Start-up and Entrepreneurship Workshop

ETH Zurich, 8 Juni 2017
The Swiss Competence Centers for Energy Research

Purpose and Institutional Structure

- **Promote innovation** required to implement the **Energy Strategy 2050**
- **Develop solutions** for technical, social and political problems
- **Bundle the energy research activities** of Swiss universities
- **Work closely with industry**

**SCCER**

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<thead>
<tr>
<th>Leading House (University A)</th>
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<tr>
<td>University of Applied Sciences A</td>
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<td>Research Institute</td>
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<td>University B</td>
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<td>University of Applied Sciences B</td>
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<td>University of Applied Sciences C</td>
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**Cooperation Partners from Industry and Public Administration**
SCCER Mobility: Mission

Developing the knowledge and technologies essential for the transition of the current fossil fuel based transportation system to a sustainable one, featuring minimal CO2-output and primary energy demand as well as virtually zero-pollutant emissions.

- **Energy or CO2**
- **Status quo**
- **100 %**
- **Political target**

**Business as usual scenario**

**Mobility and transportation demand reduction**

- A1, A2, A3,
- B1.1

**Energy conversion processes**

- A1, A2

**Energy carrier substitution**

- (electricity, renewable fuels, H₂)
<table>
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<tr>
<th>Institution</th>
<th>Address</th>
<th>Website</th>
<th>Contact Information</th>
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<tbody>
<tr>
<td>Berner Fachhochschule BFH</td>
<td>Industry Relations</td>
<td>Seevorstadt 103, 2501 Biel</td>
<td>Website</td>
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<tr>
<td>Empa</td>
<td>Technology Transfer</td>
<td>Überlandstr. 129, 8600 Dübendorf</td>
<td>Website</td>
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<tr>
<td>Paul Scherrer Institut PSI</td>
<td>Technology Transfer</td>
<td>5232 Villigen PSI</td>
<td>Website</td>
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<td>Universität St. Gallen HSG</td>
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<td>Website</td>
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<tr>
<td>Interstaatliche Hochschule für Technik Buchs NTB</td>
<td>Werdenbergstr. 4, 9471 Buchs</td>
<td>Website</td>
<td>Andreas Ettemeier</td>
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Program

15:15 Welcome and scope of workshop
15:20 CTI Entrepreneurship - Swiss federal training program for start-up founders
15:35 ImagineCargo GmbH - sustainable logistics (start-up mobility sector)
15:55 Supporting activities for young inventors and entrepreneurs – ETH transfer
16:15 vir2sense GmbH - virtual sensor technology (ETH-spin-off, D-MAVT)
16:35 Q&A and discussion - Philip Hassler and Marjan Kraak
Advisory Board Members: Partners from Industry

ABB Turbosystems AG
Adaptricity AG
Batteriewerk Schweiz AG
Bcomp Ltd
Bombardier
Boschung Engineering AG
Bucher Municipal AG
Carrosserie HESS AG
CTI National Network Carbon
Composites Schweiz
Designwerk GmbH
Dow Europe AG
ESRI Schweiz AG
FPT Motorenforschung AG
FVV Forschungsvereinigung
Verbrennungskraftmaschinen
Kistler Instrumente AG
Kummler & Matter AG
Kyburz Switzerland AG
LEM SA
Liebherr Machines SA
myStromer AG
Protoscar SA
SBB AG
St. Gallisch-Appenzellische Kraftwerke AG
Swiss Center for Electronic and Microtechnic
Verkehrsbetriebe Zürich VBZ
Verkehrsverbund Luzern VVL
Volkswagen AG
The Swiss Competence Centers for Energy Research

7 Action Areas and 8 SCCERs

- Efficiency of the **building sector** and **industrial processes**
- Grids and their components
- **Storage** of electrical, chemical and mechanical energy
- **Power supply** (hydropower and geothermal energy)
- Economy, environment, law, behavior
  - Efficient concepts, processes and components in **Mobility**
- Biomass
SCCER Mobility: Capacity Areas

Innovation Field A: Components, Devices and Processes

A1 Swiss Battery Research Platform (E-Mobility)
- Battery systems for rail, bus, construction, agricultural and utility vehicles

A2 Chemical Energy Converters
- Cost reduction for fuel cell systems
- Internal combustion engines: renewable fuels, efficiency increase, zero pollutants

A3 Minimization of Vehicular Energy Demand
- High volume lightweight thermoplastics and bioinspired composites
- Thermal management
SCCER Mobility: Capacity Areas

Innovation Field B: System Aspects of Mobility

B1 Integration, Operation and Optimization of Mobility Systems
- Infrastructure and new urban transport
- Urban planning and environmental impact
- Spatio-temporal data Acquisition and analysis, monitoring devices and user communication

B2 Integrated Assessment of Mobility Systems
- Technology assessment and energy economics
- Socio-economic aspects of mobility
CTI Startup

SCCER Mobility
Zürich, June 8th, 2017

Philip Hassler, IFJ / Program Manager Venture Kick
ph@ifj.ch
CTI Entrepreneurship-Training-Module

Registration: www.cti-entrepreneurship.ch

Module 1
1/2 day

- Business Idea
  «feel the startup grove»
  Sensitizing Events
  Students / PhD

Module 2
1 semester evening course

- Business Concept
  «Get the startup toolbox»
  Students with business ideas

Module 3
5 days

- Business Creation
  «Jumpstart your business»
  Persons before foundation of startups
  Start-ups

Module 4
5 days

- Business Development
  «Grow your startup»
  Start-ups in the growth period

80 courses per year (120 trainers) with more than 3’800 participants

Version 1.0
June 9, 2017
Agenda

15h15 Welcome & Introduction
   Gloria Romera, SCCER Mobility

15h20 CTI Entrepreneurship & Start-up
   Christoph Falk, CTI
   Philip Hassler, IFJ

15h35 ImagineCargo GmbH
   Nick Blake, CEO & Facilitator

15h55 Supporting activities for young inventors & entrepreneurs
   Marjan Kraak, ETH transfer

16h15 vir2sense GmbH
   Christophe Barro, CEO & Co-founder

16h35 Q&A

17h00 Apéro
Commission for Technology and Innovation CTI

Start-up and Entrepreneurship Workshop, Zürich

Zürich, 8 June 2017
Christoph Falk
The CTI’s mandate

The CTI is mandated by the Confederation to improve the innovative strength of the Swiss economy.

Mission: Bring science to market

- It funds and supports cooperation projects between companies and higher education institutions to encourage the introduction of innovative products on the market.
- It supports start-ups and thereby helps to create jobs for highly qualified workers.
- It promotes the transfer of knowledge and technology between higher education institutions and Swiss companies.
Innovation: driver of the Swiss economy

• Switzerland is a **small country with few raw materials**
• It has one of the **most open economies** in the world and is heavily dependent on exports. Almost one in every three francs is earned abroad.
• Swiss companies **compete with businesses throughout the world**.
• In order to survive in this competitive environment, their products must be **innovative**.
Switzerland as innovation champion

The World Competitiveness Scoreboard 2015

Global Innovation Index 2015


Union Innovation Scoreboard 2015

1st place: USA
2nd place: Hong Kong
3rd place: Singapore
4th place: Switzerland

1st place: Switzerland
2nd place: UK
3rd place: Sweden
4th place: Netherlands

1st place: Switzerland
2nd place: Singapore
3rd place: USA
4th place: Germany

1st place: Switzerland
2nd place: Sweden
3rd place: Denmark
4th place: Finland
Three funding areas

Start-up and Entrepreneurship
Training modules, Coaching, Start-up Label

Projects
Joint projects companies - higher education institutions, innovation cheque, innovation voucher

KTT Support
National Thematic Networks Innovation mentors Platforms
CTI instruments in innovation chain

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<th>Basic research</th>
<th>Applied research</th>
<th>Product development</th>
<th>Market</th>
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Start-up and Entrepreneurship

R&D Funding

KTT Support
CTI Start-up & Entrepreneurship
From ideas to successful companies

The CTI promotes growth-oriented, technology-based business projects in two ways:

– **CTI Entrepreneurship training**
  Program for sensitizing and training for potential entrepreneurs before and after the foundation of a company.

– **CTI Start-up coaching**
  Highly qualified coaches with considerable professional experience give you personalized coaching tailored to your business.
CTI Entrepreneurship training modules

**Module 1**
1/2 day

- **Business Idea**
  «feel the startup groove»

- **Sensitizing Events**
  Students / PhD

**Module 2**
1 semester evening course

- **Business Concept**
  «Get the startup toolbox»

- **Students with business ideas**

**Module 3**
5 days

- **Business Creation**
  «Jumpstart your business»

- **Individuals (just before company creation)**

**Module 4**
5 days

- **Business Growth**
  «Grow your startup»

- **Start-ups in growth phase**

Registration: [www.cti-entrepreneurship.ch](http://www.cti-entrepreneurship.ch)
Criteria for CTI Start-up coaching

- Company based in Switzerland
- Innovative business idea
- Scalable business with high growth potential
- A motivated team
- Possible intellectual property protection
CTI Start-up – Coaching phases

**Phase I: Basic Assessment of Business Idea (3 Weeks)**
- High impact?
- Innovative?
- Realistic?
- In the right field?

**Phase II: Professional Evaluation (4-6 Weeks)**
- Market
- Technology
- Feasibility
- Management
- Team
- Commitment

**Phase III: Professional Coaching (6-24 Months)**
- Business development
- IP
- CTI project
- Training

**Phase IV: Continuing Support (up to 3 years)**
- CTI networks
- Contracts
- Funding

**CTI Market Entry Camp (Boston, San Francisco & New York)**

**Stay Abroad: 3 months**

**Registration**

**Coaching Acceptance**

**Milestone Review(s)**

**CTI Startup Label**
The Team

Coaches:
- Deep entrepreneurial and corporate experience
- Relevant knowledge
- Very well connected

Complemented by experts:
- Legal
- Sales
- IP
- Finance
- Regulatory
- Technical/Scientific
We help startups go global

- Collaboration with Swissnex and embassies/consulates
- US market entry camps in Boston, San Francisco and New York
- UK market entry camp in London
- Asia market entry camps in Bangalore and Shanghai

• Additional hubs planned
CTI start-ups are well perceived and do well

- Top 100 Startup Award
  - 70% CTI companies
- Top 50 des start-up Suisses BILAN
  - 60% CTI companies
- Applications for de Vigier awards
  - 50% CTI companies
Thank you for listening.
ImagineCargo GmbH

Nick Blake, CEO & Facilitator
Supporting activities for inventors & entrepreneurs

Marjan Kraak, ETH Transfer
Spin-off support at ETH Zurich
Marjan Kraak, PhD - Head of the Spin-off group

SCCER Mobiligy Workshop – June 8, 2017 at ETH Zurich
Topics

- ETH Zurich’s tradition in entrepreneurship
- Spin-off support
- Pioneer Fellowship Grant & ieLab
- Some promising young ETH Spin-offs
In 2016 a record of 25 spin-offs were founded

Acquisitions in 2015 - 2017:

- Adaptricity by Leoni
- Dacuda’s 3D division was acquired by Magic Leap
- AutoForm was acquired by Astorg Group
- GlycoVaxyn acquired by GSK ($212mio)
- Faceshift by Apple
- Koubachi by Husqvarna
- Upicto by Logitec
- Skybotix by GoPro
How does it work: ETH Spin-off support

- Discussing the idea of starting a spin-off
- Giving feedback to business ideas / business plans
- Supporting in intellectual property issues (patent applications, software rights (©), confidential know-how, etc.

In case of an invention ➔ Patent before publishing!

- Negotiating license agreements
- Formalities regarding the incorporation: Domizilannahmeerklärung, ETH Spin-off Anerkennung, Miet- und Infrastrukturverträge
Pioneer Fellowship Grants

- Initiated in 2010 - Application on March 1st and Sept. 1st
- The Pioneer Fellowship is awarded to candidates who want to become entrepreneurs based on their own research carried out during their Master or Doctoral Thesis at ETH Zurich
- One or two Pioneer Fellows can be supported
- 150 kCHF for 18 months, flexibility to use the money in the best way to support their business case

- Full programm with trainings, round table discussions
- Coaching & Mentoring of Pioneer Fellows
- Networking activities

=> With the Pioneer Fellowship more high growth Spin-offs are expected
Pioneer Fellowship projects and Spin-offs

- Since 2010 thanks to the start of the Pioneer Fellowships:
  - 73 Pioneer Fellows
  - > 35 ETH Spin-offs incorporated
  - > 70% of the finished projects started an ETH Spin-off

- Donations by industry and private persons to the ETH Foundation are directly supporting young people & their projects
The Innovation and Entrepreneurship lab (ieLab) in action!

Former successful Entrepreneurs will coach the Pioneer Fellows

Networking activities

Seminars by those who have done it

Round table discussions
Wingtra – A new way of autonomous flying

Wingtra is an ETH Spin-off that started in the Autonomous Systems Lab at ETH Zurich by a group of students. Just after incorporation they already employ 20 people.

- Fly like an airplane, start and land like a helicopter.
Sunredox—Solar fuels from CO₂ and H₂O

- Sunredox is securing the availability of clean and renewable fuels for sustainable transportation through energy-efficient and cost-effective production of solar liquid fuels exclusively from CO₂, H₂O and sunlight.

- Sunredox builds on ETH patents and an ETH Pioneer Fellowship.
ComfyLight – the learning light that protects your home

ComfyLight is an ETH Spin-off that started in the “Bosch Internet of Things (IoT) Lab” at ETH Zurich and the University of St. Gallen

- ComfyLight offers a novel home security solution that actively protects your home from burglars - gently posing as a light bulb
Perceptiko – Feel closer when skyping by using CatchEye

Perceptiko developed a software at ETH Zurich and during a Pioneer Fellowship to improve features for e.g. skype:

- Eye contact
- Automatic zoom
- Lighting correction
- Background blur

Existing hardware (webcams, etc.) can be upgraded and improved

https://catch-eye.com/
The Performance of ETH Spin-offs (Jan. 2015)

A large study (Jan. ‘15) showed that ETH spin-offs:

- Produced revenues of CHF 585 Mio in 2013 alone (n=122)
- Have a 92% survival rate in their first 5 years of operations
- Created 2500 jobs until the end of 2013 (n=125)
- 30.8 % of ETH Spin-offs are backed by VCs

Thank you!

In case of questions related to Spin-offs or Pioneer Fellowship Grants please don’t hesitate to get in touch with us:

- Marjan Kraak (Head of the Spin-off group: BIOL, BSSE, CHAB, GESS, HEST, MATH, MAVT, USYS)
  marjan.kraak@sl.ethz.ch

- Hanna Brahme (Technology manager Spin-offs: ARCH, BAUG, ERDW, INFK, ITET, MATL, MTEC, PHYS)
  hanna.brahme@sl.ethz.ch

- Silvio Bonaccio (Head of ETH transfer)
  silvio.bonaccio@sl.ethz.ch
vir2sense GmbH
Christophe Barro, CEO & Co-Founder
Panel discussion / Q&A

• Creativity & Innovation
• Team & Culture
• Start & Financing
• Success factors for startups

Ask questions anytime!
Your Next Steps …

• CTI Entrepreneurship: www.cti-entrepreneurship.ch

• Training for Hightech und Life Science: www.venturelab.ch

• Up to CHF 130.000 in Seed Capital: www.venturekick.ch

• Free Courses for founders: www.ifj.ch/kurse
Please give us your feedback!
Thank you!

www.cti-entrepreneurship.ch
www.ctistartup.ch