

Industry 4.0 And The Internationalisation Of Small Businesses

Initial Post One

According to Kovaite et al. (2019, p. 192), the Fourth Industrial Revolution (Industry 4.0) encompasses technological aspects that expand the international reach of Small and Medium-Sized Enterprises (SMEs), enabling them to sell and advertise their products beyond geographical limitations. SMEs typically face several challenges related to market availability, as a considerable percentage of consumers are accustomed to big businesses due to their long-standing prominence (Prassan et al., 2019, p. 4). Due to this, SMEs must employ more strategies to improve and expand their market, as well as to establish and maintain public trust in their services and products beyond international boundaries. According to Zahoor et al. (2025, p. 428), they have employed more strategies to mitigate the effects they face from larger businesses. The Internet of Things (IoT) and Artificial Intelligence (AI) are excellent examples of technologies that SMEs can leverage in their business, courtesy of Industry 4.0. According to Suciu et al. (2021, p. 3), IoT plays a significant role in that SMEs can link their physical devices across different locations using software, thereby enabling connectivity and expanding their consumer base. As Gabelaia (2024, p. 2) explains, AI aids in aspects such as designing and advertising products for SMEs to enhance and expand their international reputation.

Although Industry 4.0 is a significant game-changer for SMEs, it does not come without its challenges and associated risks. Real-world examples of such are technological and operational risks. An excellent example is the 2017 ransomware attack (WannaCry), which severely affected operations and almost permanently halted the operations of some businesses. According to Prevezianou (2024, pp. 38-39), even though such organisations may employ precautions in their

usual operations, such attacks highlight the challenges of implementing aspects of Industry 4.0 in SMEs and other businesses in general.

Similarly, operational risks are another challenge that SMEs and large businesses may face. An example is the severe production delays that Tesla's Fremont Factory faced due to the need to repossess most of its cars in response to constant customer complaints. While Tesla has been producing good vehicles for their consumers (Naor, 2019, p. 124), the implementation of more technology to automate its machines has resulted in some cars being returned by clients for repair. Therefore, Industry 4.0 has replaced the traditional ways that SMEs used to expand their business beyond borders.

References

- Gabelaia, I., 2024. The Impact of Artificial Intelligence in Shaping Advertising Strategies for SMEs: Systematic Literature Review and Qualitative Research. *J. Mark. Res. Case Studies*, 2024, p.209492. <https://ibimapublishing.com/articles/JMRCS/2024/209492/>
- Kovaitė, K., Šūmakaris, P., Stankevičienė, J. and Korsakienė, R., 2019. Industry 4.0 as the driving force of SME internationalisation: a case of Lithuania. <https://sciendo.com/pdf/10.2478/eb-2019-0014>
- Naor, M., 2022. Tesla's circular economy strategy to recycle, reduce, reuse, repurpose and recover batteries. In *Recycling Strategy and Challenges Associated with Waste Management Towards Sustaining the World*. London, UK: IntechOpen. <https://books.google.com/books?hl=en&lr=&id=AerjEAAQBAJ&oi=fnd&pg=PA123&dq=Tesla+Fremont+Factory+and+operational+delays&ots=FcD14ykkE5&sig= 8LZslqj-Ausr5gHAOdTldYj5a8>

Prasanna, R.P.I.R., Jayasundara, J.M.S.B., Naradda Gamage, S.K., Ekanayake, E.M.S.,

Rajapakshe, P.S.K. and Abeyrathne, G.A.K.N.J., 2019. Sustainability of SMEs in the competition: A systemic review on technological challenges and SME performance.

Journal of Open Innovation: Technology, Market, and Complexity, 5(4), p.100.

<https://doi.org/10.3390/joitmc5040100>

Prevezianou, M.F., 2021. WannaCry as a creeping crisis. In Understanding the creeping crisis (pp. 37-50). Cham: Springer International Publishing.

<https://library.oapen.org/bitstream/handle/20.500.12657/48682/9783030706920.pdf#page=50>

Suciu, A.D., Tudor, A.I.M., Chițu, I.B., Dovleac, L. and Brătucu, G., 2021. IoT technologies as instruments for SMEs' innovation and sustainable growth. Sustainability, 13(11), p.6357.

<https://doi.org/10.3390/su13116357>

Zahoor, N., Al-Tabbaa, O., Khan, Z. and Wood, G., 2020. Collaboration and internationalisation of SMEs: Insights and recommendations from a systematic review. International Journal of Management Reviews, 22(4), pp.427-456. <https://doi.org/10.1111/ijmr.12238>

Peer Posts

Peer Response One

In any academic or professional work, research is vital as it enables one to see beyond the instructions of the assignment. For example, Aisha did excellent work by mentioning the nine pillars of Industry 4.0 before proceeding with the primary instructions, which clarified the meaning of Industry 4.0 and its examples. Moreover, I was impressed by the depth of research she conducted, as they provided various examples of Industry 4.0 and explained them in an eloquent manner that anyone can understand.

Peer Response Two

The most impressive aspect of this Sultan's initial post is how direct and to the point they were. As mentioned earlier, the instructions first required the definition of Industry 4.0, followed by examples, which he accurately provided. He arranged his work according to the instructions, which made it easy to review and respond to his post. In addition to that, I noticed that Sultan shared one of the real-life risks (the WannaCry ransomware attack), which goes to show how major a risk and setback it was, and how the business itself and other SMEs may learn from it to prevent such cyberattacks as they continue to expand. For these reasons, I was impressed by the initial response and even learned more than I had planned from their choice of supporting evidence for this assignment.

Summary Post

Internationalisation may be the biggest dream of all SMEs and existing businesses. The reason is that sometimes, consumers within particular geographical boundaries may not appreciate the nature of goods and services offered by SMEs, which may be contrary to the desires of other consumers in other geographical areas. Such factors are why Industry 4.0 and all the benefits it brings serve as a significant game-changer for SMEs trying to grow their brand. Not only does Industry 4.0 provide this opportunity, but it also offers SMEs various options to choose from, depending on the nature of the goods and services they provide to their consumers. That implies that the revolutions mainly came into existence to ensure that SMEs can also participate in large market competitions alongside major businesses. Additionally, Industry 4.0 recognises the role SMEs play in society, as they occupy a significant percentage of businesses globally, presenting a life-changing opportunity that encourages the start and development of more such companies.

In relation to the peers' posts, one can gain insight into the other side of Industry 4.0, which involves the risks it poses to many SMEs. Because the aspects of Industry 4.0 are not without their challenges, an intense review of the Risk Management Process (RMP) is non-negotiable. Such a process allows business to assess their potential risks and possibilities to counter challenges that may arise. SMEs may conduct such reviews through qualitative and quantitative assessments, which would then create a clear picture of how to deal with future predicaments. That is because, while the potential of SMEs may appear promising to them, the threats and vulnerabilities they may face are equally significant, posing a substantial challenge. SMEs should be able to establish their businesses and maintain a stable financial position through effective management, risk management, and other key factors.

References

- Gabelaia, I., 2024. The Impact of Artificial Intelligence in Shaping Advertising Strategies for SMEs: Systematic Literature Review and Qualitative Research. *J. Mark. Res. Case Studies*, 2024, p.209492. <https://ibimapublishing.com/articles/JMRCS/2024/209492/>
- Kovaitė, K., Šūmakaris, P., Stankevičienė, J. and Korsakienė, R., 2019. Industry 4.0 as the driving force of SME internationalisation: a case of Lithuania. <https://sciendo.com/pdf/10.2478/eb-2019-0014>
- Naor, M., 2022. Tesla's circular economy strategy to recycle, reduce, reuse, repurpose and recover batteries. In *Recycling Strategy and Challenges Associated with Waste Management Towards Sustaining the World*. London, UK: IntechOpen. https://books.google.com/books?hl=en&lr=&id=AerjEAAQBAJ&oi=fnd&pg=PA123&dq=Tesla+Fremont+Factory+and+operational+delays&ots=FcD14ykkE5&sig=_8LZslqj-Ausr5gHAOdTldYj5a8
- Prasanna, R.P.I.R., Jayasundara, J.M.S.B., Naradda Gamage, S.K., Ekanayake, E.M.S., Rajapakshe, P.S.K. and Abeyrathne, G.A.K.N.J., 2019. Sustainability of SMEs in the competition: A systemic review on technological challenges and SME performance. *Journal of Open Innovation: Technology, Market, and Complexity*, 5(4), p.100. <https://doi.org/10.3390/joitmc5040100>
- Prevezianou, M.F., 2021. WannaCry as a creeping crisis. In *Understanding the creeping crisis* (pp. 37-50). Cham: Springer International Publishing. <https://library.oapen.org/bitstream/handle/20.500.12657/48682/9783030706920.pdf#page=50>

Suciu, A.D., Tudor, A.I.M., Chițu, I.B., Dovleac, L. and Brătucu, G., 2021. IoT technologies as instruments for SMEs' innovation and sustainable growth. *Sustainability*, 13(11), p.6357.

<https://doi.org/10.3390/su13116357>

Zahoor, N., Al-Tabbaa, O., Khan, Z. and Wood, G., 2020. Collaboration and internationalisation of SMEs: Insights and recommendations from a systematic review. *International Journal of Management Reviews*, 22(4), pp.427-456. <https://doi.org/10.1111/ijmr.12238>