

Implementing Product/Service-Systems in Urban Environments: Toward the Co-Evolution of the Universal and Contingent

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In recent years the analytical focus of sustainable design and innovation has broadened to include not only products but also innovative configurations of products, services and systems. While such product/service-systems (PSS) are not inherently sustainable, they may usefully form part of the mix of innovations required to move society toward more sustainable futures. PSS are therefore now the subject of growing attention in literature. PSS concepts have been defined, typologies set out and design methodologies formulated. However, there is growing concern that PSS have not been widely implemented in either intermediate or final markets; case study research has been undertaken to explore this phenomenon. Yet how PSS are implemented in broader contexts, such as urban environments has received little attention. Since PSS such as car and bike sharing schemes are frequently implemented in cities, this is both surprising and troubling.

In the light of the current lack of attention paid to broader PSS implementations, this contribution offers a reparative engagement. We present a case study of Copenhagen's new city bike scheme - a use-orientated PSS. We draw on data collected using multiple methods from multiple sources, including among others, the actor network associated with this PSS. Key insights from the case study suggest that PSS implementation:

- is both complex and contingent and cannot be easily isolated from urban development processes.
- is subject to and considerably affected by PSS solutions developed in other times and places (e.g. cities) as well as PSS concepts, typologies and design methods.
- involves various actor constituencies engaged in the (re)imagining and (re)shaping of urban futures.

In conclusion, we highlight a tension in PSS research. On the one hand, our contribution emphasises the complex and contingent nature of PSS implementation. On the other, PSS research emphasises the need for concepts, typologies and methods, which may be universally applied. In their purest form these two views respectively suggest:

- 1) extreme localism - the need to reinvent the PSS wheel every time and place.
- 2) context (time and place) has little impact on PSS development.

Rather than resolve this tension we argue that a productive way forward lies in the co-evolution of universal PSS concepts, typologies and methods and the contingent processes and contexts through and in which they are implemented. Seen this way, PSS implementation can be understood as a form of praxis in which the meaning of PSS and pathways to implementation are made by groups of actors in particular situations. Universal concepts are needed to prompt and assist in such endeavours. However, narratives of the origin of PSS concepts, their typologies and their methods, are needed to enable actors involved to determine their applicability.