Key Elements of Successful International Networks: Experiences of ETH Zurich

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The 5th UNICA Green Academic Footprint Workshop / FU Berlin
March 2015
ETH Zurich‘s experiences with three international networks for sustainability
ETH Zurich’s experiences with three international networks for sustainability

What worked - what did not work well?

level of activities

intensive
high
medium
low

• ETH Zurich
• Integration of sustainability
• Attributes of the three selected networks
• Key elements for a successful partnership
Variety of People

- > 18’000 students
- > 500 professors
- > 10’000 staff members
- 21 Nobel Laurites
- > 100 nationalities
Research & Education in 16 Departments

- engineering sciences
- architecture
- system-oriented sciences
- mathematics & natural sciences
- management & social sciences
Core Values

- living culture of empowerment
- supporting scientific diversity
- linking research and teaching
- integrating sustainability
Core Values

- living culture of empowerment
- supporting scientific diversity
- linking research and teaching
- integrating sustainability
Sustainability at ETH Zurich

- Priority at the highest level of decision making
- Focus on four strategic fields of activity
Four strategic fields of activity

- research & knowledge transfer
- education
- dialog with society
- sustainable campus
Mandate of ETH Sustainability

- research & knowledge transfer
- education
- increase visibility
- link & catalyze
- dialog with society
- sustainable campus
- take on societal responsibility
Mandate at ETH Zurich – and globally

- research & knowledge transfer
- education
- dialog with society
- sustainable campus

link & catalyze

increase visibility
take on societal responsibility
Our exchange within international networks for sustainability is based on our four strategic fields of activity.
Connected with leading universities around the globe

- International cooperation in research and education
- Partnerships with leading universities
Critical analysis of selected sustainability networks
Critical analysis of selected sustainability networks

4 universities
- MIT
- Tokyo University
- Chalmers University
- ETH Zurich

10 universities
- Australian National University
- National University of Singapore
- Peking University
- University of California, Berkeley
- University of Cambridge
- University of Copenhagen
- University of Oxford
- University of Tokyo
- Yale University

> 70 universities
- > 20 countries
- 25 GULF members
- Steering Committee
  - EPFL Lausanne
  - ETH Zurich
  - Nanyang Technological University
  - National University of Singapore
  - The University of Hong Kong
Common attributes

- Networks are based on a regulatory framework (MoU, charter)
- Network goals are in line with our strategy
- Involvement of highest decision makers (presidential meetings)
Distinctive attributes

- **Funding**: major donor
- **Focus**: research
- **Collaboration**: scientific teams
- **Students**: independent groups
Distinctive attributes

- **Funding**: major donor
- **Focus**: research
- **Collaboration**: scientific teams
- **Students**: independent groups

- **Funding**: equal contribution of members
- **Focus**: research, education and campus
- **Collaboration**: institutional joint working groups
- **Students**: global education initiatives
Distinctive attributes

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- **Students**:

- **Funding**: equal contribution of members
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- **Collaboration**: institutional joint working groups
- **Students**: global education initiatives

- **Funding**: member fee
- **Focus**: campus, education
- **Collaboration**: charter related working groups, conferences
- **Students**: student leadership award
What have we learned from AGS, IARU and ISCN networks?
Lessons learned

- Successful research collaboration: Helpful but not sufficient.
- 4 universities: Below critical mass to ensure consistency
- Singular funding source: High risk, high potential
Lessons learned

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Helpful as pioneer network and to shape an early agenda

Difficult to keep the momentum
Lessons learned

- Collaboration on various level of decision making: Presidents, senior officers, researchers
- Personal contacts: Efficient and effective working groups and projects
- Continuous funding: Long-term planning and independency
Lessons learned

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- Personal contacts: Efficient and effective working groups and projects
- Continuous funding: Long-term planning and independency

Helpful to develop new ideas, convince board members & establish long-term programs

Difficult to magnify ideas
Lessons learned

- Peer to peer learning: Efficient exchange of know-how and best practice
- Award system: Integration of students, staff and faculty
Lessons learned

- Peer to peer learning: Efficient exchange of know-how and best practice
- Award system: Integration of students, staff and faculty

Helpful to spread ideas, share best practice examples and speak with a joint and powerful voice

Difficult to work in long-term programs: ensuring relevant funding is crucial
Summary: Principles and key elements of successful international networks
Two principles for successful sustainability networking

- «Less is more»
- «Choose complementary strategic networks»
Key elements of successful networks

- attract people
  - balanced size
  - personal contacts
- magnify ideas
  - best practice exchange
- create impact
  - commitment of highest decision makers
Thank you for your attention.
Key Elements of successful networks

1. Keep member size small to allow personal contacts
2. Ensure regular working group meetings
3. Provide formats for intensive student exchange

4. Support exchange of best practice
5. Enable collaboration in research, education & campus
6. Share living-lab experiences

7. Guarantee institutional commitment on highest level
8. Request transparent reporting of progress
9. Focus collaborative with one voice
Less is more: Focus on international collaboration
Top university in continental Europe

- # 12: QS Ranking (2014/15)
- # 19: Shanghai Jiao Tong (2014)
## Key statistics

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2010</th>
<th>2013</th>
<th>Percentage women</th>
<th>Percentage international</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Students (Headcount)</strong></td>
<td>10,693</td>
<td>16,343</td>
<td>18,178</td>
<td>31%</td>
<td>37%</td>
</tr>
<tr>
<td>of which Bachelor students</td>
<td>n. a.</td>
<td>7,483</td>
<td>8,444</td>
<td>30%</td>
<td>19%</td>
</tr>
<tr>
<td>of which Master students</td>
<td>n. a.</td>
<td>4,233</td>
<td>4,778</td>
<td>30%</td>
<td>38%</td>
</tr>
<tr>
<td>of which Doctoral students</td>
<td>2,261</td>
<td>3,507</td>
<td>3,889</td>
<td>31%</td>
<td>68%</td>
</tr>
<tr>
<td><strong>Professors (Headcount, includes dual professors)</strong></td>
<td>351</td>
<td>446</td>
<td>497</td>
<td>13%</td>
<td>68%</td>
</tr>
<tr>
<td>Professors (full-time equivalents)</td>
<td>333</td>
<td>413</td>
<td>466</td>
<td>13%</td>
<td>69%</td>
</tr>
<tr>
<td><strong>Personnel (full-time equivalents)</strong></td>
<td>5,464</td>
<td>7,284</td>
<td>7,914</td>
<td>32%</td>
<td>54%</td>
</tr>
<tr>
<td>of which scientific staff</td>
<td>3,390</td>
<td>4,479</td>
<td>4,925</td>
<td>28%</td>
<td>69%</td>
</tr>
<tr>
<td><strong>Expenditure (CHF million)</strong></td>
<td>1,059</td>
<td>1,359</td>
<td>1,512</td>
<td></td>
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</tr>
<tr>
<td>of which federal financial contribution</td>
<td>915</td>
<td>1,082</td>
<td>1,147</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of which third-party funding</td>
<td>144</td>
<td>277</td>
<td>366</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ETH Zurich at a glance

Founded 1855
  - Driving force of industrialisation in Switzerland

ETH Zurich today
  - One of the leading international universities for technology and the natural sciences
  - Place of study, research and employment for approximately 25,000 people from over 100 different countries

Reasons for success:
  - Excellent education
  - Ground-breaking fundamental research
  - Putting new findings into practice