



Principles for Responsible Innovation

For technologies society can trust

Summary

Technologies society can trust

Society needs to be able to trust that the innovations which companies deliver are going to do what they promise, without causing more problems than they solve.

But history shows that innovation almost always brings disruption; with winners and losers and divide opinion - what some consider a great breakthrough, others experience as a disastrous development. How companies and governments anticipate these transitions; how they respond to the challenge to minimise these disruptions and inequalities, often dictates how much trust society ultimately places both in the institutions and the technologies themselves. The lessons from the introduction of Genetically Modified Foods and others show us that technologies which are not trusted may not be able to effectively deliver benefits for society or fulfil their commercial goals.

Businesses developing and using new technologies, such as Artificial Intelligence, Robotics, Gene Editing, Nanotechnologies and the various Digital Technologies, promise much; but their application in products society needs and wants is not automatic. The concept of Responsible Innovation aims to focus attention on ensuring innovation delivers benefits to society; negative impacts are better anticipated and managed in advance and the involvement of people is important in shaping innovation.

“Trust is not a message it’s an outcome.”

Robert Phillips, Jericho Chambers [BBC R4 In Business 'Trust in Me'](#), Jan 2015

How companies earn the trust of stakeholders is not usually an explicit goal for the development or application of technology. These Principles are the foundation for a debate about what trustworthiness may look like in practice and the role that companies can play.

Trust in governance is essential

Many of the new technologies of our current age, which is often referred to as the 4th Industrial Revolution, are developing at a faster pace than traditional governance mechanisms can cope with.

But the social, environmental and economic challenges the world faces also inject a sense of urgency and a pressing need to develop solutions to often very complex problems. Technology has a huge role to play in in this, but many have also been part of the problem and because of this societal trust in both technology and its governance is fragile.

An approach which seeks to respond to this dual need is often called [Agile Governance](#) - it aims to explore new soft and hard governance interventions at varying stages of tech development, with new methodologies, involving multiple actors and diverse mechanisms.

However, this new approach may be very different from traditional views of what ‘good’ governance is about - eg precautionary, mandatory and strict, particularly in relation to new tech. So, building societal trust in this new approach will be one of the greatest challenges facing those who espouse and aim to practice Agile Governance and may be the differentiator between successful and unsuccessful tech introductions.

To trust (v, n)

The act of trusting - a belief in the integrity, ability or character to act in accordance with expectation

To be trustworthy (n)

That which is deemed, by reputation, or direct experience, to be deserving of trust. Displaying qualities of honesty, reliability and competence

To be trusted (adj)

To be already established as trustworthy and held in a position of trust.

...governance refers to making decisions and exercising authority to guide the behaviour of individuals and organizations. Governance is commonly achieved by the creation and enforcement of explicit rules (backed by the power to reward or impose sanctions), less explicit social norms, guidelines, policies, or the creation of defined command structures.

World Economic Forum: Agile Governance, Reimagining Policy-making in the 4th IR

These Principles for Responsible Innovation have been highlighted as an example of good Agile Governance in action, by the World Economic Forum's Prof Klaus Schwab in his book [‘Shaping the 4th Industrial Revolution’](#) launched at the WEF 2018 Davos meeting. SocietyInside is also co-creating a new project with members of the World Economic Forum Global Futures Councils aiming to add rigour to the concept of Trust in Governance which will be available in 2019.

What are these Principles for Responsible Innovation for?

1. Provide a framework to facilitate debate & build trust & confidence

Companies have told us they would like a framework and methodology to demonstrate their responsibilities around pre-and post-market applications of new technologies; their benefits to society and how the potential negative impacts are being anticipated and better managed. From the perspective of society, these Principles aim to provide ways companies can demonstrate that they are trustworthy and so begin to deserve our trust.

But because each area of innovation is different (eg a technology like biotech has different issues to nanotech; or innovations like drones different to phones for example), these principles do not seek to dictate what issues are or are not important. They focuses on ‘framing’ the areas that organisations could consider, with their stakeholders, to understand what issues and challenges they face; what new behaviours may be required and how they can best respond.

2. Inspire a ‘race to the top’ mentality for social innovation

We would like to use the debate they inspire to stimulate a ‘race to the top’ mentality; to motivate companies to think in more transformative ways about the value of a less tech-centric and a more human and planet-centric approach to innovation. In addition we hope to open a conversation with policy makers, research funders and NGOs about the impact their own behaviours have on the ability of these organisations to embed responsibility in their vision and practices.

Focus on companies and not technologies

Much current debate focuses on governance of technology - eg what does responsible AI, or responsible biotech look like. Following its co-creation with stakeholders and extensive consultation over a period of 13 years this initiative is designed to focuses only on the behaviours of companies making or using technologies, not aspirations for technologies more broadly or individual technologies specifically. Each technology will have different issues to consider, each company in the supply chain different responsibilities. Our focus is on exploring what companies have to do to earn the trust of society in its approach to innovation.

Methodology, history & funding

- These Principles for Responsible Innovation were developed according to meta principles of good governance design - including clarity of purpose & outcome; multi-stakeholder co-creation; broad external & international consultation; independent funding; independent facilitation; an independent chair and capacity for independent external evaluation through provision of evaluation frameworks for SMEs, multinational companies and retailers. (Available on request, for nanotechnologies).
- The initial development process ran from 2006-2009 creating Principles for Responsible Nanotechnology. However, it quickly became clear that these principles were valid across technologies and they have subsequently evolved and have been part of various discussions framing responsibilities in industrial biotech, synthetic biology, digital health, robotics, AI, food irradiation & nanotech.

- The initiative was co-created through working meetings and on-line deliberation by a multi-stakeholder group formed of business (Unilever, BASF, J&J, Smith & Nephew, Tesco, Thomas Swann, Johnson Matthey, Oxonica), NGOs (Amicus Union, Which? Practical Action & later Greenpeace) academia (Prof Nick Pidgeon, Prof Richard Jones, Prof Vicki Stone, Prof Rob Aitken) and an investor (Insight Investment) and the then Head of Policy at the Royal Society Nick Green. It was chaired by the Earl of Selborne, then chair of the House of Lords Science & Technology Committee. Hilary Sutcliffe, initiated, obtained funding and ran the initiative in partnership with Insight Investment
- The Responsible Nano Code initiative was paid for by the Royal Society, Insight Investment & the Nano KTN. Follow up consultations and work have been paid for by the Esme Fairbairn Foundation, a consortium of businesses including (Unilever, GSK, Astra Zeneca, Leatherhead Food & others), & various EC FP7 & H2020 projects. However proper funding to take the initiative forward on a larger scale has eluded us despite significant interest from business, research funders and foundations.
- The initial contract to take forward the Principles was awarded to Cranfield University, but they were unable to obtain any funding and the initiative was therefore only taken forward by Hilary Sutcliffe as part of the ongoing 'research and development' of SocietyInside (previously called MATTER)

About SocietyInside and Hilary Sutcliffe

SocietyInside is a the leading not-for-profit organisation working on Responsible Innovation in business and policy. The name is a riff on the famous brand 'Intelinside' and aims to encapsulate our aspiration that innovation should have the needs and concerns of society at its heart - not scientific kudos, academic citations or the desire simply to make money.

Hilary Sutcliffe is the Director of SocietyInside and she works with policy makers, business and academic researchers to explore how this could be achieved, through new approaches to innovation governance, stakeholder research & engagement & foresight as well as acting as a sounding board & critical friend.

She works across technologies aiming to bring learning from one to the other. Since 2003 she has been involved in exploring the responsibilities of technologies including nanotechnologies, industrial biotech, synthetic biology and gene editing, robotics, artificial intelligence and machine learning and quantum tech.

Publications include a [primer on Responsible Innovation](#) for the European Commission; ['What's fair to ask, what's fair to share?'](#) a business driven multi-stakeholder initiative exploring with investors, NGOs and retailers what information and engagement is required to earn stakeholder trust; [What the public expects of companies involved in technology innovation](#) - an analysis of public dialogues on a variety of technologies in Europe; and [Learnings from Nanotechnologies for emerging technologies](#), a Foresight study for CEFIC with IOM; and [Trustworthiness Builds Trust, Trust Builds Confidence and Confidence Builds Markets](#) a trust building strategy for the Industrial Biotech Leadership Council. She writes for a number of publications, most recently a series of articles for the [World Economic Forum](#).

She sits on World Economic Forum Global Futures Council on Human Rights, and previously its Global Agenda Council on Nanotechnologies; the Governance Sub-Group of the UK Synthetic Biology Leadership Council; the External Advisory Board of the Institute of Innovation Research, Manchester Business School; the Advisory Board of PRISMA an H2020 project on Responsible Innovation and Industry and SynbioChem, the Centre for Synbio & speciality fine chemicals. She also advises the university-wide Responsible Research and Innovation Steering Group at the University of Sheffield and teaches a Masterclass to researchers there in different fields as well as advising Sheffield Robotics on issues of Responsible Research and Innovation.

She was previously a Non-Exec Director of EIRIS (the Ethical Investment Research Service), the Advisory Board of the University of Michigan Risk Science Centre, USA; chaired the Advisory Board of ResAgora a H2020 project exploring a Responsible Innovation Framework for Europe; She has an MSc in Responsibility in Business Practice from the University of Bath and a BA in History of Art from the University of Manchester.

Please contact hilary@societyinside.com if you would like to know more about our work

SocietyInside Principles for Responsible Innovation

Principle 1 - Deliver social, environmental & economic benefit

Why?

A narrow view of benefit is behind much tech controversy. This can be sparked by a lack of consideration of who gains & who loses or a focus simply on technological wizardry, scientific kudos or economic advantage.

Actions may include...

Trustworthy companies focus their innovation to deliver social and environmental benefit alongside the economic; with evidence of these benefits clear and well communicated.

Principle 2 - Evaluate risks and wider impacts

Why?

Some harms only emerge through use, others are knowable in advance and are often ignored because value for one group trumps harm to others. Eg profit trumps safety, or narrow economics fails to encompass negative externalities

Actions may include...

Trustworthy companies think through potential social & environmental impacts in advance & provide evidence of their actions. They mitigate harms, evaluate risks & compensate losers or bring together trusted groups to explore solutions.

Principle 3 - Involve people

Why?

A commitment to listening to & involving others is the best way to understand views on benefit, risk, governance & the acceptability & implications of the tech in use. It could simply be seen as crowdsourcing risk assessment.

Actions may include...

Trustworthy companies involve people, respectfully listen, collaborate, communicate and co-create products or solutions to problems with different, even sometimes initially hostile stakeholders.

Principle 4 - Demonstrate Radical Transparency

Why?

Transparency does not necessarily build trust, it's arguable that it's only needed in the absence of trust. Information can be used to confuse or empower, inform or distract. Radical Transparency is about the effective use of information and evidence of trustworthy behaviours to underpin and enhance trust.

Actions may include...

Trustworthy companies work with stakeholders to understand what builds trust and provide appropriate evidence of benefit, risks managed and residual uncertainties. Communication is authentic, honest and reliable.

Principle 5 - Embrace good governance

Why?

Irresponsible companies seek to subvert regulation, ignore or deny problems or even subvert justice & decency to evade responsibility. The old adage - it's never the problem, it's the cover up, so often applies in corporate responsibility

Actions may include...

Trustworthy companies have taken steps to identify & understand their responsibilities for appropriate governance and, if problems arise, deal with them honestly & openly, seeing this as a source of strength & reputational capital.

Principle 6 - Welcome Warnings

Why?

It is often difficult to predict how a technology will be used or its impacts in use and at scale. Spotting early warnings of negative impacts is therefore important and responding effectively in a timely manner essential.

Actions may include...

Trustworthy companies welcome early warnings of problems. They have robust process to spot concerns; listen to dissenting voices; reward whistleblowers; respond decisively & learn & refine processes in the light of new knowledge