

Entrepreneurial Ecosystem in Sweden- Emerging Academic Spinoffs from Chalmers University of Technology

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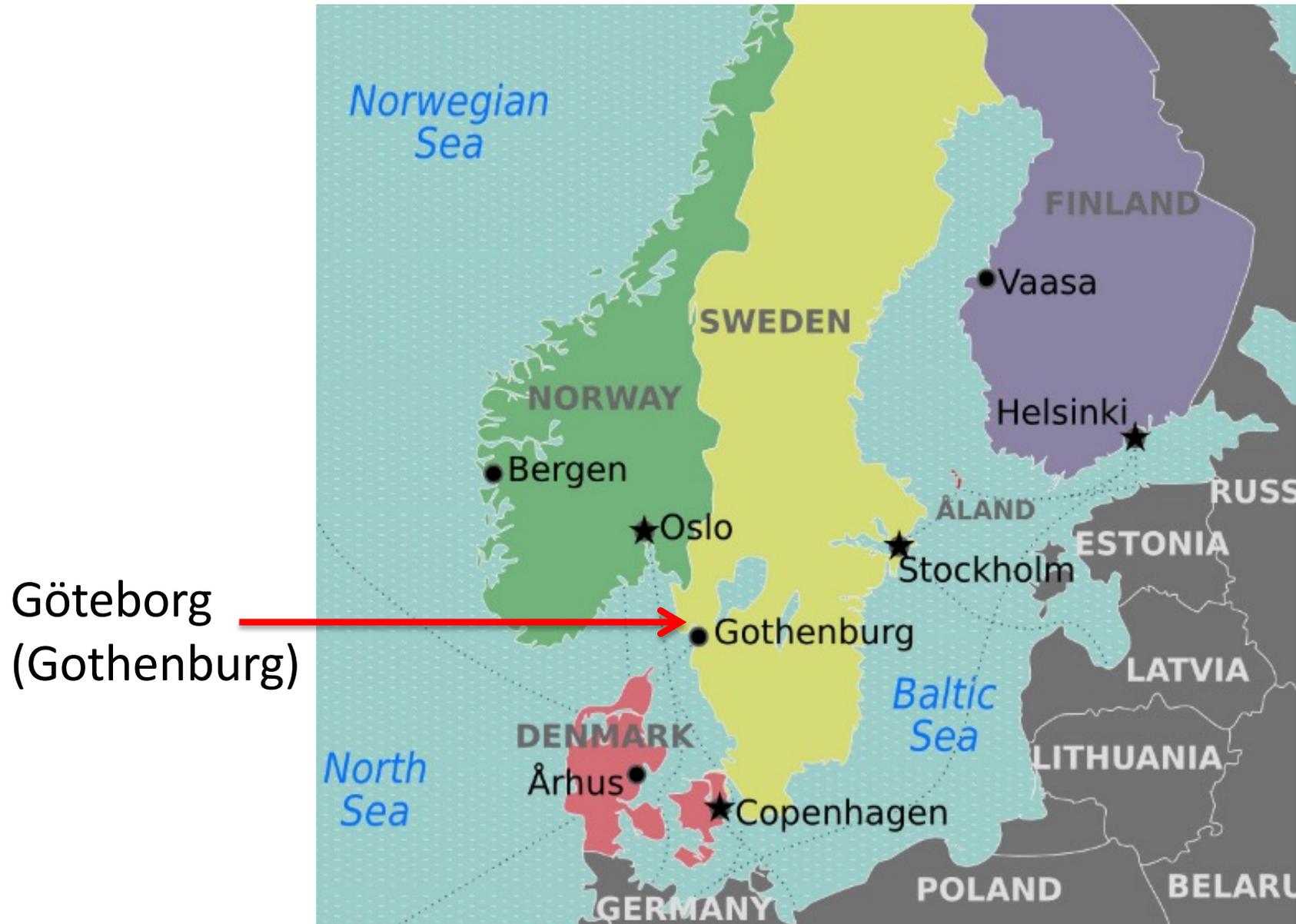
Spinoffs by Surrogate Entrepreneurs

- Eight academic startups emerged from one technology seed invented by an MIT researcher (Shane,2000).

Spinoffs by Surrogate Entrepreneurs

- There were 49 academic spinoffs from Chalmers & Gothenburg University in Gothenburg City in Sweden between 1997 and 2005.
 - Most of spinoffs in the field of biotech, health equipment were founded by **surrogate entrepreneurs**.
 - Half of the ICT were also by **surrogate entrepreneurs**. (Lundqvist, 2014)
- The survival rate within six years in the US was almost 36–51%.
The survival rate in Gothenburg City was 80%.
Less promising business plans were excluded beforehand

The Location of Gothenburg City



Göteborg
(Gothenburg)



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Commercial and Industrial City



Ship Industry &
Volvo



Convenient
Tram

Chalmers Univ.
named as
Entrepreneurial
University



Academic Spinoffs in Gothenburg

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Categorization of Academic Spinoffs in Gothenburg

- **A. From Entrepreneurship School: Engineering & Life Science**
 - Chalmers School of Entrepreneurship
 - Entrepreneurship in Life Science in Gothenburg Univ.
- **B. From other Graduate Schools: Life Science, Computer Science AI, etc.**
- **A. Surrogate entrepreneurs operate startups instead of inventors.**
 - Technology seeds invented inside the University
 - Technology seeds brought by companies and external R&D labs
- **B. Inventors challenge themselves by commercializing.**

Support System

① Incubator ② University VC ③ Governmental subsidy & Loan & VC

Outcomes

Almost 100 startups were founded between 1998–2016.

4 IPO and 6 M&A



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Previous Studies of Surrogate Entrepreneurs in Sweden

- Academic people can contribute to venture creation in spite of not becoming CEOs (In Gothenburg; Lundqvist & Midderton,2013)
- Surrogate entrepreneurs show high performance by avoiding traps (Comparison in Swedish univ; Lundqvist,2014)
- Less experienced surrogate entrepreneurs show less rigidity (Midderton,2010)



Findings: Surrogate Entrepreneur

- Surrogates commercialize technology provided by universities/ labs on behalf of inventors
 - As IPR belong to individual researchers in Sweden, professors are delighted to license out to surrogates.
- Surrogates have to begin with licensing negotiation first.
 - Chalmers program provides role play experience with inventors.
- Surrogates are expected to be familiar with a market rather than technology.
 - However, young surrogates are less experienced so that most decisions will be effectual.
- Surrogates are expected to increase a startups 'performance by using their network
 - Experts and business angels help surrogates and introduce appropriate people.



Findings: Resource

- Institutional Incubating System
 - project rooms in graduate school → Incubator after graduation
- Technology Seeds provided by campus and outside
 - From Swedish universities and companies
 - From the whole EU
- Management Team
 - Less experienced founders are supported by veteran people
 - Founders commonly give way to classmates or alumni
- Moderate fund-raising
 - Very small private investment
 - Governmental VCs, subsidies, and soft-loans help survival



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Findings—Globalization

- Resources acquired from foreign countries is limited
 - Not so many study abroad students
 - Most founders are local people compared to the capital city
 - Difficult to get investment by foreign VCs

- Expansion in the foreign market
 - European market is foreign but not overseas
 - American, Asian and African markets are truly global



Comparison between

Surrogate and non-Surrogate in Chalmers

Surrogate Type

A: Spinoff from Entrepreneurship School

VS

Non-Surrogate Type

B: Spinoff from Material Chemistry School

In the Life Science Field

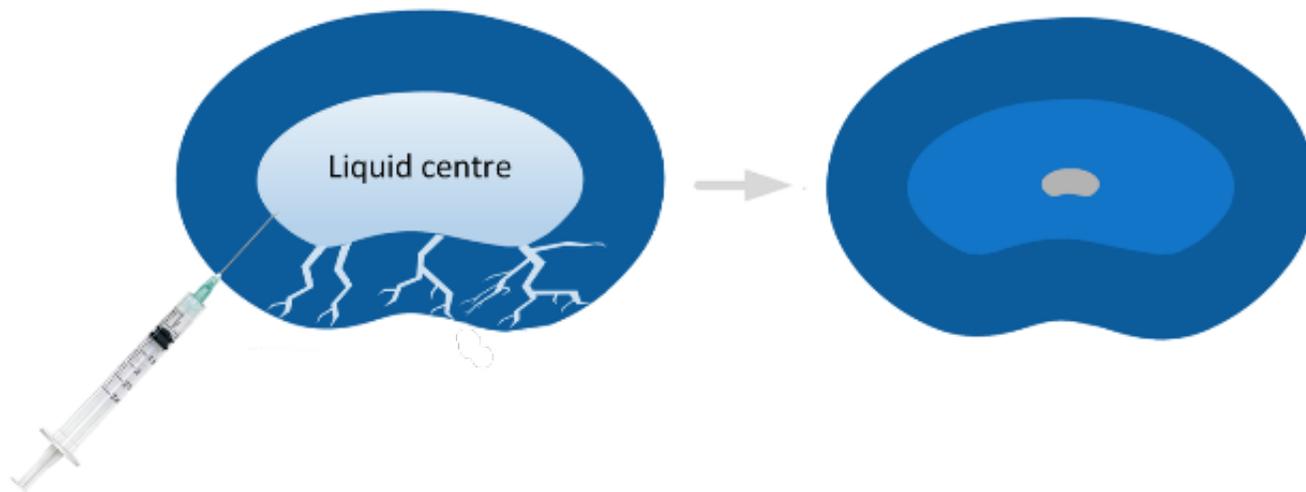
Surrogate: Stayble's Technology

Stayble is developing an injectable treatment against discogenic pain. The treatment works in the way of stabilizing the disc segment and eliminates diffusion of pro-inflammatory substances from the disc. Nerves on the outside of the disc are left to recover and the pain is estimated to disappear.

Injection of Stayble's treatment into the disc

The disc is transformed into connective tissue

- Lower the possibility of diffusion
- Makes the segment more stable



Surrogate: The Overview of Stayble

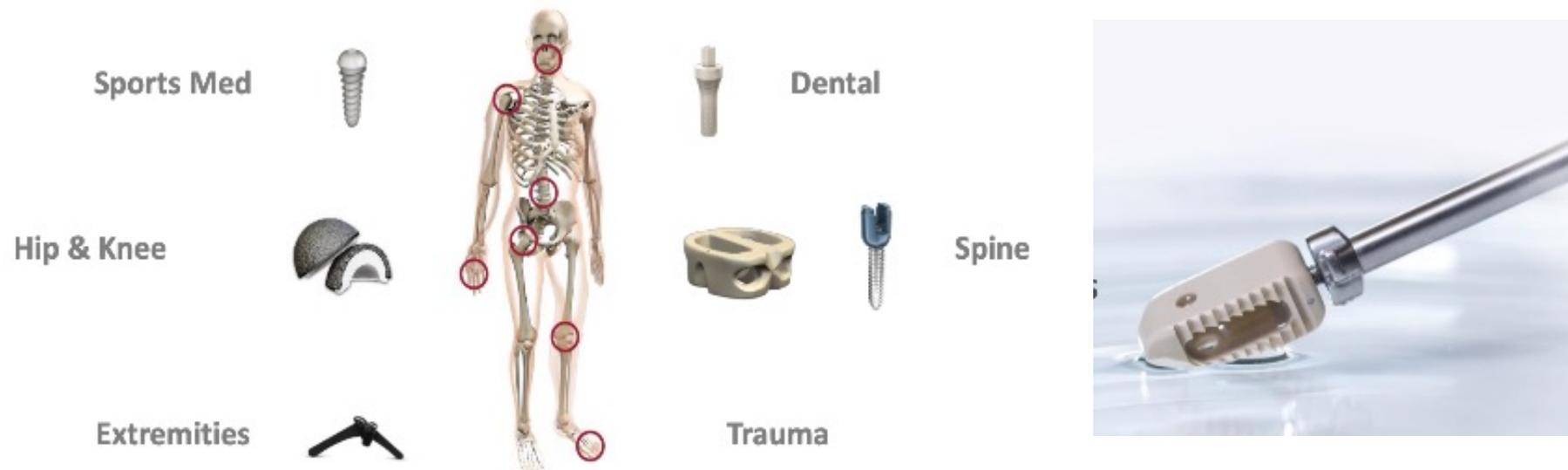
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Company	Stayble Therapeutics
Origin	Entrepreneurship School of Chalmers
Tech Seeds	Provided by a medical school professor
Product Service	Injection treatment to reduce discogenic low back pain (Clinical second phase B in 2020)
Establishment	2014
Financing	Subsidized by European Commission University & Governmental VC (\$1.7M)
Exit	Feb. 2021 Listed in Nasdaq First North Growth Raising SEK41M (\$4.92M)
Partner	Clinical hospitals in EU
Target	Aged Patients (Chronic pain)
Founder	Surrogate entrepreneur (24-year-old student) Inventor (medical school professor)
Management Team	Coach of University VC, Experienced executive of Life Science business

Non-Surrogate: Promimic's Technology

Nano coating material can coat all implant geometries.

This coating material is adopted by implant makers conducting surgery for dentists and orthopedics.



- Faster anchoring of implant
- No extra interface between implant - bone

Non-Surrogate: Promimic

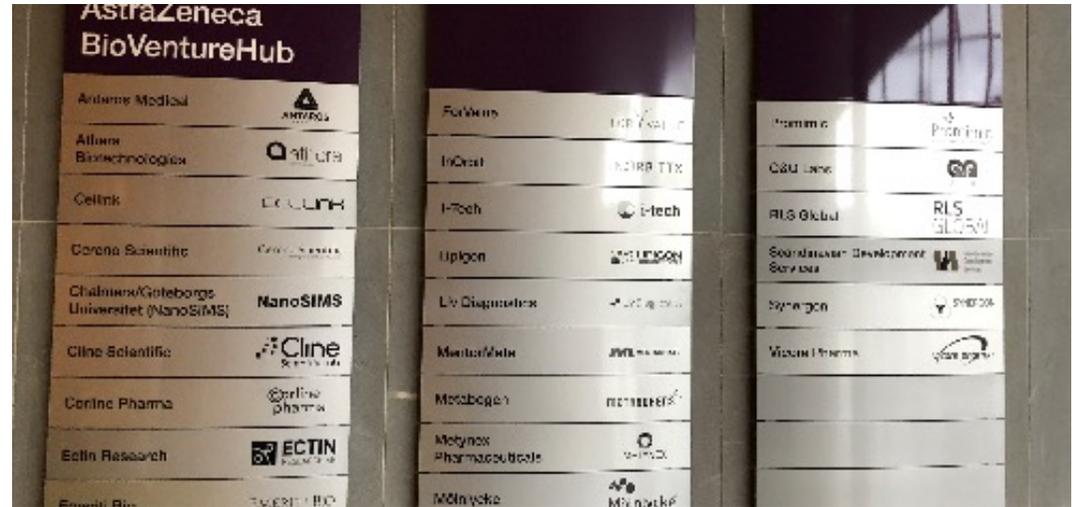
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Company	Promimic
Origin	Material Chemistry School of Chalmers
Tech Seeds	Post doc's own technology
Product Service	Nano coating material for implant
Establishment	2006
Financing	University VC (Chalmers& Karolinska), Governmental VC \$8.1M (total till 2019)
Exit	Not yet (8 employees in 2019)
Partner	Implant material makers in the USA and Brazil
Target	Implant market in the US, EU, Brazil and China
Founder	Inventors (two post doc students in 30' s)
Management Team	Coach of University VC Experienced executive of implant business

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Open Innovation Examples

Astra Zeneca BioVenture HUB



BioVenture HUB in Gothenburg

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- In 2014 Incubator (NPO) was opened in the Research Center of AZ.
- Operating budget: government subsidy (50%)
- Magnus Björsne is an advocative and responsible director.

He has worked for 26 years at AZ and holds a PhD in Medicinal Chemistry & MBA)

We are a large organization, dependent on innovation.

The value proposition in the future goes beyond medicines in isolation and we will increasingly see drugs combined with digital devices, metric devices, diagnostic etc.

This infrastructure is about catalyzing innovation cross different industry segments by collaborating with growing companies in new ways.”

