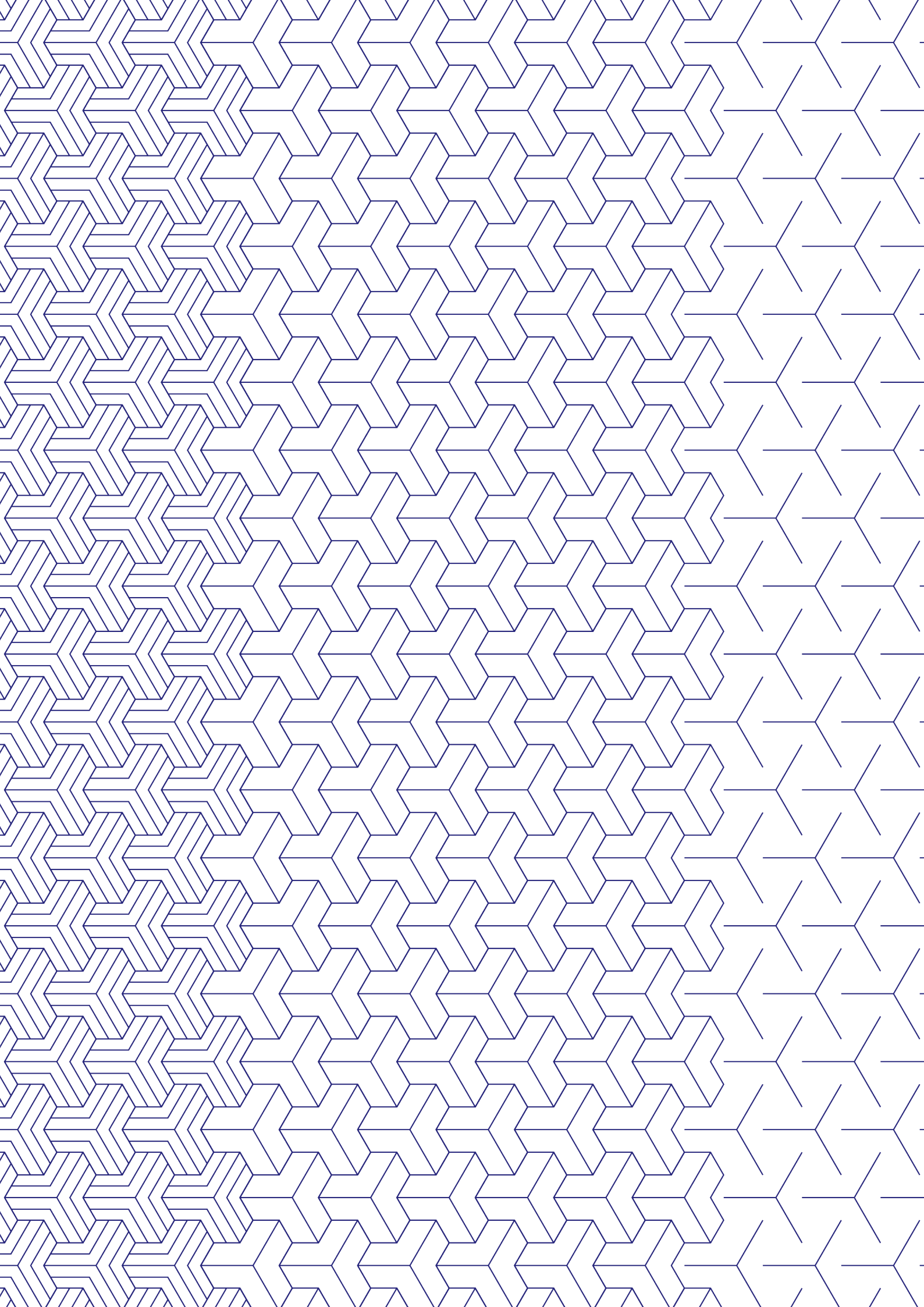
MINISTRY OF INVESTMENT,
TRADE AND INDUSTRY

NEW INDUSTRIAL
MASTER PLAN 2030

DIGITAL AND INFORMATION AND COMMUNICATION TECHNOLOGY INDUSTRY



e ISBN No. : 978-967-0020-06-8

PUBLISHED BY:

MINISTRY OF INVESTMENT,
TRADE AND INDUSTRY

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PREFACE

Malaysia's strength in the manufacturing sector has been significantly driven by the implementation of robust and forward-thinking Industrial Master Plans, first launched in 1986.

The success of the IMP3 (2006-2020) was anchored on innovation, research and development (R&D) and human capital development to drive high value-added industries to transform Malaysia into a knowledge-based economy.

The journey towards formulating the NIMP 2030 is underscored by the need to build a robust industrial sector as an important prerequisite to achieve socioeconomic prosperity. Three previous iterations of the Industrial Master Plans have driven industrial development in Malaysia, with the Government adopting industrial development strategies relevant to the period to transform the economy. Malaysia flourished from a low-productivity agrarian-based economy and is heading towards achieving developed nation status, underpinned by robust manufacturing and services sectors. The strategy has successfully raised the living standards of the Rakyat and propelled remarkable growth in Gross National Income (GNI) per capita, increasing 34 times between 1967 to 2019, making Malaysia one of the fastest growing economies in modern history.

Industrial policies have since become more diverse and complex, incorporating new imperatives including the integration into the global value chain (GVC), development of indigenous capabilities in a knowledge economy, evolution of environmental, social and governance (ESG) criteria and disruptions from the new industrial revolution. The question is not about the necessity of such policies, but rather what new policies are required and how to proceed.

Given the current challenging environment, benchmarking and learning from other country's experiences are no longer sufficient. Malaysia needs to embark on its own path into unchartered territory, to steer the nation into the challenging future. The combined impact of the new imperatives and the recent pandemic has compelled the Government to rethink Malaysia's industrial strategy.

With the NIMP 2030, Malaysia intends to transform the industry into greater heights, capitalising on emerging global trends, supply chain disruptions, current geopolitical landscape, digitalisation and ESG considerations. These trends are moving at an unprecedented pace and Malaysia has to act fast.

Therefore, the NIMP 2030 is designed to achieve the aspirations in a span of seven years and takes on a Mission-based approach for industrial development. This approach unites Malaysia by encouraging collaboration between the Government and the private sector to rally the industries.

Purpose of the NIMP 2030

The NIMP 2030 sets forth Malaysia's future direction in industrial transformation. It provides a national integrated plan for resilient industrial development until 2030 – setting the fundamentals for future policy development and enabling the industry at all levels. It articulates Malaysia's position and participation in the global economic environment.
The NIMP 2030 serves to:

- Provide national strategic direction to lead the industrial development policies;
- Be a conversation piece for investors and other economies on Malaysia's position and direction; and
- Feature the role of the Malaysian Government in shaping the economy.

INTRODUCTION

New Industrial Master Plan 2030

The Missions and Enablers identified will be executed through 21 Strategies and 62 Actions Plans to unlock the needed enabling ecosystems. Several catalytic Mission-based Projects (MBPs) have been identified to catapult the mission-based implementation. The NIMP 2030 strategic framework is illustrated below:

VISION

Our vision for Malaysia is to have:

- Competitive industry with high economic complexity
- High income and skilled workforce
- Strong domestic linkages

GOALS

- **Increase economic complexity**
- **Create high-value job opportunities**
- **Extend domestic linkages**

MISSIONS

MISSION 1
Advance economic complexity

1.1 Expand to high value-added activities of the value chain
1.1.1 Create global IC design champions from Malaysia
1.1.2 Attract global leader to establish wafer fabrication in Malaysia
1.1.3 Shift from basic to specialty chemical
1.1.4 Build Malaysian champions for game changing advanced materials
1.1.5 Identify high value-added opportunities in the aerospace, pharmaceutical and medical devices sectors

1.2 Develop entire ecosystem to support the high value-added activities
1.2.1 Build strong local SMEs in manufacturing and related services to support the industry champions
1.2.2 Integrate value chains between:
- M&E and Medical Devices
- Semiconductor and EV
- Chemical and Pharmaceutical

1.3 Establish cooperative 'vertical integration' for global value chain
1.3.1 Leverage alliance with ASEAN countries to integrate the semiconductor, advanced materials and clean energy value chain
1.3.2 Develop vertical integration programmes through IndustryConnect conferences

1.4 Foster Research, Development, Commercialisation and Innovation (RDCI) ecosystem
1.4.1 Assign specific topics and KPIs to universities for industrial-linked R&D
1.4.2 Digitalise IP application and launch enhanced National IP Policy

1.5 Increase manufacturing exports
1.5.1 Implement national trade advocacy campaign to increase industry utilisation of FTAs
1.5.2 Rejuvenate "Made in Malaysia" branding
1.5.3 Address trade restrictive non-tariff measures (NTMs) and compliance of standards
1.5.4 Update FTA based on geopolitical conditions

5 Strategies, 15 Action Plans

Mission-based Projects:

MBP 1.1 Create global IC design champions in EV, RE and AI
MBP 1.2 Attract new advanced wafer fabrication in Malaysia
MBP 1.3 Deepen to specialty chemical vertical
MBP 1.4 Groom champions in 4 game changing advanced materials

MISSION 2
Tech up for a digitally vibrant nation

2.1 Accelerate technology adoption
2.1.1 Enhance Industry4WRD programmes to increase technology adoption
2.1.2 Accelerate digital infrastructure rollout (JENDELA)

2.2 Shift away from low-skilled labour model
2.2.1 Introduce multi-tiered levy mechanism for low-skilled labour to accelerate automation
2.2.2 Introduce automation condition in new Manufacturing Licence

2.3 Spur technology innovation
2.3.1 Nurture local technology solution providers to support Technology Adoption Programme
2.3.2 Develop generative and industrial AI solution leaders and system integrators
2.3.3 Drive data analytics through a national digital platform for manufacturing

2.4 Accelerate government digitalisation and integration
2.4.1 Digitalise end-to-end government touch points across business life cycle

4 Strategies, 8 Action Plans

Mission-based Projects:

MBP 2.1 Transform 3,000 smart factories
MBP 2.2 Establish Malaysia as Generative AI Hub

STRATEGIES AND ACTION PLANS

21 Strategies
62 Action Plans

- New and existing industry clusters
- Balanced and inclusive participation
- Sustainable development

Develop new & existing clusters

Improve inclusivity

Enhance ESG practices

MISSION 3
Push for Net Zero

3.1 Accelerate transition towards sustainable practices
- 3.1.1 Develop sectoral decarbonisation pathways to guide transition
- 3.1.2 Decarbonise "hard-to-abate" sectors
- 3.1.3 Introduce carbon policy, accounting and tax
- 3.1.4 Launch iESG framework and transition programmes

3.2 Transition to renewable and clean energy
- 3.2.1 Enhance adoption scheme for energy efficiency or renewable energy
- 3.2.2 Accelerate availability and accessibility of renewable energy source for the industry

3.3 Catalyse new green growth areas
- 3.3.1 Catalyse EV as a key growth driver
- 3.3.2 Grow carbon capture, utilisation and storage (CCUS) as a new sector
- 3.3.3 Develop circular economy framework for the industry

3.4 Shift towards green infrastructure
- 3.4.1 Accelerate transformation of industrial estates into eco-industrial parks

4 Strategies, 10 Action Plans

Mission-based Projects:

MBP 3.1	Create decarbonisation pathway role models
MBP 3.2	Launch locally-manufactured EV
MBP 3.3	Deploy large-scale CCUS solutions

MISSION 4
Safeguard economic security and inclusivity

4.1 Develop resilient supply chain
- 4.1.1 Identify specific supply chain resilience strategies for critical sectors
- 4.1.2 Establish supply chain cooperation and collaboration through G2G and G2B programme
- 4.1.3 Introduce National Mineral Policy for downstream processing of critical minerals

4.2 Foster climate resilient development
- 4.2.1 Develop sectoral adaptation pathways
- 4.2.2 Foster an adaptation industry to provide adaptation products and services (including exports)
- 4.2.3 Instil climate resilience measures for critical economic infrastructure

4.3 Strengthen industrial clusters for regional development
- 4.3.1 Expand clusters for spillover regional impact
- 4.3.2 Align industrial development plan between Federal and States

4.4 Empower *Bumiputera* participation and create inclusive workforce
- 4.4.1 Uplift capabilities of *Bumiputera* companies in manufacturing via *Tindakan Pembangunan Bumiputera 2030*
- 4.4.2 Develop programme to increase women participation in high-skilled manufacturing employment

4 Strategies, 10 Action Plans

ENABLERS

E.1 Mobilise financing ecosystem
- E.1.1 Introduce NIMP Industrial Development Fund and NIMP Strategic Co-Investment Fund
- E.1.2 Boost financing for digitalisation and decarbonisation transition
- E.1.3 Establish green *sukuk* to facilitate transition
- E.1.4 Establish supply chain financing for SMEs
- E.1.5 Increase utilisation of the capital market
- E.1.6 Expand the imSME platform to show all available funding options including government funding and capital market
- E.1.7 Review government funding for consolidation

E.2 Foster talent development and attraction
- E.2.1 Leverage mynext and MYFutureJobs for strategic workforce planning to address long-term demand-supply requirement
- E.2.2 Introduce progressive wage system policy
- E.2.3 Improve policy to enable fast and hassle-free access to high-skilled foreign talents
- E.2.4 Expand TVET programmes for high-skilled jobs in critical sectors
- E.2.5 Raise profile of high-tech manufacturing career to attract interest in STEM subjects

E.3 Establish best-in-class investor journey for ease of doing business
- E.3.1 Establish a unified investment strategy and align investment evaluation to new parameters under NIA
- E.3.2 Harmonise and streamline functions and KPIs across IPA landscape
- E.3.3 Review and design competitive, agile and relevant incentives
- E.3.4 Improve One-Stop Portal for seamless investor experience

E.4 Introduce whole-of-nation governance framework
- E.4.1 Establish public-private collaborative councils
- E.4.2 Set up NIMP 2030 Delivery Management Unit
- E.4.3 Develop NIMP 2030 dashboard system

4 Strategies, 19 Action Plans

NIMP 2030 SECTORAL PLAN

There are individual enclosures of 21 sectors included as a supplementary reference to the main NIMP 2030 document.

They provide a view of the respective sectoral perspective in the context of the main NIMP 2030 document, and were developed with reference to individual sectoral roadmaps, where applicable.

The 21 sectors are:

Category	Industry
Priority Sectors	1. Aerospace 2. Chemical 3. Electrical and Electronics (E&E) 4. Pharmaceutical 5. Medical Devices
Sectors	6. Digital and Information and Communication Technology (ICT) 7. Automotive 8. Food Processing 9. Global Services and Professional Services 10. *Halal* 11. Machinery and Equipment (M&E) 12. Manufacturing-Related Services (MRS) 13. Metal 14. Mineral 15. Palm Oil-based Products 16. Petroleum Products and Petrochemicals 17. Rail 18. Rubber-based Products 19. Shipbuilding and Ship Repair (SBSR) 20. Textile, Apparel and Footwear 21. Wood, Paper and Furniture

NIMP 2030 Services Sectoral Plan

The services sector is the enabler for other economic activities, including connecting supply chains and facilitating trade in goods.

In 2022, Malaysia's Gross Domestic Product (GDP) recorded the highest annual growth rate in more than two decades at 8.7 per cent with the services sector recording the highest growth at 10.9 per cent.

Total trade in services accounted for RM336.9 billion, contributing 18.8 per cent to the GDP at current prices. The deficit in services trade narrowed to RM56.4 billion year on year compared to 2021. Exports of services grew faster than imports, from RM88.1 billion in 2021 to RM140.3 billion in 2022, while imports rose to RM196.7 billion in 2022 from RM153.7 billion in 2021.

The Government of Malaysia is supporting the continuous growth of the services industry by implementing policies and incentives aimed at enhancing its productivity.

There are three services sectors as part of the NIMP 2030 document, which are:

1. Digital and ICT;
2. Global Services and Professional Services; and
3. Manufacturing-Related Services.

This document is the **NIMP 2030 Sectoral Plan – Digital and Information and Communication Technology Industry.**

OVERVIEW OF THE DOCUMENT

This NIMP 2030 Sectoral Plan – Digital And Information and Communication Technology Industry (Document) provides insights into the sector and its prospects during the NIMP 2030 period.

This Document offers a comprehensive understanding of the industry's direction during the NIMP 2030 period based on its historical performance, opportunities and strategies to overcome existing challenges and achieve its targets.

The Document is presented in five sections:

1. Background

- This section sets the foundation to help readers understand the industry.
- It delves into the industry's focus area, encompassing its sub-sectors, for a comprehension of the industry's breadth.[1]
- Readers will find details about the industry's value chain and its key players, including the relevant industry associations, in this section.
- The section lists the policies that are related to the industry.

2. Performance

- This section reports the industry's performance during specific periods.
- There are two notable periods for the review of the industry's historical performance:
  - the IMP3 period (2006 to 2020); and
  - from 2021 to 2022.
- The performance review of the industry's development includes its investment trends, export and import dynamics, employment figures, value-added and productivity measures.

3. Trends and Opportunities

- This section highlights the opportunities and potential avenues for growth that the industry can leverage during the NIMP 2030 period.

4. Challenges

- This section provides insights into potential obstacles that could impact the industry's growth and development.

5. Strategies and Action Plans

- The final section of the document outlines the future trajectory for the industry.
- This section provides the Strategies and Action Plans that are intended to catalyse the industry during the NIMP 2030 period.
- The Strategies and Action Plans set in this Document have been aligned to the Missions set in the main NIMP 2030 document.

[1] *Incentives available for this industry as of time of writing can be found in Appendix 1*

SECTION 1 BACKGROUND

Areas Covered

1. The scope of the digital and information and communication technology (ICT) industry for NIMP 2030 covers the following main sub-sectors:
   i. Malaysia Digital status industry clusters (Table 6.1); and
   ii. ICT-related services (Table 6.2).

Table 6.1: Malaysia Digital Status Industry Clusters

Activity	Description
a. Information technology (InfoTech)	Companies involved in the design, development, implementation and technical services of any computing-based information systems
b. Digital creative content (DCC)	Companies engaged in the creation, delivery and enhancement of digital content
c. Malaysia Digital (MD) activities	Research, development and commercialisation of solutions and/ or provision of services in relation to any of the following technologies or areas (non-exhaustive): • big data analytics (BDA); • artificial intelligence (AI); • financial technology (fintech); • Internet of Things (IoT); • cyber security; • blockchain; • creative media technology; • sharing economy platform; and • user interface and user experience (UI/UX).

Source: Malaysia Digital Economy Corporation (MDEC)

Table 6.2: ICT-related Services

Activity	Description
a. Digital infrastructure[2]	• Data centres/ cloud computing/ data hosting • Submarine cables including cable landing station • Other digital infrastructure facilities and services
b. Hardware and software consultancies	• Supporting and developing strategies in the application of servers, networks and computers
c. Database activities	• Data management • Data security • Data retrieval services
d. Content development services	• Producing e-educational content • Providing online news and information • Gaming software
e. Internet-based business application services	• E-mail services • Application service provider (ASP) services • Hosting services

[2] Under the Budget 2022, the Government has introduced the Digital Ecosystem Acceleration (DESAC) scheme to strengthen the whole digital ecosystem of Malaysia

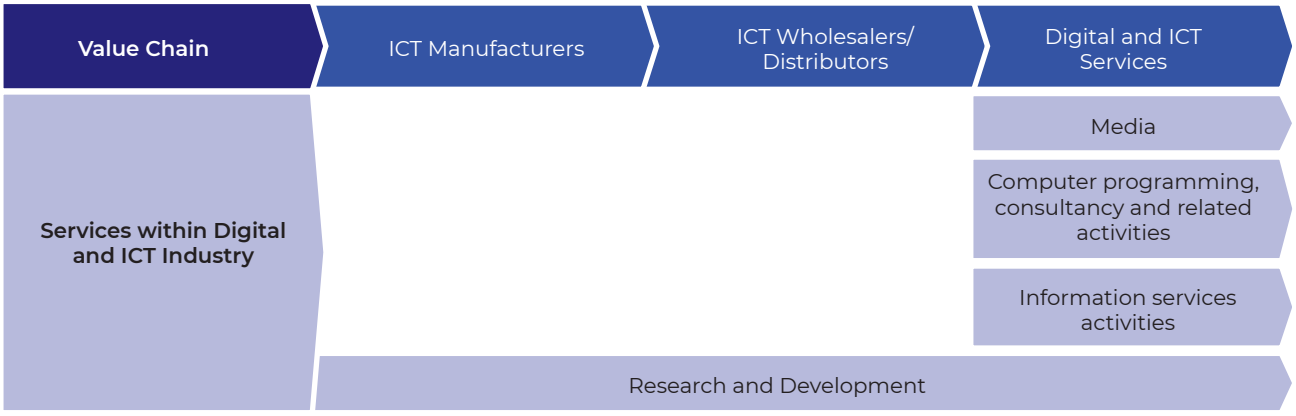
Table 6.2: ICT-related Services

Activity	Description
f. System integration services	• Electronic database information (EDI) • Data warehousing • Electronics application integration (EAI)
g. Computer-assisted manufacturing services	• Process automation • Robotics • Automated material handling systems • Supply chain integration/ management
h. Other ICT services	

Value Chain

2. The digital and ICT industry value chain comprises (Figure 6.1):
   i. ICT manufacturers;
   ii. ICT wholesalers/ distributors; and
   iii. digital and ICT services.

Figure 6.1: Value Chain of Digital and ICT Industry



Source: ICT Industry Profiling and Value Chain, Malaysia Productivity Corporation (MPC)

3. Activities undertaken by ICT manufacturers are covered under the electrical and electronics (E&E) industry, while ICT wholesalers/ distributors are part of the retail industry.

4. The digital and ICT services component in the value chain comprises:
   i. telecommunication services;
   ii. information services activities;
   iii. computer programming, consultancy, and related activities; and
   iv. media.

5. Telecommunication services cover digital infrastructure facilities which provide wires, wireless and satellite services, such as 5G and satellite internet.

6. Information services involve data processing, web hosting and managing web portals.
   i. Digital data is a key enabler for data analytics, blockchain, cloud computing and other internet-based services.
   ii. To support data management, services such as data hosting, data processing and data centres are provided in this sub-sector.

7. Computer programming activities involve the use of technology to create systems, applications and games. The sub-sector incorporates emerging digital technologies such as machine learning, AI, fintech and automation. This includes:
   i. software development and integration;
   ii. software and IT consulting;
   iii. application development; and
   iv. ICT cyber security services.

8. The focus of media is to encourage the production of animation, game and digital creative content, which include the following activities:
   i. programming and broadcasting;
   ii. motion picture, video and television; and
   iii. publishing activities.

Market Players

9. As of 2021, there were more than 4,700 digital and ICT players awarded Multimedia Super Corridor (MSC) Malaysia status, of which more than 2,700 were active companies. These projects undertaken by the enterprises involved investments totalling RM430.0 billion and generated 199,000 job opportunities. Starting 4 July 2022, the MSC Malaysia has been rebranded as the Malaysia Digital[3] initiative.

10. Industry associations represent the digital and ICT players in promoting the growth of the industry in collaboration with the Government. Non-exhaustive examples of the industry associations are:
   i. National ICT Association of Malaysia (PIKOM);
   ii. Malaysia Electronic Sports Federation (MESF);
   iii. Creative Content Association Malaysia (CCAM);
   iv. Technological Association of Malaysia (TAM);
   v. Malaysia Internet Exchange (MyIX); and
   vi. Fintech Association of Malaysia (FAOM).

[3] Malaysia Digital status companies are offered to a set of incentives, rights and privileges from the Government, subject to necessary approvals, compliance of applicable conditions, laws and regulationshole digital ecosystem of Malaysia

11. Related Ministries and Government Agencies that play a key role in the development of the digital and ICT industry include:
    i. Ministry of Communications and Digital (KKD);
    ii. Ministry of Science, Technology and Innovation (MOSTI);
    iii. Ministry of Investment, Trade and Industry (MITI);
    iv. MyDigital Corporation under the purview of the Ministry of Economy (KE);
    v. Malaysia Digital Economy Corporation (MDEC);
    vi. Malaysian Communications and Multimedia Commission (MCMC);
    vii. Malaysian Administrative Modernisation and Management Planning Unit (MAMPU);
    viii. MIMOS Berhad (MIMOS);
    ix. SIRIM Berhad (SIRIM);
    x. Malaysian Research Accelerator for Technology and Innovation (MRANTI);
    xi. Malaysian Investment Development Authority (MIDA);
    xii. Malaysia External Trade Development Corporation (MATRADE); and
    xiii. National Cyber Security Agency (NACSA).

12. Public research institutions and academia drive innovation to contribute to advancement of the digital and ICT industry. Examples include institutes of higher learning such as public and private universities.

Policies, Laws and Regulations

13. The industry's development is guided by the following:
    i. Malaysia Digital Economy Blueprint (MyDIGITAL);
    ii. Malaysia Artificial Intelligence Roadmap 2021-2025 (AI-RMAP);
    iii. Malaysia Cyber Security Strategy 2020-2024;
    iv. Twelfth Malaysia Plan, 2021-2025 (RMKe-12); and
    v. Industry4WRD: National Policy on Industry 4.0 (Industry4WRD).

14. Non-exhaustive laws and regulations related to the digital and ICT industry are:
    i. Personal Data Protection Act 2010 (PDPA);
    ii. Electronic Commerce Act 2006 (E-CA);
    iii. Copyright (Amendment) Act 1997; and
    iv. Regulations on Spectrum Allocation, Licensing and Interconnection.

SECTION 2 PERFORMANCE

IMP3 Focus and Performance

15. During the period of the IMP3 (2006 to 2020), 10 strategic initiatives were established to encourage the adoption of ICT and other promising technologies in industrial advancement. The strategic initiatives were:
    i. enhancing the awareness of trends and potential benefits from the greater adoption of ICT and other technologies;
    ii. improving international linkages in ICT and other technology developments to facilitate the sourcing of global knowledge;
    iii. nurturing and fostering collaborations between domestic business entities and foreign technology providers to accelerate technological diffusion, adoption and adaptation;
    iv. integrating Malaysian-owned companies into the global supply chains;
    v. promoting ICT and other potential technologies in the services sector;
    vi. intensifying private sector investments, including Foreign Direct Investment (FDI) to enhance technological capabilities and transfers;
    vii. establishing a data centre for the development and application of ICT and other technologies;
    viii. building domestic technological capacities and capabilities;
    ix. developing programmes on human resource development (HRD) to support technological enhancements in the manufacturing and services sectors; and
    x. enhancing institutional support in facilitating technological developments and applications.

16. These strategic initiatives have contributed to the growth of the ICT industry – in 2021, the contribution of ICT to the national GDP was 23.2 per cent (RM359.3 billion).

17. Exports of ICT services increased during the IMP3 period with a CAGR[4] of 10.4 per cent from RM3.3 billion (2006) to RM13.4 billion (2020).

Investments

18. The investment performance of the digital and ICT services industry for the period of 2006 to 2022 is recorded as follows (Table 6.3)

Table 6.3: Approved Investments of of Digital and ICT Services

Items	Units	IMP3			2021	2022	2021-2022
		2006	2020	2006-2020			
Total Investment[5]	RM billion	2.9	3.9	45.6	3.4	80.8	84.2
Domestic Investment	RM billion	2.0	2.6	28.1	1.6	8.8	10.5
Foreign Investment	RM billion	0.9	1.3	17.5	1.8	72.0	73.7
Number of projects	#	307	45	3,263	28	156	184
Employment	persons	17,919	3,794	182,911	1,971	13,431	15,402

Source: Compilation of data from MIDA and various Ministries/ Agencies

[4] *Compound annual growth rate*
[5] *The scope covers MD/ MSC status and ICT services; excludes telecommunications and broadcasting*

19. During the IMP3 period, a total of 3,263 projects were approved in the digital and ICT services industry with a total investment of RM45.6 billion. These investments committed a total of 182,911 job opportunities.

20. In 2021 and 2022, a total of 184 projects were approved with a total investment of RM84.2 billion. These investments committed a total of 15,402 job opportunities.

21. The industry's investment trend was attributed to notable establishment of data centre and data hosting projects. These projects show that Malaysia is well-positioned to become an ideal data centre hub.

Exports

22. The export performance (2006 to 2022) of digital and ICT services is depicted in Table 6.4 below.

Table 6.4: Exports of Digital and ICT Services

Item	IMP3			2021	2022	2006-2020	2020-2021	2021-2022
	2006	2020	2006-2020			CAGR	Annual Growth	
Exports[6] (RM billion)	3.3	13.4	14.0	15.9	10.4%	4.6%	14.2%	3.3

Source: Department of Statistics Malaysia (DOSM)

23. During the IMP3 period, total exports grew by a CAGR of 10.4 per cent from RM3.3 billion (2006) to RM13.4 billion (2020).

24. In 2021, total exports grew by 4.6 per cent to reach RM14.0 billion.

25. Subsequently, in 2022, total exports increased by 14.2 per cent to RM15.9 billion.

26. The factors that contributed to the export performance include the growth of the global Digital Economy, increased demand for ICT services and encouraging Government policies which support the development of the industry.

Imports

27. The table below presents the import performance of digital and ICT services (2006 to 2022) (Table 6.5).

Table 6.5: Imports of Digital and ICT Services

Item	IMP3			2021	2022	2006-2020	2020-2021	2021-2022
	2006	2020	2006-2020			CAGR	Annual Growth	
Imports[6] (RM billion)	3.6	16.7	17.8	18.3	11.6%	6.1%	2.9%	3.6

Source: DOSM

28. During the IMP3 period, total imports grew by a CAGR of 11.6 per cent from RM3.6 billion (2006) to RM16.7 billion (2020).

29. In 2021, imports grew by 6.1 per cent to RM17.8 billion.

30. Thereafter, imports grew further by 2.9 per cent to RM18.3 billion in 2022.

31. Factors that contributed to the rising import performance include the growth of the Malaysian Digital Economy and the heavy reliance on ICT services by businesses in Malaysia.

[6] *This data is based on DOSM statistics for ICT services and includes telecommunications, computer and information services*

Value-added

32. The digital and ICT services industry's value-added (GDP) during the period of 2006 to 2022 is recorded in Table 6.6 below.

33. During the IMP3 period, the industry's contribution to GDP has grown by a CAGR of 12.0 per cent from RM18.3 billion (2006) to RM89.3 billion (2020).

Table 6.6: Value-added of Digital and ICT Services

Item	IMP3		2021	2022	2006-2020	2020-2021	2021-2022
	2006	2020			CAGR	Annual Growth	
Value-added[7] (RM billion)	18.3	89.3	94.8	99.8	12.0%	6.3%	5.2%

Source: DOSM

34. The industry's contribution to Malaysian economy grew further by 6.3 per cent and 5.2 per cent in 2021 and 2022 respectively.

35. The growth of the industry was driven by the rapid growth of the Digital Economy such as e-commerce.

Employment

36. The industry's employment during the period of 2019 to 2022 is tabulated below (Table 6.7).

37. Employment in the industry grew by a CAGR of 2.9 per cent from 481,000 (2019) to 509,000 (2021).

Table 6.7: Employment in Digital and ICT Services

Item	IMP3		2021	2019-2022
	2019	2020		CAGR
Employment[8] (persons)	481,000	497,000	509,000	2.9%

Source: DOSM

38. The growth in employment was driven by the increasing demand for ICT services, which created new opportunities for ICT service providers as well as the rise of the Digital Economy.

[7] Value added is measured by the GDP of the ICT services industry, excluding ICT Manufacturing and ICT Trade; 2006 GDP data is based on constant 2005 prices, while 2020 to 2022 data are based on constant 2015 prices
[8] This employment data is based on DOSM ICT Satellite Account and includes ICT services, content and media and excludes ICT manufacturing and ICT trade. Due to the change in methodology for employment statistics tabulation in 2019, industry's employment breakdown from 2006 to 2018 is not available

Labour Productivity

39. The industry's labour productivity during the period of 2019 to 2022 is recorded below (Table 6.8).

Table 6.8: Labour Productivity of Digital and ICT Services

Item	IMP3		2021	2019-2022
	2019	2020		CAGR
Labour Productivity[9] (RM)	175,104	179,581	186,393	3.2%

Source: DOSM

40. The industry's labour productivity grew by a CAGR of 3.2 per cent from RM175,104 (2019) to RM186,393 (2021).

41. The growth in labour productivity was driven by the increasing use of technology and improvement of skills.

Research and Development

42. The Government provides several grants through MIDA and MDEC for ICT services development to:

i. accelerate the shift of Malaysian-owned companies in targeted industries toward high value-added, high-technology, knowledge-intensive and innovation-based industries;
ii. transform the services and manufacturing sectors; and
iii. increase the presence of Malaysian-owned companies in the global market.

Table 6.9: Grants in Digital and ICT Services

No.	Agency	Grant	Description
1	**MIDA**	**Domestic Investment Strategic Fund (DISF) (2012-2021)**	Establishment of a DISF of RM1.0 billion to accelerate the shift of Malaysian-owned companies in targeted industries to high value-added, high technology, knowledge-intensive and innovation-based industries. The DISF will provide matching grants (1:1) as follows: i. for training and research and development (R&D) activities; ii. to undertake outsourcing activities; iii. to comply with international standards; and iv. for licensing/ purchase of technology.

[9] *Annual labour productivity is derived from value added per employment*

Table 6.9: Grants in Digital and ICT Services

No.	Agency	Grant	Description
2	MIDA	**Smart Automation Grant (SAG) (2020-2021)**	The SAG was introduced in the National Economic Recovery Plan (PENJANA) in June 2020. Under the SAG scheme, the Government has allocated RM200.0 million, capped at up to RM1.0 million per company. The main objectives of the SAG are: i. to assist as well as incentivise small and medium enterprises (SME) and mid-tier companies (MTCs) to automate and digitalise operations, production and trade channels; ii. to improve efficiency in the manufacturing and services sectors; iii. to reduce reliance on low-skilled foreign workers; iv. to provide job opportunities in high value-added sectors; v. to enhance SME competitiveness on an international level; vi. to be aligned with the National Policy on Industry 4.0; and vii. to boost domestic investments.
3	MIDA	**Industry4WRD DISF (2019-2021)**	Through Industry4WRD DISF, Malaysia is envisioned to become: i. strategic partners for smart manufacturing and manufacturing related services in Asia Pacific; ii. the preferred destination for high-tech industry investments; and iii. the total solution provider for advanced technology.
4	MIDA	**Automation Capital Allowance (CA) (2020-Present)**	The main objectives of the Automation CA incentive for the services sector are: i. to encourage services companies to engage in innovative and productive activities; ii. to encourage quick adoption of automation; iii. to spur automation initiatives; and iv. to enhance productivity in the services sector.
5	MDEC	**Global Technology Fund (GTF) (2017-2020)**	The GTF supported three focus pillars: i. nurturing global champions – GTF targets local scale-up technology companies that are ready to expand their existing global market presence via technology innovation; ii. driving investments in research, development and commercialisation – GTF targets foreign technology companies to set up a Centre of Excellence to conduct high-value technology innovation and R&D activities; and iii. catalysing digital innovation ecosystem – Improve the prospects of innovative, high-growth Malaysian technology start-ups in international markets.

Table 6.9: Grants in Digital and ICT Services

No.	Agency	Grant	Description
6	MDEC	**Global Technology Grant (GTG) (2022)**	GTG is to nurture global champions, driving investments and catalysing the digital innovation ecosystem. The grant will be used solely for the purpose of technology innovation, development and commercialisation of innovative commercial-driven products or services.
7	MDEC	**4IR Catalyst Grant (4ICG) (2022)**	4ICG is designed to catalyse the use and development of Industry 4.0 technologies into key business verticals as outlined in the National Fourth Industrial Revolution (4IR) Policy. The grant will be used solely for the purpose of co-creation, problem-solving and commercialisation of Industry 4.0 technologies.
8	MDEC	**Smart Automation Grant (SAG) (2020-2021)**	SAG is a matching grant for services companies to automate their business processes and adopt digitalisation. The grant will be used solely to kick start the development and implementation of the project by technology to automate the business operations.
9	MDEC	**Digital Content Grant (DCG) (2016-2023)**	DCG is designed and created to support local creative content companies in developing, producing and marketing their digital content in animation, digital games, digital comics and creative technology content. Grant Type: i. the mini project grant – focuses on the development stage of the project involving idea generation and production design for the studios in operation for less than five years; ii. the development grant – focuses on the development stage of the project involving idea generation and production design for the companies in operation for more than one year; iii. the production grant – focuses on the production stage of the project which involves the activity of creating, assembling, aggregating and generally producing or generating content; and iv. the marketing and commercialisation grant – financial assistance provided to IP creators with a market-ready product.
10	MATRADE	**Services Export Fund (SEF) (2021-2025)**	The SEF provides assistance to Malaysian Service Providers (MSPs) to undertake activities to expand and venture into the international market. The assistance is extended in the form of reimbursable grant, for 12 eligible activities. The grant disbursement is according to the maximum amount of each activity.

Institutional Support

Pelan Jalinan Digital Negara (JENDELA)

43. The JENDELA initiative was launched in September 2020 with the aim to maximise the efficiency of current resources and infrastructure for both mobile and fixed broadband services.

44. The programme has improved connectivity in the country, with 96.9 per cent 4G coverage in populated areas.

45. The target for Phase 2 is to achieve 100.0 per cent connectivity by 2025.

46. This is supplemented by the Government's plan to increase mobile broadband speed to 100.0 Mbps through the nationwide 5G rollout by Digital Nasional Berhad (DNB).

47. As at March 2023, 4,634 sites providing 5G coverage have been developed nationwide with an overall target by the end of 2023 of 7,509 sites. As such, the readiness of the 5G network has reached 57.8% coverage of populated areas.

MyDIGITAL

48. The objective of MyDIGITAL initiative is to drive digital transformation and propel Malaysia towards becoming a technologically advanced and digitally inclusive nation.

49. MyDIGITAL covers the following key focus areas to be achieved by 2025:
    i. the Rakyat will experience improved digital literacy, increased availability of high-paying job opportunities while fostering social well-being and environmental sustainability;
    ii. businesses including the micro, small and medium enterprises (MSME) will benefit from the prospects of the shared economy, generating opportunities for expansion and development;
    iii. the Government to provide integrated end-to-end online services through digitalisation which are more efficient, effective and transparent; and
    iv. the Government to target an investment of RM70 billion in digitalisation and Digital Economy with the goal of contributing 22.6 per cent to Malaysia's GDP by 2025.

Industry4WRD

50. The Industry4WRD policy was launched by MITI in 2018 to transform the manufacturing sector by driving technology adoption in line with Industry 4.0.

51. To propel the manufacturing sector and its related services, the formation of Industry4WRD has three main objectives, i.e. A-C-T:
    i. attract the industry (including MSME) in the adoption of Industry 4.0 technologies and processes and further increase Malaysia's attractiveness as the preferred manufacturing location;
    ii. create the ecosystem for Industry 4.0 technologies to be adopted (including talent, digital infrastructure, funding and collaborative platforms) and align existing and future development initiatives; and
    iii. transform industry capabilities in a holistic and an accelerated manner with the aim to increase labour productivity, cost efficiency and promotion of local technological development.

52. The vision is to establish Malaysia as a primary destination for high-tech industry by being a total solutions provider for advanced technology. This will enable the manufacturing sector to adopt smart manufacturing processes, positioning Malaysia as a strategic partner for its related services within Asia-Pacific.

Digital Investment Office

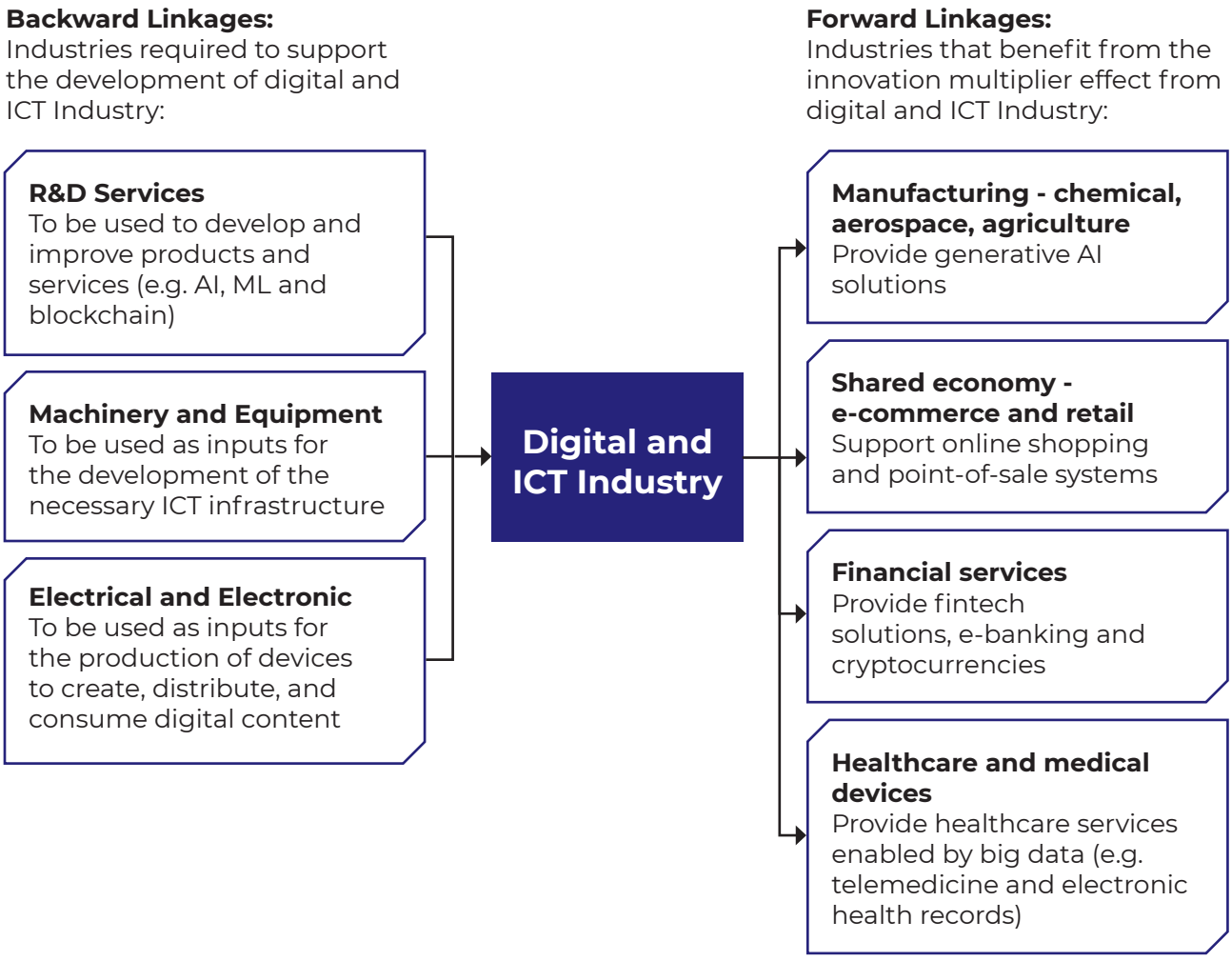
53. The Digital Investment Office (DIO) is a collaborative platform between MIDA and MDEC to coordinate and facilitate foreign and local digital investments in Malaysia in line with the Government's aim to attract RM70 billion in investment in digitalisation by 2025.

54. The DIO will be a one-stop centre for all digital investment projects in Malaysia by providing end-to-end facilitation with optimised solutions to ease investors' journey in setting up operations in Malaysia. At the same time, the DIO also puts forward future-ready policies to meet investor needs, including the Malaysia Digital initiative and Digital Ecosystem Acceleration Scheme.

Linkages with Other Industries

55. The digital and ICT industry has extensive backward and forward linkages with other industries (Figure 6.2).

Figure 6.2: Industries with Backward and Forward Linkages with Digital and ICT Industry



SECTION 3 TRENDS AND OPPORTUNITIES

56. The Digital Economy market size in Southeast Asia is expected to reach RM4.9 trillion[10] by 2030.[11]

57. The growth of the Digital Economy is driven by the:
    i. investment in digital solutions by more than 80.0 per cent of medium and large firms in Malaysia, according to the World Bank;
    ii. shift in economic dynamics as emerging economies relocate production activities to Malaysia; and
    iii. Malaysia's readiness to implement AI in public services – ranked 1st in ASEAN and 28th globally.[12]

58. The future trends and opportunities for digital and ICT include:
    i. Digital Economy;
    ii. 4IR;
    iii. AI; and
    iv. cyber security.

Digital Economy

59. The Digital Economy is experiencing rapid growth, providing opportunities not only for Malaysia, but globally. The Digital Economy contributed 23.2 per cent to the nation's GDP[13] in 2021, and the figure is expected to rise to 25.5 per cent by 2025.

60. The Movement Control Order (MCO) throughout the COVID-19 period accelerated the expansion of internet access and usage as:
    i. businesses and MSME resorted to digitalisation to minimise the disruption in operations;
    ii. mobility restrictions increased the utilisation of digital platforms and payments for home entertainment; and
    iii. multiple sectors relied on digital services, stimulating economic activities amid the lockdown.

61. Increasingly, consumers are shifting towards digitalisation, particularly in embracing e-commerce and e-banking.

62. Given the dynamic nature of the Digital Economy, there are two categories of investment opportunities for Malaysia.
    i. Growth – focus on the regional and global markets while fostering the development of the local market; and
    ii. Enabler – establish crucial drivers to develop digital capabilities across sectors.

63. In 2021, Malaysia launched MyDIGITAL to chart the growth of the Digital Economy. MyDIGITAL is a transformational plan to drive the business sector to compete in the global economy by accelerating the adoption of digitalisation. The vision is for Malaysia to be a regional leader in the Digital Economy by improving digital literacy, creating high-income jobs and providing opportunities to sub-urban and rural areas. Thus, it is crucial to develop digital-first mindset and increase digital technology adoption across the public sector.

64. Refer to Action Plan 5 (AP5) and Action Plan 6 (AP6) in Section 5 for strategies and action plans related to the Digital Economy.

[10] USD1.0 trillion, converted based on exchange rate USD1 to RM4.48
[11] Source: e-Conomy SEA 2022
[12] Source: AI-RMAP
[13] Source: New Investment Policy

Fourth Industrial Revolution (4IR)

65. The 4IR is experiencing rapid growth driven by a multitude of technologies that are crossing boundaries between physical, digital and biological spaces.

66. Digital technologies, innovation and knowledge are driving economic growth and competitiveness of Malaysia in the 4IR.

67. Industry 4.0 transforms the entire spectrum of product development from design and fabrication to operations and maintenance. It has the potential to revolutionise factory operations, improve processes and encourage significant improvements in energy efficiency.

68. The manufacturing industry is increasingly shifting towards producing higher valued technological products. This is driven by:
    i. Rapid technological advancement
        a. New technologies such as BDA, IoT and cloud computing are constantly evolving.
        b. To be a market leader, there is a narrow timeframe to capitalise on the opportunity to cultivate an ecosystem of new technologies.
        c. This provides substantial competitive advantages, including the ability to set industry standards, attract regional players and unlock new avenues of growth.
    ii. Shift in global economic dynamics
        a. Increasing complexity in the global manufacturing supply chain as companies are not bound by geographical locations.
        b. The rise of emerging economics in the region as countries are relocating production activities to ASEAN.
        c. There is greater global competition as industries are able to tap into new markets while preserving the domestic market share. This will drive further innovation and investments in new technologies.

69. Malaysia has launched the Industry4WRD that provides a comprehensive transformation agenda for the manufacturing sector.

70. Smart manufacturing and Industry 4.0 technologies rely on the integration of ICT systems and physical systems. This integration requires the development of standards that ensure different systems can communicate with each other and that data can be exchanged seamlessly.

71. Refer to Action Plan 2 (AP2) and Action Plan 4 (AP4) in Section 5 for strategies and action plans related to encouraging digitalisation across manufacturing in Malaysia.

Artificial Intelligence (AI)

72. AI presents numerous opportunities for the manufacturing industry, offering opportunities to drive innovation, streamline operations and increase productivity.

73. AI is expected to generate the highest impact among other emerging technologies across all industries and businesses. In Asia, AI will boost GDP by a further 10.4 per cent, prompting countries to formulate national AI strategies.

74. Malaysia has launched the AI-RMAP in 2021 to create a thriving and sustainable AI innovation ecosystem that will push Malaysia into a high-technology and high-income nation.

75. In 2022, Malaysia ranked second in ASEAN and 29th globally in terms of readiness to implement AI in the delivery of public services.

76. Harnessing the capability of AI, generative AI is a type of AI that uses algorithms to generate new data based on existing data and develop new content. Generative AI is expected to drive a 7.0 per cent (RM31.4 trillion)[14] increase in global GDP and increase productivity growth by 1.5 per cent in the next 10 years.

77. Examples of generative AI application for manufacturers are:
    i. design drugs, offering pharmaceutical companies' significant opportunities to reduce costs and duration for drug discovery;
    ii. formulate new materials with unique properties that are lighter, stronger or more durable;
    iii. develop effective crop planning based on weather patterns, soil conditions and other agricultural data; and
    iv. other possible applications in industries such as automotive, aerospace, financial services and advanced materials.

78. Refer to Action Plan 1 (AP1) in Section 5 for strategies and action plans related to accelerating the adoption of AI in Malaysia.

Cyber Security

79. As Malaysia embraces the Digital Economy, cyber security threats have increased as people generate, exchange and use data more extensively.

80. As the Government and businesses continue to digitalise operational models, cyber risks loom over business continuity and operational effectiveness.

81. Since 2014, Malaysia has consistently ranked among the top 10 countries globally for cyber security commitment based on the ITU Global Cyber security Index.

82. Challenges remain with regard to the awareness levels among the public and MSME, on the importance of being secure in the digital space. Financial constraints may be a deterrence in the adoption of cyber security tools.

83. Based on statistics from Cyber Security Malaysia (CSM), Malaysia reported 4,741 cases of cyber threats in 2022.

84. Thus, cyber security plays an important role in ensuring information systems and manufacturing lines are protected from cybercrime threats.

85. Refer to Action Plan 3 (AP3) in Section 5 for strategies and action plans related to cyber security initiatives.

[14] *USD 7.0 trillion, converted based on exchange rate USD1 to RM4.48*

SECTION 4 CHALLENGES

Digital Accessibility

86. The digital divide is reflected in the percentage of broadband subscriptions among the income groups[15]:
    i. B40 group is the lowest at 49.3 per cent;
    ii. M40 group at 90.7 per cent; and
    iii. T20 group at 99.7 per cent.

87. Despite a high mobile penetration rate, users have limited access to the internet, thus hindering their participation in the Digital Economy. Lack of accessibility is among the main factors which contribute to the digital divide especially in rural areas.

88. The COVID-19 pandemic has affected many businesses and digitalisation has become the new normal in socioeconomic activities.

89. The digital divide among Malaysians in income groups, geographical areas and age groups needs to be addressed for Malaysia to embrace the digital era.

90. Refer to AP2 and AP6 in Section 5 for strategies and action plans related to the improvement of digital connectivity.

Digital Talent and Skills

91. To meet the demands of the industries and to remain competitive in the regional as well as global market, there will be a surge in demand for high skilled digital talent.

92. Digitalisation has to be embedded within talent development at various levels of education and in the upskilling and reskilling of the existing workforce.

93. Malaysia has been relying on low labour cost in the past, with a declining share of skilled labour in the workforce.

94. There is a significant shortage of local talents, skills and knowledge for Industry 4.0, particularly in the areas of IoT, robotics and AI as well as data centre operations.

95. There is a limited number of local players providing Industry 4.0 solutions across key technologies. Local players are at a disadvantage in terms of costs compared to their international competitors.

96. Malaysia can attract foreign skilled talent or knowledge workers to encourage technology transfer to upskill local talent.

97. Apart from that, Industry 4.0 is transforming the landscape of jobs and will evolve traditional roles. According to the World Economic Forum, 50.0 per cent of the workforce will need to be retrained over the next two years to meet the demands of Industry 4.0.

98. New roles with different skillsets will be created while some tasks will be obsolete.

99. Skilled workforce from the science, technology, engineering and mathematics (STEM) will be required to support the development of the industries.

100. There is an urgent need to upskill and reskill the existing labour pool as well as to attract future talents.

101. The digital transformation of the Government sector will require digital-ready civil servants.

[15] *Source: RMKe-12*

102. As job requirements change and new roles are created, the key challenge for Malaysia is to transform the national workforce into a skilled workforce to remain competitive.

103. Refer to Action Plan 7 (AP7) in Section 5 for strategies and action plans related to the building skills and talent of Malaysia to meet the demand of the industry.

R&D Activities

104. Gross Domestic Expenditure on R&D (GERD) in ICT declined by 43.0 per cent from 2014 to 2018.

105. Businesses are not sufficiently incentivised to invest in R&D initiatives. Thus, insufficient innovative efforts are impacting technological advancements.

106. Apart from that, MSME encounter barriers to collaboration in research, resulting in limited opportunities to pool knowledge, share expertise and collectively address complex problems.

107. There is a pressing need for a collaborative approach between the public and private sectors to overcome these hurdles and foster a more conducive environment for R&D.

108. The Government and the private sector can empower organisations to thrive in research-driven initiatives by jointly addressing these challenges and creating mutually beneficial incentives. This will lead to accelerated progress and sustainable economic growth.

109. Refer to AP1 in Section 5 for strategies and action plans related to R&D.

SECTION 5 STRATEGIES AND ACTION PLANS

NIMP 2030 Focus

110. During the period of the NIMP 2030, the industry will:
   i. drive digital adoption in the public and private sector;
   ii. develop a trusted and secure digital ecosystem;
   iii. intensify efforts in the application of emerging technologies in the manufacturing sector through Industry4WRD; and
   iv. build a digital ready Malaysian workforce to increase competitiveness in the region.

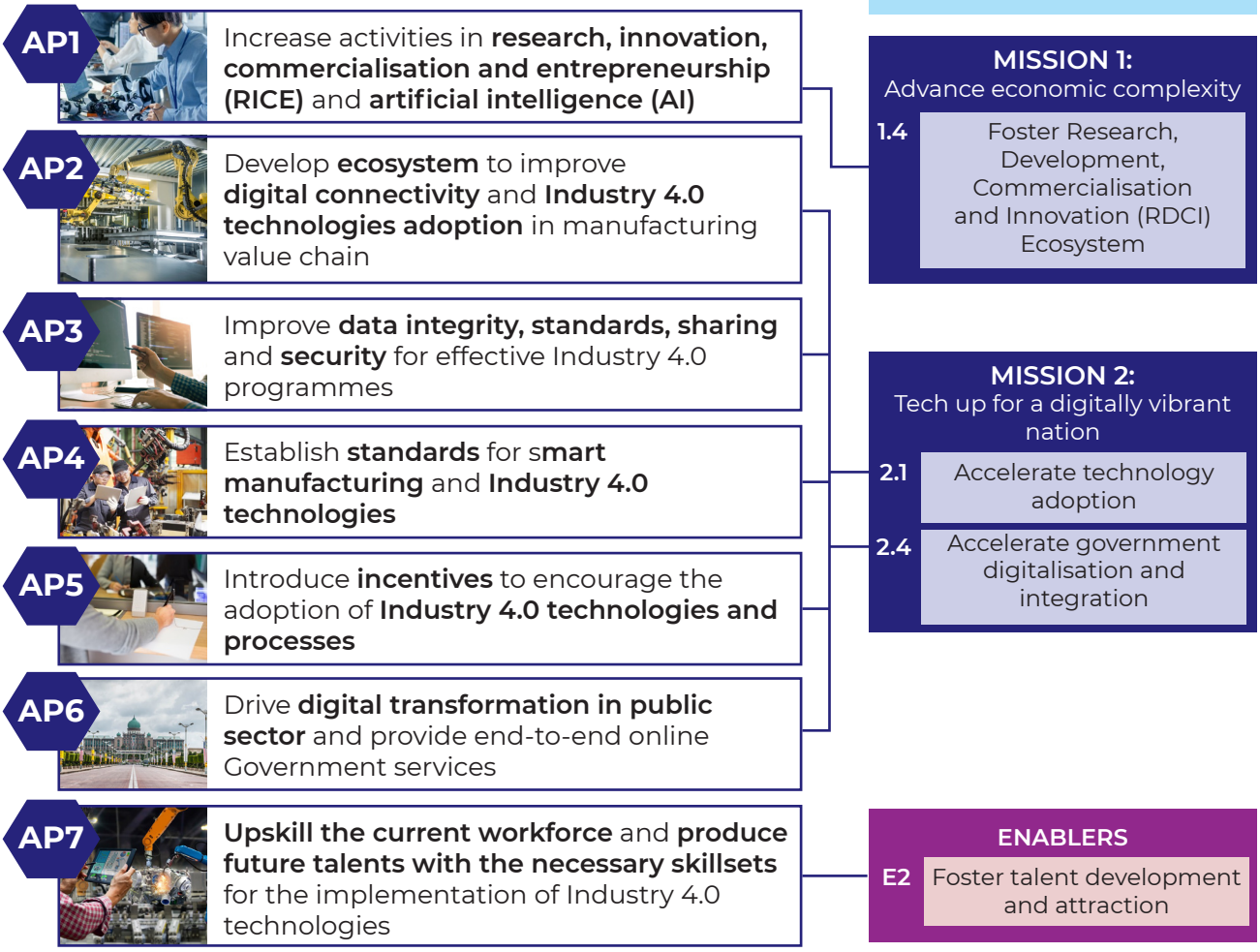
Action Plans

111. Strategies and Action Plans relating to the NIMP 2030's Missions and Enablers are applicable to this industry (Figure 6.3).

112. Further action plans specific to this industry shall be guided by:
   i. RMKe-12;
   ii. Industry4WRD;
   iii. MyDIGITAL;
   iv. AI-RMAP; and
   v. Malaysia Cyber Security Strategy 2020-2024

Figure 6.3: Strategies and Action Plans for Digital and ICT Industry

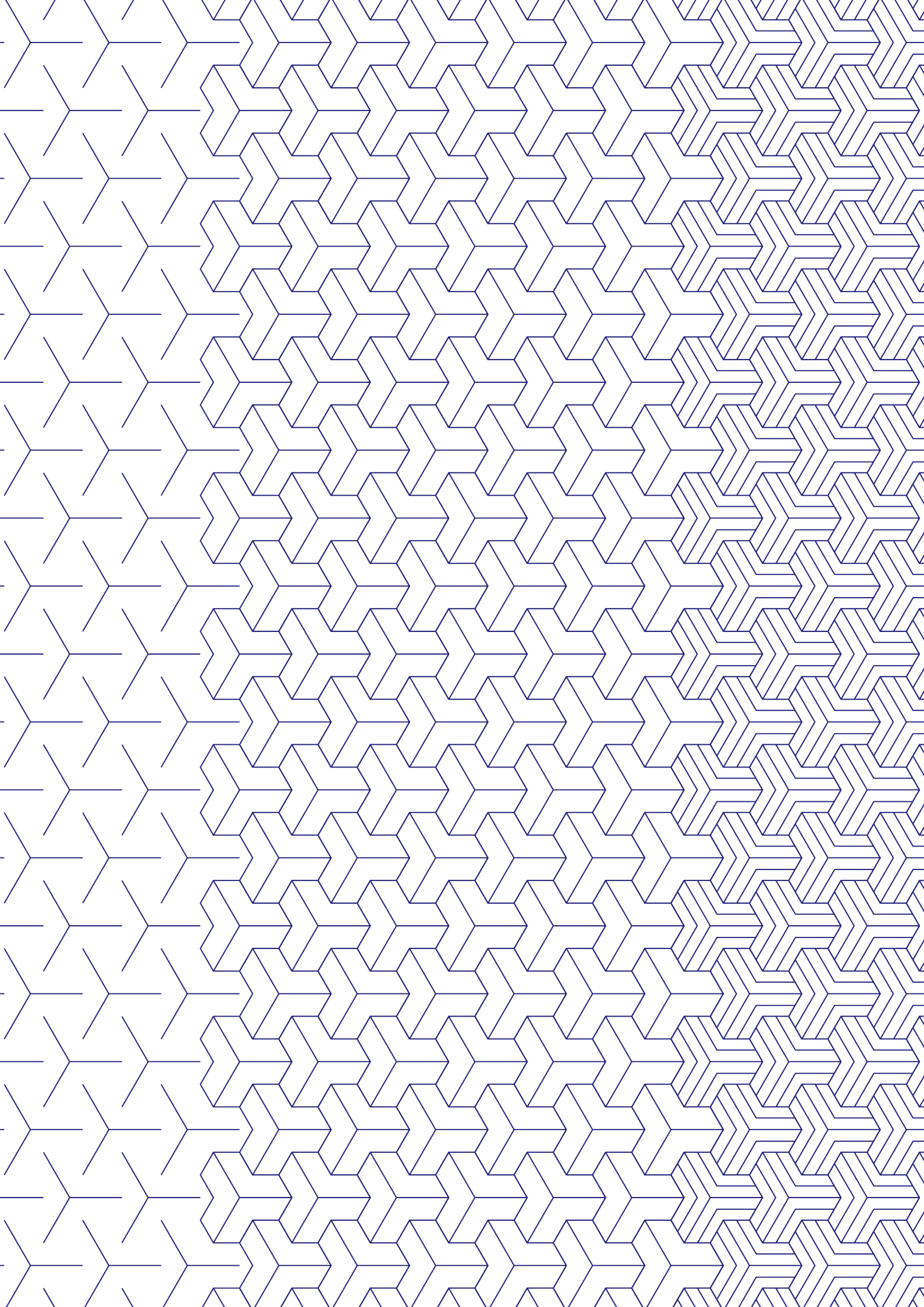
The following action plans are guided by Industry4WRD, MyDIGITAL, AI-RMAP and Malaysia Cyber Security Strategy 2020-2024:



APPENDIX 1 INCENTIVES

There is an array of incentives offered for key industry players of digital and ICT industry, these include the following:

Incentives	Agency
Malaysia Digital	Malaysian Digital Economy Corporation (MDEC)
Digital Ecosystem Acceleration (DESAC)	Malaysian Investment Development Authority (MIDA)



e ISBN 978-967-0020-06-8