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K-One earns prize in MTEA's IoT – Manufacturing category

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K-One strongly believes in living up to its vision “to be an extraordinary technology innovator” and the mission to “innovate technology products and solutions which enhance comfort, connectivity and care in daily life”. It is therefore dedicated in the design and development of medical/healthcare devices, IoT gadgets, consumer electronic lifestyle products and industrial equipment. Towards this end, it consistently innovates cutting-edge products and the same time adopt in-house engineered IoT-powered advanced manufacturing system to produce them efficiently.

K-One has enhanced its manufacturing process by integrating cloud computing, Internet of Things and big data analytics. It has formed a team which had developed an IoT system integrated with its own cloud-based platform. This effort in digital transformation has enabled K-One to win in the IoT – Manufacturing category of the Malaysia Technology Excellence Awards 2021.

The IoT system enables seamless sharing of real-time information within the organisation, which assists in management decision-making, enables remote monitoring, and reduces administration costs. The production line is structured as a cell system, where each cell is equipped with sensors that capture real-time data while enabling a closed-loop system within the cell. A gateway device functions as an intermediary to relay data to the cloud so that the relevant

employees can track the real-time performance of the cells. The data can also be used to trigger alerts and notifications through email, mobile and web applications, which improve reactivity in unexpected situations.

The design process at K-One is based on an understanding of customers' needs and the problems they want to solve. In the project implementation process, the company's multidisciplinary team discusses not only concepts but also constraints to generate valuable insights. These insights are used as a reference to develop viable solutions, which are validated through simulation, testing, and rapid prototyping. The team optimises the design for manufacturability and production efficiency.

The digital transformation on the production floor has enabled K-One's plants to record the following achievements: (1) Overall equipment effectiveness increased from 69% to 74% and a larger amount of data from sensors improved the company's ability to identify improvement areas and allow more in-depth analysis of root causes, (2) The duration of time to arrive in the incident area after implementation of real-time notification decreased from 28 minutes to 7 minutes on average, resulting in a significant direct decrease in downtime. (3) Effective check-in area containment and social distance detection with alerts has been achieved to prevent the risk of Covid-19 infection and spread.

Since K-One was established in 2001, it has worked with multinationals in creating innovative whole products for industrialisation, turnkey manufacturing, and product design services. The company's actions are based on its core values of integrity, ingenuity and inspiration, which bring together its employees around the world into a unified workforce. K-One's operations are characterised by time efficiency and resourcefulness, which enable its clients to complete their projects ahead of schedule. Furthermore, K-One's extensive supply chain network ensures competitiveness and efficiency, while the company consistently improves product quality and costs for the benefit of the customers it works with.

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