MALAYSIA CITIES PREPAREDNESS FOR THE 4TH INDUSTRIAL REVOLUTION

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Centre of Excellence for Sustainable Cities and Community Well-being

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INDUSTRY 4.0 AND SUSTAINABLE CITIES

1st	2nd	3rd	4th
Mechanization, water power, steam power	Mass production, assembly line, electricity	Computer and automation	Cyber Physical Systems

Industrialization has led to many of the world's current environmental problems :-

- Climate change,
- Unsafe levels of air pollution,
- Depletion of fishing stocks, toxins in rivers and soils,
- Overflowing levels of waste on land and ocean,
- Loss of biodiversity, and deforestation

75% of IoT projects concentrate on five SDGs.

- SDG 9 Industry, innovation, and infrastructure
- SDG 11 Smart cities and communities
- SGD 7 Affordable and clean energy
- SDG 3 Good health and well-being
- SDG 12 Responsible production and consumption

IoT Analytics & World Economic Forum (analysis)

17 SDG'S & 169 TARGETS
Qualitative measures to achieve sustainable development
GOALS & MEASURES

Objective is to 'make cities and human settlements inclusive, safe, resilient and sustainable'

THRUSTS TOOLS & ENABLERS
to achieve its commitment for **Cities For All**

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The SDG's and the New Urban Agenda

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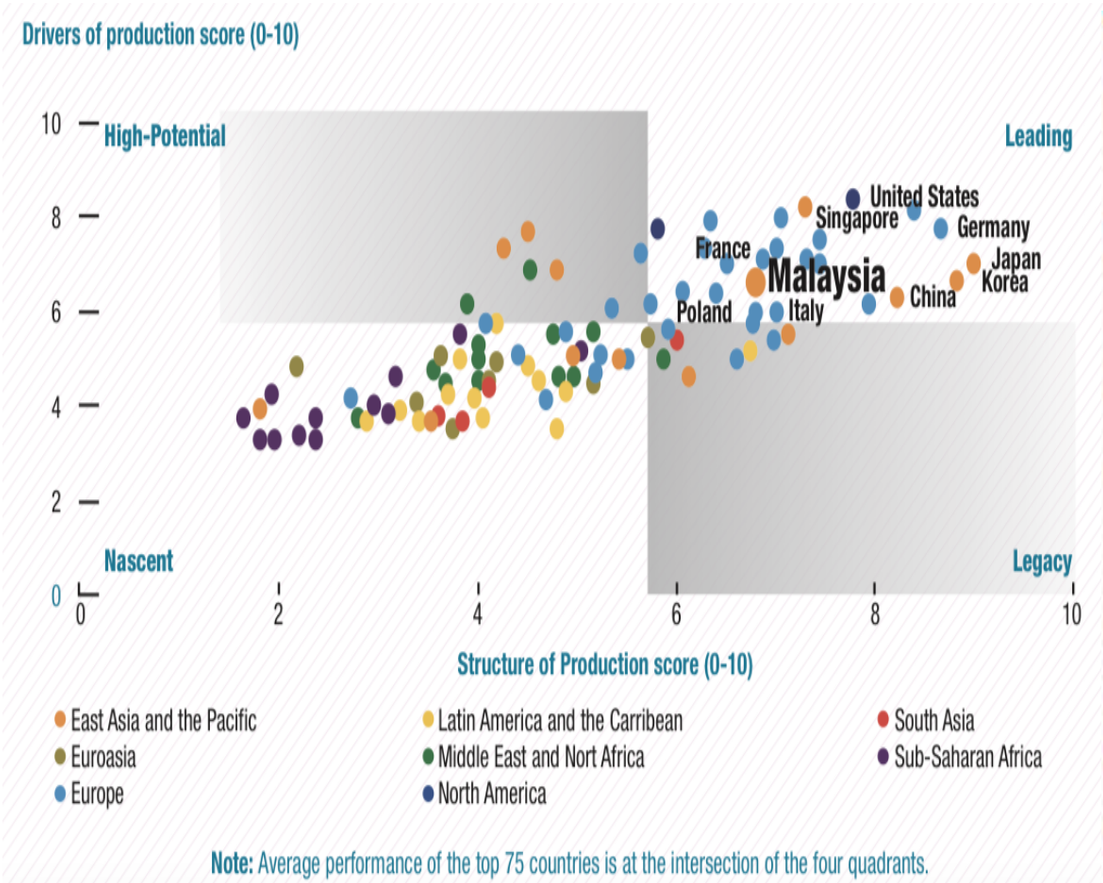
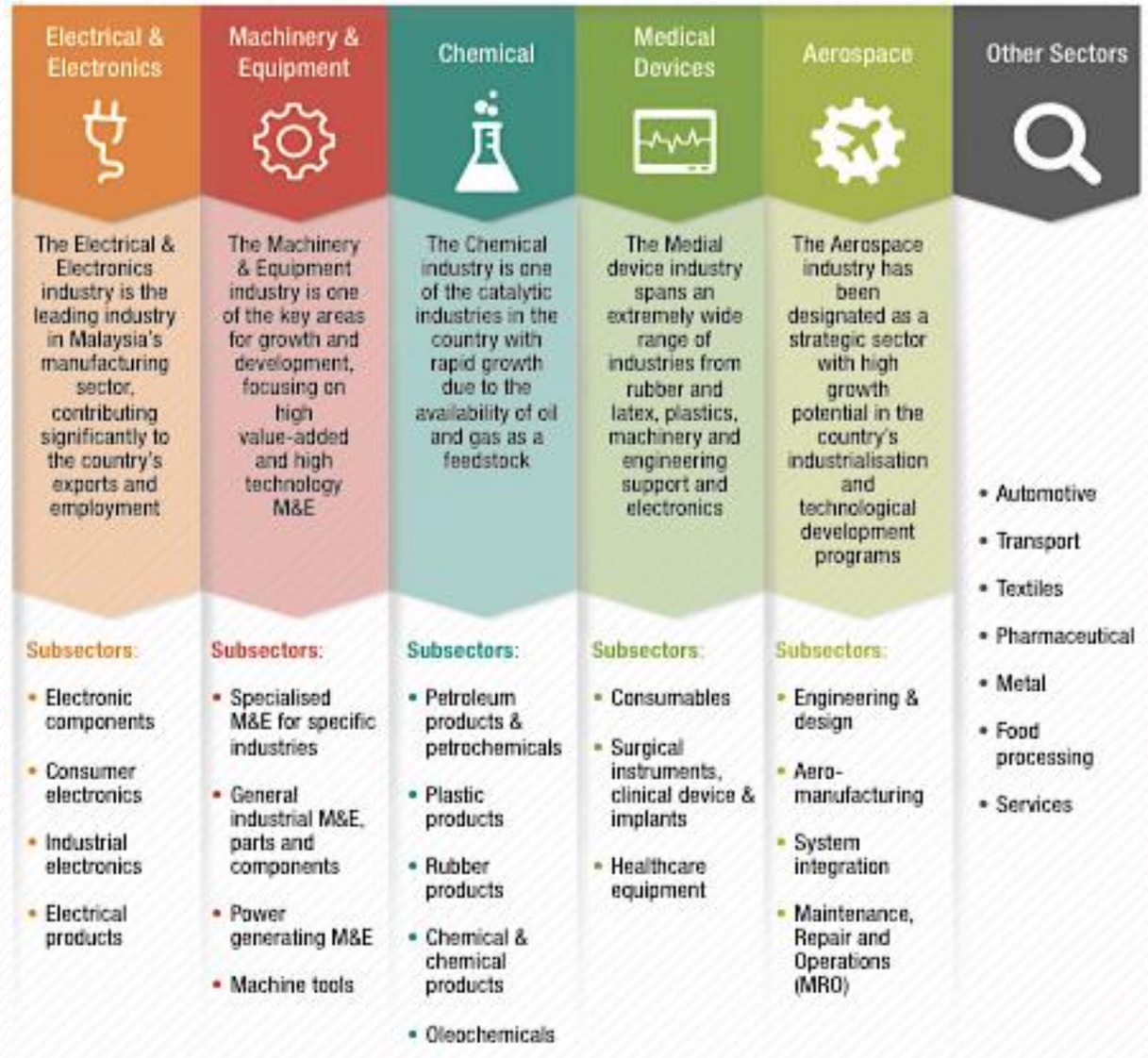
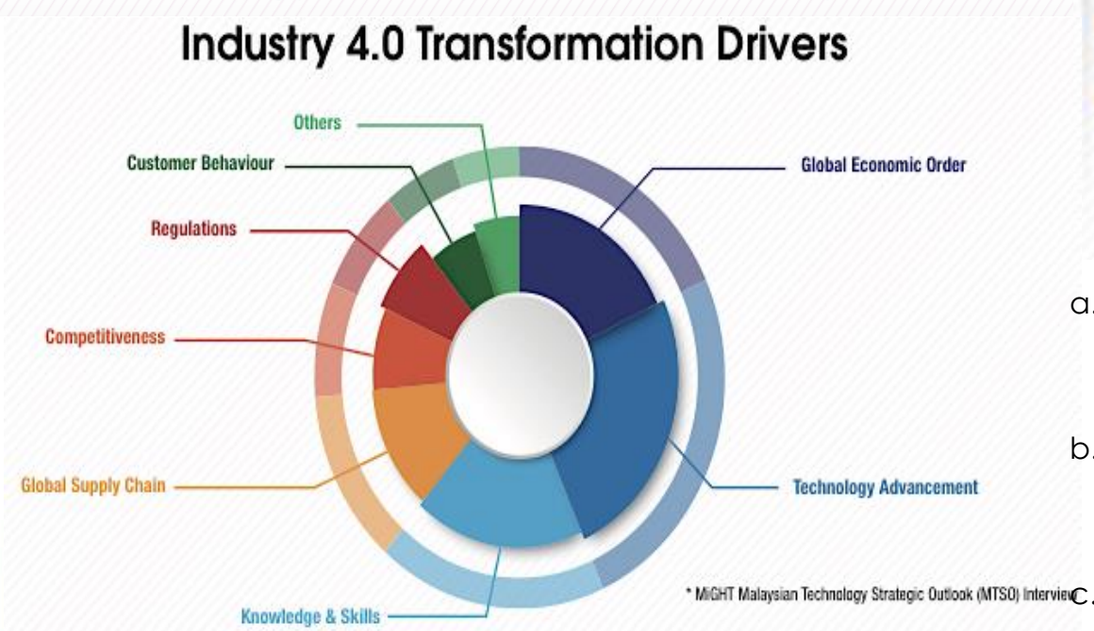
MALAYSIA'S READINESS FOR INDUSTRY 4.0







a. On a global level, Malaysia has been enjoying a fairly strong and competitive position in both manufacturing and the use of technology. The Global Manufacturing Competitiveness Index 2016 (by Deloitte Touche Tohmatsu) ranked Malaysia at 17 th place among 40 countries.
b. The report also projected Malaysia to climb four notches to 13 th by 2020. On the technology and innovation side, the Global Innovation Index 2017 (by Cornell University, INSEAD and WIPO) ranked Malaysia at 37 th globally among 127 countries and 8 th in Asia.
c. Further, the recent Readiness for the Future of Production Report 2018 (by WEF and A.T. Kearney) highlights that Malaysia is well-positioned to benefit from the future of Industry 4.0.

Source : MITI, National Policy on Industry 4.0, Oct 2018

THE INDUSTRY 4.0 IN MALAYSIA

The Role of Government

MIDA

National Industry 4.0 Policy Framework

Study on Future of Manufacturing: Industry 3+2

Industry 4.0 Taskforce
* Infrastructure and Ecosystem
* Funding and Incentives
* Talent and Human Capital
* Technology and Standards
* SMEs

National Internet of Things (IoT) Strategic Roadmap

Launching of National IoT Strategic Road Map

Embracing Industry 4.0 in Malaysia

DIGITAL MALAYSIA

Malaysia Digital Economy for year 2017: To implement programme including e-commerce systems, digital maker movement including new location for Malaysia Digital Hubs.

MALAYSIA PRODUCTIVITY BLUEPRINT
Driving Productivity of the Nation

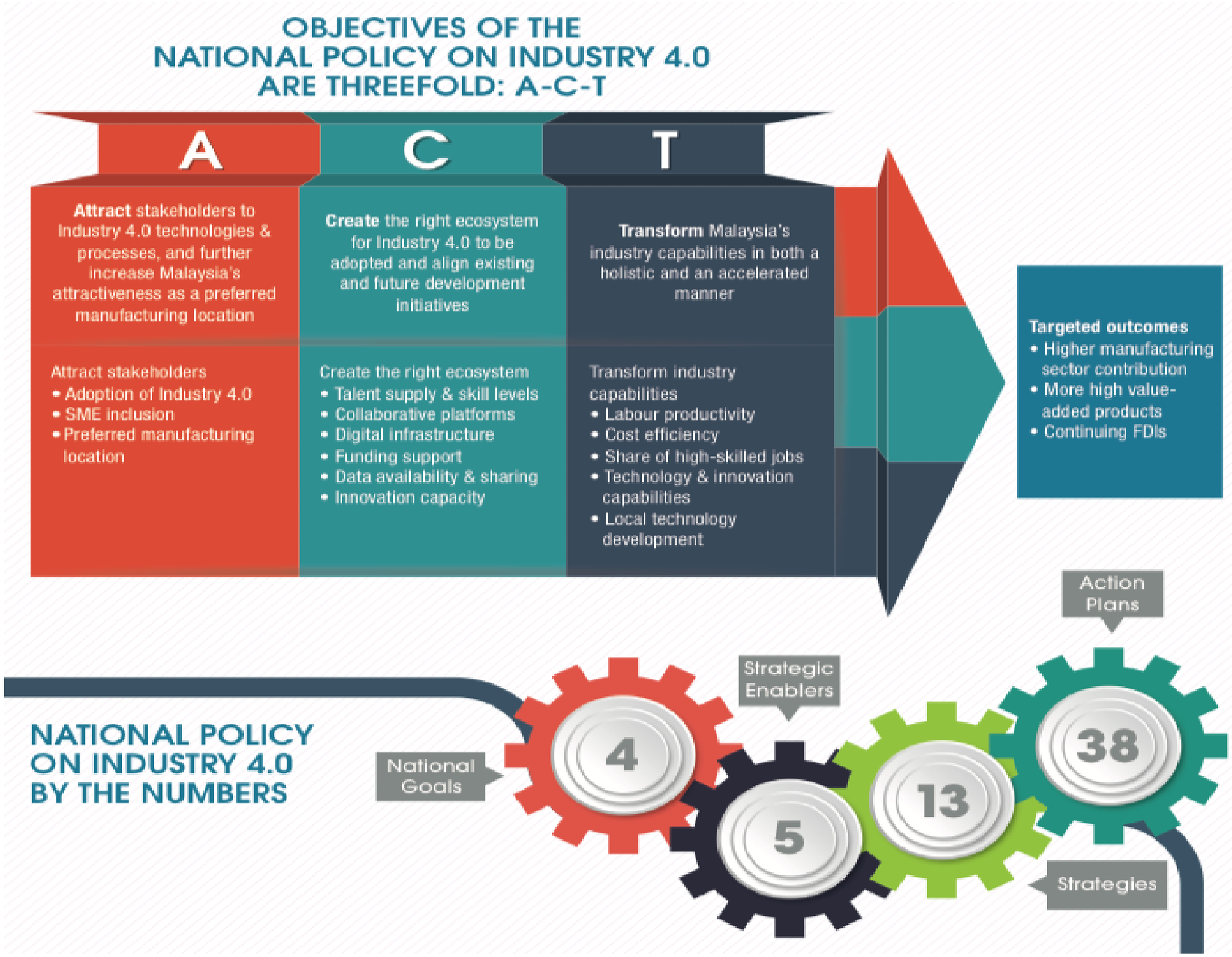
A blueprint created to address productivity challenges holistically in order to boost economic growth

DFTZ
DIGITAL FREE TRADE ZONE

Establishment of Digital Free Zone to stimulate internet based innovation

Building Analytics Capabilities: 20,000 data professionals and 2,000 data scientists by 2020

THE INDUSTRY 4.0 IN MALAYSIA



Source : MITI, National Policy on Industry 4.0, Oct 2018

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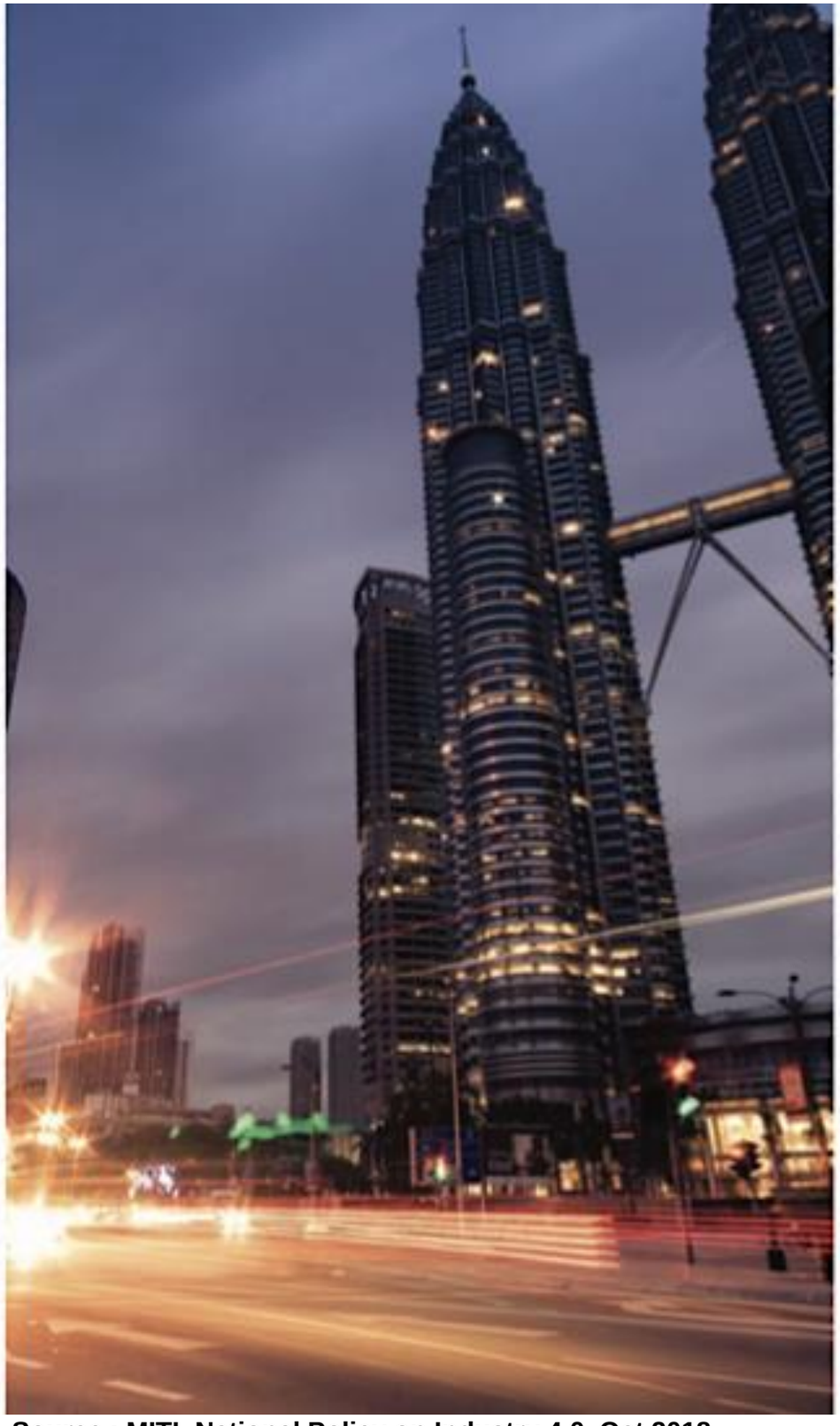
MALAYSIA MOVING FORWARD : 4IR



From the stakeholder interactions and issue analyses, five themes emerge that drive the development of an end-to-end Industry 4.0 ecosystem in Malaysia. They have also been guiding the development of this National Policy on Industry 4.0 and the four key goals of GDP contribution, national productivity, high-skilled employment and innovation capabilities.

Upskilling and reskilling existing and future labour pool need to be at the heart of Malaysia's transformation

Inclusive involvement of SMEs is critical to power a holistic step up in labour productivity across the economy

Significant evolution in innovation capabilities and collaborative platforms is essential to foster the development of, and access to, cost-effective technologies that address specific sector needs

Focused funding support is needed to kickstart the adoption and complement private sector investments

Good digital infrastructure is required to enable reliable and secure Industry 4.0 operations

Source : MITI, National Policy on Industry 4.0, Oct 2018

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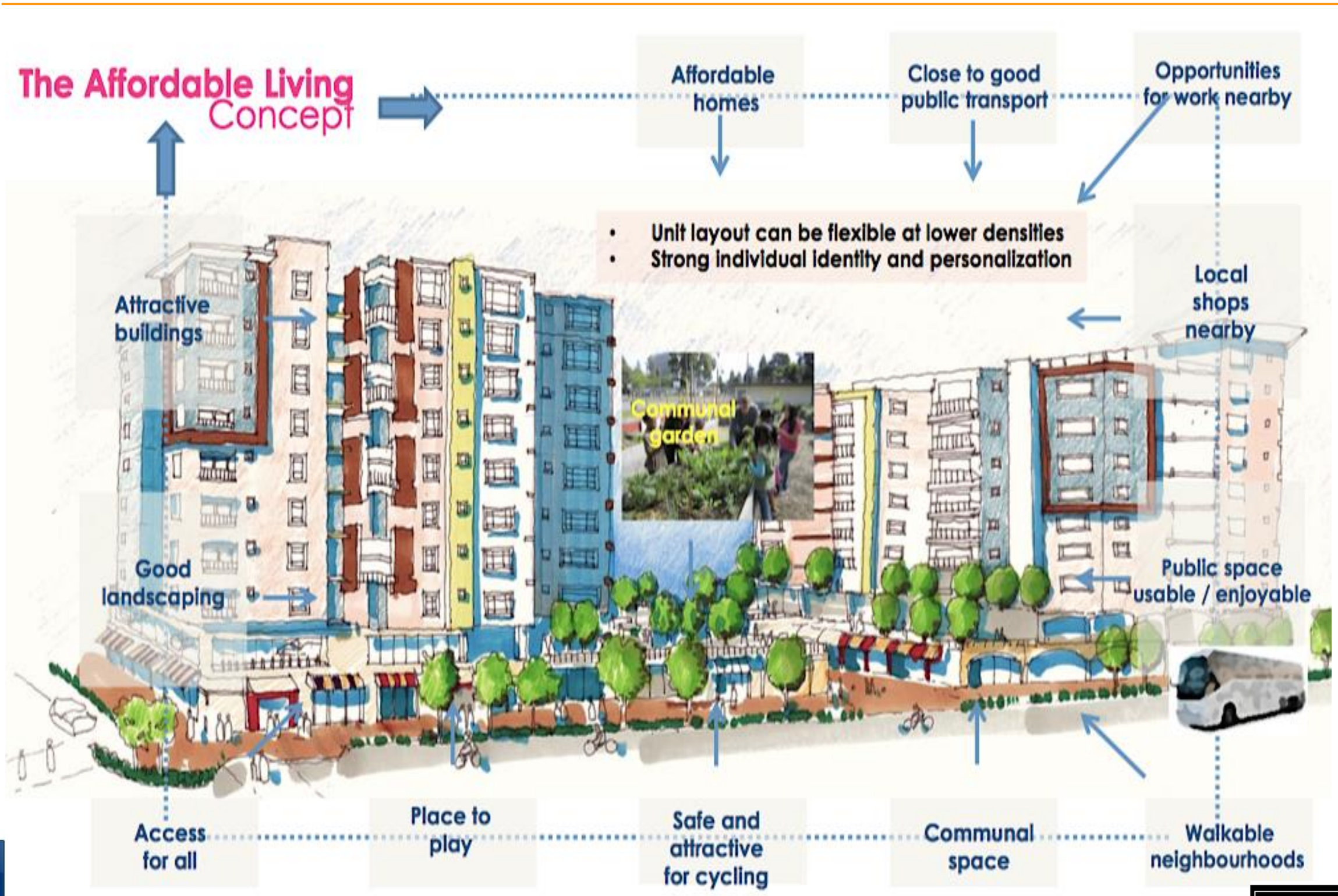
AFFORDABLE LIVING AS KEY TO CITIES 4.0



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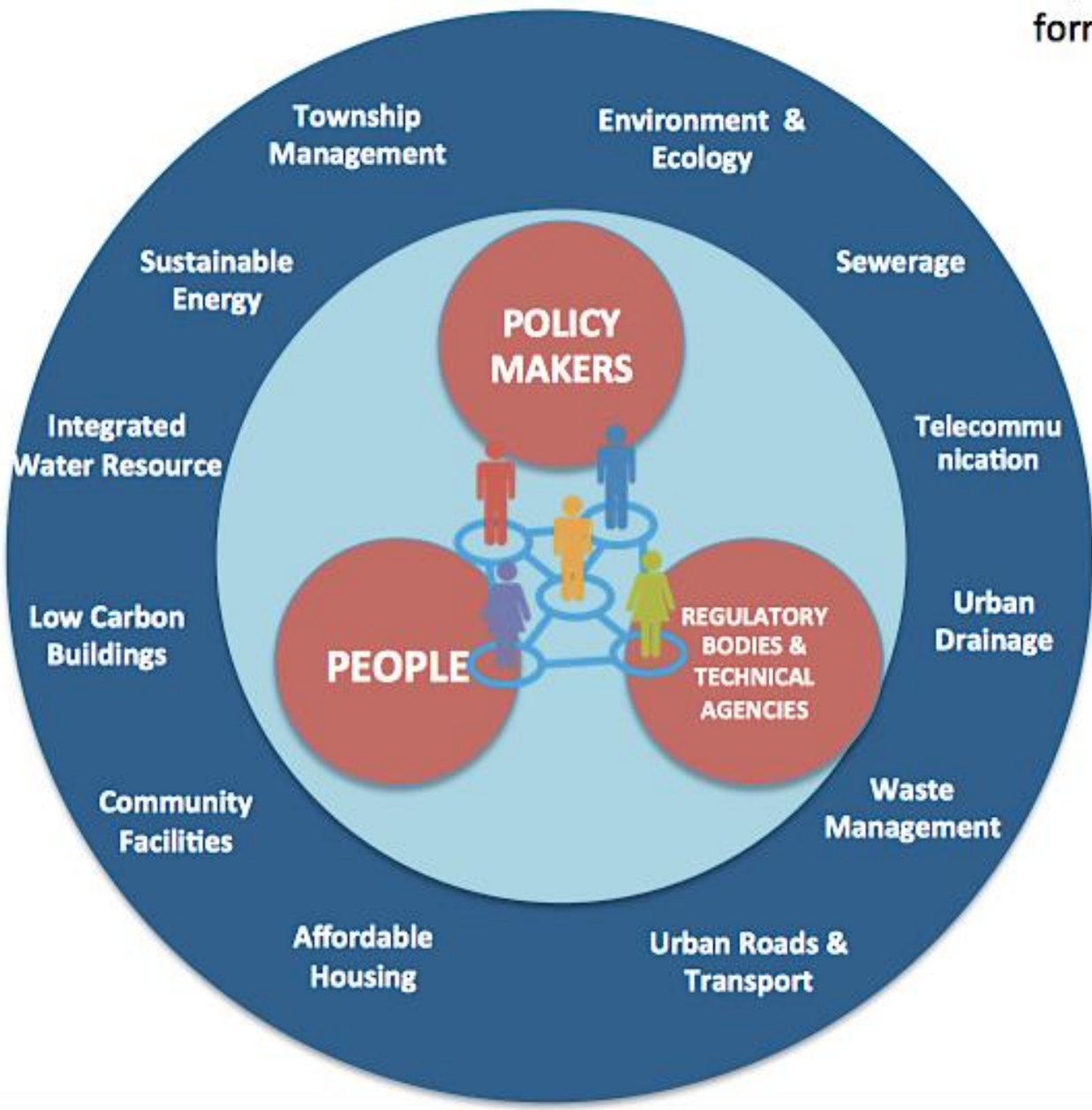
CITIES 4.0 AND COMMUNITY PARTICIPATION

Through 4iR communities can now decide in the functioning of their communities. Civil society groups and citizens should actively take part in local and national discussions on the form and direction of urban development in the 4IR.



COMMUNITY PARTICIPATION & STAKEHOLDERS MAPPING

Stakeholders of various key players at all levels of communities.

OTHERS

- Investors
- Business Communities
- Consumers/Prospects
- Funders
- Communities/Citizens
- NGO's/CSO's

LEVELS OF INVOLVEMENT

- Planning
- Approving/ Regulating
- Building
- Operational

Ensure Cities 4.0 designs are human-centered and technology gives more autonomy to people

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CONCLUSION

INDUSTRY4WRD – MALAYSIA'S POLICY ON INDUSTRY 4.0

What is Industry4WRD?

Attract stakeholders to Industry 4.0
Create the right ecosystem for Industry 4.0 technologies
Transform capabilities of the manufacturing sector to be Industry 4.0 ready

- Drive continuous growth in manufacturing
- Increase national productivity
- Create high skill employment opportunities
- Raise innovation capabilities and competitiveness

Goals of Industry4WRD

30%

Increase productivity in the manufacturing industry per person by 30 percent from US$25,486 to US$33,132

Elevate absolute contribution of the manufacturing sector to the economy by 54 percent from US$61 billion to US$94 billion

Increase number of high-skilled workers in the manufacturing sector from 18 percent to 35 percent

Strengthening innovation as reflected by improvement in the Global Innovation Index ranking from 35th to the top 30

Industry4WRD strategic enablers (F.I.R.S.T)

F	I	R	S	T
Funding	**Infrastructure**	**Regulation**	**Skills and talent**	**Technologies**
Providing financing and outcome based incentives	Creating an inclusive digital ecosystem undergirded by efficient infrastructure	Ensuring adequate regulatory frameworks and industry adoption	Upskilling and futureproofing the workforce	Enabling access to smart technologies

THE ASEAN POST

TECHNICAL INNOVATIONS TO IMPLEMENT THE FIVE SOLUTION LEVERS FOR CITIES 4.0

Clean power	Smart transport systems	Sustainable production and consumption	Sustainable land-use	Smart cities and homes
• Cheap renewables generation • Advanced energy storage • Clean fossil fuels • Next-generation grid management • Carbon capture, sequestration and use • Energy efficiency • Renewable heat • Next-generation nuclear fission • Nuclear fusion	• Clean liquid and gaseous fuels • System efficiency solutions • Clean long-haul transport • High-efficiency engines • Next generation batteries • Energy-dense gaseous fuel storage • Technology enabled transport systems	• Circular economy recycling solutions e.g. cradle to cradle • Sharing economy • Reduced waste and energy production • Clean chemicals, steel, cement, and paper production • Extreme durability for energy-intensive products and materials • Extreme efficiency of IT/Data centres • Supply chain transparency • CO_2 extraction from manufacturing	• Land-use transparency • Low-emissions agriculture • New-techniques in forest management • Reduced losses in the supply chain • Soil sequestration • Low-emissions sources of protein • Reduced emissions from livestock • Reduced deforestation	• Connected homes • High-efficiency heating, cooling, lighting, and appliances • High-efficiency windows and insulation • Building energy storage • Technology-enabled urban planning and building design • Next-generation commercial building management

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Source : MITI, National Policy on Industry 4.0, Oct 2018

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THANK YOU

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Sustainability is the key goal and Cities 4.0 should be future-proof by ensuring that the solutions adopted meet the needs and social and cultural capital of our cities

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