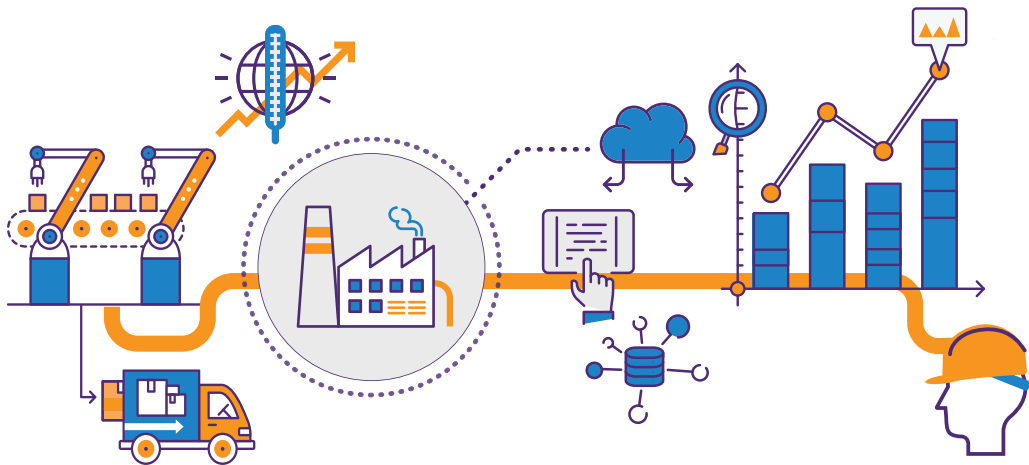




## A NEW AGE IN ADVANCED MANUFACTURING



Global manufacturing is being disrupted by demographic shifts, resource scarcity, climate change, and not least by automation and robotics.

**By 2030, 51% of all jobs will be susceptible to automation and up to 375 million people globally will need to embark on new careers.**

To weather these changing world trends, Singapore plans to embrace Industry 4.0 by **using human-centred technology** to improve products and processes, while building our **manufacturing base into a global hub.**

## PUBLIC POLICY EFFORTS TOWARDS WORLD-CLASS MANUFACTURING

The key government strategies for Industry 4.0:



### TRANSFORM

Introducing long-term facilities and operations transformation initiatives such as the Economic Development Board (EDB) Singapore's Smart Industry Readiness Index (see next page)



### GROW AND BUILD

Strengthening the business while developing new talent capabilities through R&D partnerships and programmes



### CONNECT

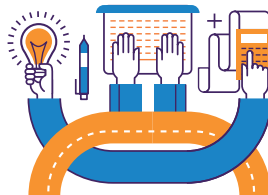
Collaborate with global and regional manufacturing communities by participating in industry fairs, such as the Asian Edition of Hanover Messe

Industry 4.0 has the power to transform how products are created, how supply chains are managed, and how value chains are defined.

EDB Singapore, The Singapore Smart Industry Readiness Index:  
Catalysing the transformation of manufacturing

## INTRODUCING THE SINGAPORE SMART INDUSTRY READINESS INDEX

- Launched in Nov 2017 by **EDB**
- Prepares companies for Industry 4.0 by guiding them through **Industry Transformation Maps (ITMs)**
- Co-created with global testing, inspection, certification and training provider TÜV SÜD
- Validated by an expert advisory panel of academics and industry insiders
- Designed for all companies regardless of size, profile and maturity level



Companies tend to focus excessively on shop floor automation and under-invest in equally important areas such as process design and workforce competency. The Index serves as a useful counter-check to capture maximum value from any Industry 4.0 initiatives.

Mr Yeoh Pit Wee,  
Director, Manufacturing Operations, Rockwell Automation

## BRINGING STAKEHOLDERS TOGETHER

“It is critical that we build an ecosystem where innovation is pervasive, value creation is deep and technology adoption is enabling.”

Mr Russell Tham, former Regional President (Southeast Asia) of Applied Materials and Member of the Future Economy Council

Developed under the **Ministry of Trade and Industry** and implemented by the Future Economy Council, ITMs seek to foster partnerships between **employers, industry associations, unions, education and training institutions and the government.**

This creates transformative pathways for **23 industries in 6 clusters based on 4 pillars:**



**INNOVATION**



**PRODUCTIVITY**



**INTERNATIONALISM**



**SKILLS**

## THE SKILLS FRAMEWORK

An integral ITM component, the framework creates a **common skills language** for the various stakeholders, and provides them with vital information, such as **career pathways, existing and emerging skills for the sector.**

How it is being applied in various sectors, including:



### PRECISION ENGINEERINGS

Creating **3,000** PMET digital manufacturing jobs by 2020



### ENERGY & CHEMICALS

**1,400** new job openings by 2025



### MARINE & OFFSHORE

Reskilling more than **300** PMETs since 2016 through Professional Conversion Programmes (PCPs)



### AEROSPACE

- Career growth opportunities covering **86** job roles
- More than **60** mid-career PMETs benefitted from existing PCPs so far



### ELECTRONICS

- Introducing **2,100** new PMET jobs by 2020
- Shifting Singaporean PMETs towards higher value jobs with Electronics Industry PCPs

## LIFTING THE PRIVATE SECTOR TOWARDS ADVANCED MANUFACTURING

Temasek Portfolio Companies (TPCs) act as catalysts for transformation by:



co-creating or adopting  
new digital-first solutions



venturing overseas and  
capturing new growth  
opportunities

### CASE STUDY: **Keppel Shipyard**

To improve its blasting system for priming vessel surfaces for painting, Keppel Shipyard worked with its contractors to develop a semi-automated system that both reduced operating costs and raised overall yard productivity and efficiency.

Keppel Shipyard went on to share its learnings, including latest market-technologies and equipment, and competitive best practices, with more than 200 SMEs.

## GOVERNMENT INCENTIVES AND GRANTS YOU CAN TAP INTO

### PRODUCTIVITY SOLUTIONS GRANT (PSG)

- Coordinated by the Ministry of Trade and Industry's Grants Management Office (GMO)
- Helps businesses automate existing processes and improve productivity to support their digital transformation journey
- Covers both sector-specific and broader solutions

### PARTNERSHIP FOR CAPABILITY TRANSFORMATION (PACT) SCHEME

- Administered by Enterprise Singapore and EDB
- Foster partnerships between large organisations and SMEs on collaborative projects
- Supports up to 70% of qualifying costs for partnerships in capability development, and business development

