Business incubation and start-ups in the ICT sector

Support for new and potential start-up incubators in the field of Information and Communication Technology (ICT)

Irina Nunberger
Definition
Business incubators + their relation with the environment

Goal: Creation of Wealth
(new companies, products + services, innovation, technology transfer, jobs)

Industry

<table>
<thead>
<tr>
<th>Industrial-/Commercial Zone</th>
<th>Business Incubators/Innov. Centres</th>
<th>Science Park</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Park</td>
<td>Technology Park</td>
<td>Research &amp; Development, Higher education institutions (HEIs)</td>
</tr>
</tbody>
</table>

Basis: Regional Potential

Source: Dietrich 1996

Support for new and potential start-up incubators in the field of Information and Communication Technology
Facilities + services, the model

A full-service incubator will offer:

- **Incubator space**: offices or workshops, sometimes labs, available on a flexible, affordable + temporary basis (**easy-in + easy-out**), more & more: pre-incubation rooms

- **Common services**: incl. secretarial support, telephone answering, common reception, mailing facilities, LAN and other office equipment, meeting rooms and (in some cases) **cafeteria/canteen facilities**

- **Business counselling**, namely ‘hands-on’ assistance with regard to business planning, training in management skills, access to accounting, legal-, marketing- + financial expertise, + ad hoc advice

- **Access to finance + specialist advice**: some operate own seed + venture capital funds; access to specialist advice will be provided if an incubator does not have the skills + know-how itself
Factors influencing the role a business incubator can play in a region

- Local support
- Promoters from different sources
- Referring to strengths + weaknesses of the region
- Type of services already available to businesses in the region
- Type of R&D being undertaken
Role of business incubators in enterprise creation + regional development: Limits

- The business incubator is an instrument showing effects in the long run:
  - it is a medium-term venture (with possibly 3-5 years before it shows sustainable success)
  - its impact will be felt locally + 15-20 km surrounding, not nationally + macro-economically

- Initiatives such as business incubators make sense only if
  - the relationship between entrepreneurship + economic development has been acknowledged and supported
  - there is consistency with the overall economic development strategy
Start-ups and SME

- Start-up – starting its entrepreneurial activities (young companies – 1-2 years – newly formed company) or not yet existing

- Small enterprise - < 50 staff, turnover < 10 Mio. EUR (prev. 7 Mio. EUR)

- Micro enterprise - < 10 staff, turnover < 2 Mio. EUR (prev. not existing)

- Medium enterprises < 250 staff, turnover < 50 Mio. EUR (prev. 40 Mio. EUR)

- Definition: European Commission, recommendation 2003

- Basis for comparison (other countries) – number of staff
Start-ups in the ICT sector

- Capital intensive – availability of seed and venture capital
- !!! but 79% of start-ups in Germany finance their growth from own returns (branding at weekend) – conventional web-services for third parties
- Extremely high share of costs regarding to telecommunication services
- Difficulties in market attraction – strong support measures at TBI
- Qualification (rapid development and growth)
- Skilled ICT managers at TBI – ICT projects management
- High reactivity of managers at TBI
History
First business incubator + origin of the term

- First incubation activities in the USA + Western Europe
  - partitioning space, share services by J. Mancuso

- **Batavia Industrial Center (BIC):** first business incubator, founded 1959 (Batavia/ State of N.Y.)

- Still operating (110 tenants, 1000 working places)

- Had much in common with present initiatives in Eastern + Central Europe

Batavia Industrial Centre (N.Y.)
http://www.mancusogroup.com(properties_bic.html)
History
Dissemination of the business incubator concept

European pioneers in business incubators – based on the science park concept + focussing on promoting technology-based start-up companies:

- Heriot-Watt University, Edinburgh (1969), Cambridge University

Followed by projects in

- Australia (1972)
- Asia (1974)
- Scandinavia (1982)
- Germany (1983) \+ BIG Berlin
- Latin America (1986)
- Eastern + Central Europe (1990) at the same time in Africa

Different continents developed quite heterogeneous models
History (cont.)
Development of the concept in US + Western - Europe

Managed Workshops
Enterprise Agencies
Industrial Estates
Science Parks

Business Incubator Concept
Multi-Purpose Incubators
Specialised Incubators
Technology Incubator Centres
Incubator without walls
Sector-specific Incubators (e.g. rural incubators)

Pre-Incubator
New Econ. BI
Virtual BI

Source: UNIDO
Types of business incubators
Different forms of categorisation

- Categorisation acc. to objectives (2 groups):

<table>
<thead>
<tr>
<th>Multi-purpose incubators</th>
<th>Specialised incubators</th>
</tr>
</thead>
<tbody>
<tr>
<td>admitting any type of business satisfying commercial criteria</td>
<td>focussing on particular activities (e.g. technology, sectors)</td>
</tr>
</tbody>
</table>

- Incubators are often integrated part of a park structure

- Virtual incubator: new type of incubator; other than the “traditional incubators”, mostly web-based activity

- New economy incubator, exclusively driven by profit interest of venture capital organisations/ bigger companies

- Pre-Incubator, often part of regular incubators

Source: UNIDO
Placement of business incubators in the scheme of business incubation systems

<table>
<thead>
<tr>
<th>Technology-orientation</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Industrial Estate</td>
<td>Business Park</td>
<td>Science Park</td>
</tr>
<tr>
<td>Medium</td>
<td>Managed Workshop</td>
<td>Enterprise Centre</td>
<td>Innovation Centre</td>
</tr>
<tr>
<td>High</td>
<td>Multi-Purpose Business Incubator</td>
<td>Business &amp; Innovation Centre (BIC)</td>
<td>Technology Business Incubator</td>
</tr>
</tbody>
</table>

Source: UNIDO
Dissemination of the business incubator concept

**Today:**

- approx. 60 associations (international + national) of business + innovation centres or science/technology parks actively promote the development of new companies + regional economic development

- **more than 4,000 incubators worldwide**

In Europe:

- around 1,200 incubators generating 30,000 gross new jobs/year; results being achieved at an average cost per job to public authorities of around 4,000 € net

(Source: European Commission 2002; newer sources, where available)
Dissemination of the business incubator concept in the US:

- around 1,000 incubators which assisted more than 35,000 start-up companies that provided full-time employment for nearly 82,000 workers and generated annual earnings of more than $7 billion

- Publicly supported incubators create jobs at a cost of about $1,100 each, whereas other publicly supported job creation mechanisms commonly cost more than $10,000 per job created.

Dissemination of the business incubator concept in Asian countries:

- Total of 1,152 incubators with 6,177 incubator graduates

<table>
<thead>
<tr>
<th></th>
<th>China</th>
<th>Japan</th>
<th>Korea</th>
<th>Taiwan</th>
<th>Singapore</th>
<th>Hong Kong</th>
<th>India</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-profit</td>
<td>460</td>
<td>159</td>
<td>322</td>
<td>59</td>
<td>42</td>
<td>4</td>
<td>25</td>
<td>1,071</td>
</tr>
<tr>
<td>For-profit</td>
<td>-</td>
<td>44</td>
<td>11</td>
<td>5</td>
<td>13</td>
<td>2</td>
<td>6</td>
<td>81</td>
</tr>
<tr>
<td>Total</td>
<td>460</td>
<td>203</td>
<td>333</td>
<td>64</td>
<td>55</td>
<td>6</td>
<td>31</td>
<td>1,152</td>
</tr>
<tr>
<td>Incub. graduates</td>
<td>3,887</td>
<td>800</td>
<td>1,234</td>
<td>190</td>
<td>-</td>
<td>66</td>
<td>-</td>
<td>6,177</td>
</tr>
</tbody>
</table>

Hong KIM, President, KOBIA (2003): The Improvement of Asian Business Incubation.
## Ratio of business incubators to SMEs in EU states

<table>
<thead>
<tr>
<th>Member State</th>
<th>A – No. Incubators</th>
<th>B – No. SMEs</th>
<th>Ratio A:B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>63</td>
<td>237,000</td>
<td>1 : 3,000</td>
</tr>
<tr>
<td>Belgium</td>
<td>131</td>
<td>594,000</td>
<td>1 : 45,000</td>
</tr>
<tr>
<td>Denmark</td>
<td>7</td>
<td>235,000</td>
<td>1 : 33,000</td>
</tr>
<tr>
<td>France</td>
<td>192</td>
<td>2,166,000</td>
<td>1 : 11,000</td>
</tr>
<tr>
<td>Finland</td>
<td>26</td>
<td>180,000</td>
<td>1 : 7,000</td>
</tr>
<tr>
<td>Germany</td>
<td>600</td>
<td>3,334,000</td>
<td>1 : 6,000</td>
</tr>
<tr>
<td>Greece</td>
<td>7</td>
<td>747,000</td>
<td>1 : 106,000</td>
</tr>
<tr>
<td>Ireland</td>
<td>6</td>
<td>160,000</td>
<td>1 : 26,000</td>
</tr>
<tr>
<td>Italy</td>
<td>45</td>
<td>3,251,000</td>
<td>1 : 72,000</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>2</td>
<td>18,000</td>
<td>1 : 9,000</td>
</tr>
<tr>
<td>Netherlands</td>
<td>6</td>
<td>550,000</td>
<td>1 : 91,000</td>
</tr>
<tr>
<td>Portugal</td>
<td>23</td>
<td>656,000</td>
<td>1 : 28,000</td>
</tr>
<tr>
<td>Sweden</td>
<td>39</td>
<td>243,000</td>
<td>1 : 6,000</td>
</tr>
<tr>
<td>Spain</td>
<td>38</td>
<td>2,349,000</td>
<td>1 : 61,000</td>
</tr>
<tr>
<td>UK</td>
<td>144</td>
<td>3,355,000</td>
<td>1 : 23,000</td>
</tr>
<tr>
<td><strong>EU 15</strong></td>
<td><strong>1.211</strong></td>
<td><strong>18,025,000</strong></td>
<td><strong>1 : 17,000</strong></td>
</tr>
</tbody>
</table>
### Business activities in which European business incubators specialise in

<table>
<thead>
<tr>
<th>Business Activities</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Sales, marketing and distribution</td>
<td>5</td>
<td>0.4</td>
</tr>
<tr>
<td>(2) Business and financial services</td>
<td>8</td>
<td>0.6</td>
</tr>
<tr>
<td>(3) Advanced/ high-tech manufacturing</td>
<td>263</td>
<td>18.6</td>
</tr>
<tr>
<td>(4) Information &amp; communication technologies</td>
<td>258</td>
<td>18.2</td>
</tr>
<tr>
<td>(5) Research &amp; development</td>
<td>173</td>
<td>12.2</td>
</tr>
<tr>
<td>(6) Biotechnology/ Pharmaceuticals</td>
<td>201</td>
<td>14.2</td>
</tr>
<tr>
<td>(7) Knowledge-based industries/ new economy companies</td>
<td>162</td>
<td>11.5</td>
</tr>
<tr>
<td>(8) Other manufacturing activities</td>
<td>86</td>
<td>6.1</td>
</tr>
<tr>
<td>(9) Other service activities</td>
<td>124</td>
<td>8.8</td>
</tr>
<tr>
<td>(10) A combination of some/ all of these activities</td>
<td>134</td>
<td>9.5</td>
</tr>
<tr>
<td><strong>Total (multiple responses possible)</strong></td>
<td><strong>1,414</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

(Source: CSES analysis of DG Enterprise, Incubator database)
Examples of business incubators
Technology business incubator: TZDO – Dortmund Technology Centre

- Opened in 1985 + belongs to the largest technology centres Europe-wide
  - approx. 90 companies, 1.300 work places
  - size: 70.000 sqm, consists of 8 complexes of buildings
  - with complete service-package + established network-links to main agents in the region
  - PPP by local administration, chambers and 7 banks

- Focus on existing technology potentials in science + economy: Micro-systems-technologies, IT, technology-oriented services, electronics, mechanical engineering, logistics, environmental technologies, biomedicine

TZDO
http://www.tzdo.de/

Technology park Dortmund
http://www.technologiepark.de
Examples of business incubators (cont.)
Virtual incubator: nhvbi

Resource portal:
- supporting entrepreneurs, self-employed and small business professionals by connecting

Access and Use:
- Sources of free business counseling
- Sources of business funding
- Virtual tools for business planning, financial analysis, and strategy development
- Expert advice

http://www.nhvbi.buzgate.org
Examples of business incubators (*cont.*)
Software centre Hagenberg, Upper Austria

- Founded 1988, located in the Software park Hagenberg
- Rent able size: 7,200 sqm, enlargement is going on
- Favourable environment due to location near to on-site research institutes, competence centres + polytechnical university
- Austrian-wide network provides start-up assistance to entrepreneurs
- Upper Austria is among the top-networking regions in Europe concerning its **cluster strategies** key issue: distinctive feature is the importance of a **broader regional technology strategy** in which the incubators are integrated
- Each centre focuses on particular technologies + clusters

http://www.softwarepark.co.at
Examples of business incubators (cont.)
Dublin Business Innovation Centre (Dublin BIC)
today also: Guinness Enterprise Centre (GEC)

- Opened in 2001 initiated due to need for enlargement of
  the existing EU-BIC in the **disused premises of a
  former warehouse** from the Guiness Group
- Joint initiative of public + private sector (PPP of six
  partners)
- Focus primarily on: software services oriented
  businesses, hi-tech prototype engineering, e-
  commerce, internet + mobile technology development
- Own seed capital fonds
- Size: 5.000 sqm
- 83 companies (2003)
- Max. tenancy: 33 month

http://www.guinness-enterprisctr.com; http://www.thedigitalhub.com
Examples of business incubators (cont.)
Innopoli incubators at Otaniemi Science Park, Espoo, Finland

- **Innopoli** – Opened in 1991; size: 20,000 sqm; focused on hi-tech start-ups
- **Innopolili** – Completed 2002; specialised in software; size: 19,500 sqm
- **Innolinko** – Pre-incubator at Innopoli II: early stage companies; support professors + students to transform their business ideas (no rental costs)
- Tenants at Innopoli: 140 companies employing > 800 people
- Located in Otaniemi Science Park, one of Europe’s largest commercial science parks, outskirts of Helsinki

Main objective for setting up the incubators: **revitalise the regional economy** severely effected by the decline of traditional industry

‡ Reactive approach
Examples from Asian countries: Japan, Kyoto Research Park - Technology Business Incubator

- Regarded as a **leading business incubator** and international center for high-tech R&D
- Privately-owned research park, established in 1987 as a 100% subsidiary of Osaka Gas. Co., Ltd.,
- Now over **200 tenant companies** and research facilities specializing in fields ranging from life sciences, to business services
- Park complex has developed into a **cluster** of new media and IT companies with over 45% of tenant companies falling into these categories
- Total floor space: 1,076,000ft² [100,000 m²]
- Average monthly rent: US$ 3.50/ft² [US$ 34/m²]
- No. of staff: 95

http://www.krp.co.jp/english/
Examples from Asian countries: Japan, KRP - Technology Business Incubator (cont.)

**Business Services:**
Market research, Business matching, Technology matching, Financial advice, Venture Capital Coordination, Introduction to public subsidies, Bookkeeping, Legal services, Incorporation support, General office equipment, Computer services and/or equipment, Secretarial services

**Other Services:**
Infrastructure includes a Data Center, 1 Gigabit LAN, Labs, Meeting rooms, Rental apartments, Catering facilities, Gymnasium, and Conference facilities that host **over 1000 conferences** per year.
### Key European incubator performance statistics + suggested benchmarks

<table>
<thead>
<tr>
<th>Setting up + operating</th>
<th>Average</th>
<th>Range</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average capital investment cost</td>
<td>€ 3.7 m.</td>
<td>€ 1.5 – 22 m.</td>
<td>na</td>
</tr>
<tr>
<td>Average operating costs</td>
<td>€ 480,000 p.a.</td>
<td>€ 50,000-1.8 mio.</td>
<td>na</td>
</tr>
<tr>
<td>% of revenue from public subsidies</td>
<td>37%</td>
<td>0-100%</td>
<td>25%</td>
</tr>
<tr>
<td>Incubator space</td>
<td>3,200 sqm</td>
<td>90-41,000 sqm</td>
<td>2,000-4,000 sqm</td>
</tr>
<tr>
<td>Number of incubator tenants</td>
<td>27 firms</td>
<td>1-120 firms</td>
<td>20-30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incubator functions</th>
<th>Average</th>
<th>Range</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incubator occupancy rates</td>
<td>85%</td>
<td>9-100%</td>
<td>85%</td>
</tr>
<tr>
<td>Length of tenancy</td>
<td>35 months</td>
<td>6 months – no max.</td>
<td>3 years</td>
</tr>
<tr>
<td>Number of management staff</td>
<td>2.3 managers</td>
<td>1-9 managers</td>
<td>2 managers min.</td>
</tr>
<tr>
<td>Ratio of incubator staff: tenants</td>
<td>1:14</td>
<td>1:2 – 1:64</td>
<td>1:10–1:20</td>
</tr>
<tr>
<td>% of managers’ time advising clients</td>
<td>39%</td>
<td>5% - 80%</td>
<td>50%</td>
</tr>
</tbody>
</table>

Source: Europ. Commission
Support for new and potential start-up incubators in the field of Information and Communication Technology

Operational Environment of a business incubator

- Shareholders
- Stakeholders

Managing Director plus staff

Incubator building

- Incubator building is in the ownership of incubator or other

Specific service companies

Incubating and pre-incubating companies,

Rental - & Service - agreements

Consulting plus daily management

Strategic planning, Monitoring, Controlling
**Organisation, operation + financing (cont.)**

Legal structure – typical management structure (Minimum!)

- **Board/ Council**
- **MD/ CEO**
- **Advisory committee**

- **Experts 1-3**
  - Business planning/ Financing
  - Market
  - Technol. Transfer

- **Manager**
  - Incubator units
  - + common services

- **Manager**
  - Administration + finance

- **Support staff**

- **Tenant businesses/Incubatees**

- **Network of external specialists/ agencies**

*Source: UNIDO*
Organisation, operation + financing (cont.)
Legal structure

- **Typical partners**: local authorities, RDA, business associations, chamber of commerce, chamber of handicraft, banks, HEIs, R&D institutions, private firms

- **Probable nature of relation between promoters + objectives:**
  - **Public**: ų ų job + enterprise creation
  - **University**: ų ų transfer of technologies; commercialisation of academic research
  - **Private**: ų ų real estate investment, financing, social responsibility
Organisation, operation + financing (cont.)
Enterprise-like operation + PPP

- Business incubators: generally legally incorporated as
  - Companies with limited liability (joint stock company, Incorporated or limited liability co.)
  - Association
  - Foundation
- Public Private Partnership (PPP) is most recommendable
- Relatively few business incubators operate as ‘for profit’ organisations; generally impossible in the short + medium-term
- Few incubators also are just part (department) of a University or Science Park holding or governmental organisation
Incubators should be operated and financed as enterprises
With equity + loan capital – as any other industrial estate –
Equity capital can be replaced by a resp. share of public subsidies
Loan capital usually financed by a long-term (medium-term) mortgage

Alternatives for municipalities/ regional governments:
- Donation of buildings or
- Lease at nominal rates or to
- Guarantee rent of a privately owned/ financed building
Organisation, operation + **financing** *(cont.)*

Group 2: costs for getting started + operation

- Costs for personnel, expenditures for energy, maintenance, cleaning, security, marketing, external services etc.

- Bigger problem concerning financing than with group 1

- Different options to finance:
  - Assigning of costs directly to tenants (difficult in starting phase; only possible if incubator is nearly full let + of minimum size (> 3.000 sqm))
  - Charging **lump sums** (fixed monthly amount or related to space)
  - Use of equity capital and/or **subsidies** in start-up phase of the incubator
  - Cross – financing by rents
  - Sale of (consulting) services to **external customers**
  - Project work
Key success factors for technology incubators

- Significant regional demand for an TBI
- Broad support from different stakeholders
- Adequate incubator building (free)
- Secured long-term financing
- Clear entry- and exit criteria
- Actively embedded into a national and international network
- High professional, dedicated and qualified long term staff from different educational background
Thank you for your attention.
Support for new and potential start-up incubators in the field of Information and Communication Technology

Links

- **European Commission/ Promotion of entrepreneurship:**

- **EU Business incubators case studies:**

- **OECD-Leed Programme (Local economic and employment development):**
  [http://www.oecd.org/EN/home/0,,EN-home-545-5-no-no--no,00.html](http://www.oecd.org/EN/home/0,,EN-home-545-5-no-no--no,00.html) (***)

- **WorldBank/ Infodev incubator initiative:**

- **UNIDO/ Business Incubators:**

- **APCTT Asian + Pacific centre for transfer of technology**
  [http://www.apctt.org](http://www.apctt.org)

- **SPICE Science Park and Innovation Centre Experts:**
  [http://www.spicegroup.de/](http://www.spicegroup.de/)

(***) = very comprehensive up-to-date information; recommended
Support for new and potential start-up incubators in the field of Information and Communication Technology

Links (cont.)

- EU Business Incubator Database: [http://www.cordis.lu/incubators/](http://www.cordis.lu/incubators/)
- EBN European Network of Business and Innovation Centres: [http://www.ebn.be/](http://www.ebn.be/)
- AdT German Association of Technology + Incubation Centres: [http://www.adt-online.de/](http://www.adt-online.de/)
- Database on German Centres: [http://www.adt-online.de/zentren/standorte.htm](http://www.adt-online.de/zentren/standorte.htm)
- Links to international incubation associations + organisations: [http://www.infodev.org/incubator/annex1.htm](http://www.infodev.org/incubator/annex1.htm)
Links (cont.)

- Asian Association of Business Incubation AABI: http://www.aabi.info
- Japan Association for New Business Incubation JANBO: http://www.janbo.gr.jp/eng/e_index.html
- China Business Incubator Association
- Best practice in business incubator management: http://www.uark.edu/~genesis/about/bestpracRIPT.pdf
Sources

ossier


Sources (cont.)

