

Management Summary

Sensing machines connected home appliances, and wearable sensor technology that networks over the Internet and allows for process automation, predictive analysis, and artificially intelligent environments able to interact and communicate over a smart phone without constraints of time and distance are nearly ready for possible mass adoption.

In fact, the capabilities of the Internet of Things and big data are promising disruptive change. However, although for the smart home sector expects big growth, the transparency regarding the developing market, as well as the awareness regarding the disruptive technologies, still raise concerns, such as feelings of a lack of individual control of how data is used and shared by different data holders. Determining questions to be answered for the adoption and sustainability of the Internet of Things and big data in general, and the smart home in particular, will be what the benefits for its users will be and how risks will be optimized.

Literature was studied to identify the different potentially smart home related Internet of Things and big data players' strategies and a SWOT analysis was performed as a basis for the informed development of a sustainable smart home data governance setup. Survey research was used to analyze possible relationships between smart home adoption likelihood, opportunity, and risk perception regarding the increased collection and use of smart home data and perceived need for regulation. The survey respondents were also presented a set of smart home provisions strategic pillars, one of which was "citizen participating organizational form". The relative importance of the strategic pillars was analyzed and reasons for the rating of citizen participation as a strategic element were explored.

Overall, this project has to be understood as a situational analysis of the smart home value system and the development of a strategic planning framework that addresses the needs for smart home data governance. The body of knowledge elaborated in this work is incorporated into the smart home sustainability framework in terms of (1) smart home drivers, such as commercialization and human integration; (2) benefit realization and risk optimization; (3) stakeholders, namely corporations, government, citizens, and communities; and (4) strategic options such as top-down and bottom-up governance.

The main practical contribution of this master thesis lies in logically deriving, structuring, and formulating actionable tactics to reach the governance goal of creating economically and socially sustainable value for citizens, i.e., smart home users, in an evolving data value system. The tactics involve business, technology, and innovation perspectives. For example, a peer-to-peer smart home data-trading platform is planned. Societal and cultural points of view are considered as well. The proposed tactics conclude each with an analysis how they could be attained in order to put the smart home vision and the tactics feasibility into context.

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