

Management science in the era of smart consumer products: challenges and research perspectives
Herbert Dawid¹. In this paper, we outline the technical potential and future trends of smart consumer products, discuss economic challenges in four scopes, namely, preference-based new product development, market analysis, supply chain design, and industry development, and, in particular, we highlight research perspectives for management science in this promising field. In the following, smart products are defined as consumer products that are equipped with intelligence-generating technologies including (i) sensors and/or actuation, either to gather data from the environment or to use the data to change the environment, (ii) computing power for data analysis, and (iii) optional interfaces to exchange information with their environment. Moreover, we have witnessed successful market entries of smart products such as Nest's thermostats, Oral-B's Bluetooth toothbrush, Big Ass ceiling fans with SenseME technology, or Philips' Hue lighting. They show how traditional and well-established consumer products can be transformed into smart products by integrating intelligence-generating technologies that equip them with abilities of environment sensing, data processing, information sharing, reasoning, and/or actuation. This article is published with open access at Springerlink.com Abstract Smart products not only provide novel functionalities, but also may establish new business models, markets, or distribution channels, strengthen relationships with consumers, and/or add smart remote services.²⁵, 33615 Bielefeld, Germany ³ Ambient Intelligence Group, Cluster of Excellence – Cognitive Interaction Technology (CITEC), Bielefeld University, Inspiration 1, 33619 Bielefeld, Germany ⁴ Chair of Management Accounting and Operations Management, Bielefeld University, Universitaetsstr. While many technical obstacles of such products have already been overcome, the broad market dissemination of smart products still poses some vital managerial challenges for decision makers. Research perspectives

B Christian Stummer christian.stummer@uni-bielefeld.de ¹ Chair of Economic Theory and Computational Economics, Bielefeld University, Universitaetsstr. ²⁵, 33615 Bielefeld, Germany ¹²³ H. Dawid et al. ¹ Introduction Smart homes, smart cars, or smart cities have been part of popular visions of the future for several decades.²⁵, 33615 Bielefeld, Germany ² Chair of Marketing, Bielefeld University, . Universitaetsstr. Reinhold Decker² . Hermann Jahnke⁴