

The Electrum Innovation System

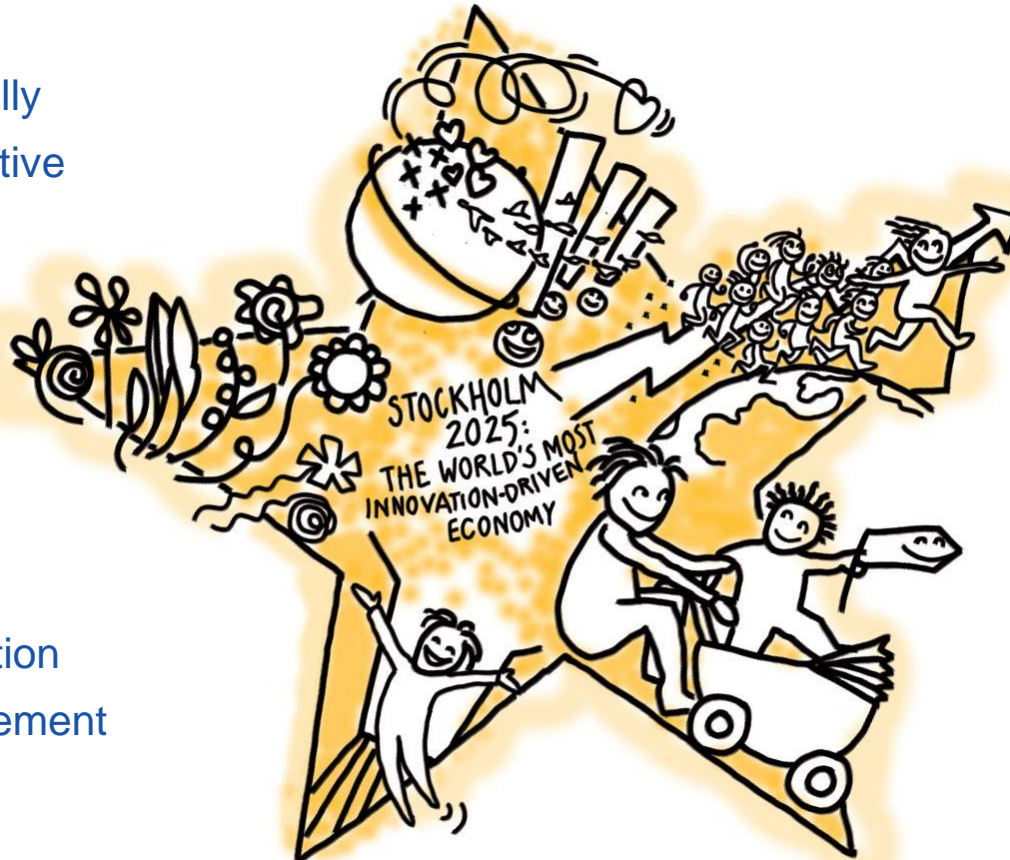
From Research to Production

Nils Nordell

Stockholm Region: Research and Innovation Strategies for Smart Specialisation - RIS3

Globally
Attractive

Cross sector
Approach

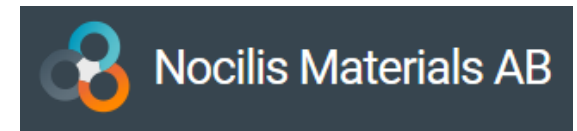
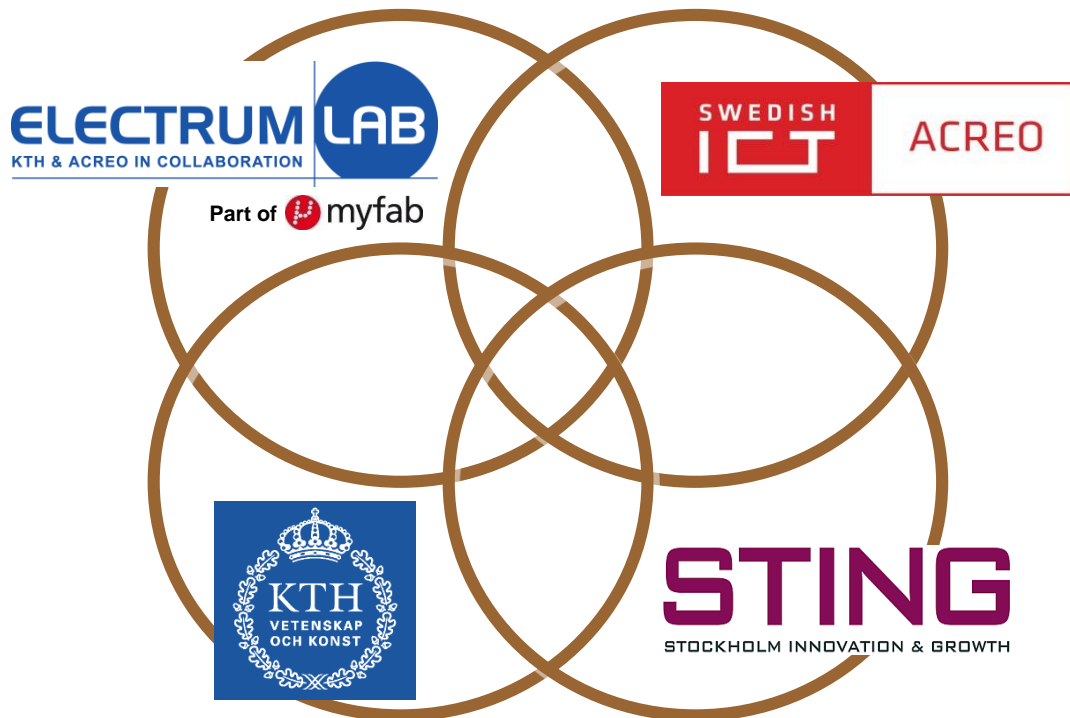


Research and
Innovation
Infrastructure

Innovation
Procurement

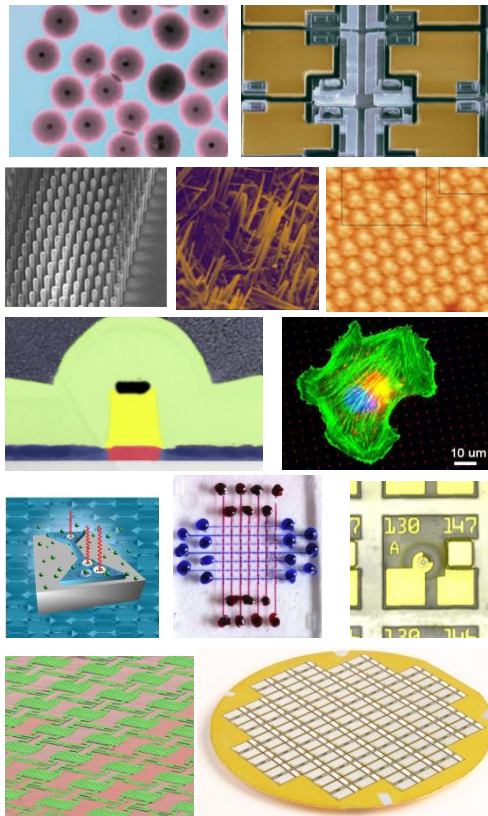
Supply of
Capital

The Electrum Innovation System: Forms Companies:





Research in Materials and Design for Nano- and Microtechnology



- Nanoparticles for drug distribution
- Bolometers for IR imaging detectors
- Photonic crystals for integrated optics
- Nanostructured surfaces for fuel cells
- Atomic layer surface investigations
- Nanotransistors for efficient integration
- Templates for cell growth experiments
- Detectors for proteins and DNA
- Three dimensional microfluidics
- High speed lasers for telecommunication
- Surface array for automotive radar
- Electronics at high temperature and high power

Electrum Laboratory

Mission

- To offer a competitive laboratory environment for micro and nano technology:
 - Processes capabilities – including cleanroom – for device fabrication
 - Facilities for characterization of materials and devices.
- To create an open environment for education, research, development and small scale production.
- To assure a cost efficient usage of expensive laboratory resources.



A flexible lab resource



- **Research and development**

- Inventing, designing, manufacturing of novel devices
- Establishing novel processes and characterization techniques
- Synthesis and characterization of new materials and structures
- Flexibility, allowing different materials and sizes

- **Small scale production**

- Incubator for start-up and spin-off companies
- Access to all the lab resources
- Possibility to rent lab space for proprietary equipment
- Stability and repeatability maintained

- **Education**

- Advanced graduate and undergraduate courses.
- Micro- and nano fabrication technologies and characterization.

Incubator

ISO 9001:2008 Certified management system

Simple business model

Access to the whole lab:

- Processes
- Characterization
- Network of researchers and entrepreneurs

Proprietary lab area for rent:

- For own tools
- Necessary infrastructure and media delivery
- Authority permits

Access to Electrum Lab partners:

- Acreo production Incubator
- KTH research groups
- STING business incubator
- Myfab network



ACREO

Research institute for electronics, optics, and communication technology

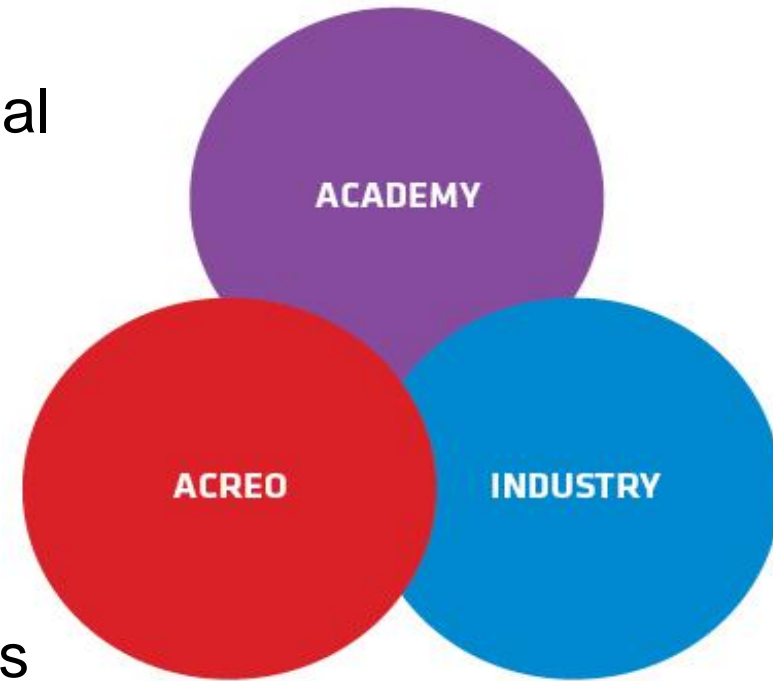
- Support to start-ups
- Maintaining a production incubator with ISO 9001 certified process lines
 - Device production
 - Foundry service
 - Production development projects
- Technology development

- Technology transfer
- Addressing SMEs
- Suggesting high-tech solutions
 - integrated electronics
 - software based systems
- Joint product development project



INNOVATION FOR GROWTH

- Cutting-edge R&D with focus on industrial relevance and sustainable growth
- Participation in co-operative EU funded projects and co-operation projects with industry and academia
- Processes for tech-transfer and business development of SME



TECHNOLOGY TRANSFER AND BUSINESS DEVELOPMENT



STING - Vision, goal and owner

- Vision: One of the best business incubators in the world, attracting promising and talented entrepreneurs and clearly providing value for the development of a successful growth company.
- Goal: turn out 8 – 10 high growth potential companies per year from the Business Accelerator
- Ranked as #4 Top Global University Business Incubator in the world 2013
- Owned by the Electrum Foundation
 - Behind the foundation are the City of Stockholm, KTH Royal Institute of Technology and Ericsson, among others
- Private backing via corporate partners and service providers
- Three locations:
 - Kista Science City
 - KTH Valhallavägen, Stockholm
 - SUP46, downtown Stockholm

World-class eco system

Supporting entrepreneurs and innovators with great ambitions

Business Incubator

- Several proven development programs for startups at different stages
- Highly qualified business development support based on success fee
- Closely connected to all major innovation environments in Stockholm
→ large and qualified deal flow

Business Angel Network

40 established and respected entrepreneurial BA's

Venture Capital Fund

STING Capital – Seed Capital fund

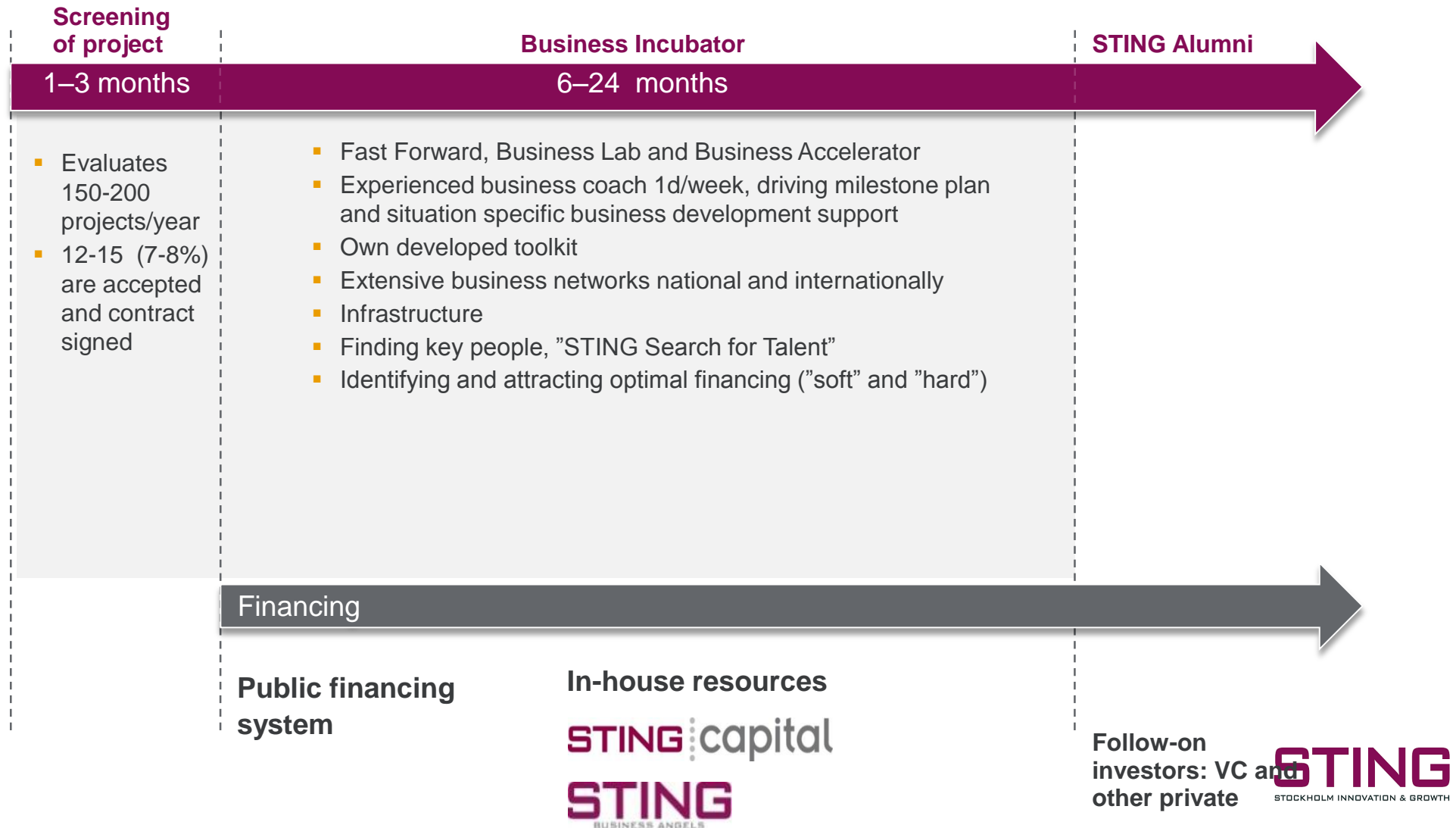
In-house Recruitment Service

STING Search for Talent – recruiting key personnel

Events

Take Off, Sting Day + many internal events

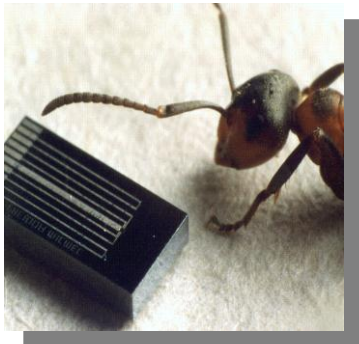
How we do it



From research to company

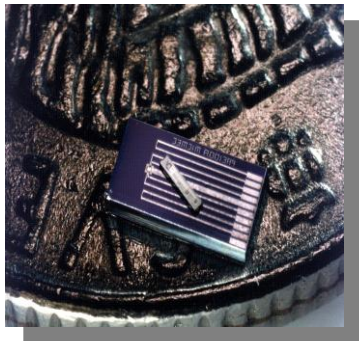
Originated as a MEMS
PhD project at KTH...

1994
KTH, IMC



Microphone
for turbulence
research

1996
KTH, IMC, RADl



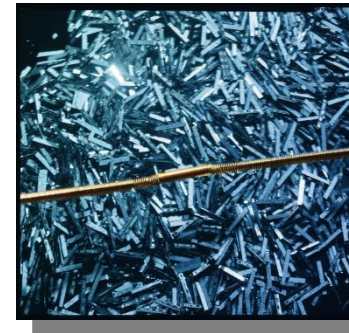
Miniaturised
sensor for
blood pressure
measurements

1997
RADl, IMC



Clinical blood
pressure
measurements

2000
RADl, Silex, Acreo



Production

2004
Silex



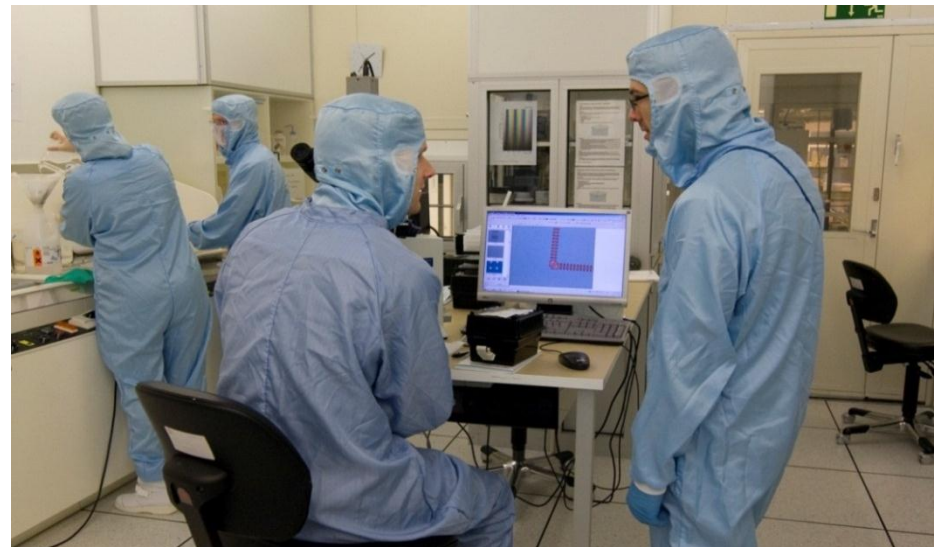
MEMS fab

... Silex has developed to a
world leading "pure-play"
MEMS foundry. In 2013:

- turn-over 25 MEUR
- 150 employees

Network of people

- New ideas occur in-between established disciplines and cultures
- Critical mass of knowledgeable people:
 - Technicians
 - Researchers
 - Entrepreneurs
 - The lab as an environment for recruitment.
- Entrepreneurs and researchers working side by side
- Early management
 - Entrepreneur
 - Technical skills
 - Customer orientation
- Venture capitalists
 - Understanding nanotechnology
 - Making market judgments
- International networks
 - EU projects
 - International companies



CAMART² - Excellence Centre of Advanced MAterial Research and Technology Transfer

- A Horizon 2020 Widespread project

Partners

- Institute of Solid State Physics, University of Latvia
- KTH Royal Institute of Technology
- Acreo Swedish ICT

Goal

- To enhance the innovation capabilities of ISSP UL
- Commercialization of research results at ISSP UL
- Synergy with industrial partners

Method

- Phase 1 (2015-16): Assessment - Road Maps - Business plan
- Phase 2 (2016-2023): Implementation of the Business plan at ISSP UL



