Living Labs as Leverage for a Sustainable Transition Overview of student research in the Caribbean context

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- Promising and agreed counteraction
- Objective

Core

- Identification: Theoretical background on SNM & Living Labs
- Contribution: Interpretation for the building sector and for HEIs for Architecture & Planning
- Illustration: UA student Living Labs in the Caribbean context

Conclusion

- Wrap up
- Outlook?

Introduction – Observation

- Urge for a sustainable development, for sustainable building > **TRANSITION**
- Despite agreed urgency: tangible actions are limited, successes are rather rare
 - 1. Sustainability = 'wicked', 'complex', 'messy', ...
 - High amount of requirements (and ever increasing)
 - Size and multi-disciplinarity of design teams expand
 - > Infinite possibilities, solutions, sources of information
 - Limited time frame of design processes (DPs)
 - Costs of not succeeding is high (for project team members, users, ...)
 - 2. Building industry = socio-technical system
 - Consists of many elements, of parts and wholes
 - High resistance to radical change & innovation

1 + 2 Challenge for required sustainable transition

(aggravated by the often immature nature of the aspect of sustainability)

Introduction – Counteraction & Objective

- Strategic Niche Management (SNM) operationalized by Living Labs
 - Focuses on the development of inexistent proto-markets by the creation of real-life projects as test-beds, for learning and enhancing the rate of diffusion of new innovation, by exploring and identifying processes, objectives and possibilities
- Objective
 - Contribute to a sustainable transition
 - Provide incentives to close the gab between 'rhetoric' and 'reality'
 - Highlight the relevance and importance of Living Labs as 'short cut' towards a sustainable transition
 - Identify and promote student design projects as Living Labs
 - Provide incentives for the creation of more real-life projects, of niches for radical innovations for sustainability

Core – Theoretical background of SNM & Living Labs

Increasing structuration of activities in local practices



Time

Core – Theoretical background of SNM & Living Labs

- ... Responds to the fact that the market, as a system, might not be ready for some innovations
 - > as established technologies are embedded in existing sectors (blind to, or even unwilling for radical change as this may lead to failure

• ... Advocates

> "the creation, development and controlled break-down of test-beds (experiments, demonstration projects) for promising new technologies and concepts with the aim of learning about the desirability (for example in terms of sustainable development) and enhancing the rate of diffusion of the new technology" (Weber, Hoogma, Elzen and Schot, 1999)

• ... Posits

> successful sustainable innovations originate from real-world experiments or demonstrations (Markard and Truffer, 2008)

> achieved innovations have an uncertain future: stay local, disappear, or provide seeds of potentially structural changes > accept it

Core – Theoretical background of SNM & Living Labs

Success factors of Innovation:

- Relative advantage (hightlight)
- Visibility (marketing)
- Trialability (test)
- Complexity (low)
- Compatibility (with market, social aspects, ...)

(Rogers, 2003)

Success factors of Living Labs

- Making expectations explicit
- Involvement of a supportive, aligned social network
- Including learning processes (first-order & second-order)

(Kemp et al, 1998)

Core – Interpretation for the building sector

Demonstration projects

- > Top-down approach (deliberately set up and financed by public authorities)
- Exemplary and innovative character in more or less normal situation
- Introducing and testing new policy, new requirements

"a project in which innovative technologies are being used in more or less normal situations to foster the development and diffusion in the regular market of these technologies" (Buijs and Silvester, 1996)

Best-Practice projects

- Bottum-up approach (actors initiate without public budget)
- Outcomes are praised and recognized as 'exemplary'

(Janssens, 2015)

Experiences:

Successful projects for energy efficient buildings have accelerated the introduction of new energy technologies in Sweden with 3 to 5 years. (The Swedish Energy Research Commission, 1987)

Core – Interpretation for HEIs for Architecture & Planning

• Design studio work

- > On real-life assignments
- In view of a specific quest (e.g. sustainability)
- Isolated social space (students, lectures, client, advisors, specialists, ...)
- Output: Sketches, plans, 3D visualizations, scale models and texts

Used for communication, dissemination, provide incentives for discussion and follow-up adjustments or (research) projects



Core – Interpretation for HEIs for Architecture & Planning

- Design & Build Projects / Live Projects
 - Traditional design studio work supplemented with a built component
 - Possibly result in Best-Practice projects
 - Ever increasing model for education
 - Output: + tangible prototypes, (part of) buildings / sites

Skills center Nairobi - TUM, Germany



Core – UA student Living Labs in the Caribbean context

Framework

- City link Antwerp Paramaribo
- VLIR South Initiative
- Edulink

Model adopted

Increasing level of knowledge & insights



- Conducted Living Labs
 - Schools



- Conducted Living Labs
 - Schools
 - > Healthcare







- Conducted Living Labs
 - > Schools
 - > Healthcare
 - Campuses
 - ≻ ...







Core – UA student Living Labs in the Caribbean context

.... start of 'a' niche







Core – UA student Living Labs in the Caribbean context

.... start of 'a' niche

Analysis ...





Core – UA student Living Labs in the Caribbean context

.... start of 'a' niche



Universiteit

Antwerper

Core – UA student Living Labs in the Caribbean context

.... start of 'a' niche

Optimization ...











Conclusion – Wrap up

SNM and Living Labs sees structural change as the result of upscaling niches, under specific windows of opportunities

> decentralized innovation >< coordinated innovation</p>

>< overall consensus on a wished future

> seed planting without guarantees >< certainties

Promising for sustainable transition

- > articulates (new) policy (make it tangible and coherent)
- > stimulates needed radical change
- > Adjustments in socio-technical regimes

Interpretation for building industry:

- > Demonstration projects
- > Best-Practice projects

Conclusion – Outlook?

Interpretation for HEIs in Architecture and Planning:

- > Research & Design studio work
- > Research, Design & Build Projects / Live Projects

- > successful outcomes, appreciated by academics, practitioners and policy
- > increased the awareness of possibilities (e.g. campuses within Edulink)
- > maybe/hopefully contributed to a sustainable transition (as short cut)

Increa	sing level of knowle	edge & insights	
Identification / exploration	Field study	Research by design	Design by design
Literature Case study First insights	Date collection Focus groeps Interviews Workshops	Generation by Trial & error process	Design in view of a specific (test) case Principles guidelines
	RESEARCH		DESIGN

Conclusion – Outlook?

Lessons learned for future work

- > principles/success factors of innovation, SNM, Living Labs should be added to increase the impact of student Living Labs:
 - add/expand the social network (+diversification of network)
 - include a follow up

(evaluation of outcomes, uptake/diffusion of outcomes)

> even increased potentials if a build component could be added - set up of a real Living Lab



Thank you for your attention!

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