Life sciences research commercialisation—Finnish experience.

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Finland

- Pop: 5.4 million
- GDP $200 Billion
- 66% service
- 31% manufacturing
- OECD education rank 1
- WEF tertiary education rank 2
- 30% tertiary graduates in science
- OECD publication rank 4
- One global MNC
Manufacturing sector declining
Need to build more Finnish multinationals in a global economy
Aging population/Health requirements increasing both nationally and internationally
Opportunity with a strong educational sector
Need to repurpose and reutilise IT/engineering skills

Finland and Life Sciences
Figure 4.14: Nokia in the Finnish business sector R&D in 2006

Nokia conducts nearly half of business R&D in Finland*

<table>
<thead>
<tr>
<th>Country</th>
<th>R&amp;D%</th>
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<tbody>
<tr>
<td>Israel</td>
<td>3.64%</td>
</tr>
<tr>
<td>Sweden</td>
<td>2.79%</td>
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<tr>
<td>Japan</td>
<td>2.62%</td>
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<tr>
<td>Korea</td>
<td>2.49%</td>
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<tr>
<td>Finland</td>
<td>2.46%</td>
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</tbody>
</table>

Finland without Nokia: 1.30%
OECD average: 1.56%

- **Mid-sized firms**
  - (50-249 empl.): 11%
- **Large firms outside top 10**
  - (at least 250 empl.): 20%

**Top 9**
- after Nokia: 13%

Nokia: 47%
Finland has few entrepreneurs in Life Sciences
Only Orion as mid cap life sciences company
Start up money based on ICT
Few life science investors
Little series B/C money

Issues
Experienced academic, TTO, biotech and pharma team

EIF

Finnish partners: TEKES, VTT, Sitra, Veraventures

Review of state of the art

Analysis and proposal

Presentation to government agencies

Response 2009 onwards
Political will and government strategy
Financial resources
Strong science base
Multinational company support
Infrastructure support
Strong skillbase
Experienced leaders
Entrepreneurial and innovative culture

Lifetech success - major
Biotech clusters – proximity to academic medical centers
Experienced technology transfer organisation
Integration of non-health skills
Patent and regulatory framework
Financial incentives (other than direct funding)
Appropriate purpose built premises
Centres of excellence in universities (such as nanotechnology)
Specific educational programmes (Masters/MBAs)

Lifetech success – minor
Company factors
International Consultancy group
Developed incubator team – Finns/expats
International scientific advisory group
Developed initial government strategy
Consolidated swatch files
Doubled investment (Finnish/outside)
Moved 50% funding early stage
Set aside fund for established SMEs
Newer funding methods (superangels, crowdfunding, DST etc.)
Encouraged consolidation of current SMEs
Partnered with Orion, Nycomed.

Response 2009 onwards
Supported University/RI TTOs
Regional (state-funded) TTOs co-ordinated university/polytechnic offices
Increased support for training in translational medicine in medical schools
Developed think tank to identify future competitiveness
Developed user forums (patients/physicians)
‘Ideas’ website
Reform of the University system

Fundamental changes
Government funding
- TEKES
- Finnvera
- SITRA

Private
- Paucity of life science VCs

Start ups get funding

Series B/C?

Traditional
Transitional funding model
Kaufmann foundation report 2012 – high risk
Expertise more important than funding
Commercial success more dependent on experience than R&D
Still worth attempting for society!

Life science industry