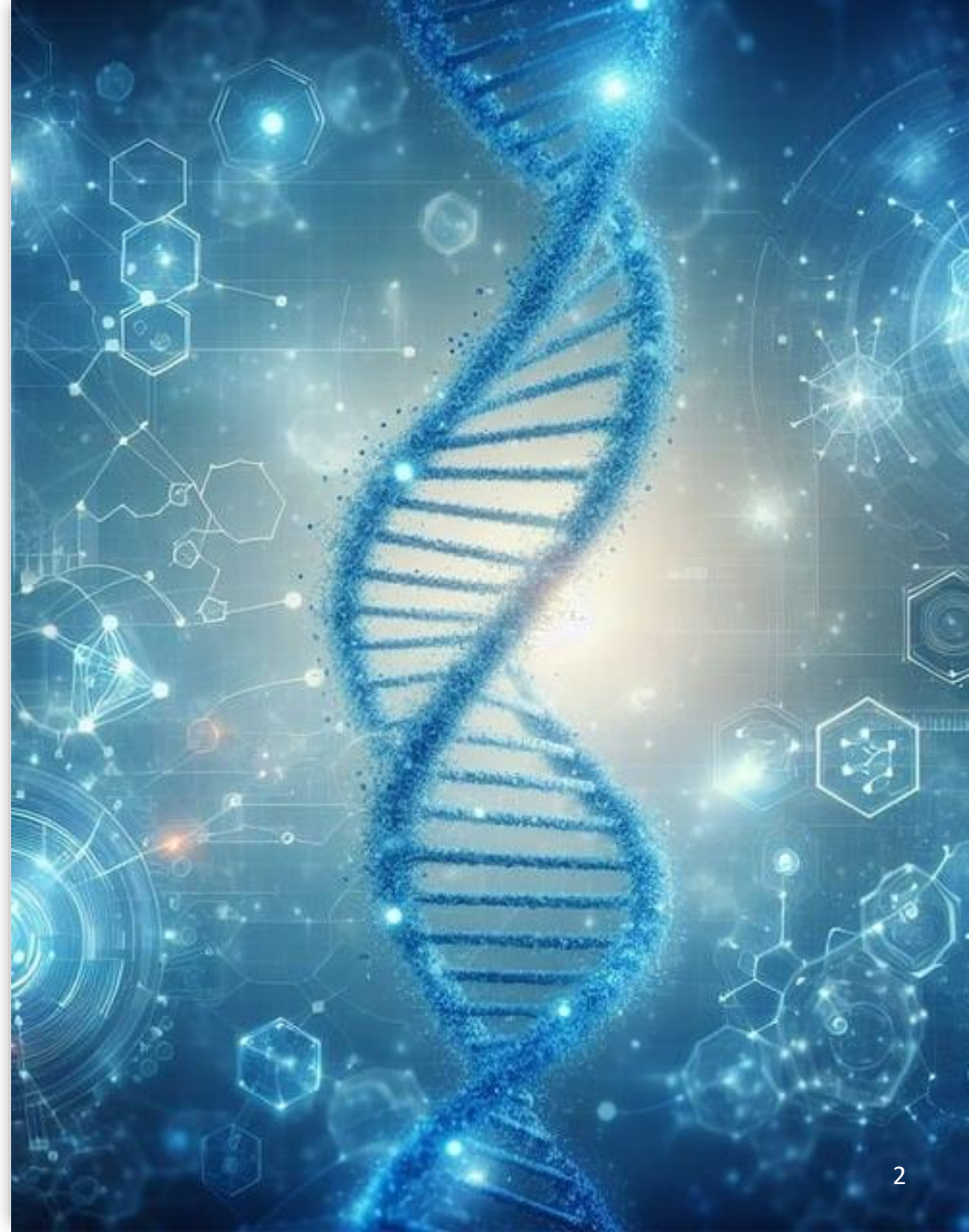


What is needed to build a major biotechnology/pharmaceutical company?

By Helén Johansen Blanco, COO Node Pharma AS

AGENDA

- Overview Case studies
- Is there a financial strategy leading to success?
- Investing in the right people- what resources are typically missing
- What Norwegian biotech can learn from biotech abroad
- Common factors of companies that succeed



"What is needed to build a major biotechnology/ pharmaceutical company in Norway?"

Scope:

- Interview 25 CEOs, CFOs, Chairmen/members of the Board of Directors, founders
- Representing biotech companies in Norway, Sweden, Denmark, Iceland, Switzerland, Spain and Canada
- Experts within finance, innovation, medical...

Definition of success: ability to upscale, i.e. aquisition not the targeted outcome



Case studies

International:

1) Spanish Cellerix

- Established 2000 by Jorge Alemany Herrera
- Aquired 11 years later by TiGenix for 79.7 millions USD
- At acquisition, Cellerix had 67 employees
- Further, TiGenix was aquired by Takeda i 2018

2) Icelandic Alvotech

- Alvotech was founded 2013 by Robert Wessman
- Initial strategy was to invest in development and production of a portfolio of biosimilars
- ..and to build a top modern production facility in Reykjavik, Iceland
- Alvotech has today 1023 employees
- ...and reached level of 250, i.e. no longer a SME, in 2018, 5 years after starting (ref: Pitchbook, 14MAR2021)



Case studies cont.

International cont.:

3) Swedish Cantargia

- Cantargia AB was established in 2009
- Immunotherapy, platform technology
- Dec 20: received 1 billion SEK in investment – started 5 (basket) trials
- Currently 22 employees, decreasing (at most approx. 45)

4) Swiss AAA

- AAA (Advanced Accelerator Applications) founded in Switzerland in 2002
- ...by Stephan Brano, based on an idea at CERN in Genève
- AAA was acquired in 2017 by for 3.9 billion USD
- Radioligand: Lutathera



Case studies cont.

National/Norwegian

1) Algeta

- Founded 1997 by Dr. Roy Larsen & Dr. Øyvind Bruland
- Acquired by Bayer in 2013 for 2.6 billion USD
- ... when reaching 100 employees with offices in Norway and USA
- Radioligand: Xofigo

2) Nordic Nanovector

- Founded in 2009 by Dr. Larsen & Dr. Bruland
- Reached 48 employees (ref: proff.no, 17APR2021)
- Filed for bankruptcy 2022
- Radioligand: Betalutin



Case studies cont.

National/Norwegian:

3) Oncoinvent AS

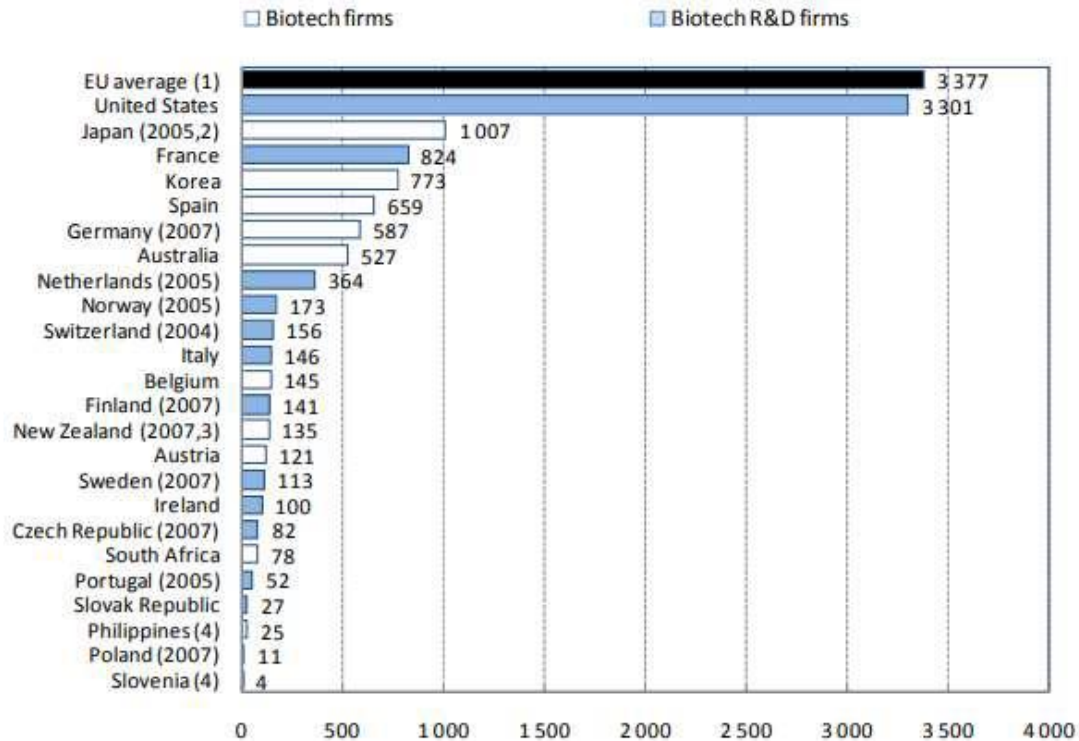
- Established 2010 by Dr. Larsen & Dr. Bruland
- Radioligand: Radpsherin®
- Reached 50+ employees – currently downsizing

4) Vaccibody (now: Nykode Therapeutics)

- Established 2007
- Vaccine, platform technology
- Licencing agreement with Roche/Genentech in 2020
- From 20 to 180 in 3 years (20-23)
- Stock price decreased -87% during 2024 (-60% same day as Roche/Genentech terminated agreement)



Is number of innovations per country predicting success?



Number Biotech companies (ref: OECD, 2009)

- To a certain degree... e.g. USA – the more “shots on the goal, the higher likelihood to hit target”
- Norway is leading over Switzerland (and Sweden) in # biotech firms..
- Current number of biotech/medtech companies in Norway: 450 (ref: Brønnøysundregisteret/national register)
 - ref: prev. prime minister “*biotechnology is the new oil*”
- High number of innovations- creates an environment/”hub” for biotech – companies can support each other (Oslo Science Cluster/Life Science Cluster)
- However- tendency of “Blind leading the deaf” – without mentoring by those who have succeeded, the path to success is unknown...

What financial strategy is leading to success?

- **Public funding**

- **Benefits:** measured by hours used, not milestones reached (gives time for innovations to mature- perfect for early stages)
- **Cons:** lack of adequate progression

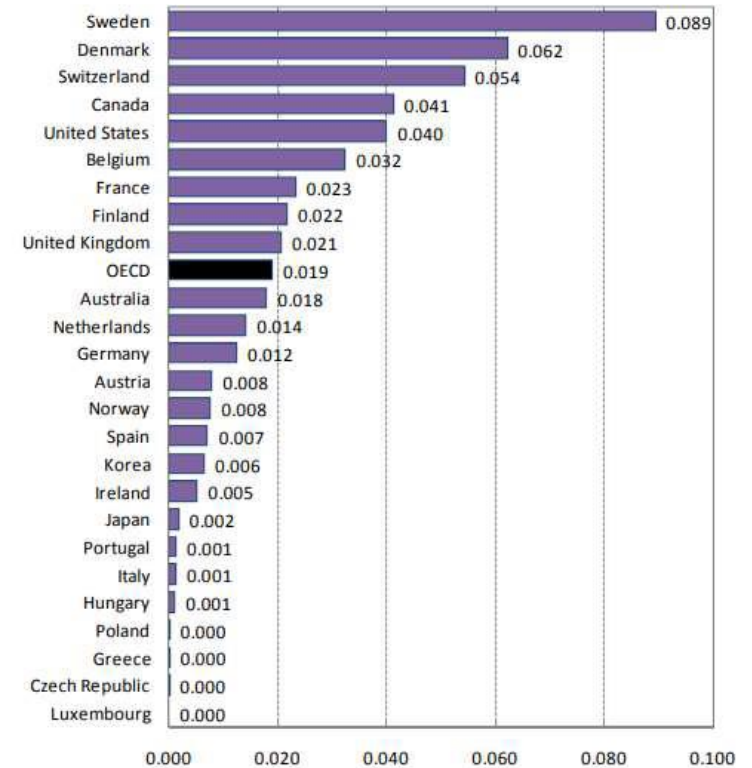
- > Trend of Norwegian biotech leaning on public funding until clinical development, e.g.: Vaccibody – funded by Norwegian Research council 2012, -15, -16, -18 and -19 (ref: Vaccibody, 17APR2021), licensing w/Roche in 20.

- **Venture Capitalists (VCs)/IPOs**

- **Benefits:** More capital involved
- **Cons:** need to report on progress, sometimes unrealistic expectations for time to deliver

- **Licensing agreements (e.g. Algeta/Nykode)**

- **Benefits:** Potential to tap into huge reservoirs of knowledge
- **Cons:** in the hands of someone else (indications chosen as priority, market strategy, impact of termination of agreement by Big Pharma)



Investments within biotech from Venture Capital
(ref: OECD, 2009)

Result: lack of ambition...

Reasons mentioned:

- VC companies and major investors such as the pharmaceutical industry, banks, funds and other "smart money" are [contacted late in the development...](#)
- ..due to that the early-stage company owners (founders and early investors) want to retain ownership.
- I.e. -> it is more important to maintain control of a company than to obtain sufficient financing for the fastest possible access to the market.



Result: lack of ambition...

Reasons mentioned:

- Tax rules for owners / entrepreneurs;
 - no great incentive to continue upscaling a company;
 - In line with: higher proportion of biotech that succeed in countries with different and more advantageous taxation, such as. Switzerland, Sweden and US;
- The choice of owners is based on the same criteria as for financing:
 - it is more important keep ownership than expanding the company further in line with the results achieved



Result: lack of ambition...

Reasons mentioned:

- Lack of initiatives to ensure that management has an ambition to scale up
 - e.g. lack of schemes such as that the CEO has shares in the company, which is noticed to be more common in e.g. Sweden and Spain
 - Options normal in Norway, but entry level sat too high – money never regained...



Result: lack of ambition...

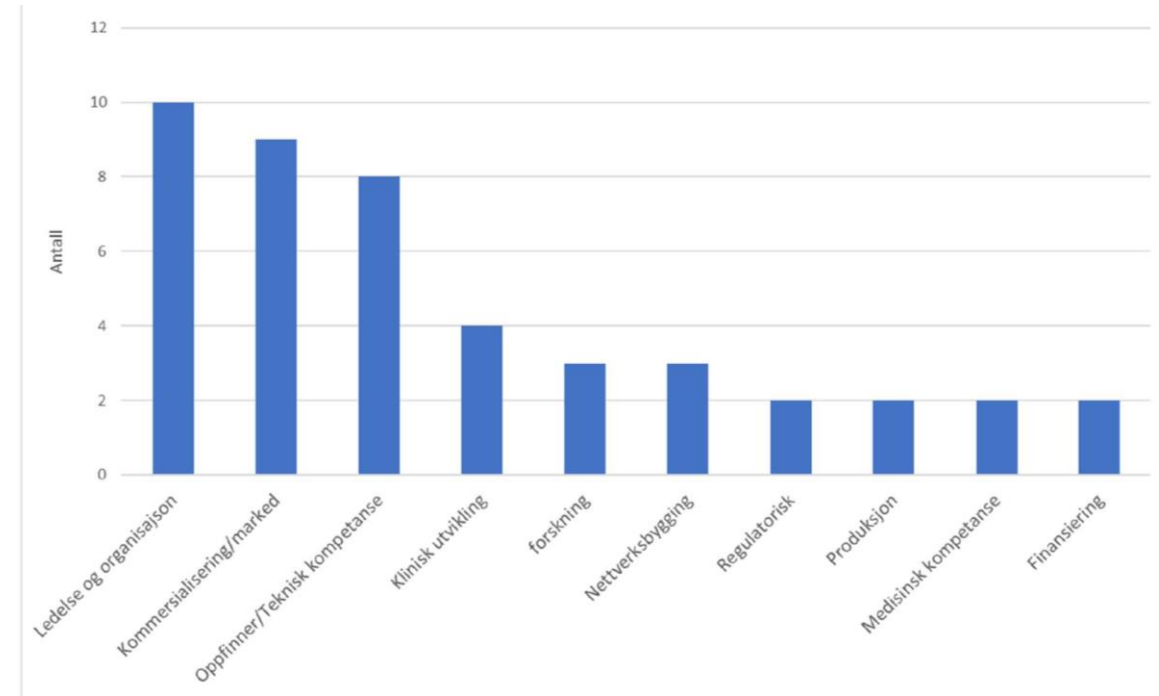
Reasons mentioned:

- A high proportion of government funding in Norway has made it easy for many Norwegian biotechnology companies to *survive*, without increase in the value of the company.
- In the event of excessive state support: similar applies in Norway as for the 1st English biotechnology company, which was state-funded; the organization is more reminiscent of academia than industry.



Differentiator: ability to invest in the right people

- A need of early gap-analysis of resources & knowledge identified
- Tendency of “employing those you know”
- “You don’t know what you don’t know” – difficult to assess the competency needed without mentorship
- Common frequent knowledge gaps were
 - #1 Leadership & organization
 - #2 Marketing/commercial
 - #3 Innovation
 - Clinical Development
 - Regulatory strategy
 - Medical competency/ Competitive Intelligence (prioritization of indications)
 - Financial accountability/strategy



What can Norwegian biotech learn from abroad?

Sweden

- Past successful upscaling: one of the largest Big Pharma Astra (now AstraZeneca) plus Pharmacia.
- Large external validity, i.e. learn from other industries, as Volvo, Saab og Ikea – understanding how to upscale & having the foundation for creating ambition.
- Large amount of aquisition of Swedish biotech: e.g.
 - Aerocrine AB aquired by Circassia in 2015,
 - Medicarb AB aquired by Gore in 2005,
 - Millicore AB aquired by Medela i 2010,
 - Q-Med AB aquired by swiss Galderma plus
 - Therapeutics AB aquired by Alexoin i 2018. (ref: Healthcap, 02MAI2021) etc.
 - In compaison to 2 in Norway same time period...



What can Norwegian biotech learn from abroad?

Switzerland

- *“The ability to work globally and have knowledge of the markets is essential. In the biotech world, you can’t have 10 people doing one task. You need 1 skilled person who is not rooted in a particular country.”* – AAA management
- Attractive salaries attract the highly skilled employees (3-4 times higher in Germany/CH)
- Beneficial taxation for early stage biotech (e.g. production facilities)
- Local hub of knowledge around Novartis & Roche



What can Norwegian biotech learn from abroad?

Switzerland

- AAA: active strategy for licensing agreements- Novartis, GE Healthcare & Eli Lilly
- Good foundation for raising venture capital.
 - 70% of all investments in life sciences in Europe are made in the UK, Germany, Ireland, the Netherlands, France and Switzerland (ref: Wikipedia, 17APR2021).
- The Swiss Biotech Association, founded 1998
 - Represents the interests of the Swiss biotechnology industry.
 - To support its members, the association works to ensure favorable framework conditions and facilitate access to talent, new technology and financial resources (ref: Swiss biotech, 17APR2021).



Common factors for successful companies

- Ability to obtain sufficient funding for optimal progress of clinical development
- Having the adequate knowledge to hire the ambitious management and recruiting a knowledgeable Board of Directors
- Ensuring optimal progress (quickly reaching milestones, with low burn rate)
- Keeping in contact with the innovators – understanding the science
- Collaborate with people/organizations that know how (licensing agreement, mentorship, member of an international cluster)



Summary

- **Ambition from start sets the course for the company!**
- Capital is essential – but ensuring funding is not sufficient to succeed upscaling a biotech!
- High degree of public funding leads to survivors rather than champions (ref. Finnish study)
- Ensuring the right knowledge & resources are on board, early, is essential
- Location of biotech (close to clusters) helps, but is not crucial (e.g. Alvotech)
- Collaboration agreement – beneficial for knowledge sharing, financing – but loss of “ownership”, risk of innovation down-prioritized



Thank you for your attention!