Demand for stimulating innovation

Supply of RE expected to stimulate innovation
How does the BE stimulate innovation in TCs?

What evidence do we have to prove that campuses generate innovation?

1) Thin evidence
2) Less thin evidence
The thin evidence...

39 research sites in 16 industrialised countries → knowledge economy

CAMPUSES → INNOVATION

The less thin evidence...

MITC, USA

HTCE, NL

Flavia Curvelo Magdaniel, Delft University of Technology
(1) concepts

(2) strategies
Conditions (input) for innovation

- Exchange of ideas
- Complementary intellectual background
- Geographical proximity
- Density of social interaction
- Opportunities to meet

Diversity | Innovation as social process

(Curvelo Magdaniel, 2016)
Cities as natural sources of diversity

Jane Jacobs, 1961
Glaeser, 1992
Florida, 2002

... positive environments for innovation.

Influence campus development...

...from peripheral to inner-city locations.
Location patterns…

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equals</td>
<td>4</td>
<td>City is the same as Campus</td>
</tr>
<tr>
<td>Touches</td>
<td>17</td>
<td>City touches Campus</td>
</tr>
<tr>
<td>Overlaps</td>
<td>6</td>
<td>City and campus have common points</td>
</tr>
<tr>
<td>Contains</td>
<td>13</td>
<td>City contains Campus</td>
</tr>
<tr>
<td>Disjoints</td>
<td>7</td>
<td>City shares nothing with Campus</td>
</tr>
</tbody>
</table>

Curvelo Magdaniel, 2016

Influence campus development…

...from mono-functional to multi-functional areas.

Den Heijer, 2011
Campus & City
Physical/functional relations

campus as the city
vs.
campus as a city

( Den Heijer & Curvelo Magdaniel, 2018)

Challenges diversity & location

- Isolation
- Dispersion
- Connectivity
- Attractiveness
Challenges diversity & location

- Affordability
- Traffic congestion
- Long-term sustainability
- Lack of space
- Inclusion

(1) concepts
(2) strategies
1. Assess your campus-city relationships

![Diagram showing types of campus-city relationships: Tech-district: campus in the city model and Tech-park: campus as the city model.](image)

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### Models to frame the campus vision

**Tool for planners in the initiation stage of campus development**

<table>
<thead>
<tr>
<th>CAMPUS MODELS DESCRIPITION</th>
<th>Campus as the city</th>
<th>Tech-district</th>
<th>Tech-park</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecting Cities</td>
<td>Don't overlap</td>
<td>Contains</td>
<td>Disjoins (1) &amp; Touches (2)</td>
</tr>
<tr>
<td>Geographic scale</td>
<td>Region</td>
<td>City</td>
<td></td>
</tr>
<tr>
<td>Types of campus-city relationship</td>
<td>Distance to urban area with sufficient amenities</td>
<td>Over 40 minutes (Public Transport*) *less frequent schedules</td>
<td>Within 25 minutes (Public Transport*) *more frequent schedules</td>
</tr>
<tr>
<td></td>
<td>Travelling distance to International airport</td>
<td>Over 40 minutes (Public Transport*) *less frequent schedules</td>
<td>Within 40 minutes (Public Transport*) *more frequent schedules</td>
</tr>
<tr>
<td>Primary transportation mode</td>
<td>Car-oriented</td>
<td>Car-oriented</td>
<td>Transit-oriented</td>
</tr>
<tr>
<td>Planning frame</td>
<td>Proximity of enough amenities in campus and effective connectivity to cities</td>
<td>Balancing the provision of amenities between the campus and the city</td>
<td></td>
</tr>
<tr>
<td>Key partners</td>
<td>State-Provincial authorities</td>
<td>Municipalities</td>
<td></td>
</tr>
<tr>
<td>Consequences for the city</td>
<td>The concentration of innovative activities can shape the growth of cities and urban development towards those areas.</td>
<td>The concentration of innovative activities can lead to an increase of real estate and rental prices of the urban land in the vicinities of campus.</td>
<td></td>
</tr>
</tbody>
</table>
2. Improve the accessibility to your knowledge networks

Distance to international airport. Data: 2017, Measured in minutes using public transportation available in Google Maps
3. Improve the accessibility to amenities

Distance to city centre. Data: 2017, Measured in minutes using public transportation available in Google Maps.
Mix of functions

Public space (indoor/outdoor)
4. Reflect about size

Density: 155 users/ha on average… (41-390)

Compact areas / shared facilities

MIT Museum, 1944-45
5. Engage your partners

- **Stakeholders’ roles**
  - Founder
  - Manager
  - Promoter

*Key stakeholders (playing 2 to 3 roles)*
- Founder + Manager
- Founder + Promoter
- Manager + Promoter
- Founder + Manager + Promoter

**Share capabilities**

- 1959 Technology Square
- 1968 Kendall Square
- 1983 University Park

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Flavia Curvelo Magdaniel, Delft University of Technology
6. Don’t forget the users

User’s involvement

MIT News

City of Cambridge approves MIT’s zoning petition
Kendall Square to be invigorated; approval gained through collaborative approach
Innovation and social inclusion

Thanks!