

The Impact of Smart Systems on Post Covid Business Recovery

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Key words: Collaborative Systems, IoT, Factory of the Future, Smart Technologies

Introduction

Technologies such as the Internet of Things (IoT), Cloud Computing (CC) and Smart Systems (SS) are being considered as important investments for companies, to help drive new levels of performance in a post Covid environment. SS allow for improved business performance in allowing faster information flows and more rapid and accurate decision making to take place. This is achieved primarily through the speed of digital systems but also due to the nature of the technology in being able to connect many different business elements together between often disparate entities. This paper analyses the importance of Smart Systems and their related technologies with a focus on how they operate within supply chains. The work will focus on the nature of Smart Systems and analyses the business performance improvements that can be made through SS via improved communication between humans and devices in order to improve information sharing, decision making and accuracy of information. This research adopts a case study approach. The study shows the extent to which supply chain integration and collaboration is improved through the application of Smart Systems and how this can drive new levels of performance in post Covid environments.

Relevant background

The development of SS has brought a new era of information use through which businesses are able to collect, analyse and measure their efficiency and develop specific solutions in order to continually improve their business performance. Whilst the benefits and uses of cyber-connected systems offered by SS are many, evidence suggests that companies are still not convinced of their applicability to their organisations and frequently do not understand SS and confuse the use of advanced manufacturing technology as being the same as using SS, often failing to identify that it is the cyber/internet connectivity that is the essential issue in developing and implementing SS (Schroder, 2017), (Abazi 2016). Companies must distribute knowledge faster before competitors acquire the same knowledge and therefore, smaller companies may need to focus on the development and effective implementation of SS through strengthening their internet operations as well as driving their technological expertise (Abazi, 2016).

A recent study into the adoption of SS in smaller businesses (Interreg, 2016) identifies that the attitudes of companies towards the implementation of such technologies and systems is highly variable ranging from significant levels of adoption of technologies through to relatively low levels of implementation amongst companies. Impediments to the adoption of such technologies in companies include risks around cyber security, and the lack of suitable training and competency development amongst their workforce (Schroder, 2015). Further research also reports that most companies do not have a comprehensive strategy towards the systematic development and adoption of such technologies. A study by Moeuf (2018) also identified that whilst SS technologies and systems can and are being adopted by SMEs, these

technologies are not well mastered thus leading to incorrect adoption or, an under-exploitation of implementation.

Research approach

The paper employs a case study approach that shows the research undertaken from secondary research sources and some interviews with a range of retail and manufacturing companies.

Discussion

Real-time information, and SS support the flexibility and transparency of the supply chain and can shorten the length of the supply chain (Tao & Qi, 2019). Thus, it raises company productivity and reduces costs. This research has found that in the secondary data analysis phase, very few articles emphasise the creation of a shorter supply chains as one of the major reasons for using SS. For example, according to one of the McKinsey surveys, the first three expectations of SS are; fewer lost sales, lower inventory and, lower operational costs. After that companies expect optimised networks (Alicke et al., 2017). In this context, the positive impact of SS investment on the profitability and efficiency not only of the company but of the entire supply chain can be expressed as an increase in customer satisfaction. Customer satisfaction is closely related to the speed and accuracy of the delivery of goods, and lower product cost. SS applications significantly improve the business efficiency and productivity (Shoukry et al, 2019).

6. Conclusion

This paper highlights the importance of SS within supply chain and identifies that companies can increase their performance through adoption of SS. Most literature reviewed highlighted that companies have identified improved cooperation with their suppliers which led to a more effective supply chain. The result of SS adoption is the creation of shortened supply chains

due to the enhanced information sharing and improved response to demand. The evidence suggests that SS is a notable driver for productivity while it also has some challenges (data security etc). The implementation of SS is a complex solution, which influences not only the relevant e-procurement processes but also the business model. Effective leadership is critical to manage the change as a result of SS implementation. Consequently, the research study will provide valuable evidence on the importance and benefits of SS while highlighting practical issues in its adoption and application.

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