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IoT and Communication in Malaysia: New Frontiers

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The development of the Internet of Things (IoT) has drastically changed communication perspectives around the world, especially in Malaysia. IoT is an interconnected network of devices, detectors, and software programs that interact and exchange data over the internet. IoT improves not just human-to-human interaction, but also machine-to-machine (M2M) and human-to-machine (H2M) communication. This evolution marks a change away from conventional linear communication models and towards dynamic, real-time, data-driven interaction.

Recognising the revolutionary potential of IoT, the Malaysian government launched the National Internet of Things Strategic Road Map in 2015, with the goal of improving IoT integration into smart city frameworks and promoting economic growth (Norjanah, 2021). This plan outlines a methodical strategy for using IoT technology for development with a focus on contemporary infrastructures that address urbanisation concerns (Lim et al., 2021).

In Malaysia, the integration of IoT and communication is becoming more noticeable in industries such as urban planning, education, healthcare, and business. For example, the Malaysian government's efforts demonstrate a strong commitment to incorporating IoT into daily interactions and service delivery. In smart city projects such as Cyberjaya and Putrajaya, IoT enables continuous communication between traffic monitors, surveillance systems, and government administration, allowing authorities to provide timely information to residents and simultaneously solicit comments. This creates a reciprocal interaction flow, which improves engagement and efficiency.

In education, IoT tools such as smart classes and digital learning platforms enhance the relationship between instructors and learners by adding interactive devices and real-time information sharing. During the COVID-19 pandemic, connected device technology bridged communication gaps by allowing remote learning and ensuring continuing education (Lim et al., 2021).

The usage of IoT in education encourages more tailored learning experiences. It enables the construction of education systems tailored to pupils' unique needs (Alhumaid et al., 2025). Such systems analyse data to determine trends in student performance and adjust instructional material accordingly, resulting in a more efficient and interesting learning experience. The intriguing applications of IoT extend beyond traditional classroom settings, where it might boost extracurricular activities by continuously monitoring student engagement and well-being.

Likewise, in healthcare, IoT devices such as smartwatches for health monitoring enable continuous communication between patients and medical workers, promoting proactive treatment while developing trust through transparent data interchange.

Overall, IoT is altering Malaysia's business communications. Companies employ IoT-enabled customer service, artificial intelligence (AI), and data insights to provide tailored communication to their customers. This not only increases service quality but also enhances brand-customer relationships.

However, issues such as technology gaps, data security, and infrastructure availability keep hampering the full integration of IoT in communication. Collaboration among the government, academia, and the commercial sector is required to create a cohesive IoT ecosystem capable of resolving systemic issues and maximising the advantages of collaborative advancements for Malaysian society (Jamalut et al., 2022).

To summarise, IoT is transforming communication in Malaysia by expanding contact across human interactions to include intelligent devices and systems. While there are several opportunities for efficiency, customisation, and engagement, constant investment in educational institutions, infrastructure, and digital literacy is required to fully realise IoT's promise in transforming Malaysia's communication landscape.

References

Alhumaid, K., Ayoubi, K., Khalifa, M., & Salloum, S. A. (2025). Factors determining acceptance of Internet of things in medical education: mixed methods study. *JMIR Human Factors*, 12, e58377-e58377. https://doi.org/10.2196/58377

Lim, S. B., Malek, J. A., Yussoff, M. F. Y. M., & Yiğitcanlar, T. (2021). Understanding and acceptance of smart city policies: practitioners' perspectives on the Malaysian smart city framework. *Sustainability,* 13(17), 9559. https://doi.org/10.3390/su131795559

Norjanah, S. (2021). The internet of things readiness in public organization: descriptive analysis. T*urkish Journal of Computer and Mathematics Education* (TURCOMAT), 12(3), 2017-2022. https://doi.org/10.17762/turcomat.v12i3.1040

Jamalut, Y., Rahim, M. F. A., & Ong, J. (2022). A framework for intention to adopt the Internet of Things among MSMES in farming. *Advances in Economics, Business and Management Research*, 321-332. https://doi.org/10.2991/978-94-6463-080-0_28