

Unlocking the potential of Organ-on-Chip for biomedical innovation

Strategic Multi-Year Market approach (SMM) Organ-on-Chip Netherlands-Switzerland kick-off and validation

Moderation: Carmen van Vilsteren

In collaboration with:

Dr. Laura Windt, Project lead Organ-on-Chip, Health Holland

Eva van Vliet, Policy Officer, Embassy of the Kingdom of the Netherlands in Switzerland

Linda van der Horst, Program manager international Business, RVO

AGENDA

Arrival (13:45 - 14:15)

Program (14:15 - 15:30)

Networking (15:30 - 16:00)

Swiss delegation to next location (16:00)

AGENDA

validation session

- 1 Welcome

- 2 Recap of last year Dutch-Swiss collaboration program

- 3 Insight into Dutch-Swiss Organ-on-Chip collaborations

- 4 Validation session of the Organ-on-Chip actionplan for the next 3 years

- 5 Feedback, networking and coffee break

END-USERS & VALUE OF OoC technology

● BioPharma & Biotech (R&D, safety, translation)

○ OoC technology has the potential to **reduce R&D costs significantly**, driven by changes in **direct costs**, **success rates** and the **length of the R&D process** (Franzen et al., 2019)

○ Fewer animal experiments

this embodies the 3Rs principle (Replace, Reduce, Refine), supported by EMA and EU directives.

○ Provide the basis for preclinical assays with **greater predictive power** (Huh et al., 2021)

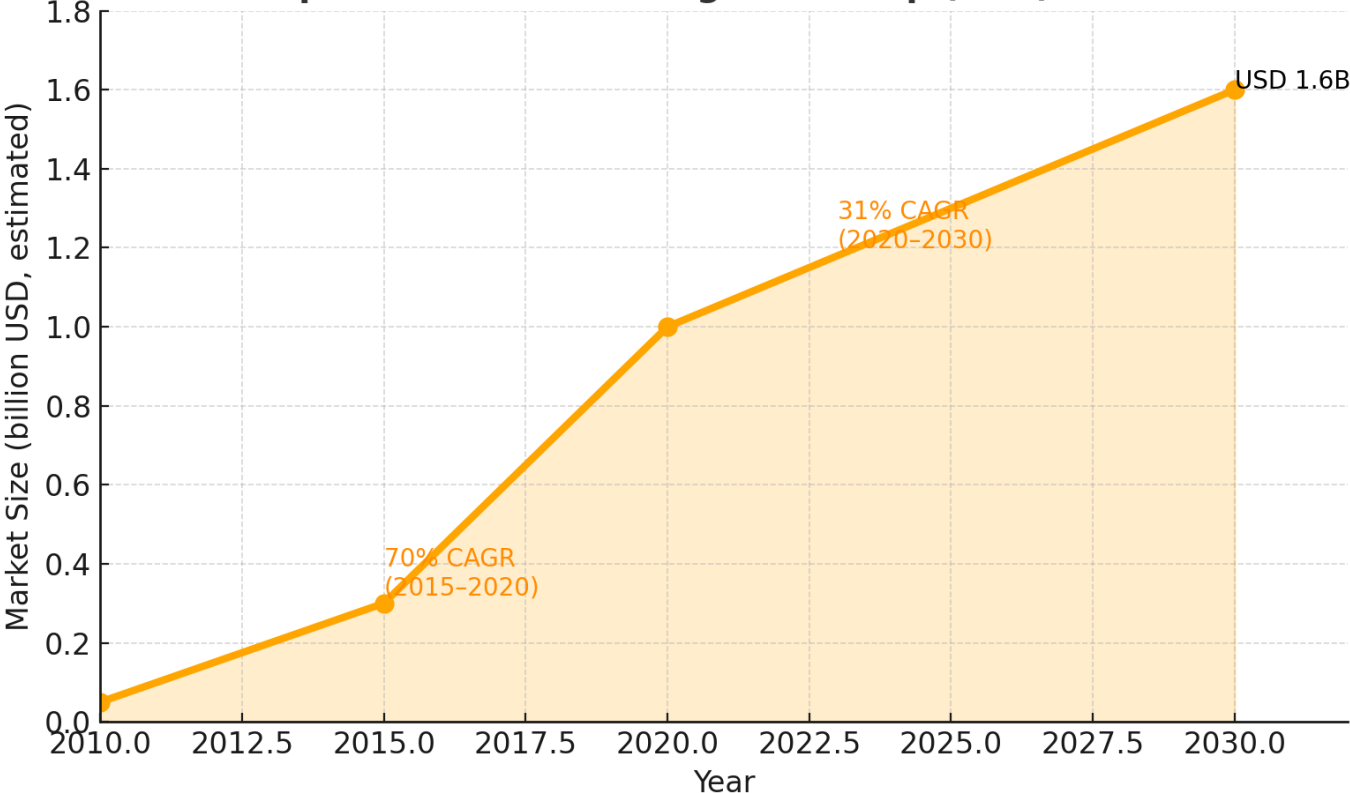
○ Faster, better **go/no-go decisions** (Ewart et al., 2022)

○ European and US regulators (EMA, FDA) are actively developing **frameworks for the regulatory use** of OoC data. (EMA 3RsWP 2024)

GLOBAL ORGAN-ON-CHIP MARKET

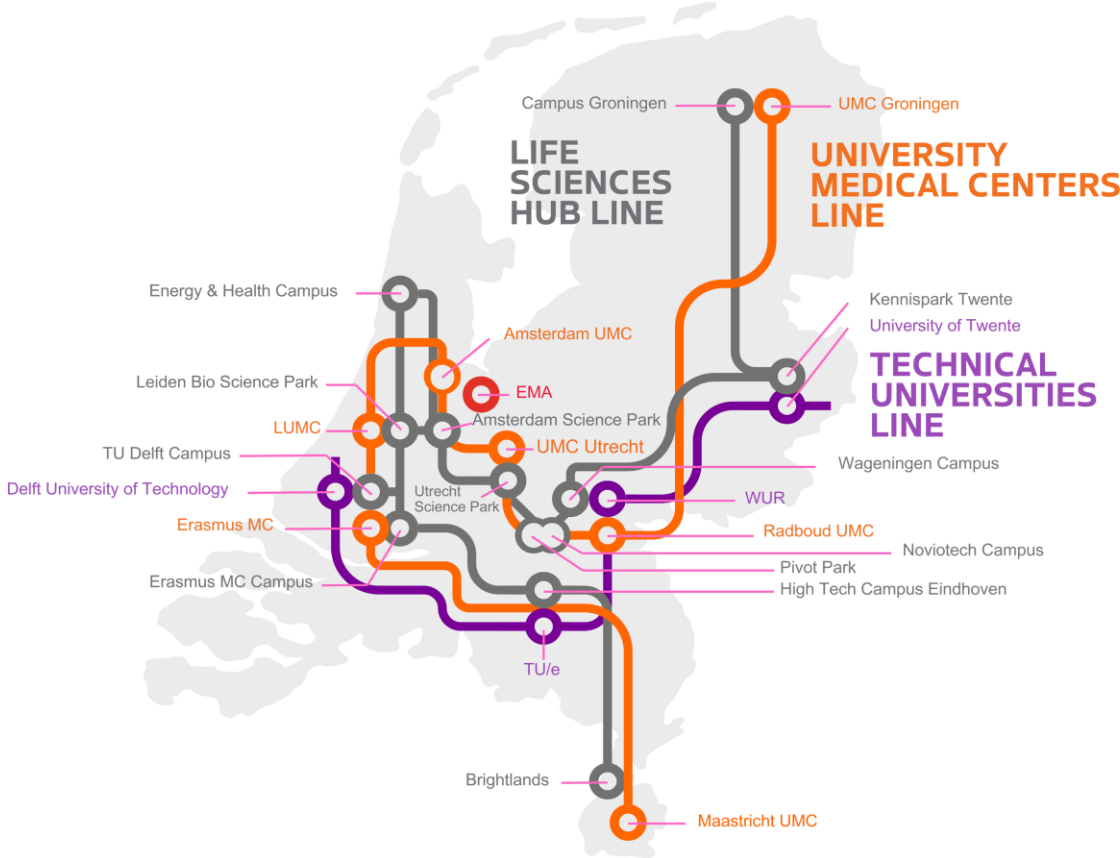
(Expected) rapid growth

Rapid Growth of the Organ-on-Chip (OoC) Market



Source: CEN and CENELEC Focus Group Organ-on-Chip Standardization Roadmap (2024)

Strong ecosystem in the Netherlands



Examples Dutch Organ-on-a-Chip (OoC) platforms:

Examples of Dutch Organ-on-a-Chip (OoC) platforms:

- Chiron:** Represented by a 96-well microplate.
- Optics 11 Life:** Represented by a small black device with a white lid.
- Mimetis:** Represented by a microplate being held by a gloved hand.
- Micronit and Imec:** Represented by a complex microchip.
- TOP platform, Smart OoC:** Represented by a multi-well microplate and a printed circuit board.

OBJECTIVE: The Netherlands, an Organ-on-a-Chip control point



Our focus is on:



Accelerated innovation and adoption of Organ-on-a-Chip technology.



Effective and efficient preclinical testing, reducing costs and minimizing animal testing.



Enhanced therapeutic outcomes and better quality of life for patients.



Economic growth through public-private partnerships and international collaboration.



Stronger geopolitical positioning of the Netherlands in the global OoC landscape.

WHY THIS INITIATIVE?

The Netherlands is a global frontrunner in Organ-on-Chip technology, with a strong ecosystem and products that are (nearly) market-ready.

Switzerland offers a strategic springboard with direct access to leading pharmaceutical companies such as Roche and Novartis.

The current momentum is favourable thanks to recent validation and standardisation initiatives, as well as growing Swiss interest in human model systems as an alternative to animal testing.

2024 – START OF PROJECT

Health/Holland



Laura Windt



Ernst Nagel



Laura Duran



Carmen van Vilsteren



Rijksdienst voor Ondernemend
Nederland



Niels van Leeuwen



Linda van der Horst



Kingdom of the Netherlands

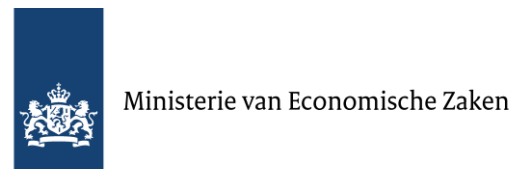


Eva van Vliet



Frank Eysen

A COLLABORATIVE EFFORT



Health/Holland



INVESTNL



Brabantse Ontwikkelings Maatschappij



ORGAN-ON-A-CHIP ECOSYSTEM in the Netherlands



abc biopply
applied biomedical concepts

INSELSPITAL
UNIVERSITÄTSSPITAL BERN
HÔPITAL UNIVERSITAIRE DE BERNE

AMF
Advanced
Microfluidics



azafaros

AMF Advanced
Microfluidics



limula

CSL Behring

csem
FACING THE CHALLENGES OF OUR TIME

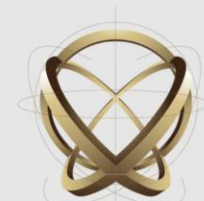
NOVARTIS

EPFL

CELLNTEC
ADVANCED CELL SYSTEMS

insphero

Alveolix
In-vitro models inspired by nature



ikonplan

Lonza

nNano

Roche

SPACE PHARMA

**SWITZERLAND
GLOBAL
ENTERPRISE**
enabling new business

3 R Swiss 3R
C C Competence
Centre

**Swiss Biotech
Association**

7AlpsBio

quality biotech
DEVELOPMENT & CELLS GMBH

**University
of Basel**

USZ Universitäts
Spital Zürich

CURARE

2025

Q2

- Organ-on-Chip page published
- Feb 13-14: CSEM workshop
- Next-gen organ-on-chips & organoids, in Basel CH
- Apr 2-3: hDMT Dutch Organ-on-Chip consortium conference (Lunteren NL)
- Apr 3: Innovation for Health (Rotterdam NL)
- Apr 29: OoC meeting (Heidelberg, DE)
- May 5-6: Participation Swiss Biotech Day
- Wrap-up marketstudy Switzerland and integration of the Roadmap
- Start development Roadmap Organ-on-Chip



Q4

- Follow-up incoming delegation from Switzerland
- Organ-on-Chip call application (deadline)
- Organ-on-Chip implementation committee meeting

Q1

- Database OoC network
- Start of the market study about the Swiss OoC ecosystem
- ATMP meeting in Stockholm

Q3

- June 9-13: MPS World Summit Brussel
- Initiative and publication Organ-on-Chip call
- Submitting Organ-on-Chip roadmap
- Follow-up Invest NL event (incl. Network event, start-up pitches)
- Start creation OoC actionplan
- OoC & Organoid Event
- Kick-off OoC implementation committee
- Mission with government officials to Switzerland

MARKET STUDY

Organ-on-Chip CH-NL

By Patrick Guye
CEO Trillium, Expert at Innosuisse, Non-executive director at Kinzbio



Swiss Organ-on-Chip Landscape & Opportunities for Dutch-Swiss Collaboration

1. Management Summary

Switzerland possesses significant foundational strengths in the Organ-on-Chip (OoC) field, rooted in world-class microtechnology and precision engineering capabilities, and a globally recognized pharmaceutical hub in Basel. The ecosystem benefits from top-tier academic institutions, specialized research centers, and an agile startup culture. However, it faces challenges in coordination and scaling. The Netherlands presents a complementary ecosystem with structured national initiatives, established funding, and a focus on standardization and clinical translation.

The strategic combination of Swiss deep-tech, precision, quality, and pharma access with Dutch structured approaches, clinical validation power, standardization leadership, and scale-up infrastructure creates a uniquely potent synergy. This partnership is not merely additive but offers the potential for exponential growth, positioning a combined Dutch-Swiss effort for global leadership by accelerating innovation, setting new standards, and solving complex challenges in the OoC field.

Key recommendations for Dutch stakeholders include: prioritizing joint R&D projects targeting complex systems and specific disease areas; leveraging EU funding mechanisms; co-developing standardized validation protocols; engaging Swiss intermediaries; and fostering direct B2B engagement. Addressing the "Valley of Death" through joint funding initiatives is crucial. Strategic collaboration, focusing on these powerful complementary strengths, can overcome shared weaknesses and unlock significant potential.

2. Introduction

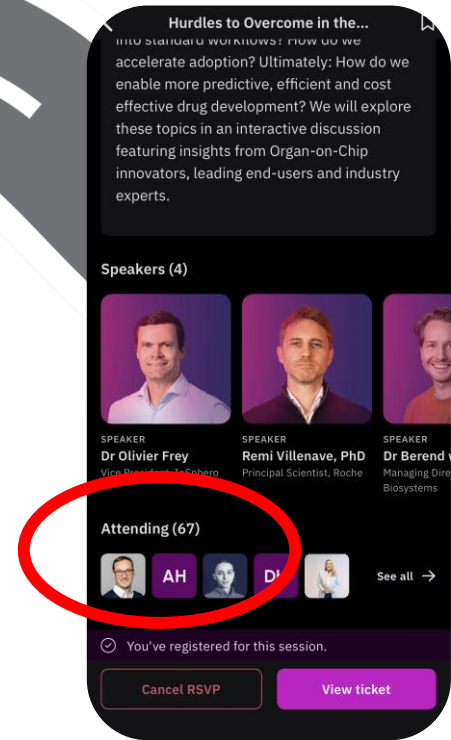
2.1. Aim and Scope

OoC technology, using biomimetic 3D systems to mimic human organ function, is revolutionizing biomedical research and drug development. It offers more physiologically relevant models than traditional methods, potentially reducing animal testing and accelerating the path to personalized medicine. Switzerland, with its strong life sciences sector, advanced microfabrication capabilities, and innovation focus, is a key player in this rapidly evolving field.

This report provides a comprehensive analysis of the Swiss OoC market and R&D landscape. It aims to:

- Map the Swiss OoC ecosystem, identifying key actors, their expertise, and networks.

2026



Q2



- Official start of the SMM Organ-on-Chip NL-CH programme – funded by Foreign Affairs (approval of the action plan and further development of the different modules)
- K2K session
- Organ-on-Chip call
- Terms of Reference for the market study completed and consultant engaged
- Health.tech – 12 Dutch OoC companies, successful event, masterclass and networking drinks
- Today: validation session and start of the incoming mission from Switzerland

Q2

- Key programme message
- Innosuisse & Health Holland call

Upcoming activities

- Swiss Biotech Days
- Global Innovation Summit
- Market study
- Workshops tbd....

Switzerland and the Netherlands

Unlocking the potential of Organ-on-a-Chip for biomedical innovation

This Strategic Multi-Year Market (SMM) approach between the Netherlands and Switzerland aims to accelerate the implementation and international adoption of Organ-on-a-Chip technology. By connecting research institutions, innovative companies, societal organisations, and government bodies in both countries, the programme facilitates collaboration between Dutch innovators and Swiss companies and end users. This supports the translation of advanced Organ-on-a-Chip models into applications within biomedical research and drug development. Through this partnership, Dutch and Swiss stakeholders are accelerating the development of human-predictive, human-centric health innovations while jointly advancing solutions to shared global healthcare challenges.

Both the Netherlands and Switzerland are among Europe's most research-intensive and innovation-driven economies. The pharmaceutical and biomedical sectors face growing pressure to accelerate R&D, reduce costs, and move towards animal-free research, which increases the need for new, human



EUREKA CH-NL Call: Cell and Gene Therapy Towards Clinical Practice

*De EUREKA CH-NL call tekst is alleen in het Engels beschikbaar.

EUREKA is an international co-operation programme supporting collaborative development projects that develop innovative products, processes and services, facilitating the coordination of national funding on R&D&I, the driving force for almost 40 years. Switzerland and the Netherlands collaborate continuously with member states and support all innovation topics with suitable EUREKA instruments (EUREKA Cluster- and Eurostars projects).





Connecting the Dutch and Swiss Life Sciences Ecosystems

- Introduction
- Dutch - Swiss cooperation
- Organ-on-Chip and Organoid Event
- H~H Organ-on-Chip initiative
- Economic mission
- Biotechnology (Dutch only)
- Online matchmaking
- Contact
- Privacy & Security (GDPR)

Health~Holland Organ-on-Chip initiative

Unlocking the potential of organ-on-a-chip technology

In the Netherlands organ-on-a-chip (OoC) is seen as a promising new technology, since it can transform drug development by replicating the key functions of human organs on a microfluidic chip. This animal-free technology has the potential to transform the Life Sciences & Health sector. It is expected that it will contribute to sustainable and structural economic growth, improved drug development and most importantly, improved quality of life. This aligns with the broader ambition to strengthen the Dutch Life Sciences & Health ecosystem and improve patients' quality of life.

To support the adoption and international positioning of OoC, Health~Holland, the Netherlands Enterprise Agency (RVO), the Dutch Embassy in Switzerland, and the life sciences & health industry established a new strategic collaboration. This initiative is commissioned by the Ministry of Foreign Affairs and is aimed to develop a strategic internationalization roadman to strengthen the collaboration between the Netherlands

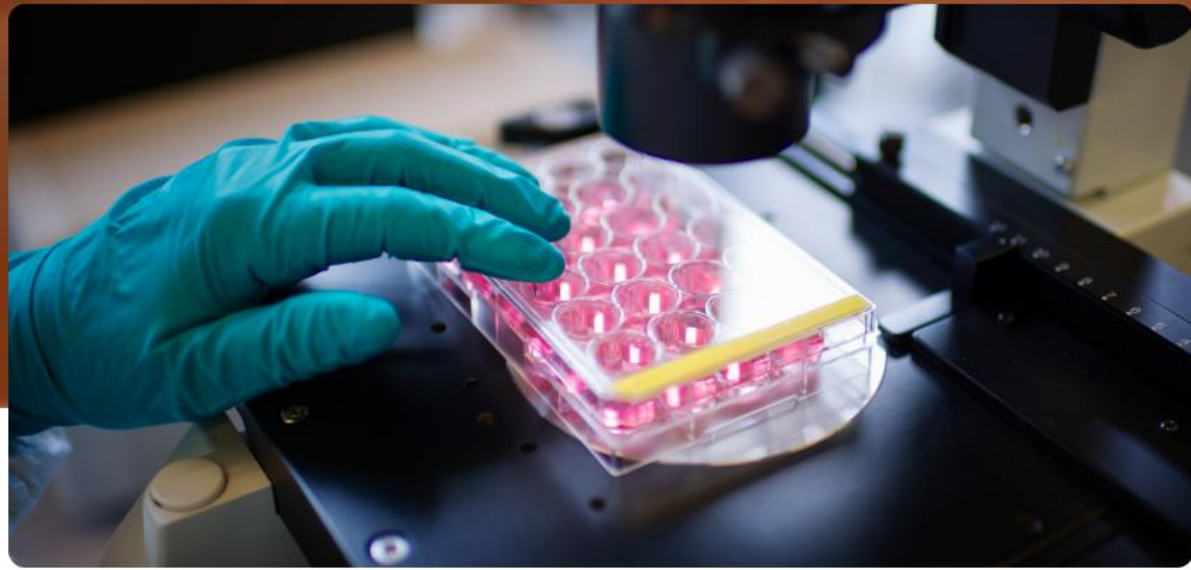
ORGANISED BY



Connecting the Dutch and Swiss Biomedical Ecosystems

Register now

Registration open until 31 Dec 2028



257 Registered participants

53 Posted opportunities

2878 Profile views

Driving the future of Organ-on-a-Chip together

Innovative therapies & human-based model systems



“We are very much looking forward to strengthening our relationships around OoC with Switzerland, as we see it as a priority country to collaborate with in medical biotechnology.”

- Ministry of Economic Affairs and Climate



Interview

DUTCH – SWISS COLLABORATION EXAMPLES

MIMETAS

insphero

charles river

Holst Centre
Powered by imec & TNO

AlveoliX
in-vitro models inspired by nature

chiron

Video ??!

Time for action: OoC action plan validation

Building Dutch-Swiss partnership

2026 - 2028

TODAYS GOAL

Input collection:

Goals SMM program

Key message

Community platform B2Match

Conferences (incl. Masterclasses,
round tables, ...)

Pharma consultant action plan
validation

Workshops: validation of relevant topics
based on expert sessions

Infographic Organ-on-Chip value chain



Rijksdienst voor Ondernemend
Nederland

Introduction to SMM program

Strategic Multi year Market approach
Organ on a Chip
Switzerland

2026-2028

*Private coordinator – Laura Windt, Health Holland
Public coordinator - Linda van der Horst, RVO*

Organ-on-Chip NL-CH roadmap 2026-2028

AIM

The Strategic Multi-Year Market (SMM) approach on Organ-on-Chip between the Netherlands and Switzerland aims to accelerate the implementation and international adoption of OoC technology

FOCUS

- The implementation of OoC technology
- Creating more interaction with end-users of the OoC technology

HOW

- Connecting research institutions, innovative companies, societal organisations and governmentbodies in both countries
- Create opportunities for knowledge exchange and practical collaboration

ACTIVITIES

- Join conferences
- Organize and facilitate workshops
- Conduct a market study – focus on how to start collaborating with end-users
- B2Match platform to facilitate interactions and create a marketplace for end-users

EXPECTED OUTCOMES

- Strengthened international partnerships driving research, adoption and implementation
- Faster adoption of Organ-on-Chip technology
- Increase in sales of Dutch OoC technology

INTERACTIVE VALIDATION SESSION



Workshop topics

Session recap & results

Theme 1: End-user demand and pharma adoption pathways.

Theme 2: Technology development, validation, and regulatory readiness

Theme 3: Strategic NL–CH collaboration and ecosystem alignment

Focus

Context of Dutch-Swiss collaboration

Further strengthening connections with the pharma sector (also through market research)

Organizing workshops with pharma and biotech companies

Validation of the plans (in today's session)

Optimizing the B2Match platform

Call to you: Validate our plans & provide us with input for Market study by pharma consultant



HBC FOR HEALTH HOLLAND ORGAN-ON-A-CHIP



*Strategic Multi-Year Market Development Plan (2026–2028)
Connecting Dutch Organ-on-Chip Companies with Swiss Pharmaceutical
Leaders*

*Commissioned by the Dutch Ministry of Foreign Affairs, executed by
Health~Holland and the Embassy of the Kingdom of the Netherlands in
Switzerland*

20-April-2026, Leiden – Julia Hepp, PhD



HBC FOR HEALTH HOLLAND ORGAN-ON-A-CHIP

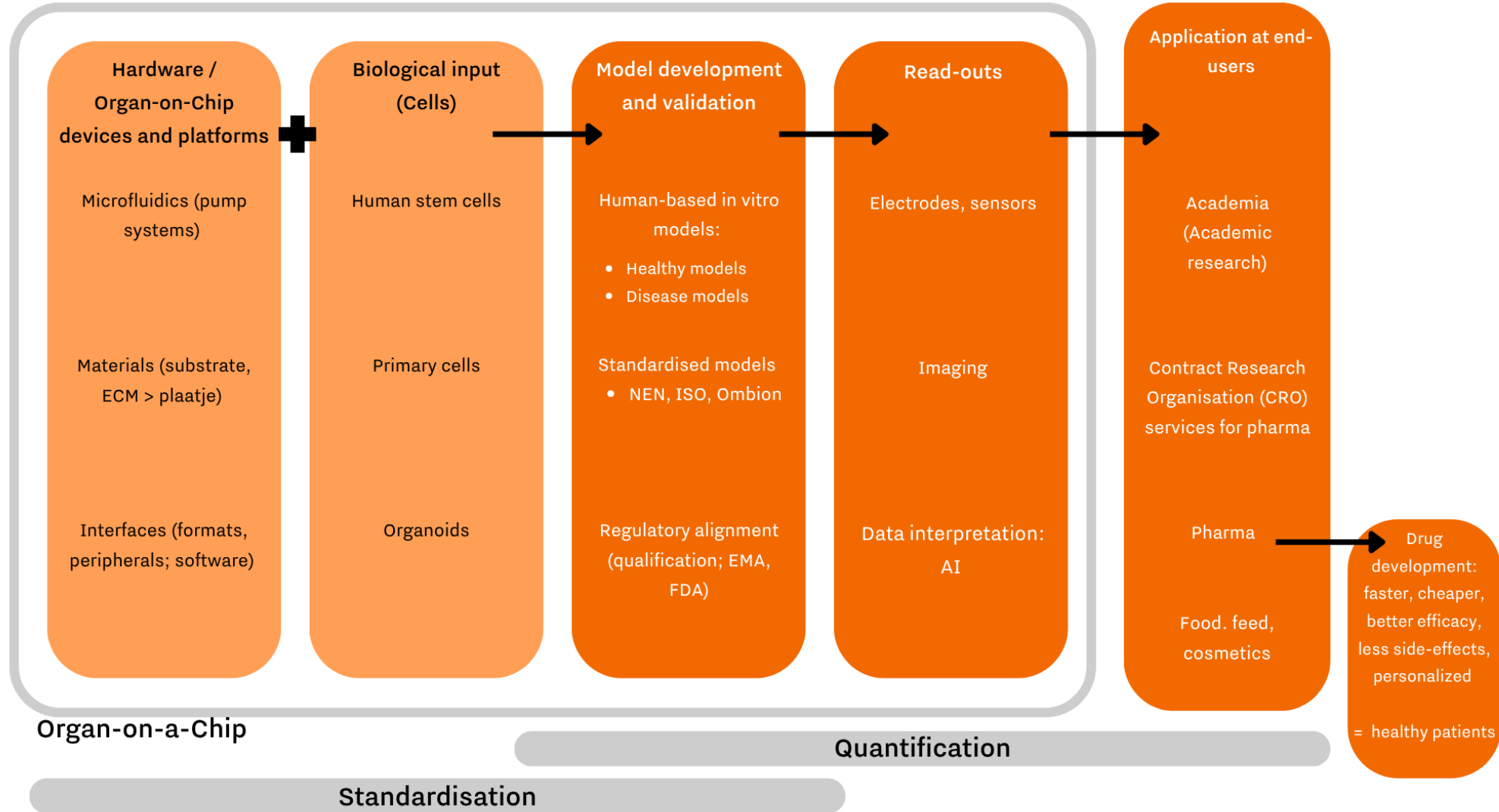
- **Actionable approach** to map, engage and activate the **Swiss pharmaceutical ecosystem**
 - to accelerate adoption of Dutch Organ-on-Chip (OoC) technologies
- **Deliverables**
 - comprehensive **ecosystem** and **stakeholder analysis** of Swiss pharma relevant to OoC
 - identification of concrete **partnership outreach** pathways and pilot opportunities
 - 2 co-creation **workshops** to align Dutch OoC providers and Swiss pharma decision-makers
 - a practical implementation **roadmap** tailored to Swiss pharma R&D and translational workflows

The focus is **explicitly market-driven**: accelerating commercial uptake, embedding OoC into real-world drug discovery and development

- **Value Proposition**
 - move beyond ecosystem mapping toward **concrete implementation**
 - aligns Dutch OoC **capabilities** with real Swiss pharma **demand**
 - produce validated, **co-created outputs** rather than consultant-driven recommendations
 - creates **durable structural connections** between both ecosystems.

The result will be a **pragmatic, adoption-oriented roadmap** positioning the Netherlands and Switzerland as joint leaders in Organ-on-Chip-enabled drug development.

Organ-on-a-Chip Value Chain in the Netherlands

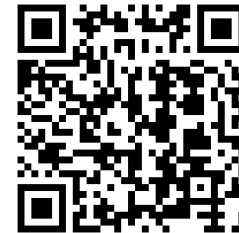


STAY UP-TO-DATE

Organ-on-Chip opportunity's

More information about the Organ-on-a-Chip initiative:
<https://www.health-holland.com/nl/OoC-project>.

Make sure to follow
the Health~Holland international LinkedIn account
to stay up-to-date about OoC developments!



Become part of the B2M Platform, don't miss any OoC
related events and expand your network!



QUESTIONS?

Please feel free to reach out to:

Laura Windt (Health Holland): windt@health-holland.com

Linda van der Horst (RVO): Linda.vanderhorst@rvo.com

Eva van Vliet (NL Embassy in Switzerland): Eva-van.vliet@minbuza.nl



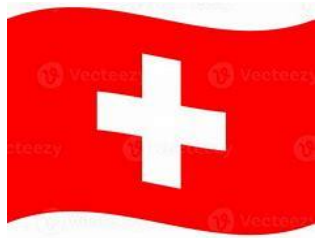
Network

Get to know
each other

Thank you for joining

We value your input

Time for action!



Swiss delegation needs to gather
outside to move to next location at
16:00 sharp!