

Impact Report



Good things are coming

Welcome!

We believe that for sustainable positive impact, social return and financial return must go hand-in-hand. At LUMO Labs we focus on investments in software and smart hardware because this is where we believe the impact magic happens.

On condition of the right business model, the matchless scalability of soft tech solutions provides unmatched potential to replicate positive outcomes around the globe and realise a major shift for the benefit of society and the planet.

The already-massive impact digital infrastructures, platforms and applications have on people's lives and the very fiber of society will continue to increase. The impact is intricately linked to developments related to Artificial Intelligence/Data, Blockchain, Robotics/ Drones, the Internet of Things and extended realities, and it will become more pervasive than it is today.

To maximize our impact as investors, we select our portfolio companies based on their contribution to three UN SDGs (3, 4 and 11). These goals fit our technology focus and network best: Health & Wellbeing, Quality Education and Sustainable Cities & Communities.

This is our first Impact Report. In this emerging field, we are doing our best and what we think is right at the moment. We wish you an enjoyable read and look forward to creating more impact together with you.

Andy Lürling & Sven Bakkes - Founding Partners



CONTENT

2021

Highlights

Summary

IMPACT-DRIVEN

What does it mean to us?

HOW

Approach

Impact-Officer & Coach - Britta Gruenig

RESULTS

2021

Alphabeats

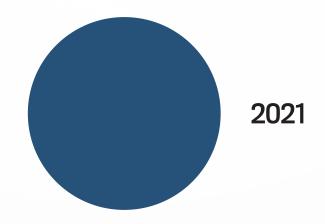
FruitPunch Al

CityLegends

Autoscriber

Aiosyn

Terminology





Andy Lürling Founding Partner



Sven Bakkes Founding Partner



Britta Gruenig Impact Officer & Coach



Ula Matlak Executive Assistant



Thomas Hannes Investment Manager



Bastiaan den Braber Venture Advisor



Lorna Goulden Venture Advisor



Harry Kok Venture Advisor



Per Slycke Venture Advisor



Steven Nelemans Venture Advisor



Jenna Seiden Venture Advisor

2021

Highlights

In 2021* LUMO Labs evaluated **510** pitch decks and committed **2 million** euros to five startups: Alphabeats, FruitPunch Al, CityLegends, Autoscriber, and Aiosyn.

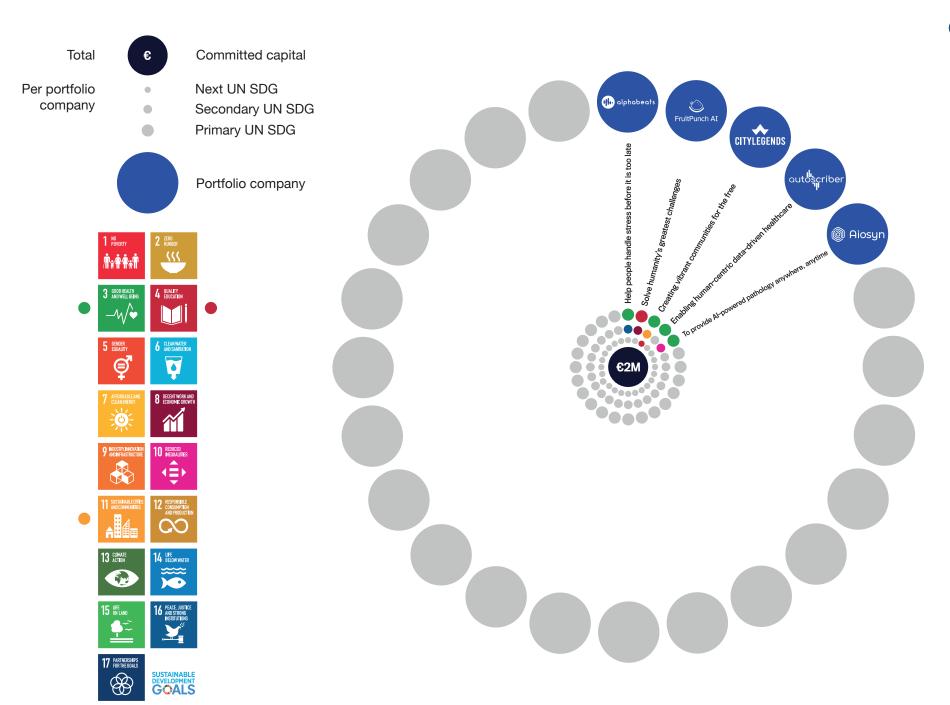
All initial impact targets are set for 2022. However, it is with great pleasure that, in this 2021 report, we can already share some very encouraging steps and accomplishments towards these targets.

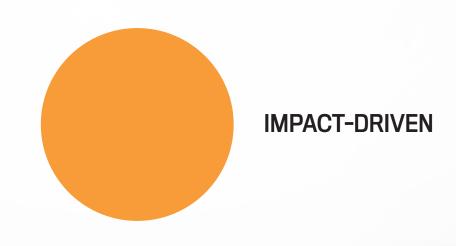
Another high note in 2021 related to our desire to increase impact awareness amongst startups was joining the Al consortium in the Thematic Technology Transfer schema as investment partner to provide early-stage funding and venture support to startups originating from knowledge institutions. All TTT.Al investments are automatically enrolled in our Impact Program, including the Impact Days by our impact officer, Britta Gruenig, one of the world's leading impact experts.

With this report we contribute to the measurability and communicability of impact-driven investing and encourage new and existing impact-driven ventures and investments.

Founding Partners & Team - LUMO Labs

*This report covers the period October 2020-December 2021, referred to throughout the report as "2021."







What does it mean to us?

LUMO Labs is an impact-driven multi-stage fund (pre-seed through series A) with a two-year venture builder program.

We love the challenge, and we play to win. For us, this means we keep a laser-like focus on how and where we can add the most value to yield maximum financial and social return.

Focus

We invest in the founding teams of early-stage ventures focused on Al/Data, Blockchain, Robotics/ Drones, IoT and VR/AR.

These emerging technologies hold the key to solving the social challenges people face today because of their potential for rapid scaling and countless human-centric applications.

At LUMO Labs, we only invest in ventures whose core proposition contributes to at least one of the following UN Sustainable Development Goals: Good Health and Well-being (UN SDG 3), Quality Education (UN SDG 4), and Sustainable Cities and Communities (UN SDG 11).









AI/Data



Blockchain



InT



Robotics & Drones



Focus

What is also considered a matter of impact is the stage at which we invest: pre-seed, seed and series A as follow-on-funding for existing portfolio companies.

At LUMO Labs, we get on board early because the dynamics at the (pre) seed stage provide unique opportunities to embed and accelerate elements that will maximize the financial and social return of a venture in the short term and long term.

Another reason we chose to focus on early-stage funding is the "additionality" of our capital in this stage. Pivotal innovation and game-changing businesses can be lost if the gap between financial support from "family and friends" and a full series A is too big (as often is the case) or if social impact potential must give way to purely financial targets. Our capital is catalytic for these early-stage impact ventures. If not us, then who?

Our chosen support package is clear and has distinctive features:

We invest relatively large tickets.

We run a Venture Builder Program that covers the entire first two years of each of our investments.

Our Venture Builder Program includes impact coaching and workshops and is modular and dynamically made-to-measure for each venture to support them in maximizing their financial and social return.

Focus

Supported by a strategic outpost in Los Angeles (USA) to keep our perspectives challenged and our network open, LUMO Labs chooses to be based in Eindhoven (NL).

The most obvious and primary reason we choose to be based in Eindhoven is because there is no other place with such a high concentration of top-tier global heavyweights and frontrunners in deep-tech, soft-tech and manufacturing.

Moreover, the region is known for fueling its industrial and technological successes by down-to-earth pragmatism, a deeply rooted sense of community, widespread social responsibility and accessible outdoor leisure for all.

No company is an island. We aspire to build more than a set of stand-alone companies. Our investments reinforce each other and contribute to the greater ecosystems in which they operate. We classify our portfolio as a "systemic portfolio."

The fundamental beliefs behind our choices

Additionality is key.

Focus is good. Silos are not.

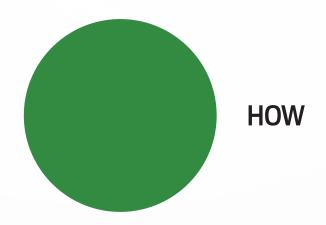
Convergence of technologies is key for next-level innovation and impact.

Awareness of the impact of our choices is key for next-level innovation and impact.

Connections with people are key for insights, traction and the thrill of serendipity.

ROI is key for sustainable traction and insights. Connectivity is key in current and next-level innovation and impact.

The increasing impact of data requires increasing oversight of quality and ethics.



HOW

Approach

At LUMO Labs, impact is integrated throughout the entire investment management process.

This starts with proper deal screening, where we challenge and ensure not only an alignment with our impact focus but also look out for specific red flags in line with, for example, the IFC Exclusion list.

Once an investment decision is made and the term sheet is signed, we immediately start engaging and onboarding the startups in our Venture Building Program. This includes the pivotal Impact Days in their first quarter.

During Impact Days, we challenge and inspire our portfolio teams to better understand, measure and communicate their impact as well as encourage them to continue to monitor their impact progress on a quarterly basis and to learn with and from each other.

Deal Screening & Due Dilligence	Pipeline
Onboarding	
Monitoring	Portfolio
Reporting	

HOW

Impact Officer & Coach

We are very grateful to have on our team Britta Gruenig – one of the leading European experts on impact investments. Britta sets up the impact framework, supports and coaches the startup founders, monitors progress, and maximizes the impact of our efforts.

Britta was one of the first employees building up the Center for Sustainable Finance and Private Wealth at the University of Zurich, in collaboration with IRI at Harvard Kennedy School. She led the Wealth Owner Programs and built the Personal Development Program for family office successors. She was also one of the first senior team members of Katapult Foundation, building up and directing their Impact Investing Academy for private wealth owners in the Nordics. She is a personal coach and facilitator for the successors of billionaire and ultrahigh net worth families. Britta helps impact startups and growth companies achieve impact clarity and effective leadership.



Britta Gruenig Impact Officer & Coach

HOW

Britta Gruenig - Impact Officer & Coach

"When working with startup founders, I help them think big in terms of the contribution their ventures could make towards the UN SDGs. I increase their awareness of impact depth along the Impact Management Project's five dimensions of impact.

I challenge the founders to develop a meaningful impact vision and to develop a coherent Theory of Change that states with which inputs, outputs and outcomes they want to make that impact happen. Subsequently, I help them establish and track Key Value Indicators.

It is vital they have lean impact measurement and management in place and they understand why impact investors are investing in them.

The reason why investors – such as LUMO Labs – provide "additional" capital to impactful startups is to create solutions to important problems. Impact investors want to make sure that their investments have intentionality, additionality, and measurability.

My goal is to make sure that positive impact is in the DNA of the founders and at the core of their business model."

- Britta Gruenig

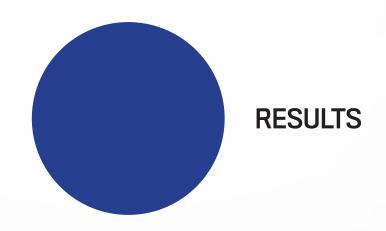
IMPACT MANAGEMENT PROJECT

The IMP reached consensus that impact can be deconstructed into five dimensions: What, Who, How Much, Contribution and Risk.

	WHAT outcome(s) does the effect drive, and how important are they to the people (or planet) experiencing it?
	WHO experiences the outcome and how underserved are they in relation to the outcome?
=======================================	HOW MUCH of the outcome occurs? Does it happen at scale? Does the effect drive the outcome deeply? Does it last for a long time?
	What is the ENTERPRISE CONTRIBUTION to what would likely happen anyway?

What is the **RISK** to people and planet if the impact

does not occur as expected?

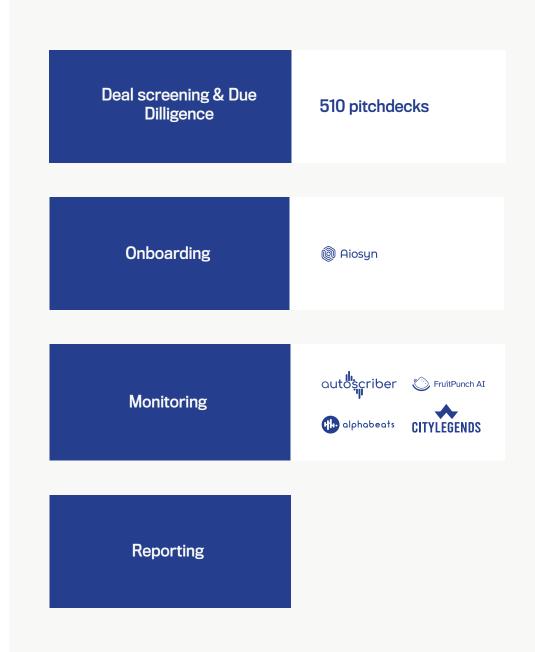


2021

In 2020-2021, LUMO Labs evaluated 510 pitch decks and committed 2 million euros to five startups: Alphabeats (22 Dec 2020 + Seed), FruitPunch Al (24 Dec 2020 + Seed), CityLegends (23 July 2021 + Seed) Autoscriber (25 August 2021 + TTT Al, pre-seed) and Aiosyn (12 November 2021 + TTT Al, pre-seed).

So far, this has resulted in four dynamic and operable Theories of Change and four sets of subsequent impact targets and Key Value Indicators. Our latest 2021 investment, Aiosyn, is currently determining which impact targets and KVIs fit their Theory of Change best.

All initial targets are set for 2022. It is with great pleasure that, in this 2020-2021 report,in addition to our portfolio companies' Theories of Change, we can already share some very encouraging steps and accomplishments towards these targets.



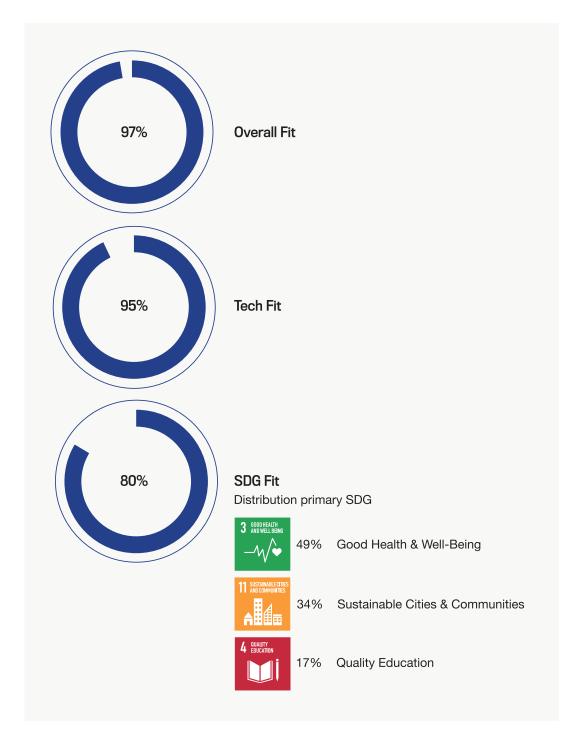
Deal flow and pipeline (2021)
Coherency between Investment Strategy and Deal Flow

Quantity

In 2021, 510 startups sent us their pitch decks.

Quality

The percentages on the left show how well these startups match our investment focus. These give an indication of the quality and effectiveness of our messaging and outreach.





IMPACT COMPASS: ALPHABEATS

THEORY OF CHANGE

VISION

A world in which everyone has the ability to become more resilient to stress, thanks to easy and affordable access to pleasant, user-friendly digital solutions, thereby reducing the most common diseases caused by stress, lowering the cost of stress and creating safer societies.

CHALLENGE

World Health Organization declares stress is the health epidemic of the 21st century.

Stress affects our weight, our blood pressure, our immune-system, our fertility, our happiness and our physical, intellectual and emotional performance in all the areas where we are trying to succeed. Daily yoga, meditation, long walks, fresh air, dedicated time with our loved ones and good sleep can help us beat the negative effects of stress and reset our brains to a state of wakeful rest: the alpha state. But our "each day, every day" reality shows lack of time, skills, space, money and/or motivation keep us from daily care before it is too late.

THEORY OF CHANGE

SOLUTION & THEORY OF CHANGE

Input: Technological innovation enables us to develop an algorithmic audio layer which uses biofeedback to tweak the music people are listening to and bring their brains in the restful Alpha State.

Output: An easy and quick new stress reduction routine using your favourite music, which fits seamlessly in your daily life flow and is available to everyone with a smartphone.

Outcome: People are less stressed, see the benefits and enjoy the routine.

Impact: Mitigating the stress epidemic, lowering the associated cost, contributing to good mental health and creating safer societies.

Impact risk: In order to achieve our impact goals, we need to reach users and challenge them to use our technology for at least 10 minutes several days a week for four weeks and repeat at weekly intervals later.

MISSION

Help people handle stress before it is too late.

CORE BELIEF

We believe inner peace creates outer peace

IMPACT COMPASS: ALPHABEATS

IMPACT TARGETS

IMPACT KVI

- 1. Confirm validated research results using the current Alphabeats technology
- 2. Number of active users

*A validated study by the University of Tilburg showed a significant reduction in stress levels after four weeks (with EEG)

MEASUREMENT METHODOLOGY

- 1. Study results by research, TBD
- 2. Active users: > 1 session per week for at least four weeks (need to define what is an active user)

IMPACT TARGET & PERFORMANCE

2022

- 1. Positive study results showing significant improvement
- 2. 10.000 active users

Long term impact: 100.000.000 active users

UN SDGs

PRIMARY



SECONDARY

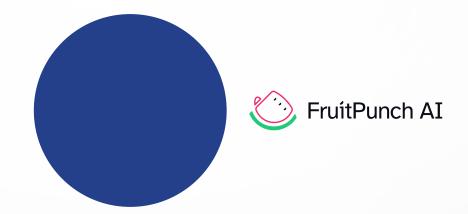


2021 ROAD TO IMPACT

Advanced and ongoing conversations about pilots with seven partners with combined reach of >1 billion potential users.

Advanced and ongoing conversations with academic research partners for further testing and validation of the effect of our algorithmic audio layer.

Working MVP and 2.000+ test sessions completed



IMPACT COMPASS: FRUITPUNCH AI

THEORY OF CHANGE

VISION

A world where everyone is empowered to grow and leverage their skills for income and meaningful, sustainable progress.

CHALLENGE

Extreme scarcity of applied AI and engineering talent stands in the way of businesses, governments and other institutions fulfilling their ambitions, nor is the full potential of artificial intelligence explored and applied to help solve our greatest social challenges.

This shortage and inefficiency seem to be particularly hard to resolve because of four reasons: 1. High financial and physical barriers of entry to education for potential talent (too expensive, too far away). 2. Overall discrepancy between what is taught (academic and scientific skills) and what is needed (applied skills). 3. Lack of a reliable, comprehensible scoring and accreditation system for companies and hiring managers to recognize, assesses and benchmark applied Al skills. 4. Expensive, incomprehensible and unequal recruitment procedures and exposure to talent (for companies) and opportunities (for talent).

Additionally, in this war for talent, our social challenges are the collateral damage, because their ownership is ambiguous and scattered.

THEORY OF CHANGE

SOLUTION & THEORY OF CHANGE

Input: An ever-expanding AI for Good community and our proprietary, gamified Social Case Method TAM (Training – Assessment – Matching) Platform, including a comprehensible scoring and accreditation system to recognize, assess and benchmark applied AI skills. Free access to training for established and aspiring talent, paid access to assessment and matching services for businesses and governments.

Output: Increased access to AI education for potential talent. Artificial intelligence explored and applied to help solve our greatest social challenges. Talent trained for relevant skills. Comprehensible talent profiles.

Outcome: Businesses, governments and other institutions have more and better access to AI and engineering talent, and more AI and engineering talent can leverage their skills for income and meaningful, sustainable progress.

Impact: Bottom-up change within companies from wielders of humans' most powerful technology, tech applied for good with every challenge, increased economic equality through equal access to education and work.

Impact risk: Teaching people AI skills who will not use it to do good. Stakeholder participation risk.

MISSION

Solve humanity's greatest challenges

CORE BELIEF

There is tremendous, unlocked potential dormant in people around the world to apply AI for Good.

IMPACT COMPASS: FRUITPUNCH AI

IMPACT TARGETS

IMPACT KVI

- 1) Challenges solved for impact organizations
- 2) Number of people assessed and accredited (lead measure)

MEASUREMENT METHODOLOGY

Automatic data capture on our platform

IMPACT TARGET & PERFORMANCE

2022: 1059

Long-term: 100.000 (2025)

Apr 2022: ~50% (560) Long-term: 0.5%

2021 ROAD TO IMPACT

Solved 16 challenges for impact organizations (from detecting Covid-19 to wildfires to catching poachers), assessed 560 engineers, built a global community of 1500

Al engineers, set up four chapters in the EU, India, South Africa & Silicon Valley, built >50 partnerships providing inkind support, built a core team that can do everything we preach (on a small scale), 25k in MRR, MVP of platform, proven and scalable model for challenges and assessment

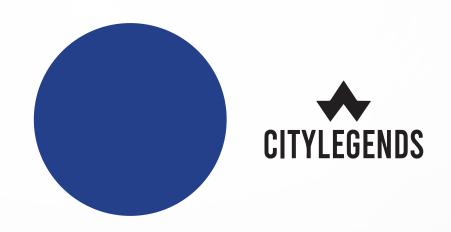
UN SDGs

PRIMARY



SECONDARY





IMPACT COMPASS: CITYLEGENDS

THEORY OF CHANGE

VISION

A world where the health and well-being of (urban) youngsters are improved by open invitations and triggers to play urban sports and to engage in culture with each other and their surroundings, creating inclusive, vibrant communities and sustainable cities.

CHALLENGE

Ever-increasing numbers of young people in developed countries feel powerless, left out and insignificant, causing many social, mental and physical problems (e.g., inactivity, obesity, criminality, loneliness, depression, poor school performance, deficient personal development).

THEORY OF CHANGE

SOLUTION & THEORY OF CHANGE

Input: As first-hand experts of the issue and the solution, we actively promote and support the use of 1. our community app for (aspiring) street athletes and artists to explore the world of street, to connect, battle their asses off and build legacy, and 2. our activation and insights dashboard for public policy makers and advisors to improve their understanding of the needs, challenges and potential of youngsters based on the qualitative and quantitative data generated and captured through the app.

Output: Ongoing activations, connections, content and valuable insights created through the app, enabling the discovery of bottom-up innovation and potentially much faster and more (cost-) effective policy making and implementation.

Outcome: Increasing numbers of recurringly active young (urban) people who directly and indirectly influence effective public policy making and public spending to improve and harness their health and well-being.

Impact: Sustainable cities with inclusive, vibrant communities and socially, mentally and physically stronger (urban) youth.

Impact risk: Stakeholder participation and drop-off risk on the youth side, e.g., because of fear of being controlled, manipulated, misunderstood.

MISSION

Creating vibrant communities for the free

CORE BELIEF

United in freedom

IMPACT COMPASS: CITYLEGENDS

IMPACT TARGETS

IMPACT KVI

- 1. Trained policy officers
- 2. Active young people

MEASUREMENT METHODOLOGY

KVI impact = Number of active users + (Number of public policy officer educated 2.500 youth*)

*On average a policy officer has the resources and network to reach 2.500 urban youth.

IMPACT TARGET & PERFORMANCE

2022: 105.000 urban youth reached 2027: 11.5 million urban youth reached

2021 ROAD TO IMPACT

7.000 beta users of the app + ongoing conversations with 20 cities in three countries

UN SDGs

PRIMARY



SECONDARY







IMPACT COMPASS: AUTOSCRIBER

THEORY OF CHANGE

VISION

A world where doctors can truly focus on the patient, enjoy zero admin and never miss a diagnosis.

CHALLENGE

85% of valuable information discovered during doctorpatient conversations is lost and can never be re-used for future diagnoses. This is because data capture is timeconsuming and is therefore often either incomplete or entirely unstructured. Increased administrative burden on doctors causes burnout and inhibits strong doctor-patient relationships.

THEORY OF CHANGE

SOLUTION & THEORY OF CHANGE

Input: User-friendly interface with AI systems that automatically capture discrete clinical information in real time, using cutting edge speech recognition & NLP algorithms for structured data-capture

Output: Structured data-sets, automated but editable summaries and AI supported insights and suggestions

Outcome: Doctors save time and can focus more on the patient; critical healthcare information is no longer lost and is used to inform personalised diagnoses and recommendations

Impact: Better patient outcomes and a better experience for doctor and patient. Decreased administrative burden on doctors, reduced burnout risk and stronger doctorpatient relationships

Impact risk: Sensitive data is exposed to cyber-attacks or misused against doctors. Patients don't consent with data-capture and/or feel less at ease to speak freely.

MISSION

Enabling human-centric data-driven healthcare

CORE BELIEF

Intelligent healthcare requires both humans and technology

IMPACT COMPASS: AUTOSCRIBER

IMPACT TARGETS

IMPACT KVI

- (1) # consultations processed by Autoscriber
- (2) Time saving for doctors
- (3) % structured field suggestions accepted

MEASUREMENT METHODOLOGY

(2) Time studies in hospital (with control group) (1 & 3) Logs within the software

IMPACT TARGET & PERFORMANCE

2022: (1) 2000 (2) net reduction (2) 25%

Long-term: (1) 60M (2) 33% reduction (3) 80%

2022: TBD

2021 ROAD TO IMPACT

Advanced and ongoing conversations with 8+ hospitals about pilots.

Advanced and ongoing conversations with 20+ healthcare professionals about wants and needs.

UN SDGs

PRIMARY





IMPACT COMPASS: AIOSYN

THEORY OF CHANGE

VISION

Global democratization of the quality of the diagnosis by using AI in pathology.

CHALLENGE

Pathology is the cornerstone of the diagnostics process. There is a major inequality in the diagnostic process between healthcare systems worldwide. The ability to develop whole slide images of histopathological specimens combined with the possibilities for automatic assessment of images AI has the potential to speed up and improve the pathology workflow and democratizes quality of the diagnosis.

THEORY OF CHANGE

SOLUTION & THEORY OF CHANGE

Input: Pathologists have been using the microscope for more than 100 years. The field is now undergoing a digital revolution that makes it possible to support pathologists with Al. We provide a digital diagnostic tool that synergizes with the pathologist.

Output: 1) Replacing manual processes 2) More consistency in diagnostic process

Outcome: A better diagnosis leads to a more personalised treatment plan.

Impact: Democratize quality of the diagnosis, improve health outcomes

Impact risk: Trust in AI system becomes "too much," which may lead to missing cancer cases by pathologists.

MISSION

To provide Al-powered pathology anywhere, anytime

CORE BELIEF

Reducing inequality and improving overall speed and accuracy in diagnostics by using Al.

IMPACT COMPASS: AIOSYN

IMPACT TARGETS

IMPACT KVI

Number of Al-assisted diagnostic procedures

MEASUREMENT METHODOLOGY

Work in progress

IMPACT TARGET & PERFORMANCE

2022 Long-term

...

% of impact target

2022 Long-term

...

UN SDGs

PRIMARY



SECONDARY



TERMINOLOGY

KVI

Key Value Indicator. Quantifiable metric that indicates value creation.

SFDR

The Sustainable Finance Disclosure Regulation (SFDR) is a European regulation introduced to improve transparency in the market for sustainable investment products, to prevent greenwashing and to increase transparency around sustainability claims made by financial market participants.

Source: Eurosif

ESG

Environmental, Social & Governance

SDG

Sustainable Development Goal. The Sustainable Development Goals are a universal call to action to end poverty, protect the planet and improve the lives and prospects of everyone, everywhere. The 17 Goals were adopted by all UN Member States in 2015 as part of the 2030 Agenda for Sustainable Development, which set out a 15-year plan to achieve the Goals.

Source: United Nations

IMPACT-DRIVEN

Striving for an optimal balance between financial and social return.

IMPACT RISK

The type of risk that may undermine the delivery of the expected impact for people and/or the planet. Source: IMP

TTT.AI

Thematic Technology Transfer – Artificial Intelligence. Thematic Technology Transfer (TTT) enables researchers to take their research-based ideas to the next level, validate them and establish successful spin-offs. The TTT.AI is a RVO scheme to accelerate the application and commercialization of innovation in the field of Artificial Intelligence (AI) by providing early-stage funding and venture support to startups originating from knowledge institutions.

IFC EXCLUSION LIST

The IFC Exclusion List defines the types of projects that International Finance Corporation does not finance. It is a list of projects and activities that are deemed harmful for people and/or planet.

VUCA WORLD

Global context of Volatility, Uncertainty, Complexity, Ambiguity.

IMP

Impact Management Project.

THEORY OF CHANGE

A theory of change is a structuring tool to describe the need a venture is trying to address, the changes they want to make and what they plan to do. It is a tool to improve their strategy, measurement, communication and partnerships.

