

The role of modern urban science parks in developing entrepreneurship and innovation ecosystems

Dr Aline Figlioli
CENTRIM
University of Brighton

Josep Miquel Pique, Aline Figlioli, Francesc Miralles and Jasmina Berbegal-Mirabent



About me

(University) CENTRIM, at the University of Brighton

- Senior /Research Fellow at the Centre for Change, Entrepreneurship and Innovation Management
 - Focus on Open Innovation for SMEs (2018 - ...)
 - The role of innovation habitats in the development of innovation ecosystems
- Post-doctoral researcher (2017 – 2018)

(Government) Goias State/ Brazil

- Head of Innovation (2012/2016)

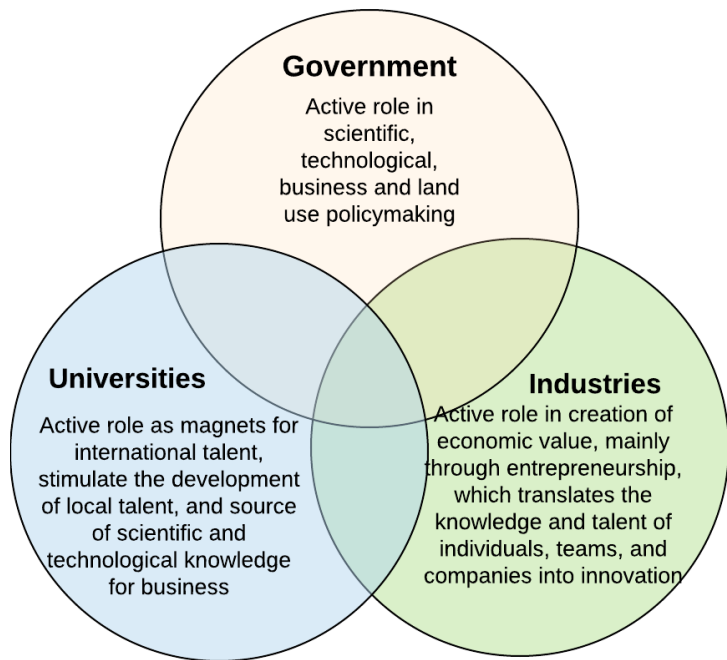
(University/ Government/ Business) SUPERA Tech Park – University of Sao Paulo

- Coordinator of implementation (2009/2011)
- Member of the implementation team (2006/2008)

(University) Lecturer in various subjects since 2003

The role of
modern urban
science parks in
developing
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and innovation
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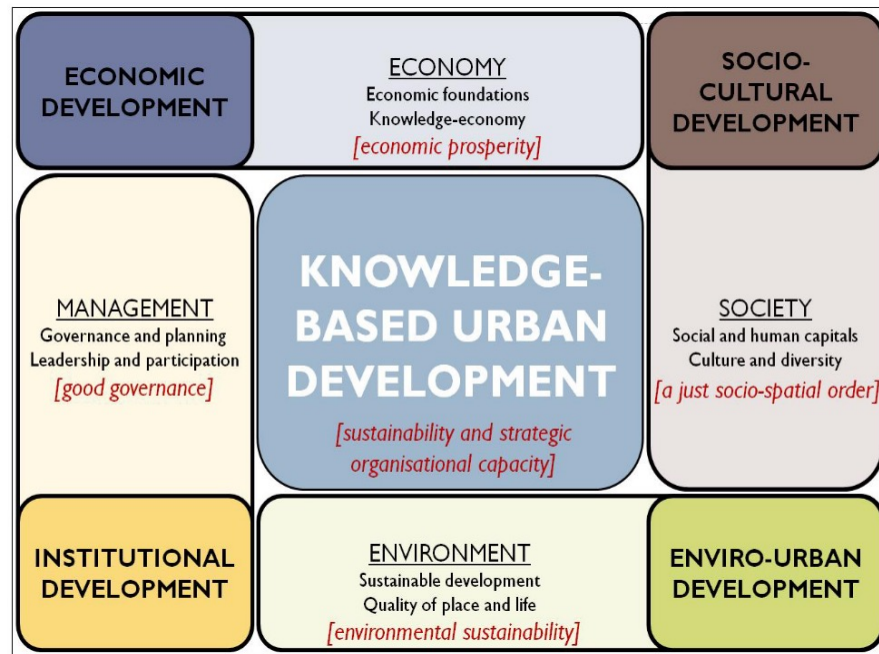
- Aims at exploring the phases of evolution and TH agents participation in modern urban STPs or **areas of innovation (Aoi)**
- AOI:
 - Designed for transforming old districts into dynamic hubs
 - Transforms cities into **vibrant locations** for knowledge generation and diffusion that provide a gravitational force attracting **creative and highly skilled people**
 - **How does it happen?**
- We propose a framework that describes the **role of the triple helix (TH) agents (U, I, G)** in the **urban, economic, social and governance** transformation along the **lifecycle phases** of the AOIs in cities



The TH Model (Etzkowitz and Leydesdorff 2000)

Quadruple Helix
incorporates the viewpoints of civil society

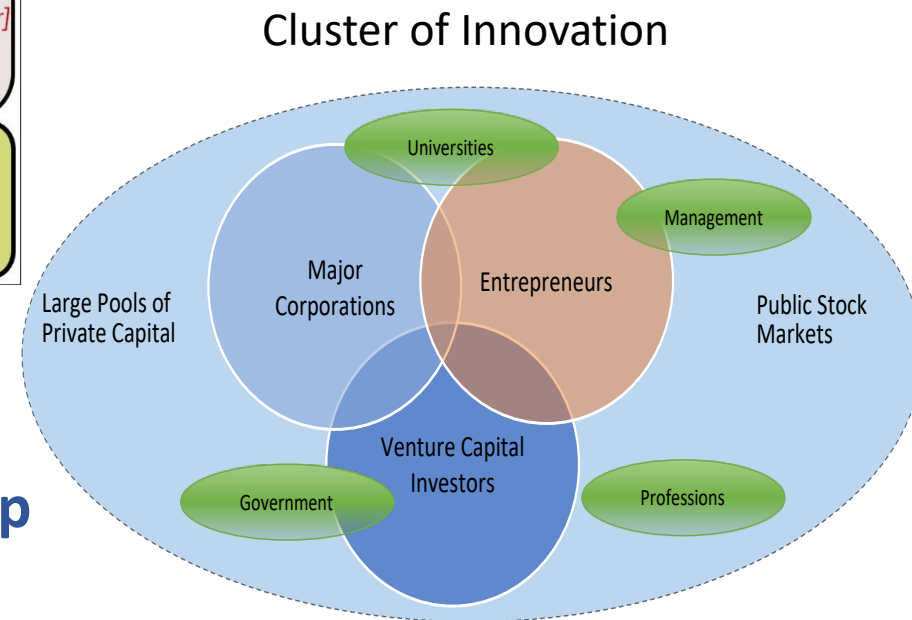
Quintuple Helix
adds the perspective of the natural environment
(Carayannis and Campbell, 2009, 2010, 2011; Carayannis et al., 2012)



Source: Sarimin, M. and Yigitcanlar, T. (2012)

Theoretical framework used to map the evolution of ecosystems

Lifecycle of a new venture
Source: Freeman and Engel (2007)



Source: Engel (2014)

Cases

	22@Barcelona	Porto Digital
Launch year	2000	2000
City	Barcelona	Recife
Law	Modification of the General Metropolitan Plan 22@BCN Activity District (07/2000)	City law 17.244/2006 and further modifications
Goals	Urban regeneration	Urban revitalisation and development
Coverage	198 hectares of former industrial neighbourhood in Poblenou	171 hectares, comprising the old Recife historic neighbourhood and part of three other adjacent neighbourhoods. One unit in Caruaru
Companies	8,223	300
Professionals	93 000	9,000

Dimensions of the KBUD

	22@Barcelona	Porto Digital
Governance	<p>22@Barcelona and Barcelona Activa (Agency for Economic Development)</p> <p>22@Network (TH association)</p> <p>Clusters associations (ICT, media, health, clean energy and design)</p>	<p>NGPD</p> <p>Administrative Council has members from the universities, industry, and the municipal and state government</p>
Social	<p>Inclusive Growth:</p> <p>Digital district – programmes for neighbours</p> <p>Programmes for young talent</p> <p>Social housing policy</p> <p>Amenities (cafeterias, restaurants, beach ...)</p> <p>Programmes for international talent</p>	<p>Amenities (bars, restaurants, museums, shopping mall, coffee shops, bookstores, cinemas, libraries)</p> <p>Artistic presentations and closed to vehicles on Sundays and holidays.</p> <p>Housing is not available in the territory</p>
Economic	<p>Clusters policy</p> <p>Promotion of start-ups and investors</p> <p>Programmes for SMEs</p> <p>Attraction of large companies</p>	<p>Programmes for SME companies</p> <p>Programmes to foster entrepreneurship and innovation</p> <p>Venture capital</p>
Urban	<p>Urban regeneration:</p> <p>22@Barcelona Urban Plan</p> <p>Special Infrastructures Plan</p> <p>22@Urban Lab</p>	<p>Urban revitalisation</p> <p>Renewing buildings and preserve historic patrimony</p> <p>Open urban laboratory</p>

Evolution of 22@Barcelona

	Inception	Launch	Growth	Maturity
Talent and social transformation	Mayor of Barcelona	Managers of the AOI: <i>22@Barcelona Company</i>	Communities and networks. <i>22@Network</i>	Global networks of talent: <i>Barcelona Global</i>
Companies and economic transformation	Involvement of Key institutions: Universities: <i>UPF, UPC & UB</i> Government: <i>Barcelona City Council</i> Associations of Companies: <i>Chamber of Commerce</i>	Tractor Companies: <i>T-Systems, Indra, Mediapro</i> Location of research and technology centres: <i>Leitat</i> <i>Barcelona Digital</i> <i>Barcelona Media</i> <i>BCD</i> Incubation and landing services: <i>Almogavers</i> <i>Business Factory</i> <i>Barcelona Activa</i>	Attraction of companies: <i>Telefonica, Yahoo, Amazon</i> Creation of companies <i>Barcelona Activa</i> Clusterisation. Open innovation Management: <i>IT, media, health, energy, and design</i>	Local social networks <i>22@Network</i> Growth models: <i>StartUpBootCamp</i> Superclusters: <i>BCN-SFO Sisterhood</i> National and International networks of innovation: <i>IASP</i> <i>ENOLL</i> <i>TCI</i>

Evolution of 22@Barcelona

	Inception	Launch	Growth	Maturity
Infrastructures and urban transformation	Planning: <i>22@MPGM Urban Plan</i>	Utilities: (telecom, water, energy, mobility)	Investors Investment: <i>€ 2,500 millions</i>	Territorial growth. Exporting the model
		Consulting: (e.g.: <i>Cushman, CBRE</i>)	Real estate and developers: <i>Castellví, Colonial, Corner Stone</i>	<i>Campus Universitari del Besòs</i>
		Real estate developers: <i>Consorci Zona Franca</i>		Future: <i>Bon Pastor</i>
				Connection with <i>La Sagrera Station</i>

Evolution of Port Digital

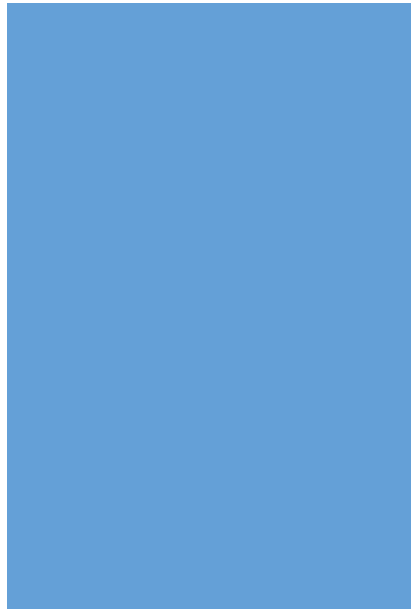
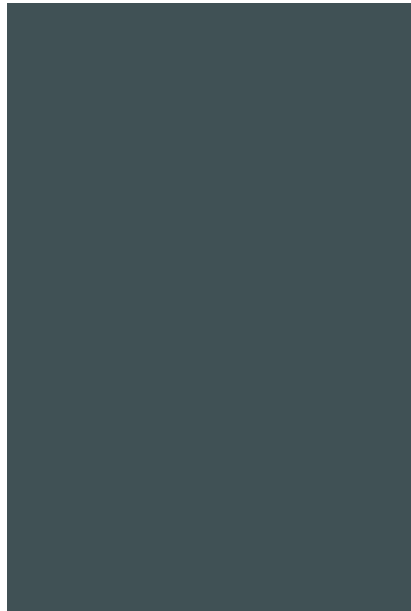
	Inception	Launch	Growth	Maturity
Talent and social transformation	Promoters: <i>CIn – UFPE</i>	Nucleo Gestor do Porto Digital (<i>NGPD</i>) Management Unit	Communities and networks: <i>NGPD</i>	International networks: <i>AmCham</i> <i>ANPROTEC</i> <i>IASP</i> <i>TH Association</i> Local social networks: <i>ASSESPRO</i> <i>Softex Recife</i> <i>Incubamet</i> <i>ITEP</i> <i>Manguezal</i>
Companies and economic transformation	Involvement of key institutions: Universities: <i>Federal</i> <i>University of Pernambuco</i> Government: <i>Pernambuco Government</i> Associations of companies: <i>Softex Recife</i>	Tractor companies: <i>CESAR</i> <i>Secretariat of Science, Technology and Environment (SECTMA)</i> Location of research and technology centres: <i>CIn – UFPE and Institute for Innovation in Informatics (I3)</i> Incubation and landing services. <i>CESAR</i> <i>CAIS do Porto Incubator</i> <i>InterAmerican Development Bank</i>	Attraction of companies: <i>Accenture</i> <i>Avanade</i> <i>FIAT Chrysler Automobiles – FCA</i> <i>IBM</i> <i>Uber</i> Creation of companies: <i>CESAR</i> Clusterisation. Open innovation management: <i>ICT and creative economy</i>	Growth models: <i>INCOBRA</i> Decentralisation: <i>Armazém da Criatividade de Caruaru</i> National and international networks of innovation: <i>IASP</i> <i>ANPROTEC</i> <i>Urban technologies and future of cities</i>

Evolution of Porto Digital

	Inception	Launch	Growth	Maturity
Infrastructures and urban transformation	City Law 17.244/2006 and further modifications	Utilities, Consulting Real estate developers	Investors, Real estate developers	Territorial growth, Exporting the model

The 5 Helices

	22@Barcelona	Porto Digital
University	Universitat Pompeu Fabra (UPF), Universitat Politècnica de Catalunya (UPC) and Universitat de Barcelona (UB)	CESAR CIn – UFPE and SENAI
Government	Barcelona City Council (22@Barcelona and Barcelona Activa) and Government of Catalonia	Pernambuco State Government and Recife City Council
Industry	Focus: ICT, media, health, clean energy, and design	Focus: ICT, creative economy, urban technologies and future of cities
Society	Participation with Barcelona Urban Lab	Participation of the citizens in the Open Urban Lab
Environment	Regulation and plan on clean infrastructures: waste management, energy efficiency, water uses and public mobility	No explicit regulation regarding environmental sustainability



Lifecycle phases

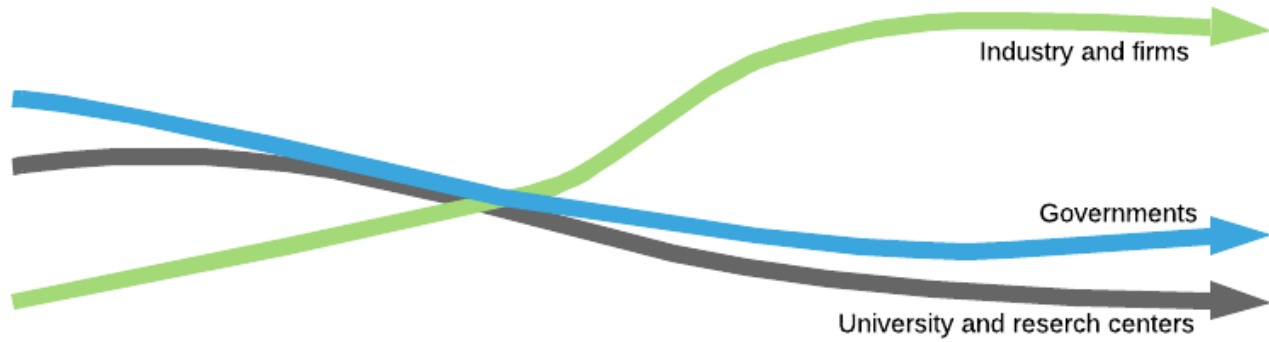
Inception

Launching

Growth

Maturity

Triple Helix Configuration



Key role

Government and Universities

Adding tractor companies

Assignment of leadership in business associations and clusters

Explicit leadership from companies, talent and related networks

Talent and social transformation

Promoters

Managers of Aol

Communities and networks

International networks
Local social networks

Companies and economic transformation

Involvement of key Institutions: Universities, Government and Associations of Companies

Tractor Companies. Location of research and technology centres. Incubation and landing services.

Attraction of companies. Creation of companies Clusterization. Open innovation Management.

Growth models. Decentralization and internationalisation. Superclusters. Megaregions. Network of networks of research and innovation.

Infrastructures and urban transformation

Planning

Utilities. Consulting. Real estate. Developers.

Investors. Real estate. Developers.

Territorial growth. Exporting the model.

Conclusions

- Universities, government and industry are found to evolve (and reshape their role, accordingly, adopting new functions) at the different stages of the evolution of the modern urban science parks (from inception to maturity).
- New hybrid organisations (incubators, accelerators, innovation labs, etc) are needed at each stage to keep the ecosystems growing and anticipate potential demands for the forthcoming stages
- Process of transformation of degraded areas into knowledge and innovation districts should consider projects that involve **changes in all the dimensions**

Conclusions and Recommendations

- Policies promoted by the AOI should focus on:
 - **Engagement of local people** in the innovation district combined with the **creation and attraction of talent**;
 - **Promotion of COI** to incentivise the creation of **knowledge-based start-ups and their connection with investors and corporates**;
 - **Urban planning, smart infrastructures, and incentives for real estate developers**; and
 - Sponsoring a **one stop shop for start-ups**, investors and corporates.
- The participation of the **various TH agents** should be fostered since the first stage
- Although the intensity of participation of each agent changes with the consolidation of the initiative, **governments are expected to build the basis** to allow companies, and their respective networks, to assume a more prominent role in the later stages of AOIs
- For this to happen, **professional management should be in place**

Thank you!



University of Brighton

CENTRIM

Dr Aline Figlioli

A.Figlioli@brighton.ac.uk

Senior Research Fellow

CENTRIM - University of Brighton / UK