DIGITAL SARAWAK

## Harnessing Digitalisation for Sustainable Development

Digital Sarawak

"By 2030, there will be no distinction between the digital economy and the economy"

- Government services are data and citizen driven, efficient and secure with 100% online option

- Businesses are digitally driven business

- Sarawak has digitally literate society to maximise digital value

- Sarawak has a globally competitive technology sector

- Sarawak is cyber secure with vibrant digital environment fostering economic prosperity, social inclusivity and environmental sustainability

POST COVID-19 DEVELOPMENT STRATEGY 2030 (PCDS 2030)

Post COVID-19 DEVELOPMENT STRATEGY 2030

Sarawak Government
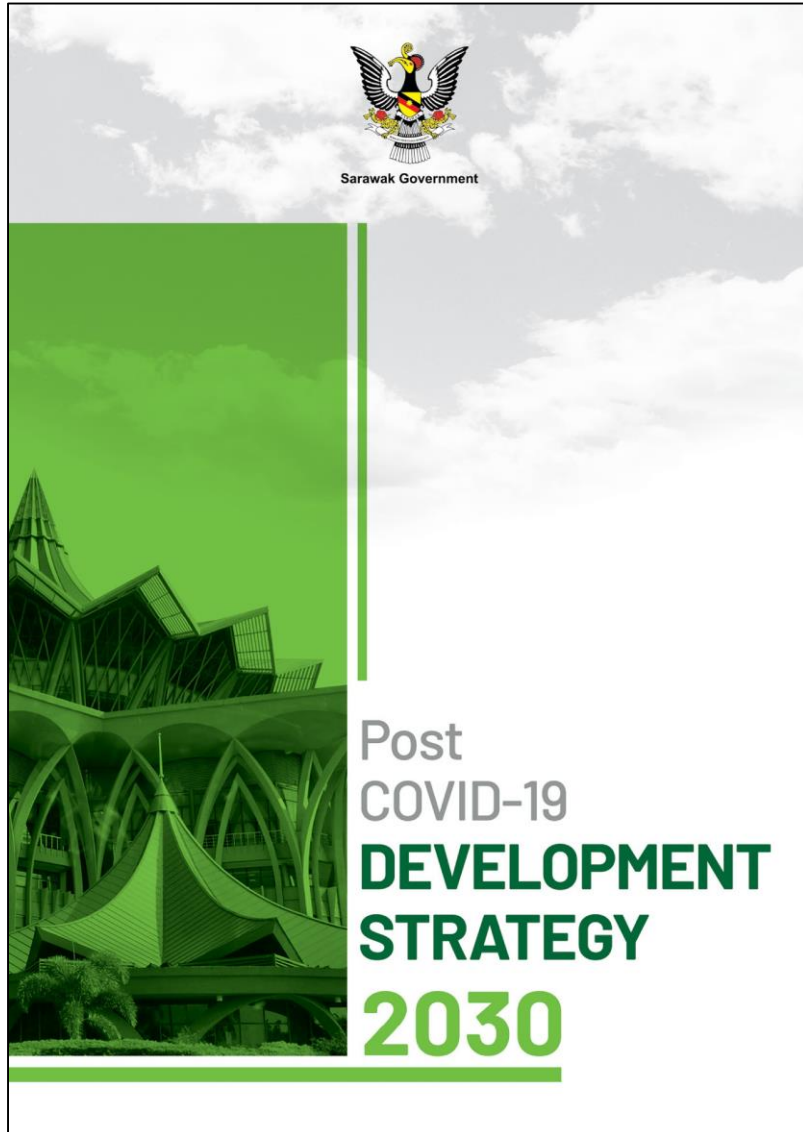
Digital Transformation is the key enabler and catalyst to PCDS 2030

Why Sarawak Digital Economy Blueprint 2030?

SARAWAK DIGITAL ECONOMY BLUEPRINT 2030

- Key contributor to Post COVID-19 Development Strategy 2030
  - Increase productivity, improve efficiency and lower cost
  - Create high value jobs, increase household income
- Tap percentage of global GDP into Sarawak
- Accelerate digital investment (FDI & DDI) and public-private partnership
- New business models and access to global market
- **Accelerate ease of doing business in Sarawak**
- **Spur innovation and new generation of digital industry**
- **Foster inclusivity, wealth sharing & transparency**
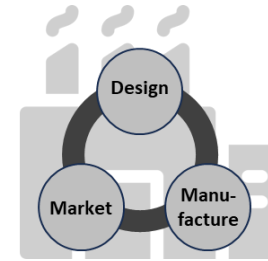
Economic Impact of Digitalisation

Digital Assets

The value derived from digital technology assets & services – infrastructure, software, digital manufacturing (chips, devices, computes), etc.
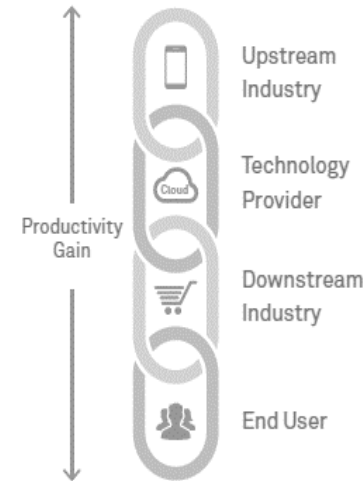
Digital Spillover

The "knock-on" benefits that follow on from digital investment, with productivity gains rippling across the economy

Internal

Optimised technology investments applied throughout the operation

Vertical

Transferring productivity gains in services across the entire supply chain

Horizontal

Innovation by one company is emulated by others, leading to productivity gains across a sector

What is for Sarawak?

Developed State by 2030

Society

Job opportunities and improved social wellbeing

- High/semi-skilled jobs
- All students & household with access to internet
- Increase household income
- Lower GINI Index

Business

New business models and access to global market

- Contribution to Sarawak GDP & productivity
- New high-tech start-ups
- Growth in Digital Investment
- Digitalised MSMEs

Government

Improved public service delivery

- Secure online government services – Ease of Doing Business
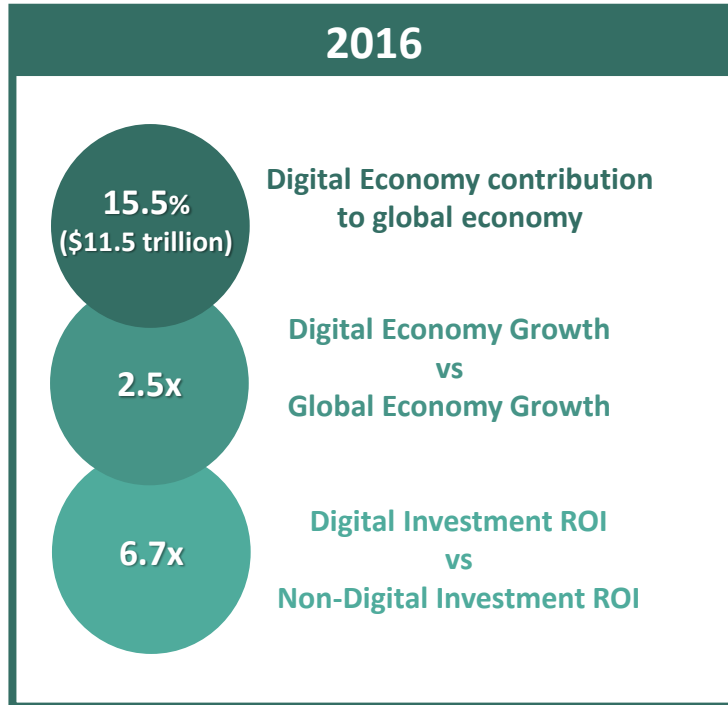- Digitally literate civil servants
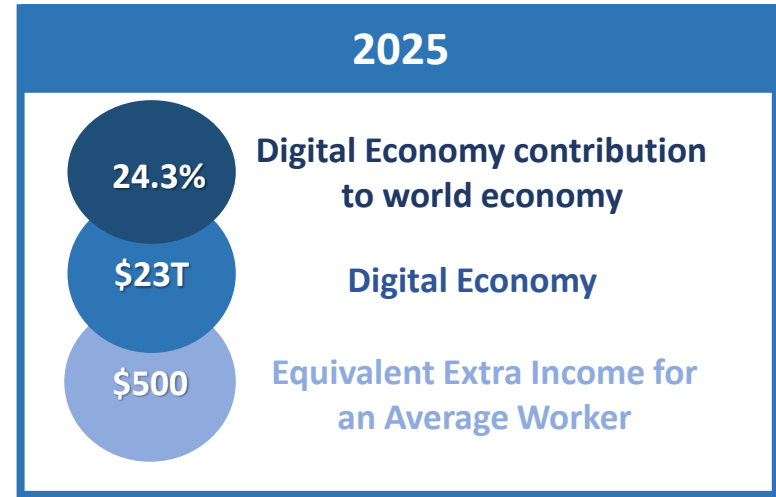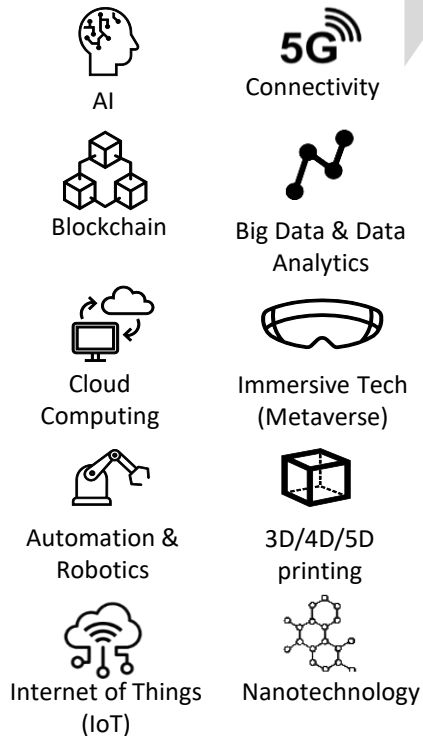- Cashless payment option offered by ministries & agencies
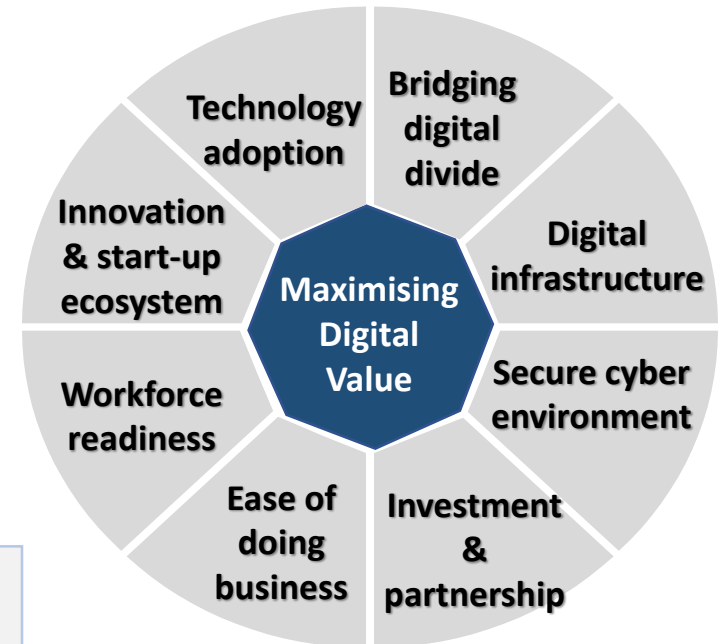- Enhanced data protection, privacy & security

Digital Economy Trends

Value of Digital Economy

2016

15.5% ($11.5 trillion) — **Digital Economy contribution to global economy**

2.5x — **Digital Economy Growth vs Global Economy Growth**

6.7x — **Digital Investment ROI vs Non-Digital Investment ROI**

From ICT to Frontier Technologies

- AI
- 5G Connectivity
- Blockchain
- Big Data & Data Analytics
- Cloud Computing
- Immersive Tech (Metaverse)
- Automation & Robotics
- 3D/4D/5D printing
- Internet of Things (IoT)
- Nanotechnology

2025

24.3% — **Digital Economy contribution to world economy**

$23T — **Digital Economy**

$500 — **Equivalent Extra Income for an Average Worker**

Digital Readiness Policies

Maximising Digital Value

- Technology adoption
- Bridging digital divide
- Digital infrastructure
- Secure cyber environment
- Investment & partnership
- Ease of doing business
- Workforce readiness
- Innovation & start-up ecosystem
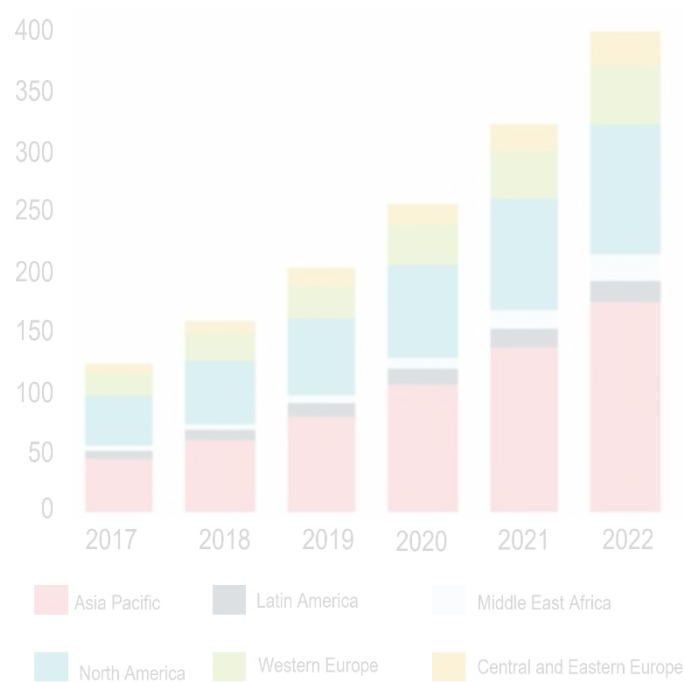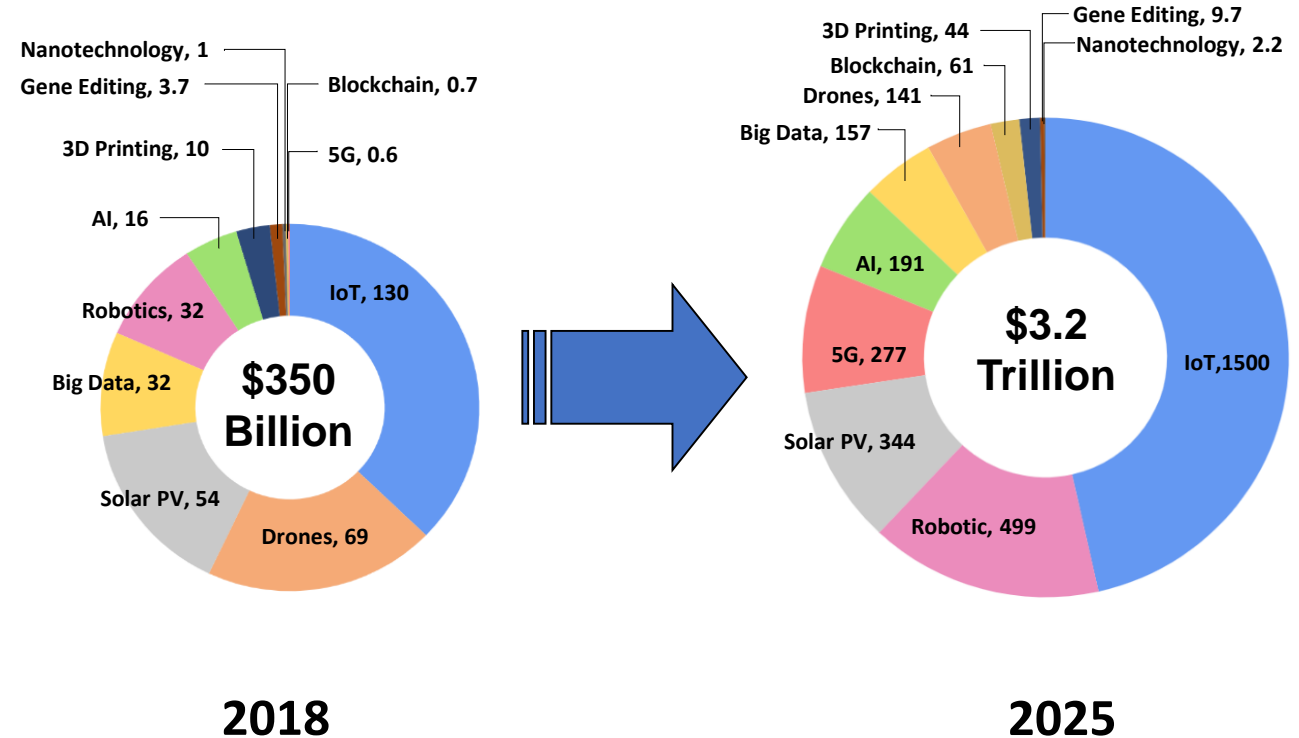
- **Policies, Regulations and Digital Readiness to maximise digital value**

Digital Economy Trends

- **Internet Protocol traffic has exceeded 400 Exabyte per month**

- **Frontier Technologies**

2018

Nanotechnology, 1
Gene Editing, 3.7
3D Printing, 10
AI, 16
Robotics, 32
Big Data, 32
Solar PV, 54
Drones, 69
IoT, 130
Blockchain, 0.7
5G, 0.6

$350 Billion

2025

3D Printing, 44
Blockchain, 61
Drones, 141
Big Data, 157
AI, 191
5G, 277
Solar PV, 344
Robotic, 499
IoT, 1500
Gene Editing, 9.7
Nanotechnology, 2.2

$3.2 Trillion

- **Cross-border data flows are a new international economic flow**

- **WEF estimates 85 million jobs will be displaced and 97 million new jobs will be created by 2025**

Sarawak Digital Economy Blueprint 2030

- **Moving Forward**
  - Foundation for the PCDS 2030
  - Builds on the SDE Strategy 2018-2022
  - Aligned with the Global and Malaysia Digital Economy Blueprints
  - Blueprint recognises that Government plays an enabling role
  - Focuses on growing the private sector economy
  - Targets on growing whole-of-society digital transformation

- **Vision**
  - Sarawak to be a *"leading Digital Economy and Society by 2030"*

- **Mission**
  - Nurture integrated ecosystem to foster inclusive digital society
  - Build the right foundations to grow Digital Economy
  - Foster business growth and vibrant technology sector
  - Capitalise on digital technologies to maximise digital value
  - Deliver simple, secure and trusted government services

Sarawak Digital Economy Blueprint 2030

## Built on five strategic pillars

- **Focusing on Economic Growth Priorities**
  - Accelerate digitalisation of economic sectors and data monetisation
  - Boosting economic competitiveness through digitalisation

- **Growing Digital Businesses**
  - Support and grow globally competitive and vibrant technology sector, investments, trade and start-ups & spin-ins

- **Transforming Public Sector & Services**
  - Deliver efficient, secure and trusted online services and improve ease of doing business

- **Adoption of Frontier Technologies**
  - Enable economy wide transformation to maximise digital value

- **Building the Foundation**
  - Accelerate **Digital Readiness** in infrastructure & connectivity, data governance & cyber security, digital talent & skills, research, innovation & entrepreneurship and inclusivity

Growing Digital Business

Digital Investment

Geography of Digital Investment

Shift in investment

7%
O&G

70%
Technology

United States
~70%

Asia
~25%
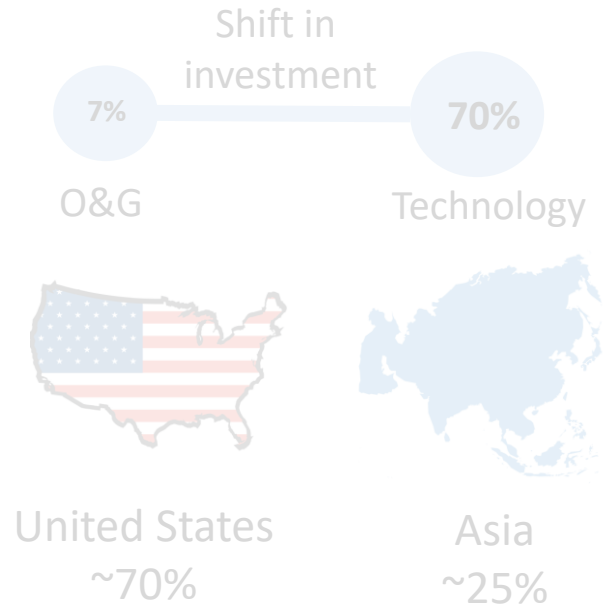
ASEAN
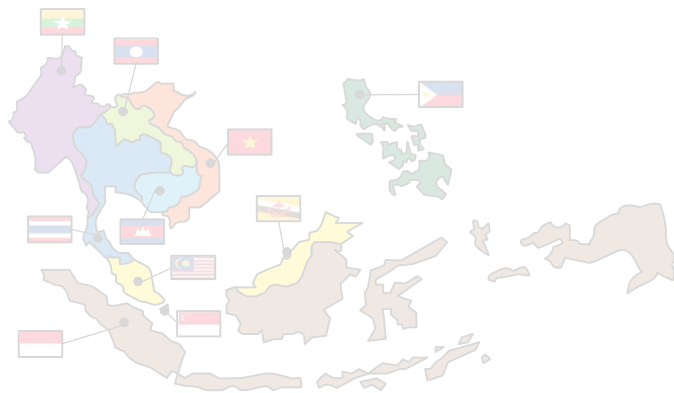
- 662 mil population
- $3.35 trillion GDP
- 70% internet users

- **Opportunities in Sarawak**

Digital Services

Digital Infrastructure

Technology

Research & Talent

- **Key Drivers**

  - Visionary Leadership and committed Government
  - Conducive policies and business environment
  - International, national and local connectivity
  - Utilities – green energy & abundance of water
  - Cyber security maturity
  - Domestic Data Centres
  - Skilled local talent (free higher education)
  - Tax incentives
  - Lifestyle and Liveability

- **Digital Precinct/Park**
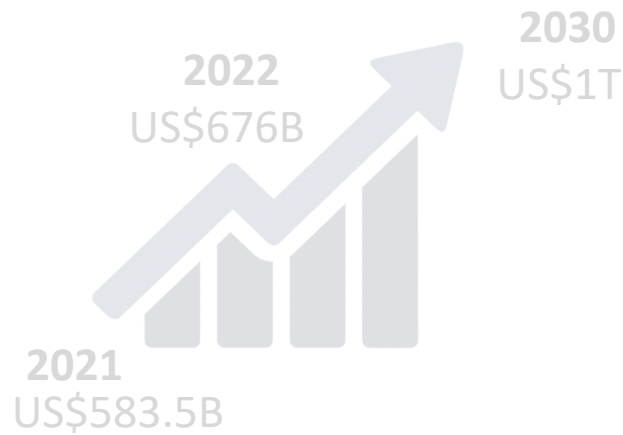- **InvestSarawak -** One stop Agency to accelerate investment

Hyperscale Data Centres & High-Performance Computing

- Cross-border data flow
- High compute power
- High-speed connectivity
- Green energy
- Competitive electricity & water tariffs
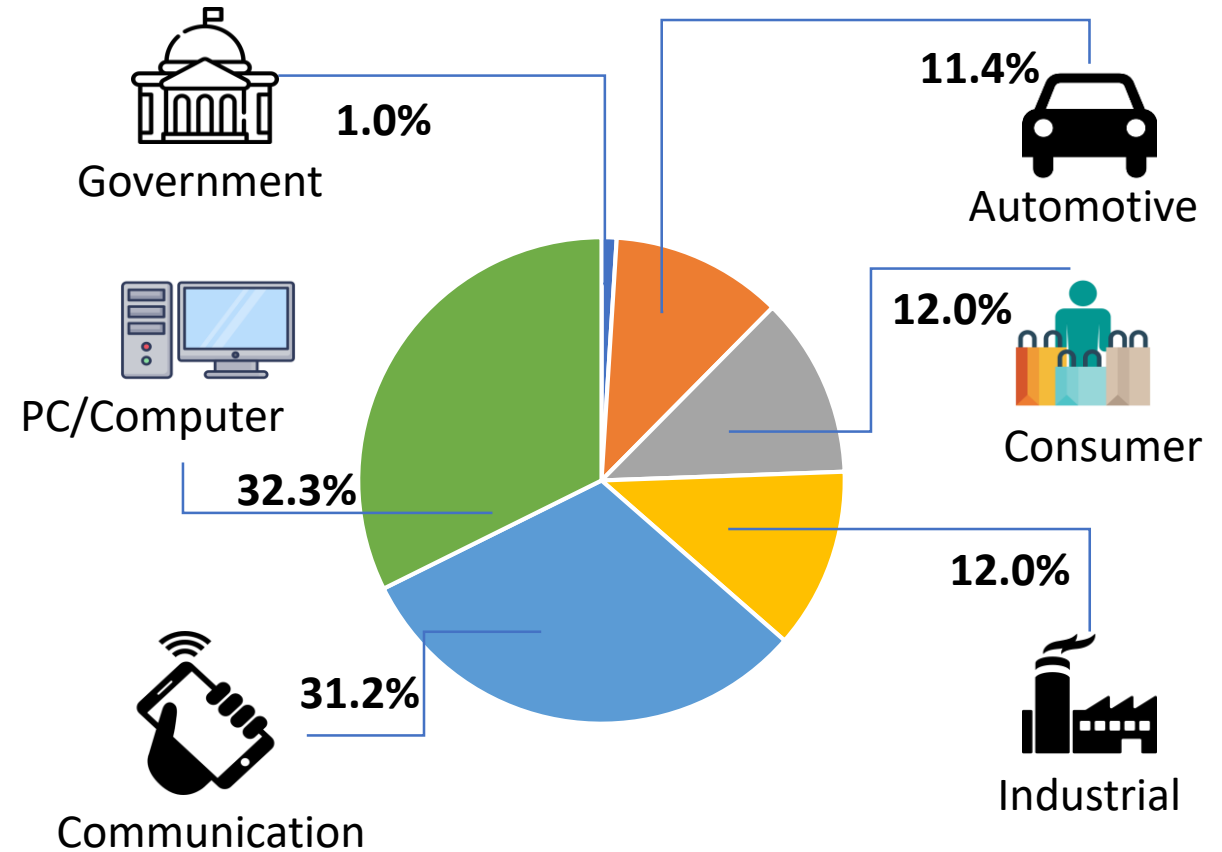- Skilled workforce
- Tax and other incentives

Semiconductor Design

- **Global semiconductor revenue**

2022
US$676B

2030
US$1T

2021
US$583.5B

- **Global microchip demand**

Government **1.0%**

PC/Computer **32.3%**

Communication **31.2%**

11.4% Automotive

12.0% Consumer

12.0% Industrial

Microchips: RF, Analog and Mixed Signal, Digital, High Voltage, Sensors, MEMS/NEMS, Compound Semiconductor, etc

5G Applications

Digital Health

Key Areas

- **Telemedicine**
  - 65% of the global market
- **EMR/EHR**
  - Electronic Medical Record/Health Record
- **Mobile Health**
  - mHealth technology
- **Remote Patient Monitoring (RPM)**
  - Allow real-time data exchange

Technology Enablers

- **Cloud Computing**
  - Efficient patient data management service model
- **AI**
  - Growing demand for value-based care, AI innovations
- **Blockchain**
  - Security
- **5G**
  - High-speed, low latency, high resolution
- **Immersive Technologies**
  - AR/Metaverse
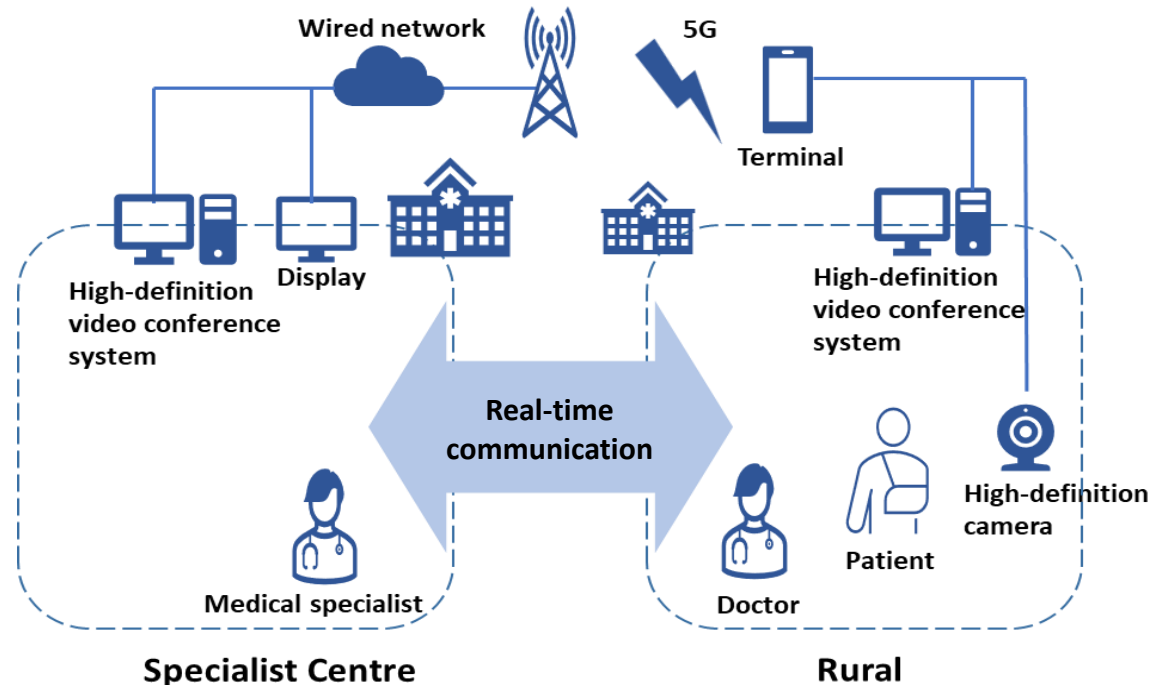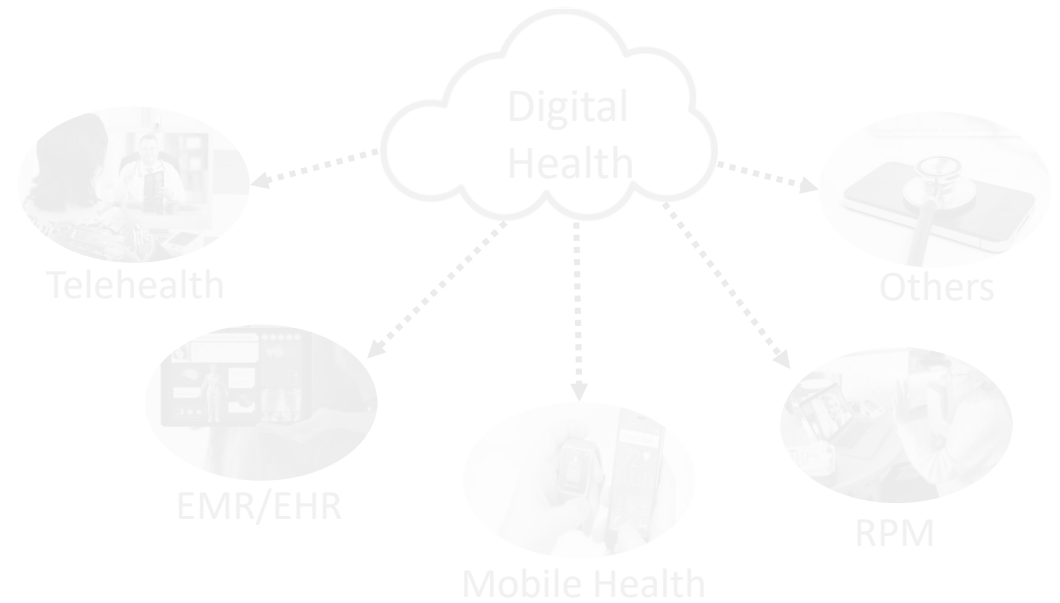
Smart Port

Leveraging innovative technologies and data-driven solutions to enhance operational efficiency, safety, and sustainability

- Technologies
  - Robotics & Automation, 5G, IoT, AI, Digital Twin, etc.
- Terminal Automation
  - Automated Ship-to Shore Crane
  - Automated Quay Cranes - Cranes Control System
  - Automated Guided Vehicles Communication Systems
  - Terminal Management System

- **Onshore Operation**
  - Data driven traffic management
  - Automated port access
  - Inventory management
- **Infrastructure Management**
  - Predictive maintenance
  - Data driven safety management

Terminal Management System

Automated Quay Cranes Automated Carriers Automated Cranes Gate Automation
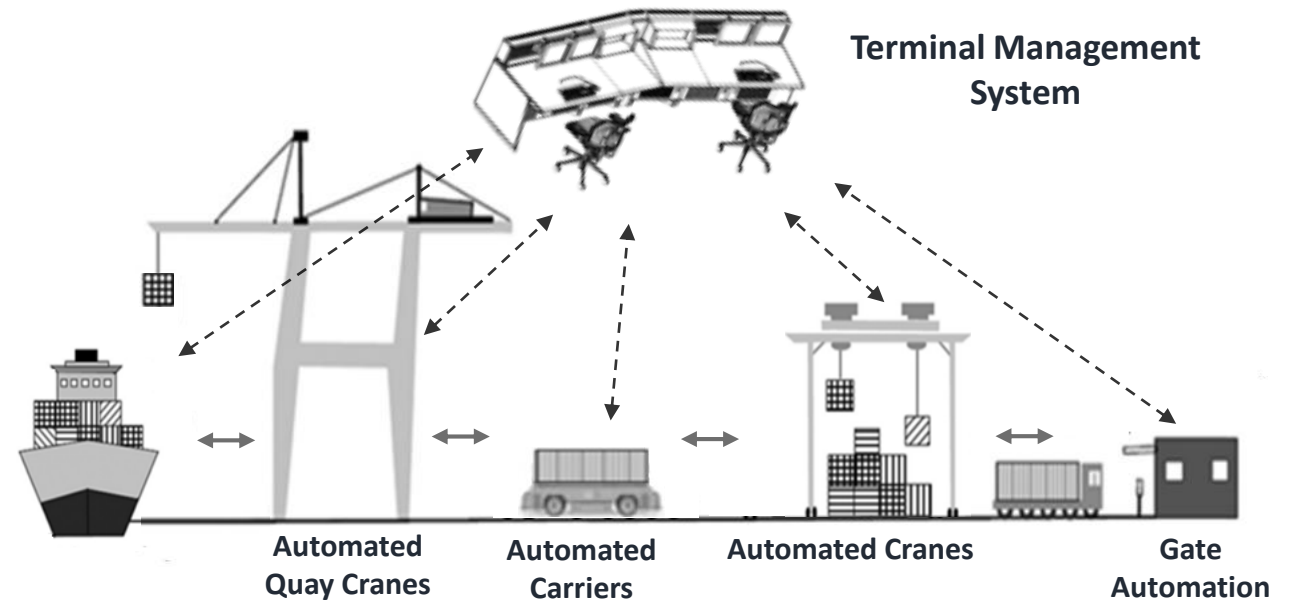
Sustainable Energy Transition

Digitalisation to expedite green economy transition

- **Digital Twins**
  - Modelling & optimising to maximise RoI and minimise risks
- **Modelling and Control**
  - Real-time monitoring, remote control of assets & improved efficiency
- **Advanced Analytics**
  - Predictive maintenance, improved yield, etc.
- **Certificate of Origin**
  - Monitoring will guarantee the origin for monetising green economy
  - End-to-end traceability

Talent, Research and Innovation

- **Industry Relevant Skills Development**
  - Investment in infrastructure, curriculum, training, upskilling and reskilling
- **Research and Development**
  - Technology and Expertise
    - High Performance Computing facility
    - Network – scalable, low-latency network
    - Cloud computing
  - Research
    - AI (ML, LLM, etc), Industry 4.0, Cyber Security, etc
- **Innovation & Commercialisation**
  - Innovation ecosystem
  - Commercialisation
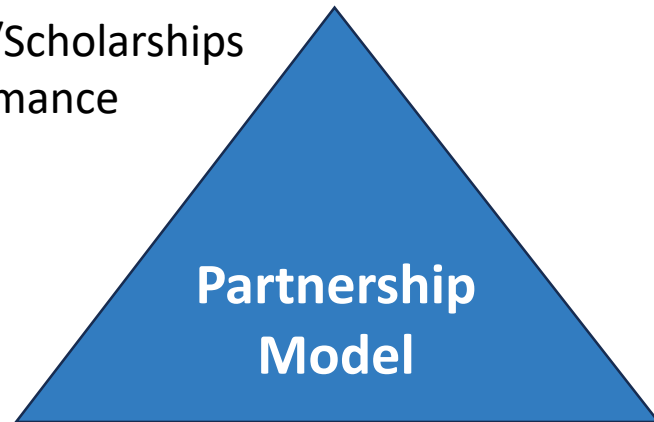
Sarawak Artificial Intelligence Centre (SAIC)

Advancing Responsible AI Systems that are Ethical, Trustworthy, Safe and Serve the Public Good

Focus:
- **Research & Development**
- **Innovation, Technology Adoption & Ventures**
- **AI Governance**
- **AI Knowledge**

Sarawak Government
- Governance
- Funds/Scholarships
- Performance

Partnership Model

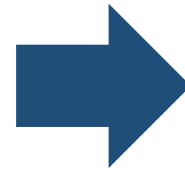**Technology Partners**
- Technology & Expertise
- Infrastructure
- Funds/scholarships

Universities
- Research
- Talent Development

SAIC Outcomes
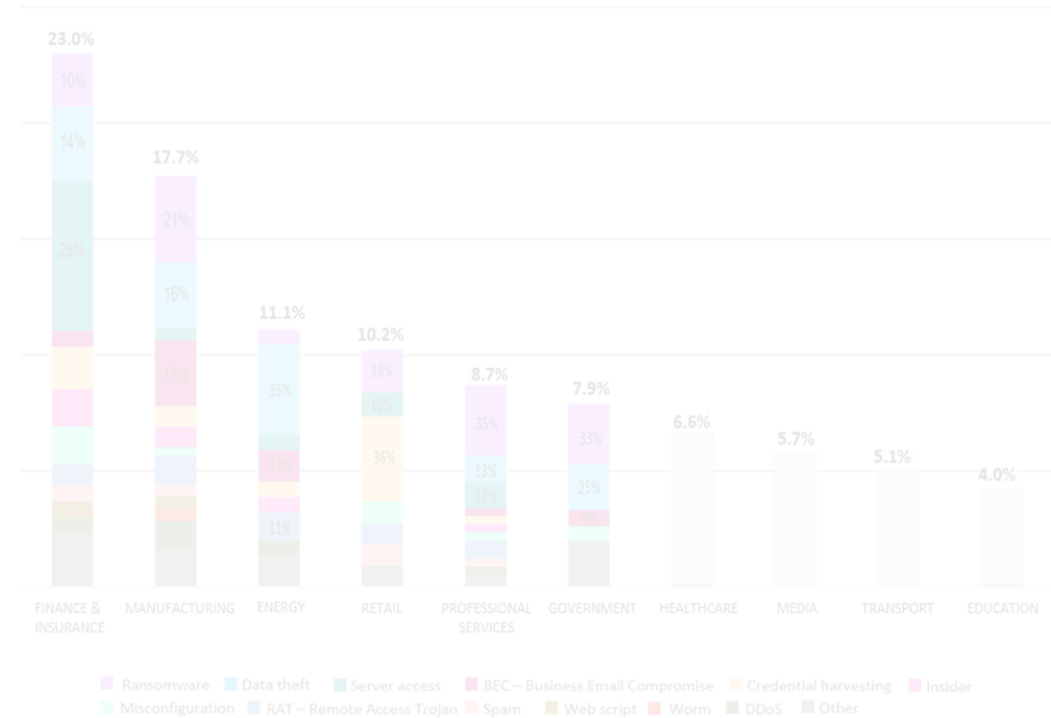- IP, Start-ups & Ventures
- Policies & Regulations
- Technology Showcase & Adoption
- Industry & Innovation Platforms & Tools
- Research, Innovation & Talent Development
- Consultancy & Publications
- AI Products & Solutions

Cyber Security

- **Cyber crime[1]**

2021
US$6T

2023
US$8T

2025
US$10.5T

- **Cyber attacks by sector in 2020[2]**

	FINANCE & INSURANCE	MANUFACTURING	ENERGY	RETAIL	PROFESSIONAL SERVICES	GOVERNMENT	HEALTHCARE	MEDIA	TRANSPORT	EDUCATION
%	23.0%	17.7%	11.1%	10.2%	8.7%	7.9%	6.6%	5.7%	5.1%	4.0%

Ransomware · Data theft · Server access · BEC – Business Email Compromise · Credential harvesting · Insider
Misconfiguration · RAT – Remote Access Trojan · Spam · Web script · Worm · DDoS · Other

Security solutions
- Data encryption and online security solutions
- AI based security tools
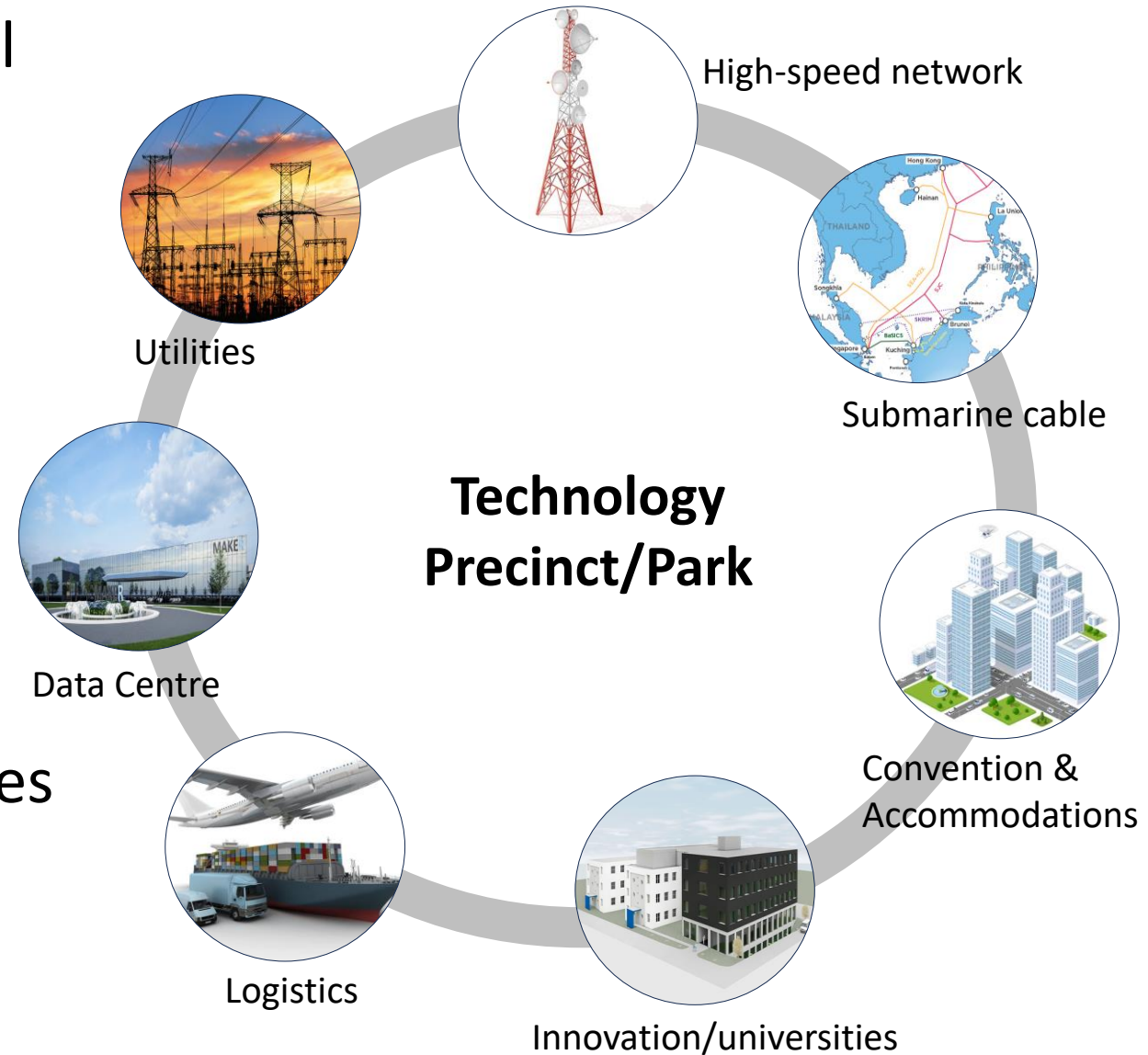
Protection of critical infrastructure
- Utilities: electricity, water, gas
- Healthcare
- Transport

Talent development
- Cyber Security capabilities
- Research & Innovation

Digital Precincts/Parks

- High-speed connectivity - local, national & global

- Data Centres

- Digital service industry

- Access to green energy and water

- Logistics - road, air & sea

- Universities/Innovation facilities

- Convention and accommodation facilities

- Good air quality

- Liveability and lifestyle

High-speed network

Submarine cable

Convention & Accommodations

Innovation/universities

Logistics

Data Centre

Utilities

Technology Precinct/Park

SARAWAK
DIGITAL ECONOMY
BLUEPRINT
2030