

## **DIGITALISATION: A PARADIGM SHIFT IN THE MANUFACTURING INDUSTRY**

*(The Singapore Manufacturing Federation (SMF), as the largest national organisation representing the interest of the manufacturing and manufacturing related industries since 1932, shares its perspective on the current trends and changes impacting the manufacturing sector.)*

The manufacturing industry has experienced rapid development over recent years in terms of advancement in technology, operations and best practices. With the current march towards digitalisation, the sector is undergoing a makeover, challenging traditional mindsets and paving the way for the future of the industry. In order to position themselves well and be future ready, businesses are starting to recognise the importance of embracing advancements such as digitalisation to stay ahead of the game and remain competitive in the global marketplace.

The industry in general has been consistent and steadfast in its focus on the reduction of overheads, minimisation of costs and productivity improvements – all of which have been traditional pillars that form the foundations for growth in the manufacturing sector. These are rock-solid principles that businesses have been operating on, and they have largely been successful. However, while the focus on productivity and profitability should remain, the wave of digitalisation that has swept across the industry necessitates that businesses review their value proposition and business model. Enterprises need to consider how best to adapt to this digital revolution to fully optimise their processes, and leverage on the tools that are now available to them.

A recent study<sup>1</sup> published by Deloitte Touche Tohmatsu Limited, Global Consumer & Industrial Products Industry Group and the Council on Competitiveness, showed that manufacturing is still very much a key driver of global economies, heavily influencing infrastructure development, job creation and contribution towards the gross domestic product (GDP). Singapore, currently ranked 10th on the index, attributes close to 20% of its GDP to the manufacturing sector alone. The Committee on the Future Economy (CFE), set up by the Singapore Government, has recommended that the contributions of the manufacturing sector remain at 20% of GDP<sup>2</sup>.

The competitive global landscape in the manufacturing sector, coupled with advancements in technology, reinforces the need for businesses in Singapore to embrace technological disruptions, hop on the digitalisation bandwagon, and keep relevant in the local and international arena. One of the key strategies to address this situation is to go digital. Digitalisation of the manufacturing sector has the potential to transform the industry and is already reshaping the traditional approach of many manufacturing enterprises - covering a broad spectrum of the manufacturing value-chain, from design to production, to warehousing, to last-mile delivery.



An analogy for the need to change would be to compare the current state of affairs to the Industrial Revolution. The Industrial Revolution was the transition to new manufacturing processes, from manual production methods to machines, new production processes, the use of steam power, and the development of machine tools. Those that altered their processes to take advantage of the innovations of the time grew exponentially, whilst those that could not cope were left by the wayside. The manufacturing sector is now experiencing the 'digital revolution', and businesses have to get on onboard or risk also being left behind.

Considering that manufacturing remains a critical component of Singapore's economic landscape, it is therefore imperative to the sustainability of Singapore's economy that the manufacturing industry embraces digitalisation to compete with regional and global players. The technologies and IT systems of digitalisation are already well-established, as are the related benefits. The challenge now is for businesses to optimise the manufacturing process through the adoption and implementation of digitalisation to tap on the countless opportunities and potential for growth. Singapore's government agencies are working with the key trade associations, such as SMF, to introduce programmes to assist businesses in their transformation journey.

For a relatively young manufacturing entity like Singapore, the key is to start from the basics. To begin with, businesses have to alter their mindset on what they hope to achieve, and how they are going to achieve it. In tandem with improving the bottom-line and productivity, businesses must align themselves with the digital revolution, and consider how digitalisation can elevate their manufacturing operations, and not fear change.

One concern is that digitalisation will lead to higher unemployment. That was the same fear caused by the Industrial Revolution, and it proved to be unfounded. Digitalisation will not lead to a major reduction of the workforce, instead, it will create new jobs and lead to re-training and upskilling of the workforce as new knowledge base and skill-sets are created.

Another challenge will be with regard to finances. The adoption of digitalisation will result in higher capital investment, but in the long run, the technology that is acquired will ultimately improve the bottom-line. There are several key government initiatives such as 'Smart Nation', Industry Transformation Maps and R&D programmes to encourage and support businesses in this push towards digitalisation and technology adoption.

SMF is playing its part in the paradigm shift of the manufacturing sector. SMF recognises that mindsets and perspectives have to change and seeks to assist businesses in Singapore in their journey of transformation towards digitalisation. SMF brings together various stakeholders, such as other trade



associations and government agencies, and facilitates collaboration among industry partners, ultimately encouraging businesses to take positive action and embrace the change that is required.

The digital revolution is now fundamental, both for the manufacturing sector and Singapore economy. Businesses must embrace technological advances to flourish in the current regional and global landscape.

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References:

1. <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Manufacturing/gx-global-mfg-competitiveness-index-2016.pdf>
2. [https://www.gov.sg/~media/cfe/downloads/mtis\\_full%20report.pdf](https://www.gov.sg/~media/cfe/downloads/mtis_full%20report.pdf) (pg 33/34)