

A circular inset image showing a sharp, rocky mountain peak, likely the Matterhorn, with patches of snow and a dramatic, cloudy sky. The peak is illuminated by warm, golden light, possibly from the setting or rising sun.

**Differentiate.
Innovate.**

Material innovations that improve lives

Corporate Presentation. October 2024

**SWISS
TECH
INSIDE**

www.heiq.com



Differentiate. Innovate.

Our Story

After a week of hiking in the Swiss Alps in 2005, our companions began to keep a distance.

It led to a revelation: use science to solve everyday problems, like smelly shirts from a long hike.

Our Driving Force:

Use co-creation to infuse everyday products with transformative qualities, making them functional, sustainable, and revolutionary



Dr. Murray Height
Co-founder
& Chief Innovation Officer

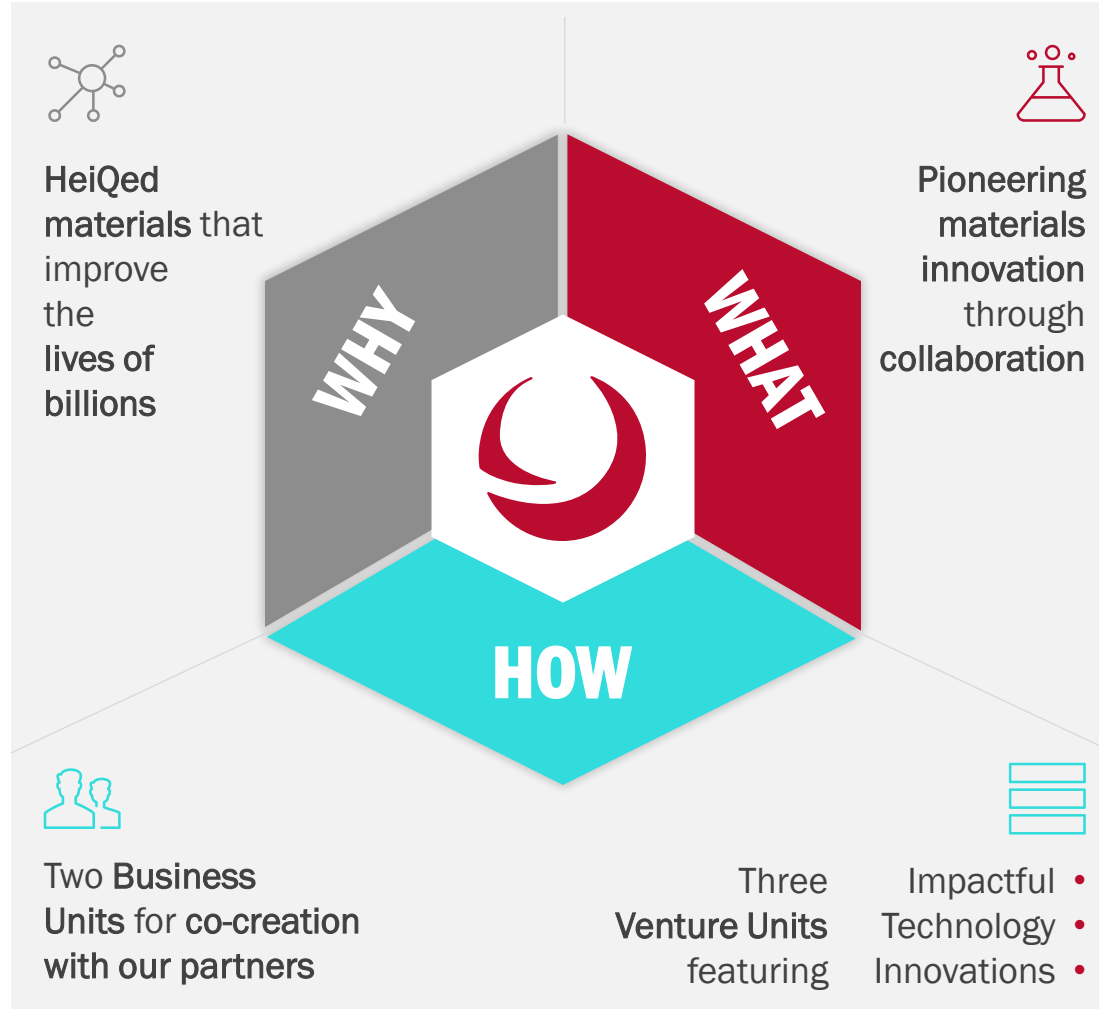


Carlo Centonze
Co-founder & CEO





HeiQ today



Business Units



Venture Units



Innovation Services

Differentiation Services

HeiQ at a glance



Better products for positive impact



bio
HeiQ Synbio
for animal farms
40% methane
emission reduction

bio
HeiQ Synbio
for cleaning
89% less
Hospital Acquired
Infections (HAI)



bio
HeiQ Mint
Biobased botanical
odor control

bio
HeiQ Eco Dry
PFC-free water
repellent

bio
HeiQ
Allergen Tech
Reduce allergens for
better home
environment

bio
HeiQ Fresh
Biobased
odor control

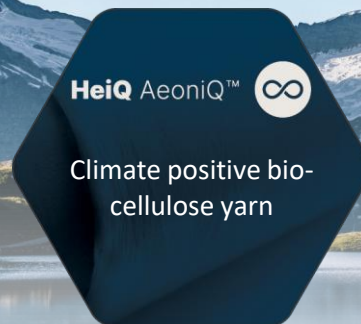
bio
HeiQ
Skin Care
Renew skin's natural
balance through
probiotics

HeiQ XReflex*
50% less insulation
yet full warmth
*(powered by Xefco)

HeiQ Clean Tech
Rapid Polyester
Dyeing - Save 30%
Water, energy
& CO₂



bio
Bac-Shield
Biobased
antimicrobial
odor control





We co-create with you

WE INNOVATE...

.01

By applying a client-led R-D-M innovation methodology Rapid innovation from lab to consumer

.02

By working with **7 technology platforms***

.03

Leveraging our **boundless research network** of 30+ university partners

.04

With a **+60 strong internal R&D team** around the globe in 8 hubs

.05

Financed with research leverage through government R&D grants

.06

Through consumer validated claims & ingredient branding

Disruptive innovation



New technology for new problems

Radical innovation



Existing technology for new problems

Incremental innovation



Existing (off-the-shelf) technology for a well-recognized problem. Best-in-class performance and/or better raw materials



HeiQ proven R D M innovation methodology



Scientific World



Market & Megatrends



HeiQ's Innovation Advisory Board



Prof. Dr. Uwe Piele
(Chairman)

University of applied Sciences
& Arts (FHNW), Switzerland
*Material Sciences
and Bionanotechnology*



Prof. Dr. Martin Loessner

ETH Zürich
Switzerland
*Microbiology & food
sciences*



Prof. Dr. Clemens Holzer
Eng. Dr. Mont.

Montan University
Austria
*Polymer science &
processing*



Prof. Dr. Andreas Widmer

University Hospital
Basel
*Immunology and
Infectious Diseases*



Prof. Dr. Hyung Gyu Park

POSTECH South
Korea
*Nanotechnology
& process engineering*



Prof. Dr. Thierry Pelet

HMCARE
Switzerland
*Molecular biology
& virology*



Dr. Wey Yang Teoh

Malaya University
Malaysia
*Nanotechnology &
Photocatalysis*



Prof. Dr. Hans Marcus Textor

ETH Zürich
Switzerland
*Surfaces and Interfaces
of biomaterials*



Dr. Frank Hermanutz

Senior researcher, German
Institutes of Textile and Fiber
Research Denkendorf
Germany
*Biopolymers
& wet-spinning*



**Prof. Dr. med. Hendrik
Tevaearai**

EMBA HSG
Switzerland
*Cardiology & medical
sciences*



Dr. Jochen Kenndorf

CEO of Dr. Kenndorf GmbH &
Co. KG, Germany
*High performance
wound care products*



**Assoc. Prof. Dr.
Alessandra Sutti**

Deakin University
Australia
*Biomaterials &
Materials Science*



Dr. Nico Bruns

Univ. of Strathclyde
Glasgow, UK
*Macromolecular
Chemistry*



Dr. Irene Preis

General & occupational
medicine, Germany
*Allergology &
Environmental Medicine*



**Prof. Dr.
Andreas Meyerhans**

Pompeu Fabra
University Barcelona
*Infections with non-
cytotoxic viruses*



Dr. Werner Kunz

University of Regensburg,
Germany
*Physical and Theoretical
Chemistry*



**Mr. Patrice
Vandendaele**

J2M BV
Belgium
*Algae and
aquaculture;
Textiles*



Prof. Dr. Renzo Raso

FHNW
Switzerland
*Polymers, textile
treatments, nanomaterials*



HeiQ's boundless Research network

30+ university partners with
subject matter experts

17 committed Innovation
Advisory Board members

Dozens PhD's and Bachelors
on HeiQ projects

EU and national government
grants in dozens of projects

**Fast, cheap proof of concept
of Radical & Disruptive Ideas!**



University of Applied Sciences and Arts
Northwestern Switzerland





HeiQ's 8 development hubs for rapid innovation

- ◆ **20+ PhD's** in HeiQ's global **60+ FTE around-all-time-zones** innovation team
- ◆ **8 specialized lab facilities** for product development, application & testing services
- ◆ **Top-of-the-line capabilities** for analytic, testing & innovation services

DEDICATED TEAM OF SCIENTISTS OFFERING



Product development



Analytics



Customized solutions



Testing services

24h speed



TECHNOLOGICAL CAPABILITIES



MOLECULAR
SYNTHESIS



PHYSICAL
VAPOR
DEPOSITION

CHEMICAL
VAPOR
DEPOSITION

FIBER
SPINNING

REGULATORY
SERVICES

PRECISION
FERMENTATION



INNOVATION
GRANT
SERVICES



FORMULATIONS
EMULSIONS
DISPERSIONS

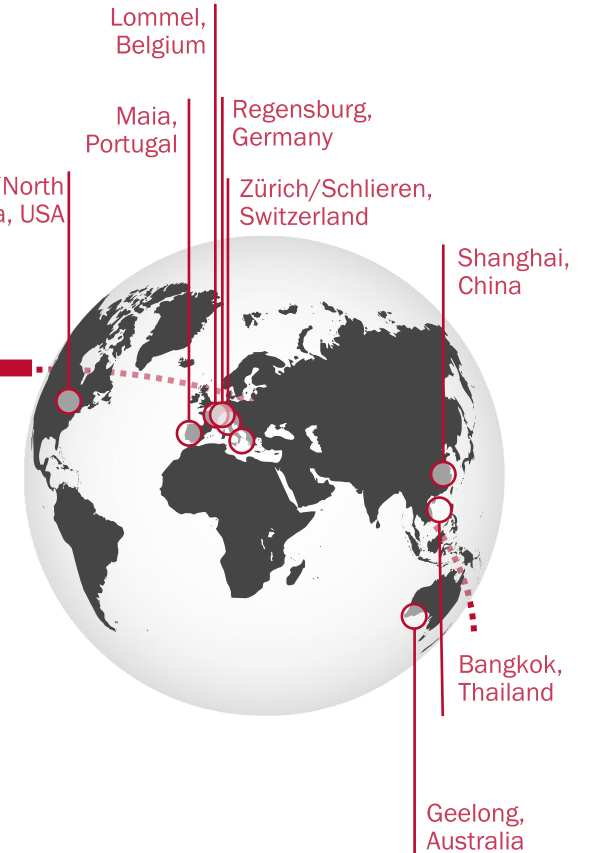
PARTICLE
SYNTHESIS

BIO-TECH
PROBIOTICS

QC, QMS &
ANALYTICS
SERVICES

TESTING
SERVICE

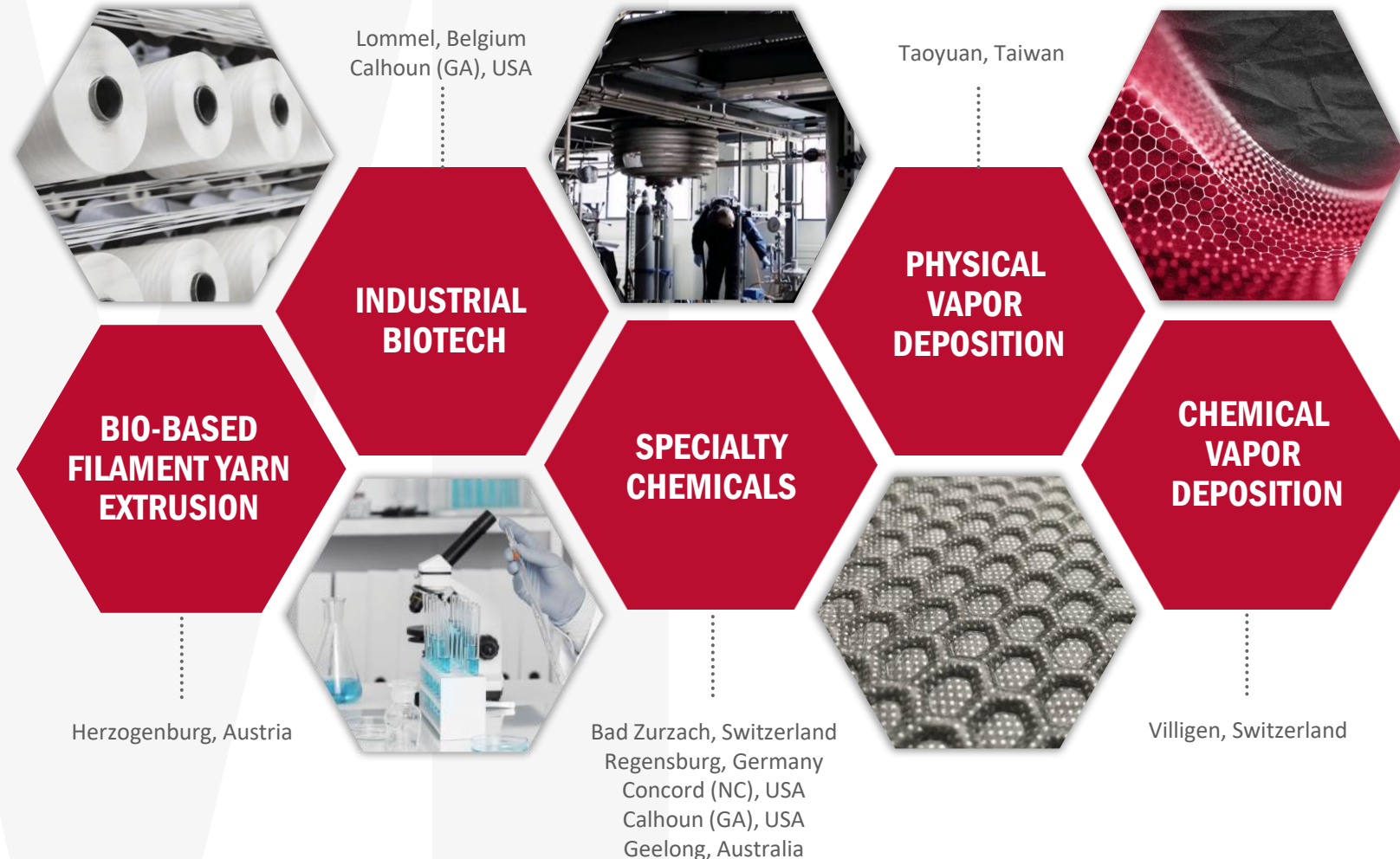
PILOT PLANT
SYSTEMS
SCALE-UP





Lean manufacturing capability for speed to market

Expertise in scale-up of unique materials, manufacturing process from lab through industrial scale production.





«Swiss Tech Inside» strong ingredient brand

Marketing support as a key factor for speed to market

- All HeiQ technologies come with a marketing package, capturing added value at the point-of-sale
 - Graphics & videos
 - Tested and legally vetted marketing claims
- Ingredient branding by trademark licensing
- Strong portfolio of 200+ trademarks



INGREDIENT BRANDING TOOLS

- Trademark license
- Hangtag
- Tech explanation Graphic
- Claims validation
- Benefit video
- Sewn label

MARKETING TOOLS

- Joint press release
- Online / offline events
- Claims guidance
- Graphic design support
- Technology video
- Social media Campaign
- HeiQ owned media



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Progress update – HeiQ AeoniQ™

Game-changing technology to help decarbonize the textile industry

TECHNOLOGY UNIQUENESS

- World's first climate-positive yarn
- First cellulosic filament fiber that matches synthetic fiber strength
- 100% circular, recyclable, biodegradable, and compostable in only 3 months
- Made out of upcycling cellulose feedstock from textile-to-textile recycled pulp, wood pulp, agri-waste and food waste
- For every ton of Polyester substituted by HeiQ AeoniQ™ up to 5 tons of CO₂ are reduced (carbon credits)



HUGO BOSS

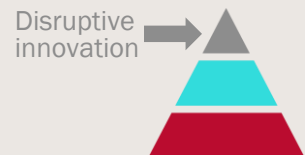


MILESTONE ACHIEVED

- Raised ~\$10M from Hugo Boss & MAS Holdings
- Secured ~\$2M from The Lycra Company as exclusive distributor
- Secured ~\$10M R&D grants from Portugal & EU institutions
- Build 50tpa first pilot commercialization plant in Austria
- Fashion for Good - elected Top Ten Innovator 2024
- Canopy - awarded "Next Generation Solutions Providers"
- Built a world-class team led by Julien Born, former Lycra CEO
- Launched to market with HUGO BOSS "The Change" collection
- Signed several paid R&D agreements with leading brands

MILESTONES AHEAD

- In negotiation
- Equity investment and development partnership with Mills & Brands
- Economic aid from the Ministry of Economy of EU countries
- Scale-Up factory with 2'000 tons annual capacity to be completed 2026
- Series A fundraising





Progress update – HeiQ GrapheneX

Highly porous graphene membrane for batteries & electronics

TECHNOLOGY UNIQUENESS

- World's first graphene membrane
- Atomically thin, permeable, extra strong, stretchable, conductive
- Enables anode-free lithium batteries with double energy density
- Enables PFAS-free electronic vents for mobile devices

MILESTONES ACHIEVED

- Built laboratory plants in Switzerland
- Proof of concept in anode-free lithium batteries at double energy density
- Proof of concept in PFAS-free electronic vents
- Designed & commissioned world's first pilot commercialization plant
- Secured first JDA with world leader in electronic devices

MILESTONES AHEAD

- Operate pilot commercialization plant by end of 2024
- Secure Series A funding by mid 2025
- Secure strategic partner for next generation battery development
- Secure government grants for further application development
- Build world-class team for commercialization





Progress update – HeiQ Xpectra

Transparent conductive coating technology

TECHNOLOGY UNIQUENESS

- Enabling transparent, conductive, heat-reflective, EMI-shielding coatings
- Wide range of applications:
 - Indoor insulating varnish for concrete, improving building energy efficiency by 25%
 - Greenhouse foils for higher agricultural yield and higher energy efficiency
 - Advanced conductive layer for organic photovoltaics
 - Stealth signature management against radar and infrared detection
 - Transparent heating foil for car windshield, sensors & electronics

OPPORTUNITIES

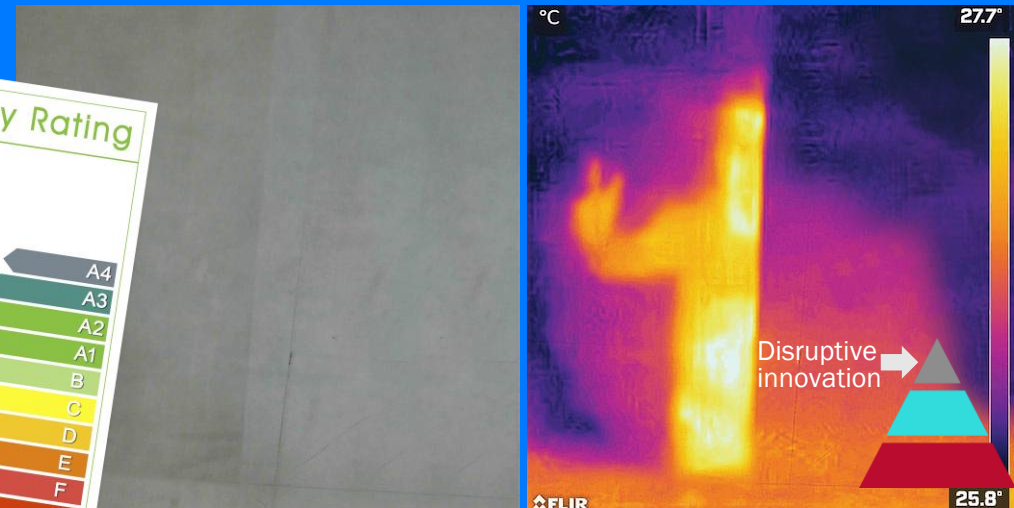
- Rapidly rising energy prices (saving energy with heat reflection/retention)
- Increased defence needs and investments (signature management applications)
- Global expansion of solar energy

PROGRESS TO DATE

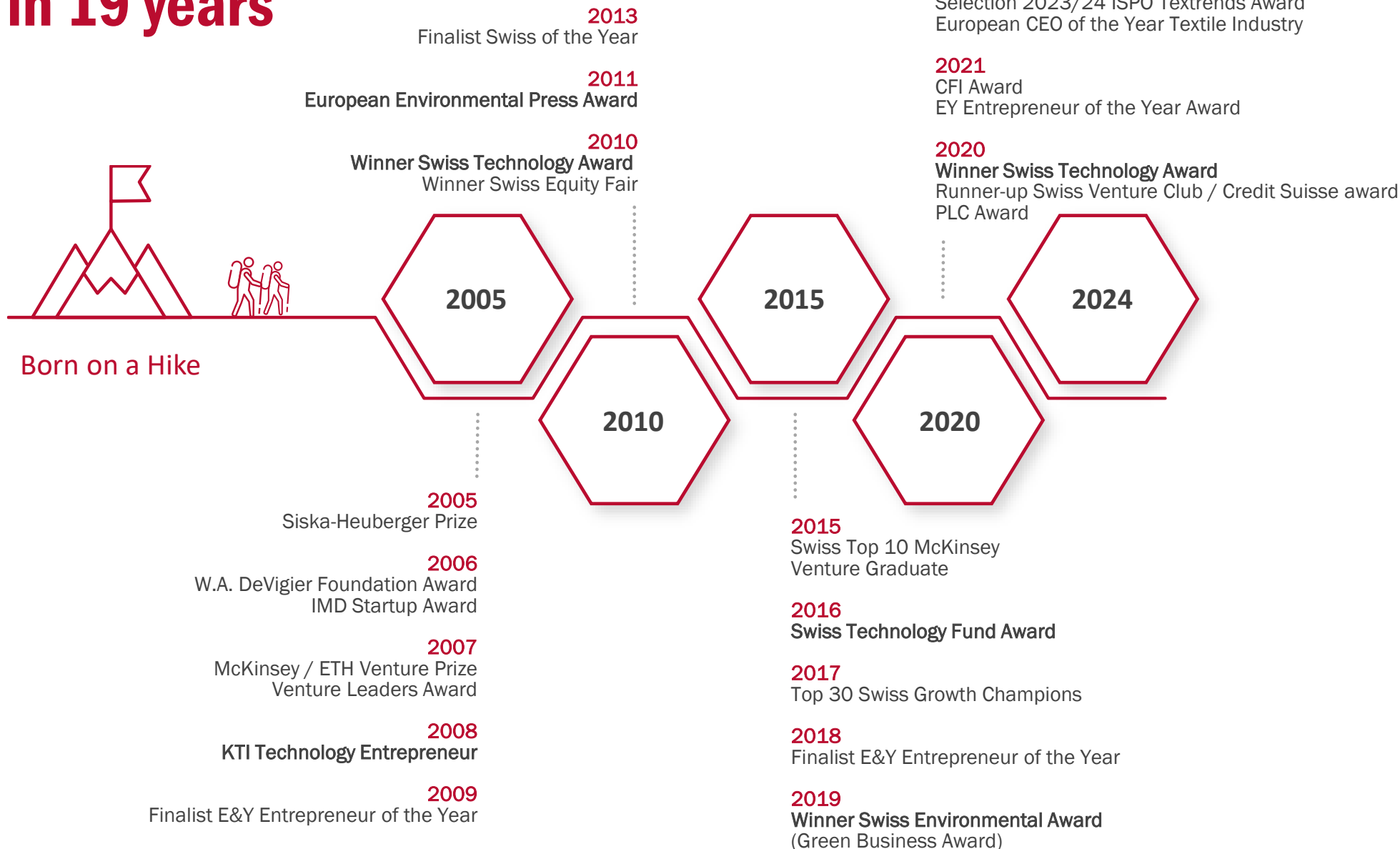
- Built pilot commercialization plant in Germany
- Proof of concept achieved in all potential application fields
- Secured first JDA with leading defense company
- Secured first JDA with leading building insulation company

MILESTONES AHEAD

- Go to market with strategic partner in building insulation in 2025
- Go to market with strategic partner in defense in 2025
- Secure JDA with leading automotive windshield company
- Secure JDA with leading organic photovoltaics company



24 awards in 19 years



HeiQ global presence today



HeiQ Materials (Switzerland)

Schlieren
(Operational Headquarters & R&D & Testing & Sales)
& Bad Zurzach (Production)

HeiQ plc (UK)

London
Listed holding company (XLON: HEIQ)

HeiQ Chrisal (Belgium)

Lommel
Probiotic and synbiotics
(R&D & Production & Sales)

HeiQ AeonIQ Holding (Switzerland)

Villigen
(HeiQ AeonIQ parent company)

HeiQ GrapheneX (Switzerland)

Villigen
(R&D & Production & Sales)

HeiQ Iberia (Portugal)

Moreira da Maia
(R&D & Sales)

HeiQ AeonIQ (Portugal)

Moreira da Maia
(R&D & Production & Sales)

HeiQ RAS (Germany)

HeiQ Regulatory GmbH
Regensburg
(R&D & Production & Sales)

HeiQ AeonIQ (Austria)

Herzogenburg
(R&D & Sales)

HeiQ Materials Company

Shanghai
(Warehouse & Testing & Sales)

HeiQ Company

Taoyuan City
(Production & Sales)

HeiQ Japan

Tokyo (Sales)

HX Taiwan

Taoyuan City
(Production & Sales)

HeiQ Life (Hong Kong)

Hong Kong
(Administration)

HeiQ Life (Thailand)

Bangkok
(R&D & Sales)

HeiQ Australia

Geelong
(R&D & Production)

HeiQ ChemTex (USA)

Concord, NC & Calhoun, GA
(R&D & Production & Sales)

HeiQ Life (Brazil)

São Paulo
Sales

HeiQ Honduras

Tegucigalpa
Sales

- Offices, Labs & Production Sites
- HeiQ sales representatives
- HeiQ distribution partners
- HeiQ FTZ warehouses

HeiQ's Leadership



Carlo Centonze
Co-founder
& Group Chief
Executive Officer



Dr. Murray Height
Co-founder,
Group Chief
Innovation Officer &
CEO of HeiQ Pty.
Ltd. (AUS)



Xavier Hangartner
Group Chief
Financial Officer



Hoi Kwan Lam
Chief Commercial
Officer BU Life
Sciences



Mike Abbott
EVP
BU HeiQ Advanced
Materials
CEO of HeiQ ChemTex
NC (USA)



Dr. Robin Temmerman
EVP
BU Life Sciences
CEO of HeiQ Chrisal
(BE)



Julien Born
EVP
CEO HeiQ AeonIQ
Holding AG (CH)



Tom E. S. Ellefsen
EVP
Chief Investment
Officer



Dr. Oliver Zech
EVP
Innovation Service
CEO
of HeiQ RAS (DE)



Robert Liu
General Manager
HeiQ Greater China



Raquel Vaz Vieira
General Manager
HeiQ Iberia (PT)



Ming Liang
General Manager
HeiQ Taiwan



Kate Maiava
General Manager
HX Taiwan

Board of Directors



Robert van de Kerkhof
Chairman



Carlo Centonze
Executive
Director



Xavier Hangartner
Executive
Director

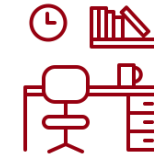


Karen Brade
Non-executive
Director



Benjamin Bergo
Non-executive
Director

Differentiate. Innovate.



UK

London
HeiQ Ltd.
Ultimate parent

AMERICAS

HeiQ ChemTex Inc.
Concord & Calhoun
USA
R&D/Production/Sales

HeiQ Life
São Paulo
Brazil
Sales

EUROPE

HeiQ Materials AG
Schlieren
Switzerland
*Operational headquarters
R&D/Testing/Production*

HeiQ RAS AG
Regensburg
Germany
R&D/Sales

HeiQ AeoniQ Holding AG
HeiQ GrapheneX AG
Villigen
Switzerland

HeiQ Iberia
Unipessoal Lda
Moreira da Maia
Portugal
R&D/Sales

HeiQ Chrisal NV
Lommel
Belgium
R&D/Production

ASIA

HeiQ Materials
Company Limited
Shanghai
Warehouse/Testing/Sales

HeiQ Company Ltd
/ HX Company Ltd
Taoyuan City
Sales/Production

HeiQ Life
Bangkok
R&D/Production/Sales

HeiQ Life
Hong Kong
R&D/Production/Sales

HeiQ
Tokyo
Sales

OCEANIA

HeiQ PTY
Geelong
Australia
R&D/Production

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