

Doctor of Media and Communication Studies

Barriers to the Emergence and Scale-up of Business Ecosystems in Highly Regulated Industries under the Influence of Digitalization: The Case of P2P Electricity Trading.

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Abstract:

While digitalization is often associated with the emergence of decentralized ecosystems and Peer-to-Peer (P2P) business models, some industries appear to lag behind in this development. This thesis delves into the impediments hindering the emergence and expansion of P2P electricity trading, serving as an illustrative case of an innovative strategy for optimizing supply within a technologically dynamic yet tightly regulated market. Despite the promising potential of P2P electricity trading to facilitate the energy transition, its widespread acceptance within the industry remains elusive. In addressing this paradox, the thesis systematically identifies key actors, delineates roles, elucidates value generation and capturing paradigms, and scrutinizes scenarios pertaining to P2P trading. Leveraging business model, value network, and ecosystem concepts, the study examines the potential of P2P markets at the actors' level, emphasizing resource sharing, while also exploring ecosystem-level barriers to emergence and scale-up. This investigation into P2P electricity trading unveils ecosystem characteristics that have been largely overlooked in the existing literature on business ecosystems within innovation studies and communication sciences. The investigation uncovers intricate challenges associated with (a) the perishability of goods or services, (b) the government's role, (c) the centrality of governance, and (d) digital data. Moreover, the research theorizes on the concept of 'Flexibility of Use' and suggests that it could offer a valuable perspective for integrating user influence into competition strategy, especially in circumstances marked by high product perishability, significant demand sensitivity, or notable supply sensitivity. These conditions have the potential to shape the competitive

strategies of rival firms or ecosystems. As a result, the thesis puts forth a framework for the evolution of ecosystems within highly regulated industries, influenced by digitalization. It also presents management and policy implications that are pertinent to the development of ecosystems in these sectors.