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*Some lessons from Science and Technology Parks experience in  
developing and emerging countries*

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## My own experience ...

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- Among the founders of Montpellier Technopole (FR), one of the first French STP and one of the most successful
  - Vice president, then President IASP (1986-92) and expert for the European Commission (Science Parks Consultancy Scheme, Regional Innovation Strategies)
  - Consulting jobs in developing / emerging countries:
    - *1990s:*
      - Venezuela: National Plan for Technology Parks + 4 specific feasibility studies
      - Morocco: technopole of Casablanca Mohammed V Airport
      - Brazil: Missions to Rio Grande do Sul (Porto Alegre)
      - Uruguay: preparatory study
      - Turkey: METU Technology Park (Ankara)
      - Chile: PCT Universidad de Chile (Valle Lo Aguirre)
      - Panamá: technology park Ciudad del Saber
    - *2000s:*
      - Tunisia: technopoles of Sousse and Monastir
    - *Latest: Republic of Congo – technopoles of Brazzaville and Pointe-Noire (2012-13)*
  - **1<sup>st</sup> and major lesson from my experience: there is no ‘model’, but a portfolio of examples to use and build upon ...**
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## A pragmatic and imperfect definition and approach ...

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- The UNCTAD Secretariat paper gives an excellent, detailed and thorough definition of STPs + typology + linkage with other concepts such as clusters
  - I will start from a simplified, ‘rough’, and – no doubt – imperfect definition:
    - *“STPs are organisations which offer real estate with good quality standards to innovative businesses (and possibly R&D labs) while providing high added value services in the field of innovation, competitiveness and internationalisation”*
  - Like the Latin god Janus, they have two faces: bricks and mortars / services:
    - *Without services , there is no STP, but business or industrial parks*
    - *Without real estate, no park of course ...*
  - From an historical point of view, two ‘sites’ had influenced the creation of many STPs:
    - *Silicon Valley is the perfectly emblematic model, mainly **bottom-up** as a more or less ‘spontaneous’ concentration of high-tech firms*
    - *Sophia-Antipolis in France (close to Nice), completely **top-down** (and as such rather typically Gallic), while pretending, when initiated, to create a French Silicon Valley*
  - This opposition is of high interest since it illustrates a key feature of STPs: **a mix of public and private partners**
    - *However bottom-up, Silicon Valley benefited from government-funded research programmes*
    - *However top-down, Sophia-Antipolis had to attract businesses*
  - **STPs all over the world have to find the proper balance between the bottom-up and the top-down approaches according to the local context**
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## STPs in developing / emerging countries: starting from the basics (1)

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- David Rowe (cited in UNCTAD paper) about STPs in the EU:
    - *“Academic studies of STPs across regions and nations have shown that there is a link between the apparent success of the STPs and the strength and diversity of the local economy where they are founded. In general stronger and more diverse economies with good local innovation systems tend to produce STPs that are generally regarded as amongst the more successful”*
  - Surely true, but these conditions are not necessarily fulfilled – in some cases far from it – in developing countries, and sometimes emerging countries/regions (counter-example: China in the 1990s with its large academic and research resources, and its fast growing industry; and India)
  - Question: must we consider it does not make sense to set up STPs in such countries / regions ? Or do we consider that the challenge can be addressed ?
  - My answer to the latter question is yes if ... This presentation is about the “if ...”
  - All the more important since the ‘STP phenomenon’ has diffused in Latin America, Southeast Asia, South Africa, ... from the 1990s, in Africa from the 2000s.
  - Calls from governments, int’l organisations, etc.: raise the issue of the ‘quality’ of Terms of Reference (ToRs)
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## STPs in developing / emerging countries: starting from the basics (2)

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- Motivations for creating a STP:
  - *Awareness among politicians, academics, business leaders that globalisation implies that no country can rely only on low labour costs, but has to promote competitiveness and innovation (and competitiveness through innovation) – and/or that economic diversification is necessary, with higher added value products and services – which means supporting endogenous innovation*
  - *Attracting FDI through making available to foreign businesses industrial real estate to int'l quality standards*
  - *Favouring cross-fertilisation of foreign and 'advanced' local businesses located in a STP, leading to tech transfer and diffusion of a culture of innovation*
  - *But there may also be questionable motivations ... from pretending to have an innovation policy with a real estate development named STP while it is not ... to making fake copies of foreign 'models' or pet projects for the self-promotion of some local or national leader*

## STPs in developing / emerging countries: starting from the basics (3)

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- **Primary objectives generally displayed** and affirmed in feasibility studies:
  - *Favouring tech transfer and innovation to the benefit of companies which will locate in STP premises*
  - *Supporting the creation of new innovative businesses (start-ups, spin-offs)*
  - *Attracting ‘advanced’ / high-tech foreign companies thus encouraging FDI*
- Fulfilling these objectives requires (see above my simplified definition ...):
  - *Facilities: serviced land + possibly buildings with quality standards higher than those prevailing on the local real estate ‘market’ (favouring re-location of already established companies) – incubator facilities for start-ups/spin-offs*
  - *Services : all the more important since scientific & technological resources, as well as consultancy, are limited – **Question: how to organise and fund them?***
- **Public money available for funding RTDI policies and support to industry competitiveness is in general scarce** – easier to find money for funding real estate (return on investment seems ‘clear’) than for services (return less visible and more long-term)

## Lessons learnt from three case studies (1)

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- **Case studies:**
    - *Tecnoparque Internacional de Panamá (TIP) – operational:*
      - 2<sup>nd</sup> half of the 1990s, on part of the Canal Zone (land, barracks and housing) given back to the Republic of Panamá by the USA , feasibility study funded by EC cooperation
      - Context: little R&D and weak academic environment, weakness of public policies, private money available; project managed by the private Foundation “City of Knowledge”; GDP/cap. 19000 \$
    - *Technopole of Sousse (Tunisia) – operational:*
      - Mid-2000s, a piece of the national “Plan Technopoles” of the Tunisian government, feasibility study funded by the Tunisian government (+EU cooperation supporting SME competitiveness and innovation policies)
      - Context: sub-contracting industries (automotive, electronics) to be supported; part of a rather comprehensive public policy; GDP/cap. 11000 \$
    - *Projects of technopoles of Brazzaville and Pointe-Noire (Republic of Congo):*
      - 2013-14, feasibility studies funded by the WB (Brazzaville) and UNESCO (Pointe-Noire)
      - Context: strategic objectives = diversification of the national economic fabric (domination of oil production) and development of the private sector, incoming of the optical fibre (ICT boom expected); lack of inter-ministerial coordination (and donors coordination) and weakness of public policies; GDP/cap. 5900 \$
  - For all: some sort of ‘free’ zone, with various incentives (taxes, customs, labour law, immigration, ...)
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## Lessons learnt from three case studies (2)

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1. The project has to be consistent with the global development strategy of the country (not a ‘pet’ project), in particular for what regards innovation and competitiveness
  - *agreeing on a shared definition of innovation: high-tech or including ‘endogenous’ innovation*
2. It must benefit from government support at the highest level, not only when it is launched, but on the mid-term (continuity)
  - *with appropriate inter-ministerial coordination – and donors’ coordination – since innovation support actions are complex and require a strong coordination of different public policies (higher education, research, industry and SMEs, international trade, taxation, etc.)*
3. Top-down approach has to be balanced with bottom-up
  - *businesses constitute the end-targets – STPs have to mix public support with mobilisation of business organisations, NGOs (e.g. the ones supporting entrepreneurship), academia, finance (e.g. equity and VC funds), etc.*
4. The context has to be taken into account (there is no ‘ideal model’)
  - *e.g.: weakness of the local R&D resources, weakness – or inexistence – when the project is launched of a real innovation support policy (Congo, Panamá)*
  - *consistency with the other government projects and policies in related fields (e.g. in Congo: optical fibre, ‘free zones’)*
  - *consistency with the local economic fabric, business structure: e.g. sub-contracting from EU companies in Tunisia*
  - *build on local specificities, e.g. investment funds from the diaspora in Congo, wealthy élites in Panamá*

## Lessons learnt from three case studies (3)

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5. Agreeing on concrete and pragmatic objectives when carrying out the feasibility study (beyond general ones) in relation to the context and size of the project – not being over-ambitious
    - *e.g.: number of companies (+ jobs) locating or relocating in the STP, number of start-ups supported, number of contracts with R&D organisations, patents and licensing, new products and services put on the market ...*
    - *these objectives will be translated into indicators aimed at building up a scoreboard and facilitating periodic evaluation of results and impacts*
  6. Organising services supporting tech transfer and innovation
    - *find the proper partners (bottom up approach) in order to build a network of organisations providing such services (universities, R&D institutions, consultancies, lawyers, ...) and creating / strengthening an innovation ecosystem - hopefully, this will kick start an innovation support policy when there is none (or practically none)*
  7. Real estate benefits funding support services
    - *as there is often little public money available for supporting innovation, the services, the innovation support network should be funded by real estate benefits – so, much attention has to be paid to real estate (and not for satisfying the ego of politicians!): good location, quality standards, market positioning ... (a 'free zone' may prove useful, but is not sufficient in the mid-term)*
  8. Having a dedicated managing team (seems common sense, but ...)
    - *from the very beginning, i.e. feasibility study = identify the right persons, train them*
    - *if necessary, keeping some more months the team in charge of the feasibility study in order to guarantee a smooth transition*
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## Lessons learnt from three case studies – Conclusion

|  | <b>TIP (Panamá)</b>  | <b>Technopole of Sousse (Tunisia)</b>   | <b><i>Technopoles of Brazzaville and Pointe-Noire (Congo)</i></b> |
|--|--|---|---|
| Consensus on a definition of innovation        | Not explicit, but high tech                                | Incremental   | Not yet clear, but preferably ‘endogenous’                        |
| High-level governmental support                | Yes, but weak public policies                              | Yes, rather well defined public policies  | Not clear, lack of inter-ministerial coordination                 |
| Top-down / bottom-up                           | Private sector and civil society stronger than government  | More public, but the creation of a cluster beside the STP has probably strengthened the bottom-up dimension | Weak private sector and civil society                             |
| Context taken into account                     | Yes  | Yes   | Yes in the feasibility study                                      |
| Concrete and pragmatic objectives / indicators | More or less ...   | More or less ...  | To be checked   |
| From services to innovation ecosystem          | TIP has contributed positively (but no real public policy) | EU cooperation has backed public policies   | To be built (hopefully)   |
| Real estate benefits funding services          | Yes  | ?   | It should because public money is very scarce                     |
| Dedicated team                                 | Yes with a leader  | Yes with a leader   | Not for the moment  |

## Thank you

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technopolis |group| has offices in Amsterdam, Brighton, Brussels, Frankfurt/Main, Paris, Stockholm, Tallinn and Vienna

Recent projects :

- European Regional Innovation Monitoring Platform <https://ec.europa.eu/growth/tools-databases/regional-innovation-monitor/>
  - European Cluster Observatory <http://www.clusterobservatory.eu/index.html>
  - Evaluation of the French 'Poles of Competitiveness' (innovation-driven clusters) [http://competitivite.gouv.fr/documents/commun/Politique\\_des\\_poles/2eme\\_phase\\_2009-2011/evaluation/Synth%C3%A8se-rapport-evaluation-2012.pdf](http://competitivite.gouv.fr/documents/commun/Politique_des_poles/2eme_phase_2009-2011/evaluation/Synth%C3%A8se-rapport-evaluation-2012.pdf)
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