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The State of Business Internet of Things Adoption: Literature Review

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Emerging smart technologies offers considerable advantages to businesses by means of any smart devices. IoT technologies drive the capabilities of identifying products, smooth communication, and provide real-time information, all adding value to trades and businesses (Oghazi et al., 2018; Sarac et al., 2010). Studying IoT adoption at a business level is a rather new-fangled and intricate subject. Most studies on IoT adoption are limited to the individual level. Among the studies on IoT applications in industry and businesses, few comprehensive literature reviews specifically investigated the factors affecting the adoption of such devices. This paper aims: (1) to identify enablers of the IoT adoption, (2) to cluster identified enablers into logistic and non-logistic industrial sectors, and (3) to propose new avenues for future studies.

This paper reviewed empirical studies about the IoT adoption in the business level. We used several databases to cover all possible relevant studies and applied a two-stage approach (Webster & Watson, 2002) to identify studies. In the first step, we conducted a systematic search in online databases such as Web of Science, IEEE Explore, and Science Direct. We used keywords of "IoT" or "The Internet of Things," "Business," and "Adoption" to find papers published within 2010 to 2021. The initial search returned over 200 articles. The second step conducted a manual search to identify the quantitative studies in IS journals focusing on the adoption of IoT devices for business purposes. We performed a qualitative analysis of 32 quantitative research articles, extracted the adoption factors from the research models. The validity of results was checked by comparing two researchers' subjective outcomes, which was consistent. Each researcher reviewed the body of the studies along with the research models and recorded all constructs associated with the adoption or intention to adopt IoT technologies. After the first round of manual coding, the researchers assessed the coding in conjunction and finalized the list of factors.

The current study is still in the early stages of progression. Still, it presents the foundations for an ongoing research paper, aiming to provide an in-depth understanding of contributing factors associated with IoT adoption in the business context. According to the preliminary results of analysis, key constructs in IoT adoption are Governance (IT Governance), Firm's Digital Capability, Operational Readiness, IT infrastructure and Collaboration, and Innovative and Absorptive Capacities. One of the key findings is the "Technology and Business Alignment." This study provides insights for practitioners regarding the importance of technology and business process alignment within the phenomena of IoT as a disruptive technology. Specifically, we highlight the role of enterprise architecture as an essential basis for enterprise IoT implementation along with business alignment. Further research is required to investigate the alignment effect on value creation and whether the digital capability reinforcement with IoT will result in competitive advantages.

References

Webster, J., & Watson, R. T. (2002). Analyzing the Past to Prepare for the Future: Writing a Literature Review. *MIS Quarterly*. https://doi.org/10.1.1.104.6570