

THE ROLE OF THE TECHNOLOGY OF THE INTERNET OF THINGS (IOT) IN THE HOTEL AND HOSPITALITY INDUSTRY

Roshna Sleman Abdulla

2019725



WHAT IS THE INTERNET OF THINGS?

- network of physical objects (devices, vehicles, appliances, etc.) that are embedded with sensors, software, and other technologies to connect and exchange data with other devices and systems over the internet.
- "Third Wave of Innovation." – General Electric



IMPACTS ON HOTEL AND HOSPITALITY INDUSTRY

Data collection and analytics

- insight into guest preferences, behaviours, and operational metrics
- Consistent personalised service

Security and safety prioritisation

- advanced surveillance
- e.g. facial recognition technology, smart locks, connected smoke alarms

IMPACTS ON HOTEL AND HOSPITALITY INDUSTRY

Event management

- real-time data collection and analysis
- Location-Based Information

Smart hotel solutions

1. predictive maintenance
2. CSR goals
3. Asset tracking
4. Inventory management

APPLICATIONS OF IOT

Customer Relationship Management (CRM)

- understanding and meeting customer needs
- (Idzikowski et al., 2019).

Innovation theory

- any new policy that reduces the overall cost of production or increases the demand for products.
- (Kabangire and Korir, 2023).

Total Quality Management (TQM)

- continuous improvement and customer satisfaction
- (Talha, 2004).

Service quality

- the gap between a customer's expectation of a service and the actual service received
- (Gronroos, 1988)

EXAMPLES OF INDUSTRY RESPONSES

- ❑ **Smart room technology:** mobile and voice activated room controls, intuitive lighting, etc.
 - Marriott teamed up with Samsung and Legrand to launch the "Internet of Things Hotel Room" (Price, 2017)
- ❑ **Operational efficiency:** predictive maintenance systems.
 - The Wynn Las Vegas Hotel uses IoT for hotel maintenance .(Hertzfeld, 2016).
- ❑ **Guest engagement:** gathers data on guest preferences and behaviour for personalised services and targeted marketing.
 - Accor Hotels
- ❑ **Smart hotel solutions:** asset tracking and supporting CSR goals.
 - The InterContinental Hotels Group smart energy management systems to contribute to sustainability efforts



Limitations

Strengths

High initial
investment
cost

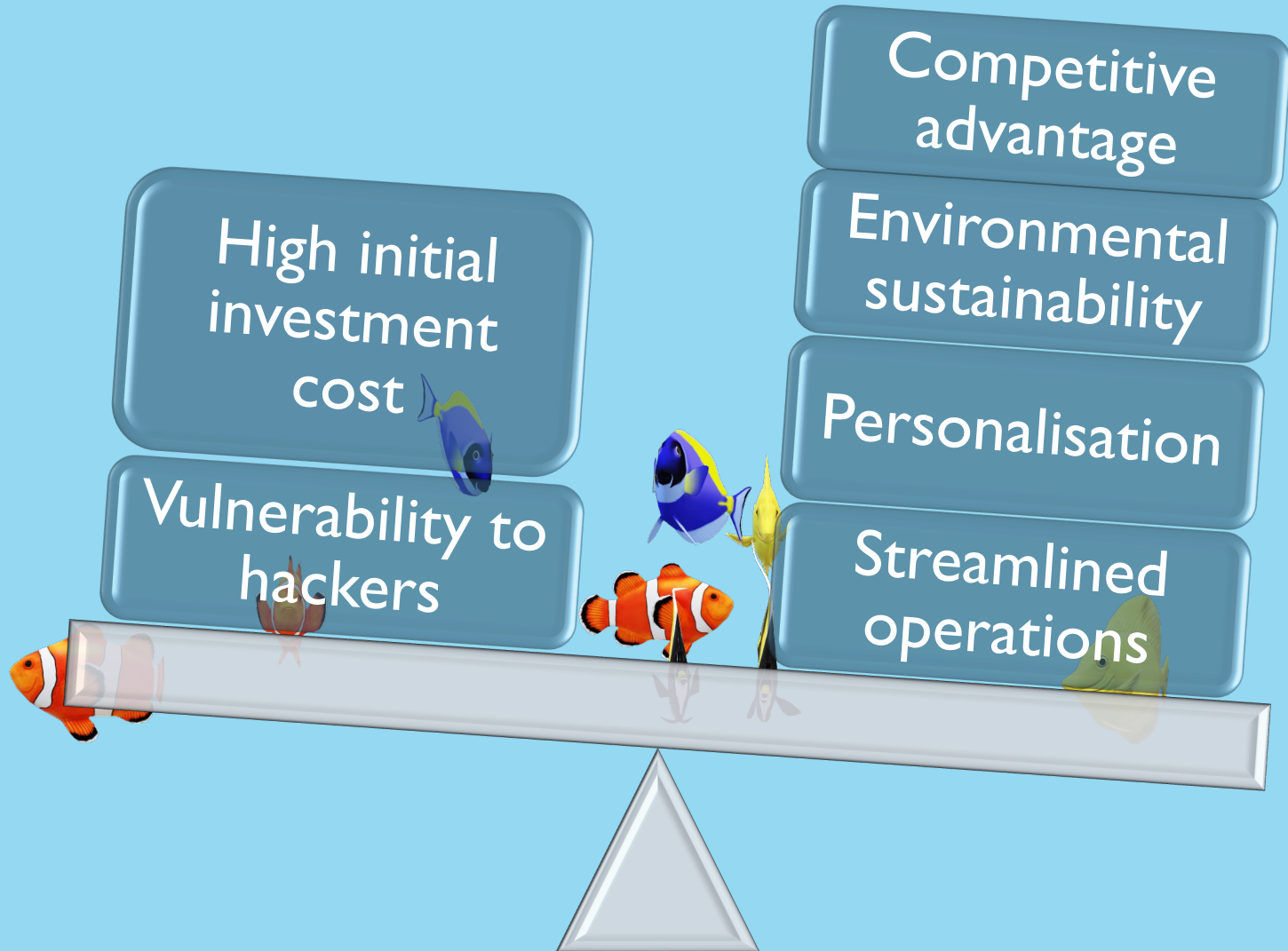
Vulnerability to
hackers

Competitive
advantage

Environmental
sustainability

Personalisation

Streamlined
operations



FUTURE MANAGEMENT POLICIES AND OPTIONS



CONCLUSION

- benefits, such as energy savings, personalised guest interactions, and operational efficiencies.
- Profound impacts on guest satisfaction, cost reduction, and productivity enhancement, underlining its alignment with service quality and innovation theory.
- IoT presents challenges like data security and initial investment costs.
- future policy and management options must prioritise data privacy, cybersecurity, and strategic IoT implementation
- IoT offers a promising pathway to unparalleled guest experiences, improved operational efficiency, and sustainable growth in the hotel and hospitality industry.

REFERENCES

- INCE (n.d.). Use Case: Smart Hotels and Rooms Systems. [online] INCE. Available at: <https://Ince.com/en-us/resources/iot-knowledge-base/iot-solutions/iot-use-cases/smart-hotel-iot-sim-cards> [Accessed 23 May 2024].
- Ali, Z., Ali, H. and Badawy, M. (2015). Internet of Things (IoT): Definitions, Challenges and Recent Research Directions. International Journal of Computer Applications, [online] 128(1), pp.37–47. doi:<https://doi.org/10.5120/ijca2015906430>.
- Bilgihan, A., Okumus, F., Khal" Nusair, K. and Joon-Wuk Kwun, D. (2011). Information technology applications and competitive advantage in hotel companies. Journal of Hospitality and Tourism Technology, 2(2), pp.139–153. doi:<https://doi.org/10.1108/1757988111154245>.
- Blueprint (2020). IoT Solutions for Hotels: The Future for the Hospitality Industry. [online] Blueprint RF. Available at: <https://www.blueprintrf.com/iot-solutions-for-hotels-the-future-for-the-hospitality-industry/> [Accessed 21 May 2024].
- Bogdanov, V. (2022). IoT in Hospitality: Hotel Automation Trends and Use Cases. [online] rinf.tech. Available at: <https://www.rinf.tech/iot-in-hospitality-hotel-automation-trends-and-use-cases/> [Accessed 10 May 2024].
- Boston University (2023). Technology Trends in Hospitality Industry—Driving Innovation and Reshaping the Future | School of Hospitality Administration. [online] www.bu.edu. Available at: <https://www.bu.edu/hospitality/2023/01/26/technology-trends-in-hospitality/>. [Accessed 14 May 2024].
- Department for Digital, Culture, Media & Sport and Department for Science, Innovation & Technology (2019). Code of Practice for consumer IoT security. [online] GOV.UK. Available at: <https://www.gov.uk/government/publications/code-of-practice-for-consumer-iot-security/code-of-practice-for-consumer-iot-security> [Accessed 20 May 2024].F
- General Electric (2013). A European Perspective Pushing the Boundaries of Minds and Machines INDUSTRIAL INTERNET. [online] General Electric. Available at: https://www.ge.com/news/sites/default/files/5901.pdf?mod=article_inline. [Accessed 11 May 2024].
- Hertzfeld, E. (2016). Energy Management. Hotel Management, [online] February 5, pp.42–43. Available at: <http://www.hotelmanagementdigital.com/publication/?m=18433&i=289537&p=42&ver=html5> [Accessed 13 May 2024].
- Hotel Speak (2024). How IoT is Helping the Hospitality Industry Evolve. [online] Hotel Speak. Available at: <https://www.hotelspeak.com/2024/02/how-iot-is-helping-the-hospitality-industry-evolve/> [Accessed 13 May 2024].
- Idzikowski, A., Kuryło, P., Cyganiuk, J. and Ryczko, M. (2019). Customer Relationship Management (CRM) - Philosophy and its Significance for the Enterprise. System Safety: Human - Technical Facility - Environment, [online] 1(1), pp.1004–1011. doi:<https://doi.org/10.2478/czoto-2019-0127>.
- Kalsi, N., Carroll, F., Minor, K. and Platts, J. (2023). IoT in Practice: Investigating the Benefits and Challenges of IoT Adoption for the Sustainability of the Hospitality Sector. [online] doi:<https://doi.org/10.5121/csit.2023.131311>.
- Markets and Markets (2022). Smart Hospitality Market Size & Trends, Growth Analysis, Forecast [2030]. [online] MarketsandMarkets. Available at: <https://www.marketsandmarkets.com/Market-Reports/smart-hospitality-market-93242156.html> [Accessed 15 May 2024].
- Mathews, L. (2017). Criminals Hacked A Fish Tank To Steal Data From A Casino. [online] Forbes. Available at: <https://www.forbes.com/sites/leemathews/2017/07/27/criminals-hacked-a-fish-tank-to-steal-data-from-a-casino/?sh=7131f08b32b9> [Accessed 14 May 2024].
- Mehrotra, R. (2019). Automation – if you aren't doing it, you're already behind. [online] The Caterer. Available at: <https://www.thecaterer.com/products--equipment/automation-if-you-arent-doing-it-youre-already-behind> [Accessed 12 May 2024].
- Narraidoo, G. (2020). The Role of Internet of Things in Hotels' Profitability The Role of Internet of Things in Hotels' Profitability. [online] Available at: <https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=10229&context=dissertations> [Accessed 15 May 2024].
- Potter, K. (2019). The Pros and Cons of IoT in the Hotel Industry [. [online] Hoteltechnologynews.com. Available at: <https://hoteltechnologynews.com/2019/03/pros-cons-iot-hospitality-industry/> [Accessed 15 May 2024].
- Price, K. (2017). Marriott launches 'hotel room of the future'. [online] The Caterer. Available at: <https://www.thecaterer.com/news/marriott-launches-hotel-room-of-the-future> [Accessed 16 May 2024].
- Shani, S., Majeed, M., Alhassan, S. and Gideon, A. (2023). Internet of Things (IoTs) in the Hospitality Sector: Challenges and Opportunities. Internet of Things (IoTs) in the Hospitality Sector: Challenges and Opportunities, [online] pp.67–81. doi:https://doi.org/10.1007/978-981-19-9888-1_6.
- Sharma, U. and Gupta, D. (2021). Analyzing the applications of internet of things in hotel industry. Journal of Physics: Conference Series, [online] 1969(1), p.012041. doi:<https://doi.org/10.1088/1742-6596/1969/1/012041>.
- Talha, M. (2004). Impact of total quality management on productivity. Miss Claire Siegel At, [online] 17(1), pp.374–380. Available at: https://abeuk.online/sites/default/files/files/5UOM_Article_4_0.pdf [Accessed 21 May 2024].