

An Introduction to Scenario Building

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Summary

The ToIP Human Experience Working Group (HXWG) advocates for human-centered best practice at all stages of the product development lifecycle. In particular in the research, design, development and shut-down of digital trust technologies and services. We have started spotlighting methods and approaches that may be useful to this end.

This document is an introduction to scenario building, a process to bring stakeholder considerations into discussions, development and delivery of digital trust technologies. Examples of how they might be used to improve human experience outcomes in a variety of domains are provided for inspiration. References and links to additional sources are given to provide pathways for deeper study.

This content along with illustrated examples can be found on the [Trust Over IP HXWG drive](#).

On Scenario Building

Context

- **Delivering new services carefully is hard**
We all strive to build the best products and services we can, but technology driven approaches often struggle to engage with the true needs of society and humans. It can be difficult to foresee secondary impacts or the feedback loops between digital interactions and human behaviour as digital services extend deeper into our daily lives.
- **Making sense of the world is hard**
Neither the technologies and services we are building or the people we anticipate using them exist in isolation. Understanding the dynamics of the complex ecosystems of daily life, or anticipating latent human and social requirements can be tricky.
- **Preparing for the future is hard**
All organisations want to anticipate the future use cases of their products and services or people's emerging needs, but face challenges when attempting to have meaningful conversations about tomorrow. Without a common language to address changes, they can often be overwhelmed by promotional assumptions and predictions.

What is Scenario Building?

Scenario building is a process to construct models, narratives or experiences from relevant components of existing or emerging real-world systems. It can be used to simulate the impact of changing conditions on an ecosystem or potential outcomes of decisions. Designers, strategists and engineers can build scenarios as tailor-made 'wind tunnels' for organisational and product strategy, or technology and engineering roadmaps.

Scenarios are one of a number of innovation and foresight techniques that are used in many different disciplines, notably planning functions such as strategy, finance, business continuity, risk management and cyber security.

This document is about scenario *building* i.e. the social process of developing scenarios with diverse groups of internal and external stakeholders. The process of scenario building results in stories about futures, sometimes called future-telling, futuring or foresight narratives.

Scenarios are tools to think ahead about potential impacts on human experiences to reveal dead angles and biases. Scenarios are not predictions or forecasts - their use should challenge singular perceptions of the future to identify preferable futures, helping to de-risk opportunities by anticipating outcomes and consequences.

- **Trend Trajectories**
Scenarios are typically constructed by considering trends in social, technological, environmental, political, legal and ethical forces ("STEEPLE", optionally adding 'culture' and 'values') that are affecting a given domain, including how these might change over time. Trends visible today can be extrapolated forward to envision how they might lead towards possible, plausible, preferable or probable futures. These create the framework for scenario development.
- **Scope**
Scenarios can scale in breadth and/or horizon. They may be looking ahead 20 years to consider the impact of a changing climate on an agricultural industry. Or may have a narrower, shorter scope, looking at the impact of a feature update to a critical onboarding journey for an existing service at the end of a quarter.

Formats and Utilisation of Scenarios

Scenarios can be documented in a number of ways, typically taking the form of **narrative writing**, **prototypes** or **curated live action 'simulators'** that allow us to investigate, experiment, propose and test within these system-level challenges in different ways.

- **Narrative writing**
Prose or collections of text that describe systems of personas, interactions, objects and environments, detailing their key characteristics and the driving forces that shape them. Often used in workshops or further strategic planning exercises.

- **Prototypes**

Typically low fidelity props or models used to test how stakeholders might interact with physical manifestations of a new object, interface or service. Can be used to probe reactions and responses to challenging concepts made tangible. Typically used to test interactions and map responses with diverse user groups.

- **Curated live action simulators (role-play)**

Typically takes place in a group setting to explore new rituals, behaviours and multi-stage interactions. By taking on alternative roles (across individuals and organisations) it can help to make sense of a system of actors and topics, experience diverse perspectives, deflect emotional responses, objectify opinions and simulate otherwise unencountered impacts. Rapid iterations of services can be tested in a variety of situations.

- **Use**

Scenario building is not exclusively oriented towards the future and can be used to describe existing systems and uncover pain points. By simulating existing services, flows or experiences stakeholders can stand 'in the shoes' of others. This can help to increase empathy and understanding of challenges and opportunities with current products or technologies.

Futures or Strategic Foresight initiatives utilise scenarios when identifying alternative futures to probe new innovation spaces, develop a vision or shape strategy, often in combination with speculative design outputs.

Why use scenario building?

"In a complex world, a vision is not a photograph of a future destination, and a strategy isn't the map that charts the course. A complex vision is a compass that points towards a future direction, and a complex strategy is a set of safety guardrails inside which people can innovate and learn."

— Marco Valente

A valuable tool for ToIP projects

ToIP is defining 'an architecture for internet-scale digital trust', the architecture is not purely technical, it is a socio-technical system, meaning that human experience must be designed in from the outset. The ecosystems developing range right across the spectrum including education, health and financial services - the forefront of the complex 'messy' edges of society. Scenario building is a fast, low cost way to de-risk developing projects in these domains by:

- Bringing human considerations 'upstream' in development processes
- Engaging with people early in the process, building buy in and co-creating
- Testing assumptions about emotional responses and human factors

Within the ToIP ecosystems different types of engineering and design decisions could impact on future human experiences. Scenario building provides a means to walk through high level interaction flows to uncover where architectural, engineering decisions might affect future human experience:

- How do citizens collate government issued credentials to prove a right to remain in a state?
- How do individuals give informed consent for their information to be shared?
- How does a police officer request identity information during a stop and search?
- How does a merchant request credentials during a payment transaction?
- How does an individual without access to a smartphone or computer interact with a digital trust ecosystem?

Further, the impact of emerging technology, governance and societal trends can be considered by posing questions of how changes in these might affect the way in which people interact or expect to interface with digital trust technologies.

Using scenarios

Scenario building can be employed throughout design and engineering processes and are an effective tool to pull human-centred or ecosystem-impact considerations upstream in the product development process. It can even happen at very early stages to help evaluate loose ideas or concepts, or event to search for emerging challenges and opportunities. When to use scenario building:

Anticipating emerging needs and challenges within an ecosystem.

Use scenarios to:

- develop use cases and requirements
- identify risks and opportunities
- put human and social change at the centre of vision and strategic priorities
- open human and society centred 'innovation portals' [opportunities for future development]

Envisioning how current trends might shape what comes next.

Use scenarios to:

- inform decision making and test assumptions
- co-create inspirational outcomes with stakeholders
- explain a service or product idea to others
- develop plausible and meaningful roadmaps for your specific product/service
- understand the impact of decisions on a wider ecosystem. A tangible way of mapping secondary, tertiary impacts on network actors

Discovering previously unforeseen obstacles, surprises and opportunities.

Use scenarios to:

- gather feedback about both functional and human/emotional responses
- build empathy with stakeholders by standing in their shoes

Shaping of products and features.

Use scenarios to:

- simulate experiences of possible outcomes
- get stakeholder buy in before launching
- reduce risks of the project by building in resilience to the product/service to operate in a variety of scenarios, for the widest number of people

References and Examples

Methods & Tools used to build scenarios

- Causal Layered Analysis
- Three Horizons framework
- Horizon Scanning (Signals of Change, Emerging Trends, Drivers)
- Futures Wheel (Primary, Secondary, Tertiary Impacts)
- Scenario Planning, the 2x2 Matrix
- Manoa Method
- Sensemaking (Sourcing, Curation, Collation, Synthesis, Analysis)
- Roadmapping
- Experiential Futures Ladder
- Systems Thinking
- Cynefin Framework
- VERGE Framework

Examples

EU Scenario Exploration System Kit:

https://knowledge4policy.ec.europa.eu/foresight/tool/scenario-exploration-system-ses_en#explore-further

Changeist:

<https://changeist.com>

<https://www.howtofuture.com>

Extrapolation Factory:

<https://extrapolationfactory.com>

IBM:

<https://www.ibm.com/design/thinking/page/toolkit/activity/as-is-scenario-map>

'Design Scenarios':

<https://www.designcouncil.org.uk/sites/default/files/asset/document/Design%20methods%20for%20developing%20services.pdf>

Institute For the Future:

<https://www.iff.org/scenario-building/>

Service Design Tools:

<https://servicedesigntools.org/tools/role-playing>

An introduction to speculative design practice

<https://speculative.hr/en/introduction-to-speculative-design-practice/>