HeartWatch®

computer vision health solutions

www.heartwatch.io

My grandfather spent 2 years in **Long-Term Care**
1st year in **home-care**, 2nd in a **nursing home**

Worldwide problems of Long-Term Care

200mil people need **Long-Term Care**

Not enough caregivers
to cover demand

"During nights, on average, 2 nurses to cover 120 beds"

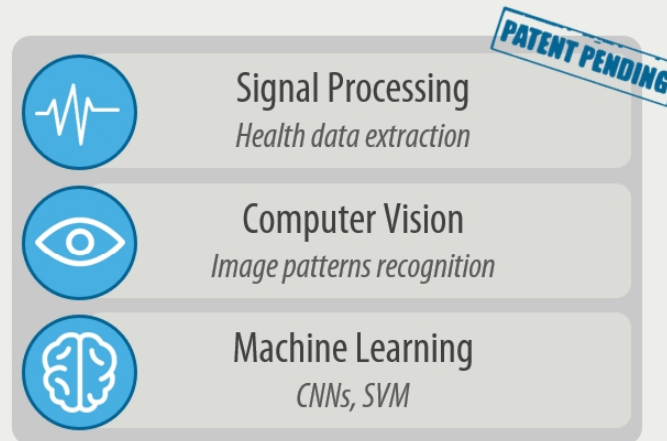Medical tools are good for
short-term monitoring
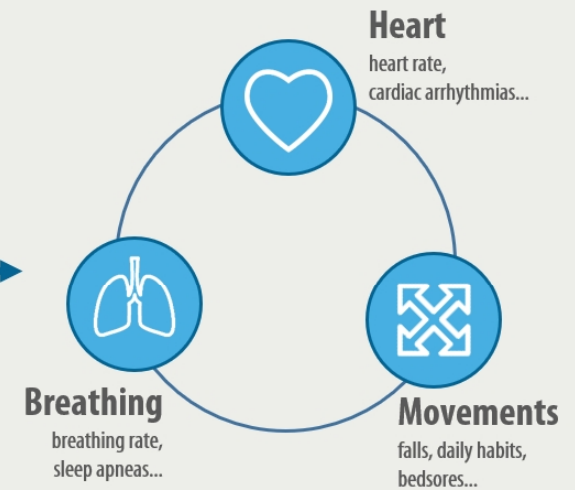
Not automated, and very invasive

HeartWatch

HeartWatch

computer vision health solutions

PATENT PENDING

Signal Processing
Health data extraction

Computer Vision
Image patterns recognition

Machine Learning
CNNs, SVM

Heart
heart rate,
cardiac arrhythmias...

Breathing
breathing rate,
sleep apneas...

Movements
falls, daily habits,
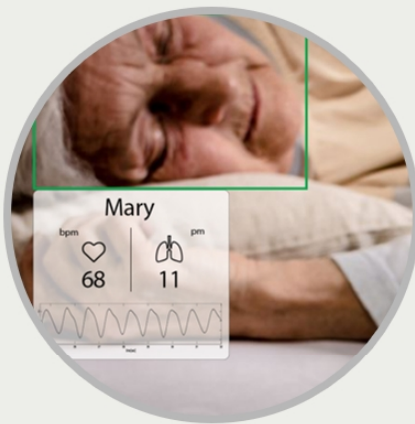bedsores...

Video Stream
*provided by HeartWatch's
or 3rd party camera**

HeartWatch Platform
CE Class IIa Medical Device* Software

Health Status
*Processed in real-time by
HeartWatch Platform*

*Pending, certification expected in Q4 2018 - 1st patent: "Cardiac activity measurement system and method thereof" #P2957IT00, 2nd patent by July 2018

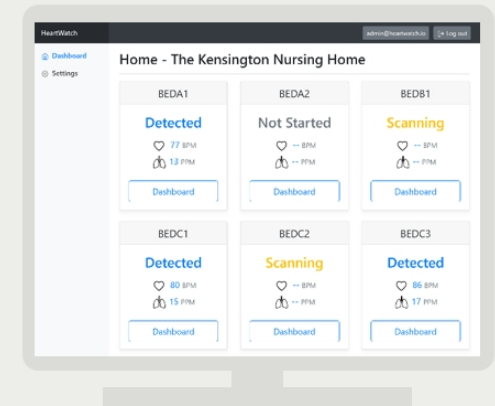# How does it work?

+

=

Patient
lying in his bed or moving slowly

Video Stream
provided by HeartWatch's or 3rd party camera*

Caregiver's Dashboard
alerts, data analytics, health records integration

* HeartWatch integrated camera or tested on Canon, Axis, Sony, etc.

Technology Demo

♥ ‑‑ beats/min

🫁 ‑‑ breaths/min

🪪 Patient Status   Detected

HeartWatch

Our scientific validation

Publications

97% accuracy

Average Heart Rate (HR)
Ideal testing conditions

"[...] heart rate detection method using a camera as a contactless sensor" [Dec 2015 - Jan 2016]

98% accuracy

Average Breathing Rate (BR)
Ideal testing conditions

"Respiratory Rate Detection Using a Camera as Contactless Sensor" [Nov 2016 - Jan 2017]
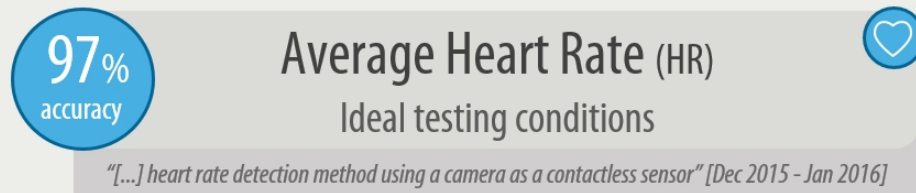
+3 more *published on major biomedical journals**

Clinical Trials

88% accuracy**

Cardiac Arrhythmias events
Ideal testing conditions

Policlinico Maggiore Hospital of Milan - 80 patients [November 2016 - April 2017]

--%

HR, BR, Cardiac Arrhythmias
Real-life testing conditions

San Raffaele Hospital of Milan [April - June 2018]

IN PROGRESS

Accuracy has been tested against medical-grade Heart and Breathing monitoring tools

**Physiological Measurements, Biomedical Engineering / Biomedizinische Technik - ** Only to provide an indication to the medical professional, accurate if >80%*

HeartWatch

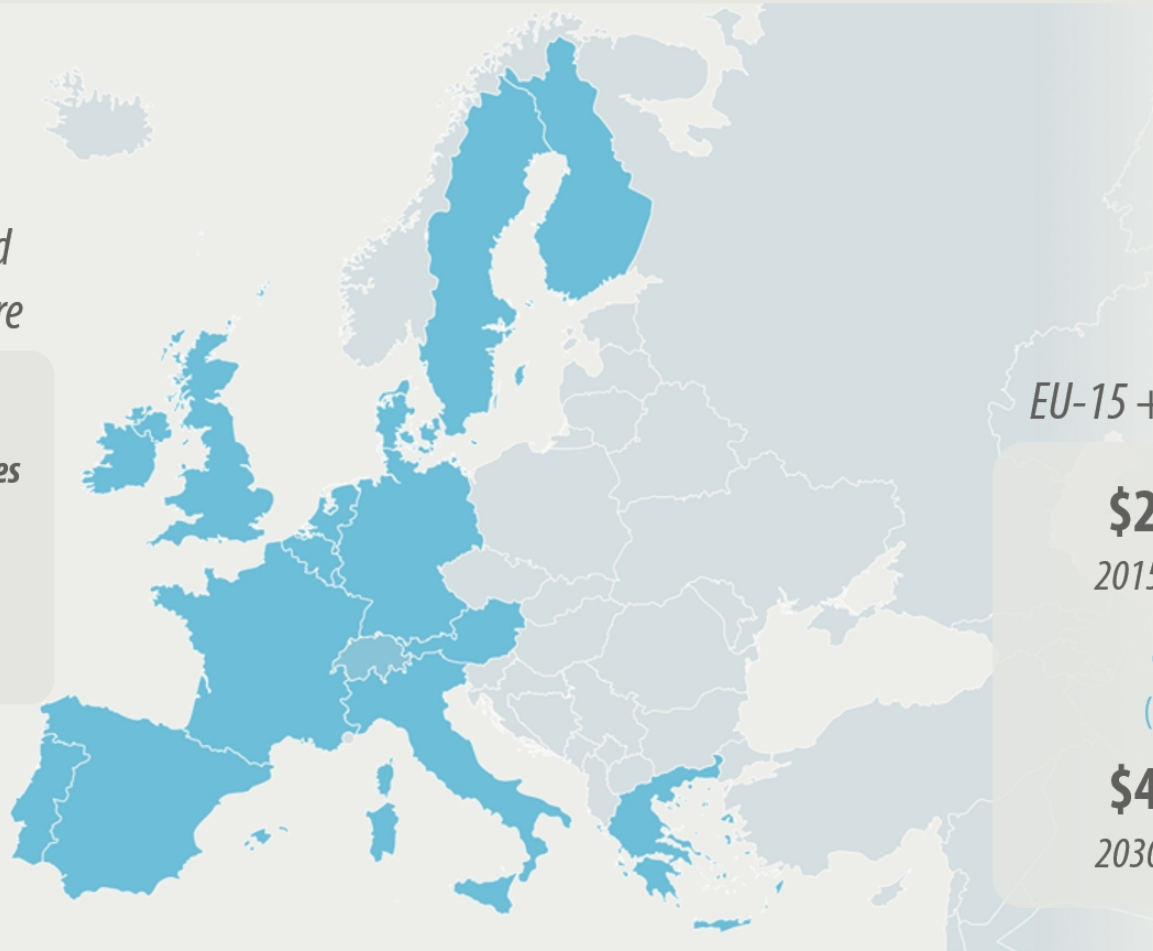# Total Addressable Market for Long-Term Care (EU-15 + Switzerland)

Officially registered people receiving care

3,276,696
in more than **52k facilities**
in UK, DE, FR, IT, SP*

7,117,749
at home

EU-15 + CH Market Size

$221 billion
2015 Market for LTC

+83%
(4,1% CAGR)

$405 billion
2030 Market for LTC

HeartWatch

Scalable on many verticals

Healthcare

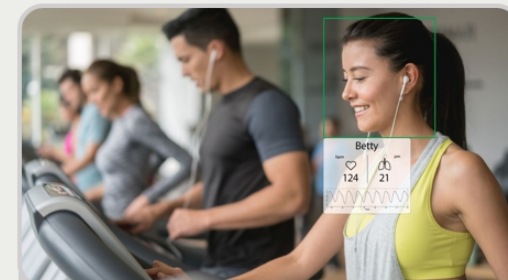Elderly monitoring, home and clinics

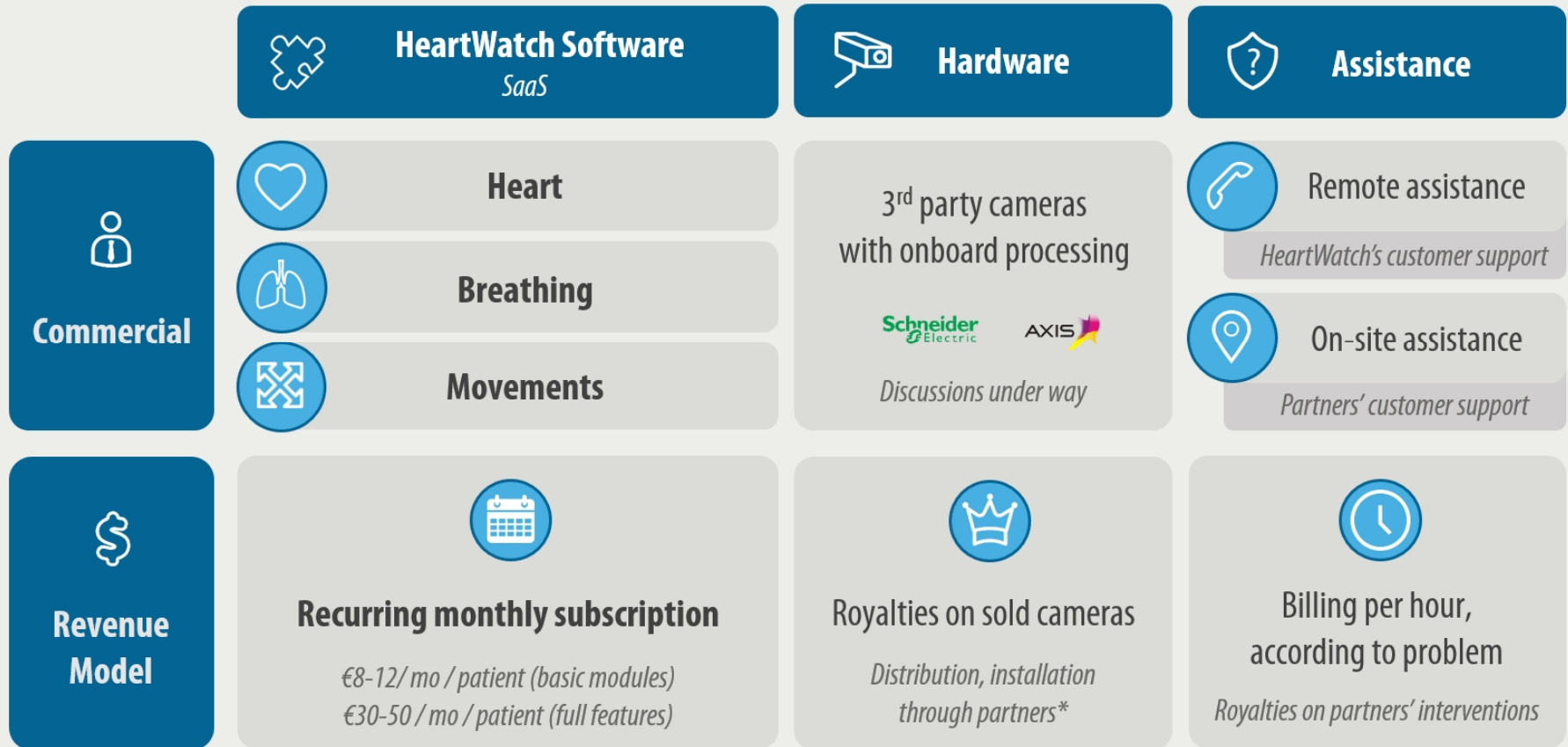Baby monitoring

Rehabilitation

Automotive

Security

Fitness

HeartWatch software is scalable onto a number of industries

Business Model

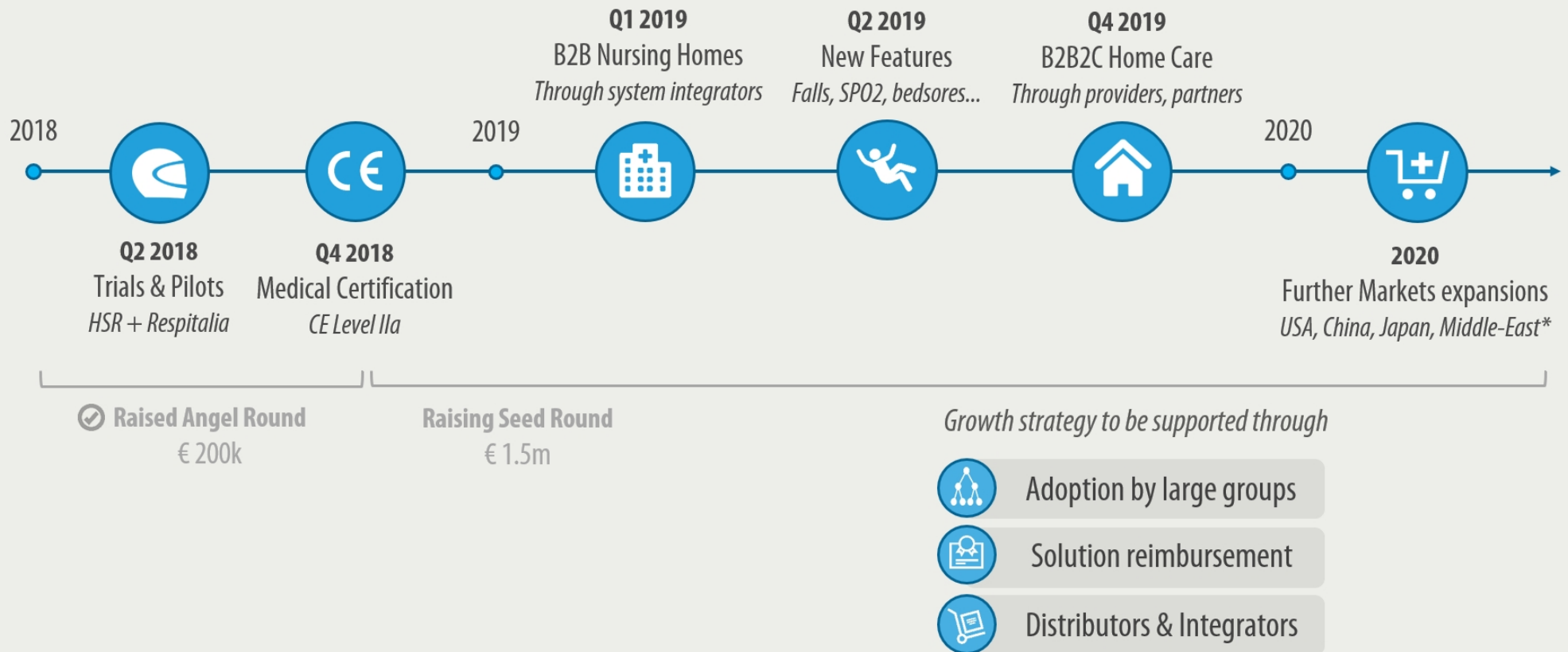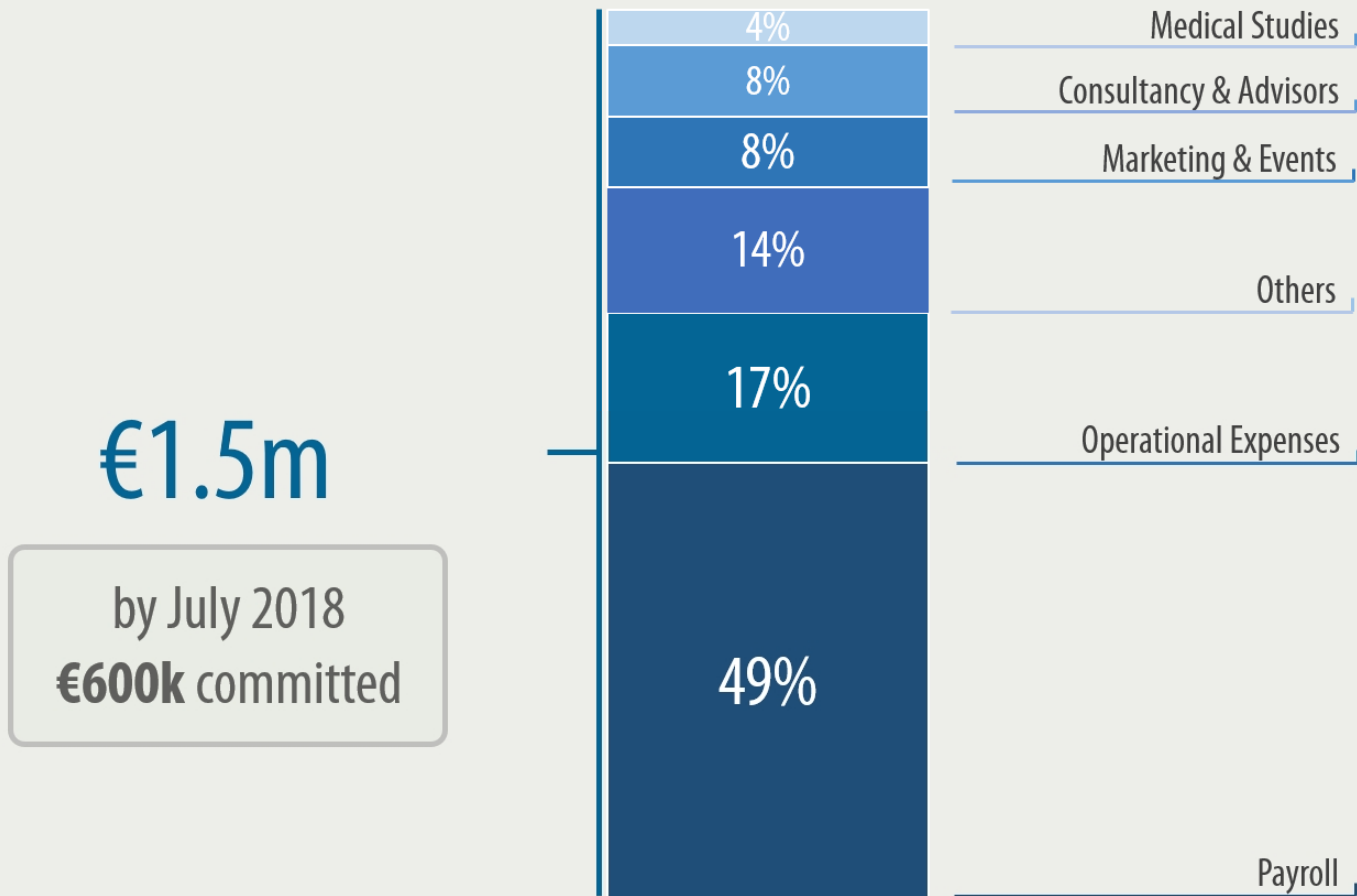|	HeartWatch Software SaaS	Hardware	Assistance
Commercial	Heart / Breathing / Movements	3rd party cameras with onboard processing — Schneider Electric, AXIS — Discussions under way	Remote assistance — HeartWatch's customer support / On-site assistance — Partners' customer support
Revenue Model	Recurring monthly subscription — €8-12/mo / patient (basic modules) — €30-50 / mo / patient (full features)	Royalties on sold cameras — Distribution, installation through partners*	Billing per hour, according to problem — Royalties on partners' interventions

*Check Business Plan for further details – *Distributors to be connected to leads through internal salesforce*

HeartWatch

Roadmap

2018

Q2 2018
Trials & Pilots
HSR + Respitalia

Q4 2018
Medical Certification
CE Level IIa

2019

Q1 2019
B2B Nursing Homes
Through system integrators

Q2 2019
New Features
Falls, SPO2, bedsores...

Q4 2019
B2B2C Home Care
Through providers, partners

2020

2020
Further Markets expansions
USA, China, Japan, Middle-East*

⊘ **Raised Angel Round**
€ 200k

Raising Seed Round
€ 1.5m

Growth strategy to be supported through

Adoption by large groups

Solution reimbursement

Distributors & Integrators

*Not limited to Long-Term Care market

HeartWatch

Fundraising

€1.5m

by July 2018
€600k committed

4%	Medical Studies
8%	Consultancy & Advisors
8%	Marketing & Events
14%	Others
17%	Operational Expenses
49%	Payroll

Check HeartWatch Business Plan for further details

The team

Luca Iozzia
CTO & Co-Founder
PhD @Polytechnic of Milan

Guido Magrin
CEO & Co-Founder
Software/Business Dev

Roberto Salamina
CMO & Co-Founder
Business Developer @i2a

Core Team

Maria Tirindelli
Biosignal Analyst
Technical University Munich

Francesco Lana
Full-Stack Engineer
Microsoft, Avanade

Abdallah Zeggada
Computer Vision Engineer
PhD @University of Trento

Alice Ravizza
Quality Responsible
PGG Scientific

Advisory

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Director Cardiac Surgery Program
University Hospital Zurich

Domenico Cianflone, MD
Director Cardiovascular Rehab
San Raffaele Hospital of Milan

Riccardo Barbieri
Biomedical Engineering Prof.
MIT Boston

Enrico Deluchi
Former Managing Director
Canon Italy

Massimo Lucchina
Head of Strategy & Innovation
Samsung Electronics

Luca Munari, MD
Healthcare Executive
Niguarda, Accura, Respitalia

HeartWatch

What are we looking for?

Investments
€1.5m Seed Round by September 2018

Strategic Partners
World-wide, to boost market entry

Cameras manufacturers

System integrators

Scientific validation

Medical distributors

Exceptional Advisors
Medical, technical, business, distribution

HeartWatch

Guido Magrin
CEO & Co-Founder

guidom@heartwatch.io

Main Partners

HeartWatch

FUSION

AXIS COMMUNICATIONS

spin off ®
POLITECNICO DI MILANO

Respitalia

@HeartWatchHQ