

Trust in Innovation



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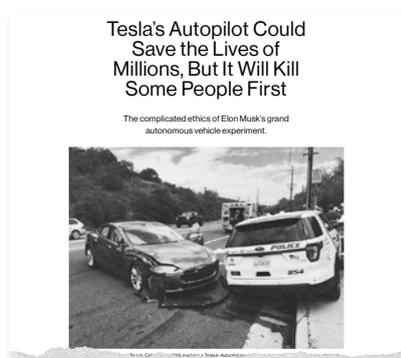
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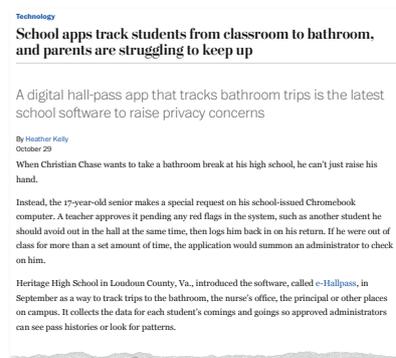
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Trust in an Innovative Age

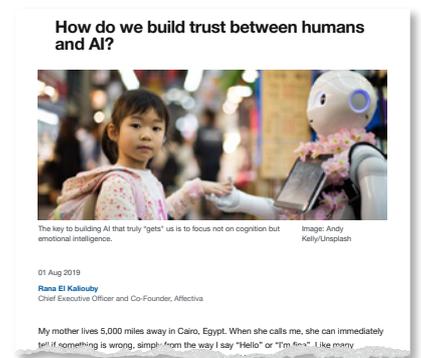
In the context of innovation, “trust” has become a topic of great concern and is considered a key component to innovative challenges. Consider the following three news clips. Each prompts various questions that address trust between humans and technology. How do we trust a fully automated robot and understand it as a relational partner? Should trust even be part of the discussion with AI (as reflected in the EU "Ethics guidelines for trustworthy AI" 2019)? Are self-driving cars an innovation we should trust to save lives? Can we trust schools and their use of digital services with our children?



Tesla¹



Student Tracking²



Build trust with AI³

Can we manage to build trust in the context of these questions?
The answers are far from straightforward.

Trust – a deeply interpersonal relation – is challenged in the context of innovation and technology. Innovation, defined by novelty and newness and subsequent infusion into our social lives, is difficult to trust. Can I trust that new medical procedure? Is my new phone spying on me? Or even worse, does tech allow my friends and family to spy on me? It is reflected in the current outcries against Big Tech, for the reassurance of privacy, and for knowing, transparently, designers' intentions.

Yet, imagine we never trusted new technologies at all. Because of the uncertainty associated with the technology, we would not engage with it. It would be incredibly difficult to have any innovative change. Yet innovation has tremendous potential for individuals, our societies, and environment. And considering the world around us, we clearly do engage with innovation. For an innovation – whether it be social, technological, environmental, economical – to become ingrained in a soci-

ety and reach its potential, the object of newness must be accepted by the broader public: in some form, there must be trust surrounding innovation. Because trust allows us to find a measure of security and allows us to engage in innovative scenarios.

The burning question: What is trust really and what is it in the context of innovation? Despite its colloquial use, trust is quite an elusive concept closely related to reliability. Traditionally built through interpersonal relationships, it can be hard to grasp what trust vis-à-vis an innovation might look like. The aim of this whitepaper is to define what trust is, in its fundamental form. We will follow the path of an imagined individual, Sascha, building trust in relation to innovation and tech in successive layers that radiate out from the individual core: “I trust you.” Through this thought experiment, the various “building stones” that are part of trust become elucidated.

Innovation Challenges Trust

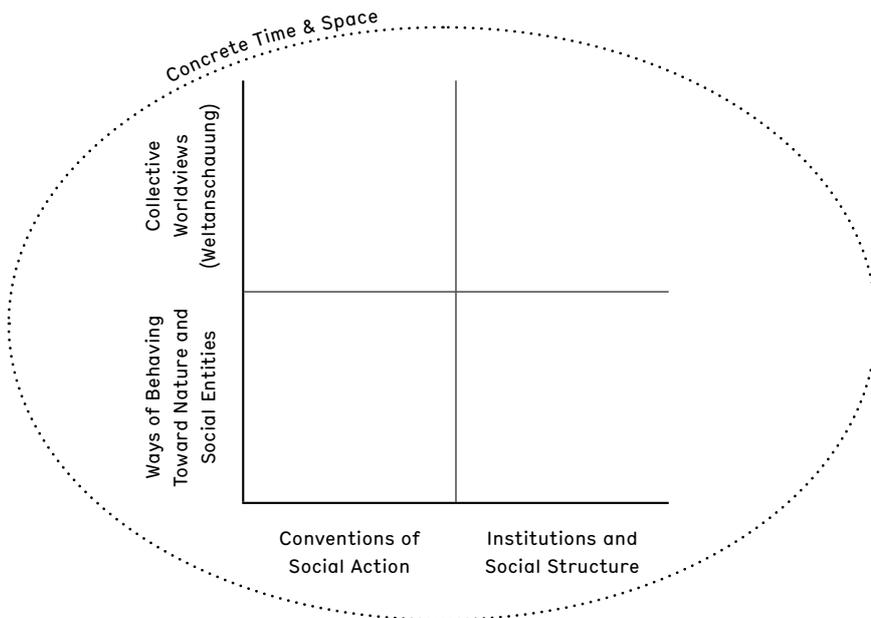
If trust is fundamentally interpersonal, then why all the commotion about trust in technology and innovation? Isn't the core building stone – a trusting human partner – missing?

It is undeniable that in the context of innovation and technology, the traditional concept of trust becomes challenged. The construction of trust may not be as straightforward and we must utilize different building stones in order to construct trusting relationships.

If we imagine a person – Sascha – confronted with the innovative Technology X that threatens to unbalance the status quo, how might Sascha end up building trust? Tech X, as proxy for newness, causes instability to varying degrees, and may thereby create a feeling of distrust for Sascha, generating the very social environ-

ment that makes trust in innovation difficult. Sascha can be seen as having a problem with trust on two levels: the novelty of Tech X and resulting uncertainty, and the lack of a dynamic human counterpart.

First, we must imagine Sascha with personal predispositions based on worldviews, ways of behaving, conventions of social action, and sociopolitical institutions, as pictured here (“Locus of Trust” adapted from Pedersen 2015). These dispositions will come into contact with Tech X in a specific time and space, all of which shape Sascha’s and Tech X’s unfolding interaction including any building or dismantling of trust. What forms might trust take in relation to Tech X? And from there, taking the image of an arch, what building stones might be used in the construction of trust?



The figure is based on Pedersen’s (2015) concept “Locus of Trust.” It represents factors that impact individuals’ dispositions which shape how they interact with their surroundings and behave. Individual dispositions in turn come to interact with others’ in a specific time, space, and context. The interface of all participating agents’ dispositions form a “locus of trust,” and depending on the level of homogeneity (dis)trust will be more or less likely to occur.

What does Trust in Innovation Look Like?

We can imagine Sascha's development of trust in relation to Tech X taking different forms, though these are somewhat artificially teased apart for our analytical purposes. Each form moves progressively away from interpersonal trust starting with human mediators, to processes of humanizing tech or the technification of humans, finally arriving at trust in a technology itself. Each trust scenario described could stand alone, but can certainly overlap with others in reality. Which forms trust takes will depend on contextual factors.



Human Mediators (Leaders, Creators, and Facilitators)

In this case, Sascha may default to a human contact that is connected to Tech X. Instead of directly trusting Tech X, Sascha trusts the leader of Tech X's company, the researchers or designers behind Tech X and/or those implementing or using the technology. A few examples include:

- Sascha may have followed many articles, news clips, or podcasts from the CEO. Thereby Sascha comes to believe that the CEO shares worldviews and values, and therefore has good intentions towards her/his customers.
- Tech X may be used by someone else, let's say a doctor. Sascha has had reliable health outcomes and the doctor seems to be invested in these: the doctor is a trusted party and therefore Tech X seems more trustworthy.
- Sascha may have trusted family or friends who, based on their own experiences, vouch for Tech X. Because Sascha trusts them, the information they give is considered trustworthy and beneficial and Tech X becomes trustworthy.



Decentralized Networks

Sascha can get inputs from diverse individuals without having a direct relation with them. By having many individuals involved in reviewing, discussing or using Tech X, a consensus about its trustworthiness can be created, based on which Sascha may be more likely to trust. This could occur, for example, if Tech X is reviewed by over 100 individuals and given a quantified rating. As an additional consideration, the more Sascha sees ways of attributing similarity, the more trust becomes facilitated. Take these two hypothetical reviews Sascha might read online:

1. Tech X really came through for me and has been excellent!
2. As a 25 year old self-proclaimed inventor and DIY enthusiast, I can say that Tech X really works for me and has been excellent.

Compared to the first, the second review allows Sascha to attribute (dis)similarity with the reviewer based on whether or not Sascha is around the same age and a DIY enthusiast. Creating tech that has a multi-vocality means that Sascha does not have to trust Tech X or the Company, but rather can build trust through many others' opinions and the values they, at least seem to, find important. However, these systems can be manipulated, rather than supported, by other users and amplify their possible impact (e.g. fake reviews, paid-to-play).



Company Reputation

Trusting in the organization or company that investigates, produces, and sells Tech X is one way to facilitate trust for Sascha.

Sascha may have had many small interactions with the company including products which have been reliable, positive interpersonal customer service interactions, and has had the company vouched for by close friends and family. All these experiences have affirmed that the Company actually stands by its stated values and mission statement. Not to mention that, Sascha can feel reassured that Tech X is backed by regulatory assurances. For example, there is a money back guarantee and, with more recent developments, the government has been holding companies legally accountable for accidents involving Tech X. This was not the case for a while, since Tech X's innovative features outpaced regulation for some time. In the end Sascha trusts the company and by extension Tech X.



Making Tech Human-like

Over time, Sascha comes to imbue Tech X with humanesque qualities and imagines a human trust partner into existence.

Through a process of anthropomorphizing, Sascha begins behaving towards Tech X that reflects, at least partially, communication with actual people. It creates a form of quasi-trust since Tech X is not actually an agentive person. Nevertheless, Sascha has a feeling of human-to-human interaction without it really existing and experiences a trust-like relationship.



Tech as an Extension of Humanity

From the very start, Sascha's interaction with Tech X occurs within an already existing network of human-technology relationships. Technology is not 'out there,' but is an extension of Sascha and other individuals. Tech X is trusted because of its interpersonal nature and its integral part in Sascha's sense of self. For Sascha Tech X as an artifact cannot be disentangled from what it means to be human and it thereby develops an interpersonal nature.



Tech as an Independent Artifact

Can Sascha trust Tech X in and of itself? If Tech X is independent from humans or organizations – can it be trustworthy? Most certainly Sascha could come to rely on Tech X if it performs consistently and the way it is meant to. Sascha can therefore experience confidence that Tech X will display a certain trait or behavior which leads to predictable patterns. Sascha may consider Tech X to be trustworthy based on its reliability, but would not develop a fully trusting relationship.

We can imagine a step further: what if there are fully automated technologies that behave independently and have their own intentions? Though currently not the case, if we come to the point of having innovative technology that can be said to have intentions and engage in dynamic unfolding relationships with humans: would Sascha then be in a place to have trust in it?

What does Trust in Innovation Mean?

Let us come back to trust as the construction of our imagined arch in which each supporting building stone operates in unison with the others. From Sascha's trust experiences, we can extrapolate and identify various building stones that may be used to foster trust in relation to innovation. Finally, the keystone placed at the apex, carries most of the weight and usually has a unique wedge shape that allows it sit tight in its position. Each building stone can be an alone standing block, but does not equate trust by itself. The building stones and the keystone will connect and stand with the others to inform, construct, and uphold trust relationship.



Reliance

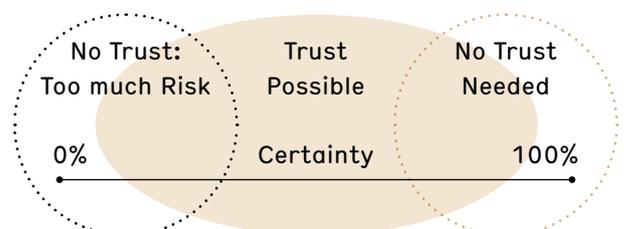
Reliability establishes predictability, so that an individual is confident that someone will display an expected trait or action which establishes predictability. On its own, however, reliance is neutral and does not include an evaluation of intentions, goodwill, or values.

In relation to technological innovations, this is perhaps where trust has been somewhat misused. Let's take a car – that is still undergoing innovative transitions today (e.g. self-driving cars). We can rely on our car: it predictably turns on in the morning, has functioning parts, and has a light that warns us when we need to change the oil. This helps us feel certain. However, the car by itself has no intentions in regards to those features and functions. And, as of yet, even cars with driverless functionality (such as new Tesla models) are far from an AI that could be said to have any kind of agentive intention or goodwill. Therefore reliability is involved in trust, but is not equal to trust by itself.



Certainty

The degree of certainty a potential trustor perceives plays a large role in the development of (dis)trust because it informs the future-oriented predictions we make. While each individual will have their own personal threshold, in general as certainty of goodwill and future oriented outcomes increases, so will the likelihood of trust. However, if it becomes a hundred percent certainty, trust is no longer necessary, since vulnerability on part of the trustor is removed.





Transparency

Transparency offers one way to better support the degree of certainty an individual has, or to strengthen a common understanding in the process of giving (dis)trust. However, what is being made transparent, why it is being done, and to whom will certainly impact the efficacy of transparency in trust relationships. Just as with reliability, transparency does not, in and of itself, promote any feelings of good- or ill will. The belief that being transparent is a show of good intentions is only partially justified. The concept of “having nothing to hide” is not congruent with actively sharing worldviews and values on the basis of which we generally form trust, though it certainly plays a part.

For example, the code for an algorithm could be made transparently available to the public, but that alone does not, by itself, reveal with what intentions and for what purpose it was created. Nor does access to a code necessarily mean much to a more generalized audience who would have to rely on another programmer to be a kind of “whistleblower” if things did not look right – a process that is not easily accomplished.

Transparency can serve trust when certain kinds of goals, intentions, or values are made transparent and followed through on. However, if we emphasize that trust is entwined with vulnerability and risk, complete transparency would actually remove those elements and move towards complete certainty scenarios where trust becomes obsolete.



Third party regulation

Trust, outside of familiar interpersonal settings, can be difficult to foster and so more formal processes can come into play. An external entity can offer a security net that provides higher degrees of certainty. Contractual relationships and regulations can either help develop trust between unknown parties or, at times, supersede the need for

trust because the relationship is being regulated in other ways. Examples would include signed contracts, laws, or other norms such as handshakes or sworn oaths.



Information from trusted partners

Information that an individual receives will be more or less believable and trusted depending on how credible the context and source (person) of information are considered to be. Sources of information can be established or discredited as believable depending on their track record for providing accurate and useful information in the past as well as the level of attachment between the (dis)trusting parties. If someone you trust tells you X is trustworthy, you are more likely to extend trust to X.



Ethos of Trust

In many aspects of our lives, there is said to be an “ethos of trust”. It arises from an extension of trust to individuals that are not personally known, creating a social climate of generalized trust. When individuals share a reality, there is a greater sense of cohesion within the social group of reference. An ethos of trust is more likely to occur if individuals have high levels of interpersonal trust, in turn making future trust relationships easier to establish. This often happens as standards of living, happiness, well-being and health increase within a group.



Perceived Similarity

Each individual comes with their own history and cultural baggage, including worldviews, individual behaviors, larger conventions of social actions, and experience with sociopolitical institutions. One can imagine a person “carrying” their own dispositions into each possible trust relationship they engage in which comes to interact with other involved parties. The more individuals perceive an overlap with their own categories and therefore similarity, the more likely they are to experience prima facie trust (in-the-moment trust based on gut reactions and various stereotypes). The less similarity, the more deliberate choice is involved in trust which could also be seen as a more justified or intelligent form of attributing trustworthiness long-term. However similarity by itself does not produce trust.

Keystone: values

Just like the center keystone in an arch, values carry the most weight. A good keystone can keep the structure stable, even when other external forces cause shifting and tensions. It’s unique wedge shape, allows it to slide tightly into place and take the brunt edge of the forces.



Values inform what we believe ought to be done or how we should behave, defining what big-picture intentions a person, company, or innovation incorporates. Trust is ultimately about beneficial intentions, goodwill, and shared worldviews that depend upon values, which create positive and meaningful human connections. Without these intentions and values, the whole structure of trust is unsteady and in danger of collapsing. They provide the underlying assurances and promises that are being offered to consumers and clients which in turn impact future-oriented predictions.

Trust is therefore based on the values that a company/organisation wishes to uphold and the subsequent detailing of how to incorporate these values into daily and long-term business processes, as well as product or service features. For example, a key value may be upholding individuals’ autonomy. First, a working definition for autonomy must be developed that actually functions within the context in which it will be used. Then, an analysis of how autonomy becomes reflected (or not) in the work processes and product, establishes an action plan on which the company/organization operates to better ensure that autonomy is upheld.

Start building Trust: How ethix can help!

Trust, at its core, is a deeply human experience that is about human interactions, whether they are direct or mediated by other processes listed above. Trust will circle back to intentions and values and shared horizons based on these. Each of the listed ingredients will interact with others within a specific time, space, and innovation.

A company's well established values can impact its organisational and products' relationship with customers and increase a sustainable, reciprocal relationship.

Two key things will play a role:

1. What are the values behind the innovation and how do they become manifested in innovations?
2. The congruence between a customer's position and the values offered to them.

Finding common ground based on values can help (re-)establish trust when it involves technological innovation and digital processes. It does this by emphasizing the "why?" behind what we are doing (e.g. the goodwill behind our actions) as well as providing common goals and a unifying sense of purpose in relation to future outcomes. In other words, a common value base lets us cooperate in the face of risks.

Establishing a core set of values for an individual, company, or technology *and consistently acting on these* can support an authentic, empathetic approach that rests upon a stable logic which is:

- essential for building a mission/strategy and company culture
- helpful for a company to communicate clearly to customers and other stakeholders and thereby win new customers
- beneficial in recruiting, gives employees meaning/motivation for their work.

Engaging ethical values to clarify one's positionality and being open about what these are, brings an orientation to the innovative process: an orientation that, grounded in relatable values, can help to build trust by infusing a highly mechanical process with humanity. With the understanding that innovation is the imperative of our times, ethix grapples with what trust in an innovative context might look like and when it is ethically defensible.

ethix can help your company/organization develop a values-oriented foundation by accompanying you along this creative process with a diverse, professional team.

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