ETHICAL PARALLEL TRACK DURING THE DEVELOPMENT OF QORONANO
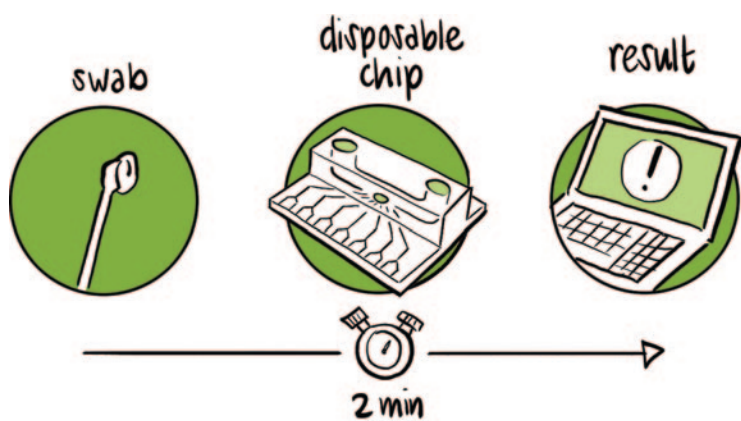
A corona rapid test linked to ticket sales for events

ECSENS

SAXION
HOGESCHOOL

swab   disposable chip   result

2 min

INTRODUCTION

The COVID-19 pandemic has confronted the world with numerous pressing ethical dilemmas. Lockdowns, implemented to protect the vulnerable and to relieve healthcare systems, eventually give rise to other social, economic, and medical problems. Faced with these negative effects, ECsens has leveraged its expertise in biosensor technology to develop a reliable corona rapid test, specifically aimed at enabling controlled access to events once again. However, technology is never neutral; a practical solution like this also raises new questions for society and can shed light on underlying dilemmas from a different perspective. Therefore, ECsens has entered into a collaboration with the Saxion Ethics & Technology and Applied Nanotechnology research groups to reflect on the ethical implications surrounding the innovation and implementation of the QoroNano rapid test.

> "For socially engaged companies like ECsens, whose primary goal is to contribute to the advancement of society, it is crucial to calibrate from an independent, honest, and critical perspective whether those best intentions will indeed yield the best outcomes"
> ECsens, Pepijn Beekman

QORONANO

By applying saliva or nasal mucus to a disposable chip, the QoroNano rapid test aims to provide a result that is hopefully highly accurate, simple, and fast: a single viral particle may be sufficient to detect an infection.
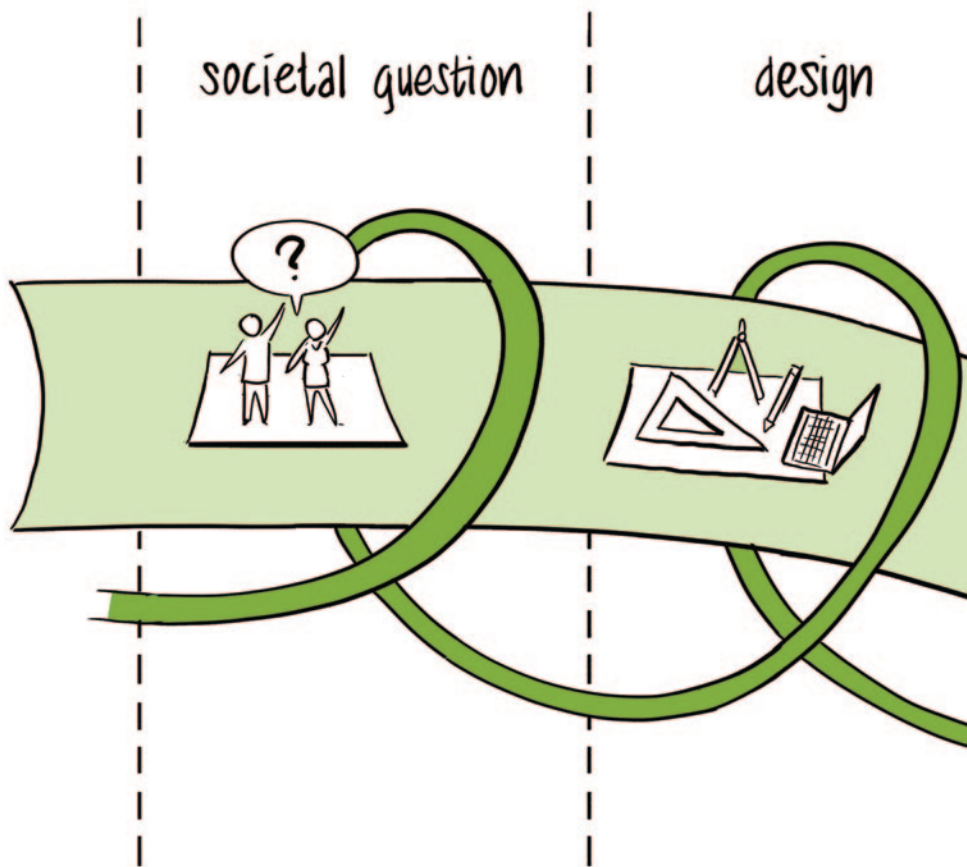
ETHICAL PARALLEL TRACK

The Saxion Ethics & Technology research group employs an Ethical Parallel Track for innovations: a series of practical tools to question and enhance ethical readiness. There are specific tools for various phases: addressing purpose and support at the start, refining design during development, and assessing unintended consequences during implementation.

implementation
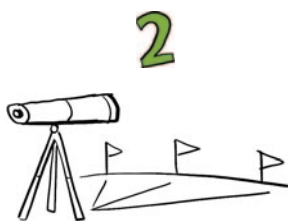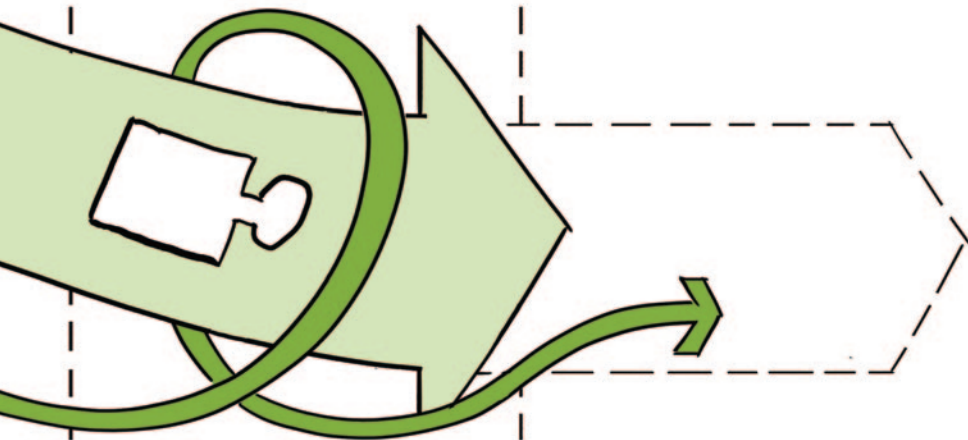
For QoroNano, three sessions have been conducted in the initial phase:
1. ethical readiness check,
2. impact anticipation, and
3. ethical stakeholder dialogue

1 ETHICAL READINESS CHECK

Based on the fundamental idea that technology should be a means rather than an end in itself, the Ethical Readiness Check questions the purpose and means surrounding an innovation.

Does the means serve a noble purpose?

▸ What is the purpose?
Safely reopening society within restrictions.

▸ Noble purpose, or contentious?
Noble purpose, but other noble purposes also feasible.

▸ Conflicting values?
Health, autonomy, economy.

▸ Any hidden agendas?
No

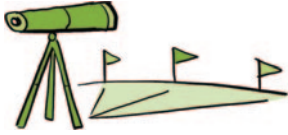## Is it a good means for the purpose?

▸ Does the means work?
Yes, highly reliable, user-friendly, and fast.

▸ Likelihood of misuse?
No.

▸ What are the side effects?
In the short term, risks related to software and data storage; see further scenarios.

2 IMPACT ANTICIPATION

Innovations stem from solution-oriented thinking and are therefore inherently aimed at potential positive impact. Predicting negative (side) effects, especially in the long term, is more challenging but no less essential: the success of an innovation depends, after all, on the ultimate impact.

Impact Anticipation consists of two steps:

▸ Identifying (side) effects
▸ Developing various future scenarios (positive/utopian, negative/dystopian, ambivalent)

The Product Impact Tool illustrates how technology influences people from all perspectives (before-the-eye, to-the-hand, behind-the-back, above-the-head). Here, some types of impact from this model are used for an Impact Anticipation session.
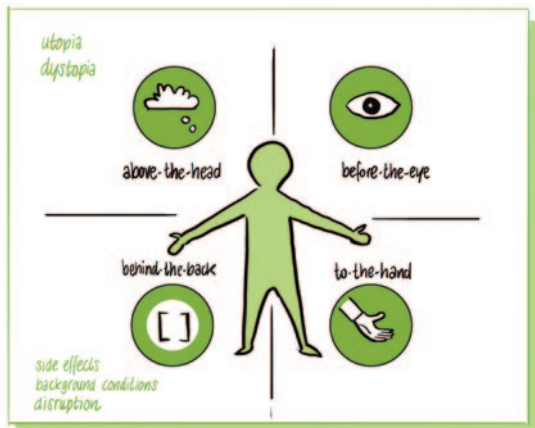
▸ What potential side **effects** can be thought of?
▸ What are the **background conditions** for proper functioning?
▸ Will the technology lead to **disruption** of values and norms?

THREE FUTURE SCENARIOS

Through scenarios, the consequences of technological impact on individuals and society are further elaborated, ranging from very positive to extremely negative: utopia and dystopia.

Testing Society:

The development of various rapid testing methods has resulted in a significant boost in the medical sector, but it has also led to dependency. The complete elimination of all health risks through preventive diagnoses gave rise to "health discrimination," while the overall resilience of our immune system declined. (negative)

Land of Conspiracy Theorists:

Lockdowns, curfews, COVID passes, and other restrictions led to significant unrest within society and deep distrust towards the government and science. While radical conspiracy thinking eventually subsided, this period resulted in a stagnation of technological advancement. (negative)

Health Society:

After the pandemic, the focus shifts towards prevention: keeping the population healthy; rapid tests for a wide range of diseases are integrated into the healthcare system, and treatment pathways are easier to monitor. People's life expectancy increases. (positive/ambivalent)
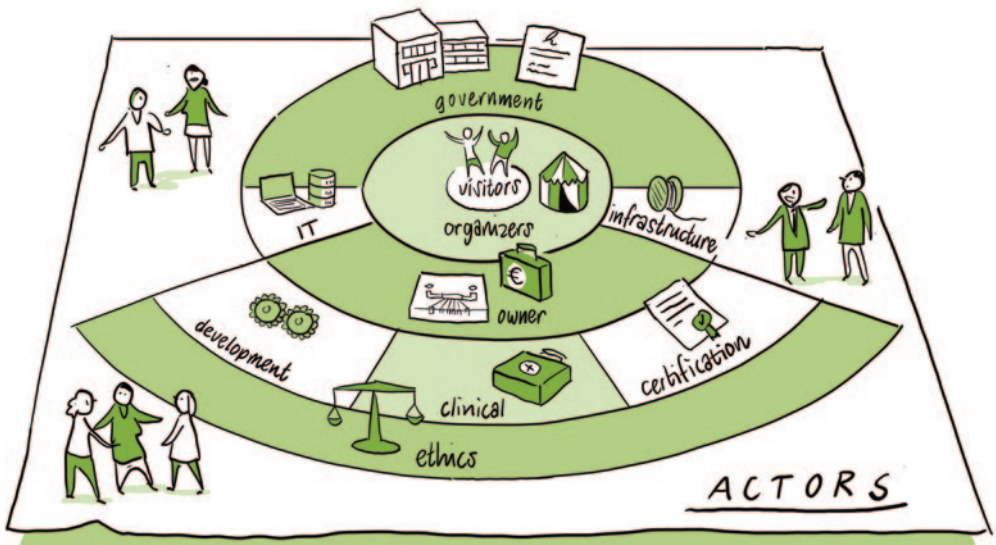
STAKEHOLDER DIALOGUE 3

An ethically inspired stakeholder analysis involves a dialogue among different stakeholders with potentially conflicting values. How can you, for instance, balance long-term ethical questions against business targets?
The approach consisted of:

▸ creating a list of actors,
▸ engaging in Socratic discussions about dilemmas and risks.

The stakeholder dialogue provides new insights into various stakeholder perspectives – both current and future. The balance between profit and responsible innovation, for example, could potentially create an internal dilemma between the company and its shareholders.

An ethical parallel track introduces ethical reflection into a research group and innovation process. Regarding QoroNano, contributions were made to broaden the problem statement from the perspective of the entire society. In subsequent phases, ethical reflection remains crucial: for adjusting the design and evaluating the effects after implementation.

For more information about the Ethical Parallel Track and the Product Impact Tool, please refer to:
www.cta-toolbox.nl
www.productimpacttool.org