

## Market for Personal Data and New Business Models

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In examining business and economic models of the future, the role of the individual is an important element, as the empowered and digitally connected individual is playing a key role in modern economy (Chourabi et al., 2012; Pura0 et al.,2013). Firms and individuals are generally viewed in the literature as distinct from each other or at most are superficially connected as part of the whole economic system. However, recent research suggests that use of digital technologies allows the individual to become an engaged ‘provider’ and ‘co-creator’ within a business and economic system (e.g., Ng, 2013). As more and more disruptive technologies are being adopted, our explicit understanding of the interactions between citizens and firms increases, which could, in its turn, lead to new business and economic models. Personal data is both a digital asset to the individual and a potential commodity for trade. At the heart of the issue is the technology that collects it, because without the technology, the data would not exist. This has three critical implications. First, since the supply of data is dependent on the technology, the ownership of the data often remains with the technology owner as in the case of supermarkets owning our purchasing data. Since such data is also potentially useful for individuals, a bargaining solution through a market could exist, leading to new economic and business models (see, e.g., RCUK Hub of All Things, or HAT, project at <http://hubofallthings.com>). Second, the structure, representation, storage and, therefore, the potential applicability of the data is dependent on the technology, i.e., the nature of how the data is collected affects how it could be used. Since such data often sits in vertical industry domains, e.g., finance data, health data, there is a need to transform the data before it can be useful for individual decision making. This transformation of vertical data could generate new innovations that can potentially “nudge” individuals towards healthier, happier and more effective living, through informed decision making and intelligent prompting. Finally, the privacy, confidentiality, security and trust issues of such data, before and after transformation, can impact individual behaviours surrounding the data and therefore the data’s commercial potential. Research into personal data is complex because of the interactions between different domains of technology and social sciences that include economics (behavioural versus rational choice), cybersecurity, information systems, markets/business models and the ‘Internet-of-Things’ (IoT). Yet, understanding more about the personal data economy and its relationship to individual and societal choices and outcomes has never been more important. With the onset of technological devices through the IoT, individuals and households produce large amounts of data. Yet, there is very little understanding of (a) whether and to what extent individuals and households use and interact with these data; (b) what are the most effective mechanisms for data ownership and data security; (c) how these data could be used more efficiently to ensure businesses better serve consumer wants and needs. We propose a framework in which consumers and producers (providers of goods and services) exchange information about consumer preferences to create better (more customised) products. We specify equilibrium conditions when it is more efficient for the market to be organised as consumer outsourcing personal data collection to producers and other third parties as well as conditions when it is more efficient for consumers and producers to trade personal data directly. We discuss implications of both possibilities on new business models.

## References

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