

Rethinking business models as sociotechnical intersections in data-economy that should be designed participatively

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ABSTRACT

We claim that business models and IT development are reciprocally intertwined, especially in the field of data-economy. To ensure socially acceptable IT systems we frame business models as sociotechnical intersections that should be designed participatively. Contributing to the workshop 'Participatory and socially responsible technology development' we want to discuss the application of participatory design methods and approaches on the development of data-economical business models.

KEYWORDS

participatory design, business models, data economy

1 DIGITAL SERVICES IN DATA ECONOMY

Today, increasing amounts of diverse social processes like self-constitution, finding your next partner, formation of groups, knowledge generation, and transformation of work occur on online platforms. Likewise, those social processes are embedded into techniques of digital data processing and economic exploitation contexts, framed by the term 'data-economy' [7]. This leads to the development of data-economical digital services that are embossed by creating user interfaces and algorithmic experiences designed to influence user's decision-making abilities and nudge interactions that make users disclose more personal data than they would normally [8]. The immersive omnipresence of these services is associated with negative effects concerning privacy matters, in the shape of "Dark Privacy Patterns", a term coined by Bösch et al. [3]: '(...) malicious patterns that intentionally weaken or exploit the privacy of users, often by making them disclose personal data or consent against their real interest'. Examples include forced registrations to platforms, using bad default settings, and hidden legalese stipulations [3]. Thus, not only privacy is at stake but also the design of user-friendly, transparent, and fair digital services. Claiming that the IT design of most digital services in data-economy is led by business models which are built on selling and processing data of their users without giving them a piece of the pie [5], the question arises if designing socially acceptable alternatives in data economy has to start with the business model in mind? The BMBF-project

FAIRDIENTSTE¹, to which all three contributors are related, is researching different ways of fairly distributing value in the course of business model design of data-economic services, using sociological and (business) informatics approaches to explore and relate them. We base our theoretical considerations of this position paper on the term of co-valuation to stress the interpretation of data-economic valuation processes as co-creation processes distilled into a business model. We draw on Participatory Design (PD) as the methodological framework to ensure the creation of business models developed with all stakeholders in mind. Thus, we propose to rethink business models as sociotechnical intersections in data-economy that should be designed participatively.

2 BUSINESS MODELS AS SOCIOTECHNICAL INTERSECTIONS

While there is no one way to define a business model, the concept is widely understood as holistically describing how firms "do business" [14] from a systemic perspective. As a distinct unit of analysis, the business model links a firm's strategies, processes, and information technologies [1]. In practice, the most widely used framework to describe a firm's business model is the business model canvas [9]. The canvas allows to map a firm's business model in nine categories, structuring the value a business offers (value propositions), how the value is created (key partners, key activities, key resources), how it is delivered and for whom (customer segments, customer relationships, channels), and how the businesses finances work (cost structures, revenue streams). In digital business, firms' value creation and value capture activities expand beyond the individual firm. Firms are intertwined with numerous other parties, such as customers, suppliers, key partners, and other stakeholders, blurring organizational boundaries. The locus of value creation has shifted to the system of interconnected actors tied together in efforts of value co-creation [2, 12]. The resulting complex constellations of actors call for a sociotechnical view of business models [10]. Especially data-economic business models, which are defined by the digital data's crucial importance for the functioning of the firm's core business [6], rely on a multitude of actors generating, exchanging, and leveraging data to improve existing products and services or to offer new innovative ones [11]. Thereby, data generated by users and other actors play a vital role in enabling personalized offerings and detecting aggregated use patterns, making them co-creators of value. Together with the widely known ramifications of digital services' immersive omnipresence in society, these value co-creation interactions put the social aspects of data-economic business models into the spotlight. PD approaches for designing

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technical artifacts built on digital technologies which enable the data-driven value co-creation between diverse actors and, thereby, create the grounds for digital innovations [13], are increasingly gaining attention. However, PD approaches have thus far not addressed the business models in which the technical artifacts are embedded. Since business models, particularly in the data economy, connect numerous diverse actors with different perspectives and values to co-create value, we argue that the PD approach should not be limited to the technical component of business models. Instead, we propose to expand PD approaches to the social component of developing and designing business models. Consequently, we call for an understanding of business models as sociotechnical intersections and the application of PD for designing business models. This approach ensures that the goals of incorporating actors' diverse range of values and perspectives into the technical artifact are embedded in business models that equally embody the values and perspectives of the actors tied together in their value co-creation efforts.

3 DISCUSSING PARTICIPATORY DESIGN FOR DATA-ECONOMICAL BUSINESS MODELS

To ensure that users of digital services can take part in participatory design processes of data-economical business models we anticipate that certain prerequisites need to be met. Therefore, we want to discuss opportunities, conditions as well as challenges and opposing positions of our proposed rethinking approach. Buur [4] for example, points out “a contradiction in terms” that may arise when designing business models participatively: In participatory design, the designers usually side with the “exploited”, but would they also side with the “exploiting” [4]? Eventually, this is one counterargument to be discussed in the workshop. Additionally, we seek feedback and suggestions on the following questions and pre-considerations from the workshop participants:

- How can business models serve as materializations of the PD process and ensure a collaborative process towards socially responsible business models?
- How can different stakeholders participate in the design of business models in practice and how can firms ensure heterogeneous participation?
- Is there a necessity for new tools to make the design of business models accessible for non-economists to work with them participatively?

Eventually, workshop participants are invited to discuss how to apply methods and tools known from former project experiences and transfer them from designing technical artifacts to designing business models in data-economy.

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