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Industries embrace digital innovation

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Industrial companies across the globe are poised to integrate digital technology as Industry 4.0 approaches, according to a PwC report.

According to a PwC survey entitled "Industry 4.0: Building the digital enterprise", the term Industry 4.0 refers to the fourth industrial revolution. It focuses on the end-to-end digitisation of all physical assets and processes as well as the integration of value-chain partners into digital ecosystems. Data and analytics is a core capability for Industry 4.0.

The PwC report is based on a poll of more than 2,000 participants from nine major industrial sectors: aerospace, defence and security; industrial manufacturing; engineering and construction; chemicals; electronics; transportation and logistics; automotive; metals and forest-based paper and packaging. The study was conducted across 26 countries.

About one third of the companies surveyed rated their level of digitisation as high. The figure is expected to rise on average to 72% from 33% within the next five years.

Leaders of industrial companies are now digitising essential functions within their internal vertical value chain, as well as with their horizontal partners along the supply chain. They are also boosting their product portfolios with digital functionalities and introducing innovative, data-based services.

Vilaiporn Taweelappontong, lead partner for consulting services at PwC Thailand, described how Industry 4.0 uses smart technology and real-time data to increase productivity and reduce costs.

"Over the next five years, we expect companies to increase additional revenues by an average of 2.9% per year and reduce costs by an average of 3.6% annually. In absolute terms, this corresponds to US\$493 billion in increased annual revenue per year and \$421 billion in cost savings," Ms Vilaiporn said.

Global industrial sectors will invest \$907 billion per year through to 2020 to embrace Industry 4.0, the report says.

A major focus of these investments will be on digital technologies like sensors or connectivity devices, and on software and applications such as manufacturing execution systems. In addition, companies are investing in training employees and driving the required organisational change.

Of these companies, 55% expect their investments to yield a return within two years, given an investment of around 5% of their digital revenue.

More than 80% of companies expect data analytics will have a significant influence on their decision-making processes within five years. While they feel confident in acquiring the necessary technology, these businesses see challenges in the lack of internal digital culture, vision and training -- as well as in a lack of specialists.

For example, almost 40% of companies rely on the analytics expertise of individual employees rather than having a dedicated data analytics department.

The study also says that data security is prerequisite for successful digitisation.

"Strong risk management and data integrity systems can help businesses avoid breaches and manage disruption to operations better," Ms Vilaiporn said.

Although companies worldwide are pressing ahead with Industry 4.0, the study shows that the level of digital integration will be broadly comparable among all regions in five years, with Japan, Germany and the US at the forefront.

Companies in Japan and Germany are the furthest along in digitising internal operations and partnering across the horizontal value chain.