World View

'Worldview' in this section relates to how people filter their experience of reality through their values and beliefs. Values are those things we see as important, beliefs are the things we hold to be true. Together, they shape our opinions, assumptions, behaviours and responses to others and the world around us.

- **Values** drive our true purpose as a human being; and they are what helps us to discern what feels right and what feels wrong (according to us); both about our own actions and of those around us.
- **Beliefs** are our generalisations about the world and our best guesses at what is true based on reality as we see it. Beliefs do not require facts. If you are a 'Make American Great Again' die hard, then facts about Donald Trump are not important. We actively seek out resources that support or corroborate our beliefs and ignore the ones which don't. Which is why Henry Ford's quote of 'If you believe you can, or believe you can't, you are always right' makes so much sense. While the idea of cognitive shortcuts are often thought to be limited to behavioural heuristics hardwired into our brains, there is less understanding about how our personal beliefs and values also help us reduce complexity and provide barriers against information overload. They help us to filter a fragmented world filled with contradictory narratives, giving us a sense of clarity and direction.[111] The emerging field of 'Cultural Cognition'[112] further explores how individual and cultural values and beliefs shape attitudes and behaviours.
- **Our sense of identity and how we view ourselves plays a central role.** Much of these cultural, political, experiential, personal influences, values and beliefs coalesce into a narrative we weave about ourselves – 'I am an environmentalist, a conservative, a scientist, an outsider, an American, a football supporter, an artist, a rebel'. Our need for internal coherence aligned to this identity will shape our actions and our decisions of who to trust and why. This is the basis too of Kahneman's What You See Is All There Is (WYSIATI) concept.[113]
- **Group belonging matters** – Humans need to belong. Linked to our sense of identity are those who share common values, beliefs, identities with us. Those who are not 'in' this group with us are 'other' – political affiliations provide interesting learning here. In others, it seems more influential as an important lens through which we judge other's actions or who is in and who is out and who is wrong and who is right. (For example, discussions with a thoughtful UK Conservative voter and Brexiteer,

explored how he struggled to believe in man-made climate change despite significant reflection. A pivotal factor in his scepticism was because 'environmentalism' was the domain of 'left-wing hippies and tree-huggers' and he was not one of those).[114]

- **Our perception of the benefit of the decision together with our perception of the risk**, and so where we place our trust, is also filtered through our values and beliefs. A selfish cost-benefit analysis is considered by some to be the leading driver of trust. It is of course important, but it appears inextricably linked to all the other human factors and clearly also senses of altruism or social justice.[115]
- **Our perceptions of other's behaviours** are also filtered through the lens of our values and beliefs, (particularly in relation to the 10 Trust Drivers). We base this on our direct experience, their reputation, how others view them (particularly those we trust) their actions towards us and other's their language, attitudes and their seeming alignment with our own values and beliefs.

All of the above combined explains why it's often so hard to convince people to change their minds. Accepting that we may be wrong about our deeply held beliefs could cause a collapse of the carefully curated worldview that allows us to navigate the world. To ask us to change our beliefs is to ask us to give up a safety net – to engage with complexity rather than short-hand – and to teeter the dominos of the other beliefs, behaviours and attitudes that follow. Awareness of those factors is crucial to building effective trust.

The Trust Dynamic and the 7 Trust Drivers

The 7 Trust Drivers in some ways transcend the messiness and of trust decisions. But in particular the awareness of the dynamic nature of trust may help in stimulating the empathy for others and self-reflection required to build trust – in particular underpinning the trust driver of Respect.

GREAT RESOURCES FOR CITIZEN INVOLVEMENT

OECD Innovative Citizen Participation and New Democratic Institutions

https://www.oecd-ilibrary.org/governance/innovative-citizen-participation-and-new-democratic-institutions_339306da-en

OECD Open Government Unit

http://www.oecd.org/gov/open-government/

OECD Best Practice Principles on Stakeholder Engagement In Regulatory Policy

http://www.oecd.org/governance/regulatory-policy/public-consultation-best-practice-principles-on-stakeholder-engagement.htm

Excite2020 Action Catalogue of methodologies for citizen Engagement

http://actioncatalogue.eu/search

Involve Knowledge Base – Case studies, Methods & Myths and Facts about citizen involvement

https://www.involve.org.uk/resources/methods

Nesta – Centre for Collective Intelligence and Collective Intelligence Playbook

https://www.nesta.org.uk/project/centre-collective-intelligence-design/

https://www.nesta.org.uk/report/future-minds-and-machines/3-what-collective-intelligence/

Participedia

https://participedia.net – a global crowdsourcing platform for researchers, activists, practitioners and anyone interested in public participation and democratic innovations.

APPENDIX A
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APPENDIX B
RESEARCH METHODS

Literature Review

While in a traditional research review of the existing literature is conducted mainly at the beginning of the process, the iterative nature of this project meant that the relevant literature was sourced, consulted and incorporated throughout the entire research process. This way, the findings were continuously refined and contextualised as new knowledge was introduced by the involvement of different stakeholders and their related disciplines.

Stakeholder involvement methodology

About Stakeholder Involvement

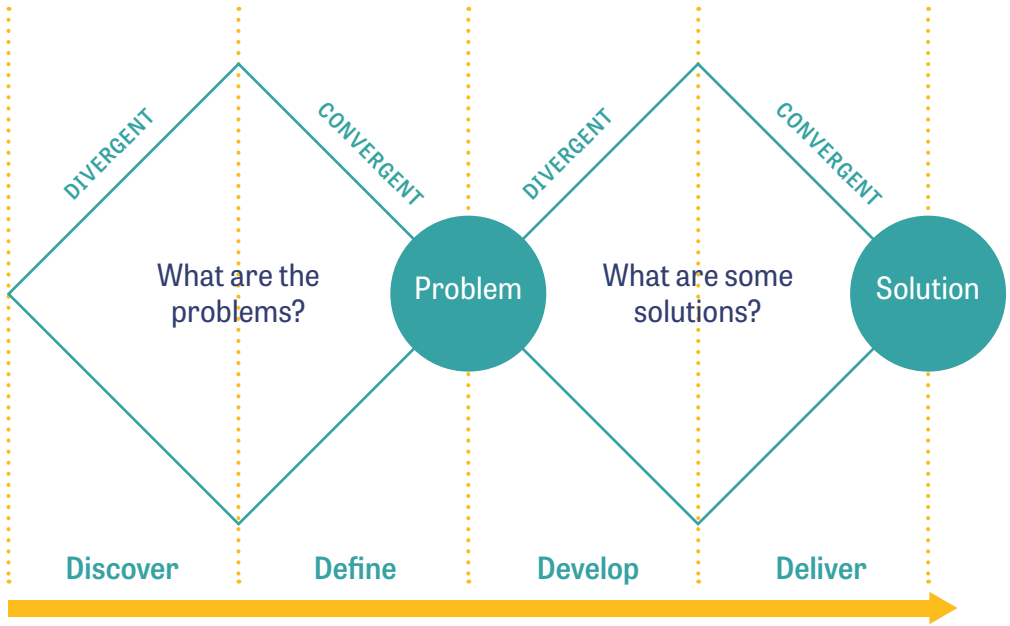
TIGTech's research and development process involved an iterative series of consultations and co-creation sessions with a range of stakeholders, from academia, business and public sector. Over 100 stakeholders were involved both individually and in groups and through a workshop held in London on October 29 2019.

Selection happened in multiple ways – by recommendation, through industry and academic conferences and initiating contact with the relevant authors discovered in the initial literature review. Sampling followed the ethos of grounded theories' theoretical sampling. This meant that rather than having a specific sample size in mind at the beginning of the process, the list kept on growing until no new insights were emerging (reaching theoretical saturation).[116]

Stakeholders were also consulted via email on our draft findings, so that they could shape the final form of the document and fact-check our assertions. Still to follow is a number of follow up meetings to present the final findings, thus giving back to the community. Some have already expressed interest in follow-on projects using our thinking to co-create specific governance initiatives, which are currently under discussion. As such, the publication of this report is only a step towards further reflection and development of ideas presented.

'Design thinking' & Stakeholder Involvement

What made this process so rich & effective for us was the 'design thinking' approach.[117] This approach leads to a more in-depth understanding of a target audience's needs, wants, problems, frustrations, and concerns. A number of stakeholders we saw more than once to update them on our thinking & receive further feedback for mutual benefit; others sent articles, ideas, links to help inform our thinking. Design thinking process is rarely linear as with each iteration, new insights would emerge that would then be developed and included in the working version of the report, while letting go of other ideas to arrive at a clear and coherent solution to the problem at hand.



The well known 'double-diamond' of design thinking guided our approach (see here the Design Council version)

Observations on TIGTech stakeholder involvement process (obviously these areas overlap)

Discover (roughly pre-May 19)	Define (roughly May-Oct 19)	Develop (roughly Oct-Feb 20)	Deliver (Feb-May 20)	Evolve (Follow ons)
Mtgs with target audience (TA) to listen/observe/discuss issues, concerns, ideas about concept & trust	Using spider chart as prompt to explore responses & lessons on practice re TDs & our emerging thinking	Present, discuss refine first stage thinking (London)	Refine findings and create draft report/ recommendations.	Promotion & follow on work constantly evolves thinking & presentation, adds examples, stories
Mtgs with stakeholders to listen/ observe/discuss their issues, concerns ideas re trust	Begin to anchor TD's & current thinking in practices in key tech & gov areas & processes.	Further refine thinking based on that meeting to second stage	Beta test with those (almost all) willing to review	New thinking – eg With RIVM Nano Trusted Env (TE) Trust, Soft Law and AI academic paper (IEEE and ASU)
Mtgs with academics & experts to scope area of 'science of human thinking' what does that actually mean & what does it cover	Gather real world stories & eg's relating to TDs & gov issues. Reflect on baggage & barriers to certain language, positioning	Consultation on 2nd stage thinking to get views, ideas, observations, examples, guidance & consider recommends	Refine Stories & language – this approach helps anchor this in how people really think & work	Refine thru contrib to other's work: eg WEF Agile, Trustworthy Auton Systems; Future of Reg Systems
Mtgs with practitioners in various fields – particularly BS/Psy to consider trust in action	Observations illuminate the reality of our task in promoting earning of trust concept	TA's initiate other connections & add to our thinking	Promote findings – Many consulted may promote via their networks	We have an active network for promotion & follow on work.
Engage/intrigue TAs in our concept & findings. Shortcut research process eg re SOHT because cross disc thinking enabled.	Real world input ensures greater correlation with practice & helps stop us saying too many stupid, or naive things.	TAs become more interested/ invested in our thinking as they have contributed, some through a number of discussions	Process helps our findings resonate more deeply with TAs as closely correlated to their concerns, language, day job	Process has meant that stakeholders more deeply understand our thinking & value our contribution to their own, generating follow on pilot projects

APPENDIX C
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