

**Why should Malaysia focus on Industry 4.0?**  
 (extract from the SmartInvestor website, World Economic Forum Jan 2016)



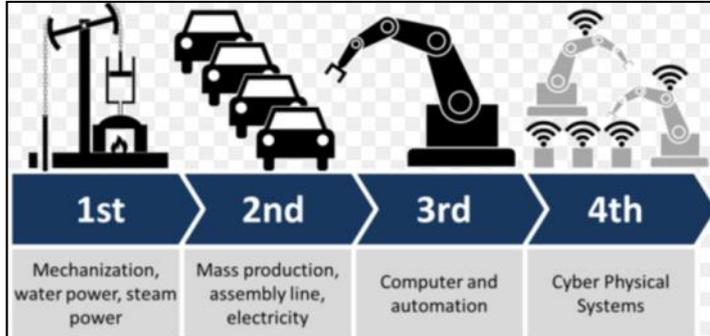
It all started with the Industrial Revolution, when the world was first introduced to steam power, mechanisation and factories that marked the new era of modernisation.

The enablers were none other than the world's powerful imperialists, the British that cultivated their growing interest in scientific investigation and invention – creating endless opportunities and jobs for their people.

As time progressed, the rapid growth of technology sparked the Second Industrial Revolution, taking mankind to the age of electricity. As demand grew, many new products were invented and significant developments were made in the structure of mass production.

The third epoch of the Industrial Revolution – better known as the Digital Revolution – began decades after World War II, welcoming the advent of computers and the initial stages of automation – subtly substituting manpower in assembly lines with robots and machineries.

Today, we are in the era of Industry 4.0 – where there are little to zilch human operations and are instead replaced by robotics that are equipped with necessary algorithms. It is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres.



**INDUSTRY 4.0 - the digital transformation**




Introduced by the Germans in 2011, the term Industry 4.0 refers to means of automation and data exchange in manufacturing technologies including cyber-physical systems, Internet of Things, big data and analytics, augmented reality, additive manufacturing, simulation, horizontal and vertical system integration, autonomous robots as well as cloud computing.

There are three reasons why today's transformations represent not merely a prolongation of the Third Industrial Revolution but rather the arrival of a Fourth and distinct one: velocity, scope, and systems impact. The speed of current breakthroughs has no historical precedent. When compared with previous industrial revolutions, the Fourth is evolving at an exponential rather than a linear pace. Moreover, it is disrupting almost every industry in every country. And the breadth and depth of these changes herald the transformation of entire systems of production, management, and governance.

Data and use of digital platforms are disrupting technologies and revolutionized the way we see and do things. Key examples include ride sharing (Uber, Grabcar), accommodation sharing (Airbnb, couchsurfing), driverless cars and many more.

**Why should Malaysia focus on Industry 4.0?  
Revolutionising Production  
(Cont.)**

Malaysia is currently still in Industry 2.0.

Based on research conducted by PwC, Industry 4.0 sees a promising future in the digitalisation of products and services and means of robotic manufacturing and engineering— companies expect to reduce operational costs by 3.6% per annum.

Since the British colonial era, 70-80% of Malaysian industries are still wedged in the second industrial era where the labour intensive phase is very much prevalent.

Although Malaysia was one of the leading industrial countries back then, a majority of our neighbouring countries and beyond are already building the bridge from Industry 3.0 to 4.0 while increasing efficiency by 4.1% annually – over the course of five years.

Organisations are willing to pay the huge expense in the hopes of fortifying their influences and positions in the multi-faceted industrial ecosystems.

Indeed, most industries always begin at Industry 2.0. In contrast to Germany that employs advanced automation, China has managed to climb the modernisation ladder with its high dependence on low cost labour.

The most apparent solution for China to sustain their rank as an industrial powerhouse is to shift their traditional manufacturing practices towards contemporary computerised machines and robots that will be implemented in the Made in China 2025 plan.

**Impact on Business**

**Production/ Supply**

Industry 4.0 will revolutionise manufacturing pushing down costs, expanding the market reach to consumers as well as creating new competitors.

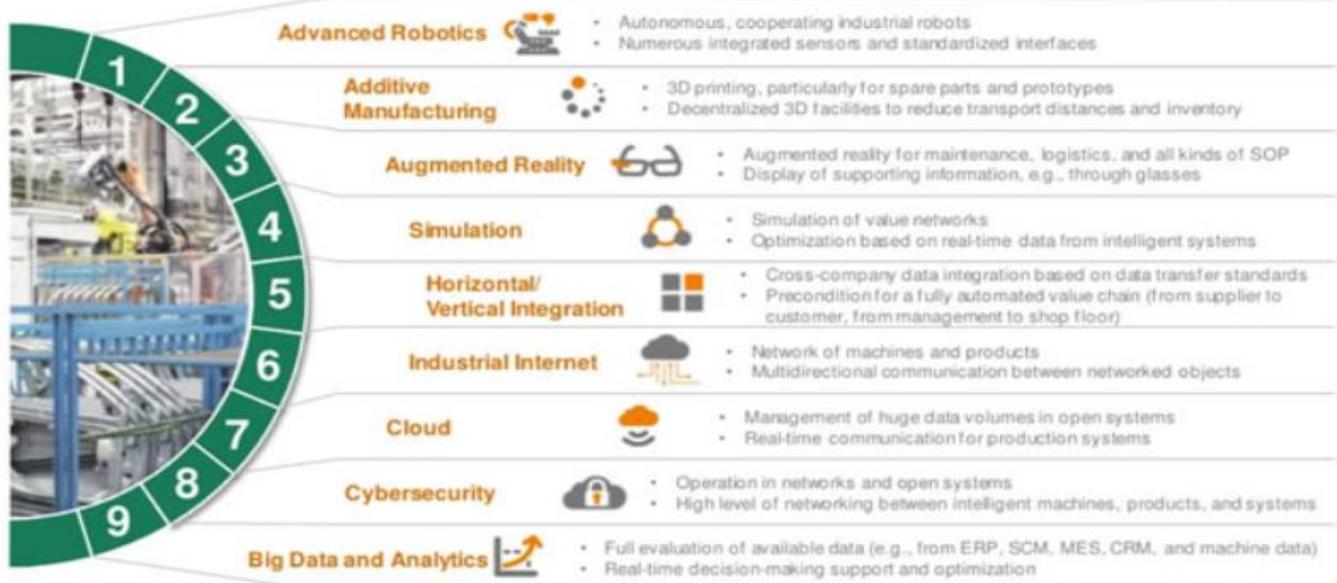
For Malaysia which is still currently depend heavily on foreign labour for its production, there is a need for mindset change to embrace new technology to increase efficiency and productivity and to expand markets through digital platforms. Malaysia may have the headstart especially in our electronics, automotive and construction industries to enhance modern manufacturing technologies towards industry 4.0.

With the emergence of regional economic clusters such as the ASEAN Economic Community (AEC), Malaysia has the technology foundation to move up and capitalize on the wider ASEAN markets including better access to Asian and European countries' economies through the implementation of free trade agreements.

Most ASEAN countries (such as Vietnam, Laos and Cambodia) have seen major progress in the productivity and growth of their vast manufacturing industries from an agricultural-driven industry making the transition from Industry 2.0 all the way to Industry 4.0.

In the last 2017 Budget announcements, there have been new incentives for companies to invest in new technology and equipment and we hope to see more incentives made available in the 2018 Budget to help Malaysian companies to adopt new technologies towards Industry 4.0.

## Industry 4.0 refers to the convergence and application of nine digital industrial technologies



**Many application examples already exist for all nine technologies**

## Why should Malaysia focus on Industry 4.0? (Cont.)

### Consumers

Customers are increasingly at the epicenter of the economy, which is all about improving how customers are served. Physical products and services, can now be enhanced with digital capabilities that increase their value. New technologies make assets more durable and resilient, while data and analytics are transforming how they are maintained.

A world of customer experiences, data-based services, and asset performance through analytics, meanwhile, requires new forms of collaboration, particularly given the speed at which innovation and disruption are taking place. And the emergence of global platforms and other new business models, finally, means that talent, culture, and organizational forms will have to be rethought.

### Impact on Government/ Governance

As the physical, digital, and biological worlds continue to converge, new technologies and platforms will increasingly enable citizens to engage with governments, voice their opinions, coordinate their efforts, and even circumvent the supervision of public authorities. Simultaneously, governments will gain new technological powers to increase their control over populations, based on pervasive surveillance systems and the ability to control digital infrastructure.

### Impact on Society

Industry 4.0 may re-shape society by the way we interact with one another and addressing income inequality. While technology may open up opportunities for poor nations to move up, the faster speed of adoption amongst rich countries can widen the gap between the rich and the poor.

Moving forward, Malaysia has to embrace the technological wave or else be left behind developing countries. Investments in the right education must continue to develop the right talent. Young and old generation must be ready to shift towards a knowledge-based economy.

Government and policies must gear toward implementation of technological advancements in order to move a more sustainable and promising future.

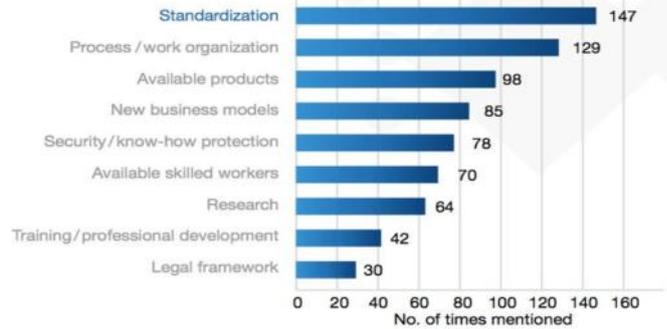
### Manufacturing Benefits of Industrial IoT



# BizWatch

## CHALLENGES FOR THE IMPLEMENTATION OF INDUSTRY 4.0

(several answers are possible)



## BizWatch

Malaysia and Iskandar Malaysia must make clear preparations for the impending automation and data usage that will fundamentally alter the employment landscape in coming decades.

Looking ahead to the advent of Industry 4.0, the trend toward increasing automation of jobs and the use of data, policies concerning education and technology must be put in place immediately.

According to the Malaysian Employer Federation, in 2015, more than 18,000 employees were retrenched in the banking sector because banks adopted technologies which could replace the job of man. This shows that the automation and computerization was already happening in the financial sector and is expected to accelerate with more adoption of fintech within the financial industry.

When predicting the future of the country's economy, economists have suggested that automation and data would sweep virtually all industries by 2050.

Industry 4.0 has already started but may not in a full swing yet... hence, we must seriously look at revamping our education system today to cater a better tomorrow.

The arrival of Industry 4.0 may mean that students today may not have jobs in the fields for which they are studying, or may lack skills and knowledge necessary for areas where there will be jobs growth.

The government and private sector must start adopting drastic measures now to prepare for the coming disruption which can start with our education system and focus areas to develop a thinking and entrepreneur culture and talent which can embrace new technology.

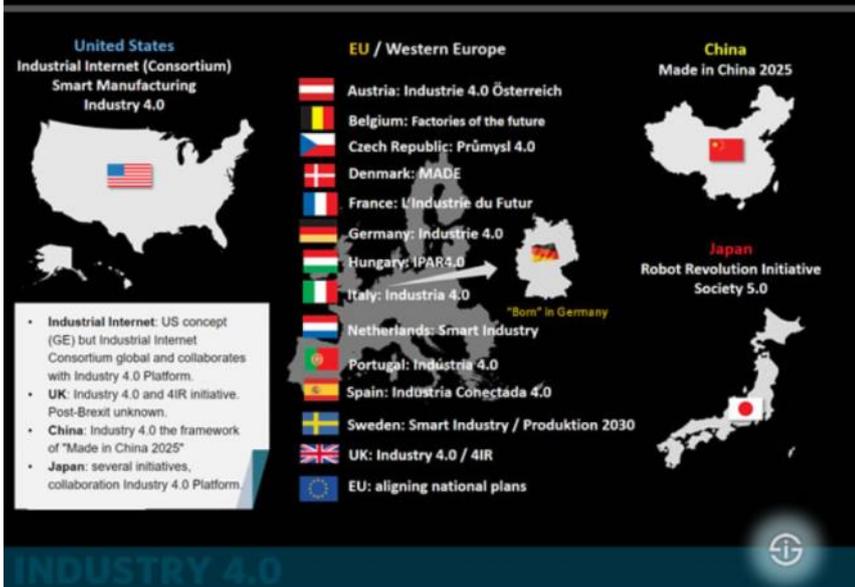
In the 80s, Malaysia was once part of the Asian Tigers with Singapore, Korea and Taiwan. Today, we are only ahead of ASEAN countries such as Indonesia and Thailand while Singapore, Korea and Taiwan have surged ahead to become high growth countries. Even late comers in ASEAN such as Vietnam and Cambodia are playing catch-up and with their larger population and bigger domestic markets are fast emerging as growing economies.

We must not miss out this opportunity !!

## Why should Malaysia focus on Industry 4.0? (Cont.)

### Industry 4.0 across the globe

Main initiatives, partnerships and influences as of March 2017



### Country Garden Pacificview Opens World's Largest Industrialised Building System (IBS) Factory

Country Garden Pacificview Sdn Bhd (CGPV), the master developer of Forest City, on August 4, 2017 opened the world's largest Industrialised Building System (IBS) factory, based on single factory production volume at Forest City in the Iskandar Region.

The factory incorporates technology from Germany, Italy and China, and has the capacity to produce materials for up to 1 million square meters of built-up area. It will house the entire production base for the construction of Forest City, and integrate construction design, precast concrete production, transportation, processing of accessories, assembly construction, as well as materials research and development.

Industry 4.0 across the globe – main initiatives, partnerships and influences as of March 2017

Globally, developed countries are already investing in technologies breaking new grounds in production, service delivery, healthcare, education and many more.

The world that we know today will look different in 2025. Each country has its own programme with focused areas to embrace industry 4.0. USA has the Industrial Internet (Consortium) and Smart Manufacturing Industry 4.0 platforms, Germany (the originator of the word Industry 4.0) has Industrie 4.0, Asian countries such as Japan and China with its 'Made in China 2025' programme are already on board.

While the above did not mention South Korea and Singapore specifically, industries in South Korea and Singapore together with the Government are on the same page on developing technologies and adopting new technologies to enhance their market leadership.

Malaysia and Iskandar Malaysia would need to stand out amongst other ASEAN countries to take this opportunity.

#### Editorial

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Country Garden Pacificview has plans to add up to five additional factories to the 417-acre site. When fully completed, it will comprise six factories that will be able to produce materials required to support the equivalent of 6 million square meters of built-up area, potentially making it the largest such facility globally.

While the initial focus of the facility will be to accelerate the development of Forest City, excess capacity will also be used to support the growing construction opportunities in Southeast Asia.

IBS is a modern construction technique that standardises the design process, while digitising, automating and modernising the processes of construction and building parts production. Prefabricated and prefinished structural components are manufactured in a controlled environment before being transported and installed or assembled on site. Not only does the technology deliver better construction quality at higher productivity levels, it also helps to reduce risks related to occupational safety and health, and alleviates the need for skilled workers.

Most importantly, the IBS method results in the ultimate goal of lowering the overall costs of construction.

