Principles for Responsible Innovation

Building the trustworthiness of technology

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About MATTER

- Focused on finding ways to better connect technology with humanity

- Independent not-for-profit

- Multi-stakeholder steering group - multi-stakeholder approach

- Building bridges between people, business, policy and research

- Promoting technology for empowerment, not €$£ or kudos

What do these guys have in common?

Why now?

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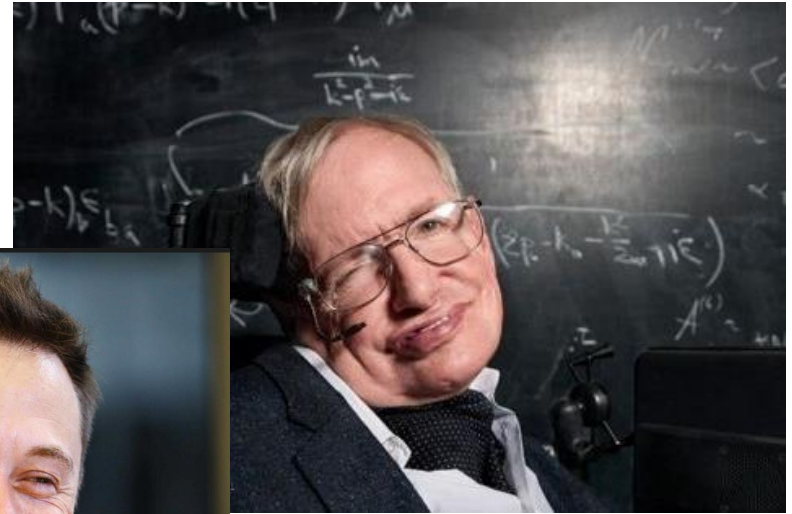
Never again….

What if…..?

What for?

But promises of solutions too

Responsible Innovation?

Making new technologies work for society….. without causing more problems than they solve

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What it could look like in practice

- *The deliberate focus of research and the products of innovation to achieve a social or environmental benefit.*

- *Which assesses and effectively prioritises the social, ethical, environmental and cultural impacts, risks and opportunities, both now and in the future, alongside the technical and commercial.*

- *Involves the consistent, ongoing involvement of society, from beginning to end of the innovation process, including the public & non-governmental groups, who are themselves mindful of the public good.*

- *Where oversight mechanisms are better able to anticipate and manage problems and opportunities and which are also able to adapt and respond effectively to changing knowledge and circumstances.*

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Principles for Responsible Innovation

- Initially developed by multi-stakeholder steering group and wide consultation process in UK, EU & US in 2006-8 as [The Responsible Nano Code](#) - designed for businesses using nanotechnologies

- Funding constraints meant no infrastructure to promote, though adopted by Nano Industry Association, a project partner

- It soon became clear that the issues were common to all innovations, particularly technology innovation. Responsible Research and Innovation as a term become more widely used

- 2014/15 Re drafted and consultation on Principles for Responsible Innovation began (unfunded). Principles honed from 8 to 4. Broadening potential audience to research institutions and business.

- Future? Depends on interest and funding!

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Principles for Responsible Innovation

Principles for Co & Self Reg	Principles for RRI	Comments
	Conception	
Participants	Yes - multi-stakeholder working group, wide consultation. Public views taken into consideration via analysis of public sponsored dialogues on various technologies - nano, synbio, stem cells, GM.	Pretty happy with that, though if done now, on-line collaboration could be improved. Bigger budget would mean more people able to be reached.
Openness	Yes - meeting minutes online, all iterations online, consultation open to all, diverse constituency deliberately approached & opinions sought.	Funding issues post Nano Code, means consultation more ad hoc, and dependent on Hilary's contacts in various technology sectors - particularly Synbio, robotics, nano, business, certain Universities
Good faith	Yes - ish? NanoCode took great care to get language & intent clear, ensure understanding of nano among diverse participants clear. All invitees participated in all aspects and commitment was strong.	Funding constraints mean that post Nano Code consultation not widespread & commitment from stakeholders not achievable.
Objectives	Yes - quite some time spent on this with working group. However this changed at the end as it became clear that	However this changed at the end as it became clear that the initial 'benchmark' concept we aspired to wasn't going to be as easy as we thought. Consumer groups were not happy
Legal Compliance	Yes - a lawyer on the working group participated fully in the process. Implementation was given to an academic institution, this was a mistake as there was a clash of objectives	It soon became clear this distinction was not really doable. Consumer groups concerned about this aspect also.

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Principles for Responsible Innovation

Principles for Co & Self Reg	Principles for RRI	Comments
Implementation		
NB Implementation	Surprising how implementation & compliance not necessarily considered early enough in many I have been involved in. This should be up in Conception. Implementation and compliance methodologies should be made explicit here in the Principles? This is different from targets & indicators.	Implementation was given to an academic institution, this was a mistake as there was a clash of objectives, and nothing happened
Iterative improvements	Yes - lots! Drafts also developed for specific areas - eg wearable health technologies, GM Insects, Synbio, Robotics.	
Monitoring	?	No funding meant this is not quite relevant
Evaluation	Evaluation framework produced for monitoring via transparency	No funding to take forward
Resolving disputes	This is at the heart of the framework itself.	
Financing	Participants were funded. Financing of implementation was not	This was a collaborative process, but only industry funders came forward, extensive fundraising has been unsuccessful.

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Principles for Responsible Innovation

Principle One - *Research & Innovation for social value*

Research & innovation which considers value in a more holistic way - considering social, ethical, environmental, cultural and economic benefit.

Principle Two – *Considering all impacts*

Which considers, assesses and effectively prioritises the potential social, ethical, environmental, cultural and economic implications and impacts - in use and misuse, from research to recycling.

Principle Three – Stakeholder participation

The values, concerns and issues raised by stakeholders are respected and responded to and they are proactively involved in the innovation process and its governance. They are themselves mindful of the public good.

Principle Four – Governance & transparency

Demonstrating trustworthiness is at the heart of governance. Oversight mechanisms anticipate and effectively manage opportunities and problems and can adapt and respond quickly to changing knowledge and circumstances.

Principle One
Research and Innovation for social value

Research & innovation which considers value in a more holistic way - considering social, ethical, environmental, cultural & economic benefit.

'How great to be here, now. Doing more with less is a great stimulus for innovation – we are at the start of what will be a glorious age'
James Dyson, entrepreneur

"We need a much richer picture of the benefit over other options - not just sales patter"

Civil Society Group

Why are you doing this? Who will benefit? Is it worth it?
Public views expressed in Food Standards Agency Citizen's Forums on Nanotechnology & Food

"I'm fed up of fighting my way through impenetrable science from companies to find the benefit to my customer"

Retail technology specialist

Is it just about profit? Or the fun of new science?
Concerns expressed in various public consultations on new technologies

"Please don't bring us pointless products using a technology for the sake of it, which doesn't bring a benefit and where you clearly haven't thought through the risks.

Retailer

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Key questions about benefit:

(NB: Whilst benefit is usually promoted, it is often the scientific, technical or commercial benefit, not the social, environmental benefit which is the starting point for innovation)

- What problem exists in the world which our research/technology/product area can contribute to improving on?

- How could our research/technology/product innovation contribute to a better world (socially, environmentally, economically)

- Do others agree with the problem and the solution? Will all stakeholders consider this a benefit - or may others disagree?

- What is the robust science or evidence behind these benefit claims?   How have we substantiated benefit and effectiveness claims?

Behaviours which may demonstrate responsibility:

- Stated innovation aspirations and strategy begins with social and environmental problem solving, not simply academic or commercial goals.

- More rounded Benefit Assessment and mapping processes are used to generate a deeper understanding benefit in relation to current or alternative solutions

- Benefit and effectiveness claims are evaluated and underpinned by clear evidence - using science, social science and stakeholder involvement to demonstrate benefit parameters and residual concerns

- Processes which involve wider groups of stakeholders are undertaken. These may be to co-create solutions with stakeholders, to listen to their views or to explore any concerns they may have.

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Principle Two
Explore potential impacts

Consider, assesses and effectively prioritise the potential social, ethical, environmental, cultural and economic implications and impacts - in use & misuse, from research to reuse

"No-one expects individual companies to necessarily do it alone. But potential problems need thinking about together with competitors, retailers and other potentially other industries"

Retail technology specialist

"What about the social impacts - who will it affect? Who will it advantage or disadvantage?"

Civil Society Group

"They all probably have it under control, but we don't know what they are doing, so can't factor either confidence or risk into our analysis."

Investor at MATTER event

"We want to know companies have anticipated risks. Acting as if they don't exist is unhelpful."

Institutional investor

"We want to hear about how they are thinking about the wider implications of what they do"

Institutional investor

"Will profit trump safety? What's the system for managing risks?"

Concern expressed by members of the public in dialogues

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Key questions about impact:

- How can we understand the potential social, ethical, environmental, cultural & economic risks, impacts and influences of our research or innovation?

- Who do we need to involve, and how, to get a clear picture?

- What can we do ourselves to mitigate negative impacts, what needs the help of others?

- What can we do to positively influence greater responsibility in others?

- What metrics can we use to evaluate our performance and demonstrate trustworthiness

- What do we do if some people don't support or agree with our assessment of benefit, risk and impact and our understanding of our responsibility and responses?

- How is new knowledge factored in to our processes and the design of final products?

- What are we doing to monitor that this is still the case with the innovation in use in society?

Behaviours which demonstrate responsibility:

- Process design which includes collaborative initiatives - partnerships and community or charitable projects or stakeholder involvement - that specifically considers wider impacts

- Openness about results of such collaborations and priorities and decision making in this regard

- Development of evaluation processes or impact metrics

- Clear commitments on EHS and wider impacts arising from impact assessment processes

- Ongoing, 'self-critical' monitoring programmes of innovation in use

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Principle Three
Involvement of stakeholders

The values, concerns and issues raised by stakeholders are respected and responded to and they are proactively involved in the innovation process and its governance. They are themselves mindful of the public good.

"Trust is not a message, it's an outcome"

Robert Philips, Jericho Chambers

Stakeholder involvement can take many forms for many purposes. The aim is to positively influence the research and innovation outcomes

Communicate
Inform, educate, inspire, motivate, demonstrate transparency

Listen
Research other views & concerns, understand broader issues

Cogitate
Think deeply about complex issues & develop responses

Co-create
Work together with others as equals

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Key questions about stakeholder involvement…

- Who are the stakeholders in relation to the research or innovation process?

- How do we involve them, including critics, in exploring the issues of benefit, risk and governance with us?

- How do we ensure that our stakeholder involvement processes are free of jargon, technical or specialist language, patronising phrases or sales language? Where this is essential, how are we clarifying meaning?

- How will we respond effectively to their concerns?

- What do they want to know about our research and innovation in use?

- What if they don't agree with us or each other - what is our strategy?

- What impact have they had on our research and innovation processes and outcomes?

- How do we demonstrate the trustworthiness of this process?

Behaviours which demonstrate responsibility

- A clear stakeholder mapping and involvement strategy & plan

- Stakeholder involvement processes at key stages in the research and innovation process

- Demonstration that stakeholder concerns and considerations have been considered and responded to in the research and development process

- Continued responsiveness to stakeholders in governance and through monitoring of the innovation in use and beyond

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Principle Four

Governance & Radical Transparency

Demonstrating trustworthiness is at the heart of governance. Oversight mechanisms anticipate and effectively manage opportunities and problems and can be made to adapt and respond quickly to changing knowledge and circumstances.

"..the slightly plaintive question 'How can we restore trust?' is on everyone's lips. The answer is pretty obvious. First: be trustworthy. Second: provide others with good evidence that you are trustworthy."

Baroness Onora O'Neill

"We are sympathetic with worries about competitiveness, but how can we trust unsubstantiated assertions we can't verify?"

Civil Society Group

"Don't force it on us, we want to have a choice"

Concern expressed by members of the public in dialogues

"Show your workings - it's like Year 5 Maths - it's not enough just to come up with the answer, you need to show how you got there to give us confidence that you know what you are doing!'

Corporate Transparency & Year 5 Maths
Blog post Hilary Sutcliffe

"No information opens up a vacuum which can easily be filled by misinformation. How can companies preempt that"?
Communications expert

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Key questions about Governance and Transparency

- How do we demonstrate the trustworthiness of our approach and processes?

- How are internal stakeholders empowered to contribute to governance of innovation? EG: what support mechanisms, incentives, training, access to information, time & space for reflection, communications and leadership do we provide to help them embed these commitments?

- What do our external stakeholders expect of us in governance and transparency? What is the evidence and how do we respond and how do we manage conflicts?

- How do external systems of governance and law support our aspiration and our approach? How are they a barrier? What is our role in affecting change?

- How can we be bold in using transparency to demonstrate our commitment to Responsible Innovation? What might this entail?

Behaviours which demonstrate responsibility

- Clearly stated commitments to strong governance and transparency

- The senior management team is accountable for managing innovation strategy and for these commitments. They have the necessary understanding and training to allow them to do so effectively.

- Aspirations are backed up by evidence - (Eg may include among others: openness about the use of a technology; sharing negative and positive research findings; Open Access to full research findings; back up of benefit, effectiveness & safety claims with evidence; openness about the priorities around wider impacts; transparency about issues around regulation and lobbying; on pack & owned media communication re RRI etc?)

- Stakeholder involvement processes are undertaken at key stages, including honesty about management of conflicts in stakeholder views and the impact on strategy.

- Ongoing monitoring, with feedback loops, into positive and negative impacts of innovation decisions. These are fed into senior management decision making.

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About Transparency as the ONLY governance mechanism for the Principles?

Building confidence in technology?

- Do we really need more armies of consultants ticking boxes? Does that methodology even work?

- All our Principles are about openness on key issues

- Multi-stakeholder collaborations, stakeholder involvement and dialogue are the critical demonstrators of responsibility

- Trustworthiness is all about evidence of thoughtfulness, action & impact - stakeholders decide

- What you share is what you are judged on

- The website is the window onto the evidence

- Race to the top to demonstrate trustworthiness?

- …but it depends on the pressure from outside

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Radical Transparency
- hopelessly naive or the most powerful governance mechanism of all?

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