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Indonesia Digital Transformation Medium-Term Development Plan 2025-2029

**Directorate of Electricity, Telecommunication and Informatics
Ministry of National Development Planning/ Bappenas
Republic of Indonesia
at Event
“Introduction to the Indonesian’s Digital Economy and Startup Ecosystem”**

Jakarta, September 10th 2024

Mega Trends 2045

Macro Economy



Dominance of Asian Economy



Digital Investment Growth

Regulation and Geopolitics



Collaborative Regulation



Increasing Strategic Competition

Demographics



Population Growth and Aging



Increasing Urbanization

Digital Industry Ecosystem



Dominance of Global Big Tech Companies



High-Tech Complex Manufacturing Industry Cluster

Emerging Technology



Hyperconnectivity



Quantum Computing



Blockchain



Artificial Intelligence and Robotics



Metaverse







Eco-Friendly Technology

Digitalization Issues, Green Economy Issues, and Digital Innovation to Support Green Economy







Current Global Conditions





Digitalization

-  There is a digital divide in terms of access to digital technology, which can make the gap between developed and developing countries
-  The constantly evolving and varying cybersecurity regulations across different countries make it difficult for the private sector to comply with all applicable requirements
-  The development of artificial intelligence raises ethical questions about its use and impact on society
-  Excessive reliance on technology can lead to problems in the event of system or infrastructure failures

Green Economy

-  The transition to a green economy has the potential to make the gap between developed and developing countries due to the high costs of such investments
-  Many countries still lack comprehensive and consistent policies to support the transition to a green economy
-  Shifting consumer behavior towards more environmentally friendly products and services
-  Many green technologies are still immature and too expensive for widespread adoption

Digital Innovation to Support Green Economy

-  **Smart Cities:** Integrating digital technologies to optimize urban infrastructure, reduce energy consumption, and improve sustainability
-  **Electric Vehicles:** Accelerating the adoption of electric vehicles to reduce greenhouse gas emissions and promote clean transportation
-  **Renewable Energy Platforms:** Online platforms that connect renewable energy producers and consumers, facilitating the transition to a clean energy future
-  **Environmental Monitoring Apps:** Mobile apps that empower citizens to track environmental conditions, report pollution incidents, and participate in conservation efforts

Conditions of Indonesian Society in the Digital Age



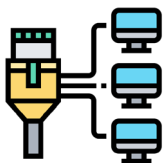
Aspects of life can not be separated from the use and utilization of information and communication technologies



There is a shift in patterns of thinking, patterns of attitudes and patterns of community action in accessing and disseminating information



Indonesian people will find it easier to access information through various digital technology platforms that offer innovative features from increasingly interactive communication



Digital society is a society in its various activities using digital technology

Digital Economy



No	Indikator	Indonesia	Amerika	Korea	Chile	China	Malaysia	Thailand	Vietnam	Filipina
1	GDP Year 2021	4.225,0	69.375,4	48.308,9	16.799,4	11.891,2	11.124,7	7.808,7	3.742,9	3.492,1
	E-Commerce (Statista billion USD)	55,98	799,70	119,50	8,7	1.368,00	8,69	10,9	12,84	17,25
	(Datareportal billion USD)	53,82	767,73	114,42	7,65	1.485,15	8,55	18,98	12,41	16,8
	GDP (WB billion USD)	1.058,4	20.936,6	1.630,5	252,9	14.722,7	336,7	501,8	271,2	361,5
	% E-Commerce to GDP	5,3%	3,8%	7,3%	3,4%	9,3%	2,6%	2,2%	4,7%	4,8%
	R & D	0,2%	2,8%	4,5%	0,36%	2,14%	1,04%	1,0%	0,5%	0,16%
2	E-Gov Development Index (EGDI) Rank	88	9	1192	34	45	47	57	86	77
6.	Telecommunication Infrastructure Index (TII)	0.5669	0.9182	0.9684	0.7606	0.7388	0.7634	0.7004	0.6694	0.5838
6.2	Percentage of Individuals using the Internet	39.9	87,27	96,02	82,33	54,3	81,2	56,82	70,35	60,05
6.3	Fixed (wired) broadband subscriptions per 100 inhabitants	3.32	33,8	41,6	17,36	28,54	8,55	13,24	13,6	3,68
6.4	Active mobile-broadband subscriptions per 100 inhabitants	87.15	120	113,62	91,58	93,46	116,7	104,67	71,89	68,44

Policy Framework and Strategy of Digital Transformation 2020-2024

Indonesia's sustainable and low-carbon economic growth (green economy)

Target

Economic Growth

Equitable Development

Initiative

Digital Transformation

The process of using digital technology to create or modify business processes, culture, and customer experience to meet changing business and market needs

Pillar

Digital Infrastructure

- Expanding Access and Quality of Digital Infrastructure (*Middle dan Lastmile*)
- National Data Center
- Digital Broadcasting
- Frequency Setting

Digital Utilization

- Government (SDI/Indonesia One Data, SPBE/E-Gov)
- Health
- Education
- Social
- Industry
- Tourist
- Trade, Rural Areas, Cooperatives, and MSME
- Agriculture and Fisheries
- Smart City
- Carbon market
- Other Priority Sectors

Enabler

- *Big Data, Artificial Intelligence, IoT, Blockchain*
- Community Literacy
- *Fintech*
- Cyber Security
- ICT HR Development
- ICT Industry Development
- *Research and Development*

Regulation-Institutional-Funding

Key Objectives of Infrastructure Development 2020-2024



BASIC SERVICES INFRASTRUCTURE

- 70%** Households Occupying Adequate Housing [2023: 63,15%]
- 100%** Housing with Access to Drinking Water [2023: 91,72%]
- 15%** Housing with Safe Drinking Water Access [2020: 11,80%]
- 30%** Housing with Piped Drinking Water Access [2023: 19,76%]
- 90%** Housing with Access to Adequate Sanitation (including safe) [2023: 82,36% layak (10,21% aman)]

- 500 Ribu ha** New Irrigation Network [2022 : 125 thousand ha]
- 50 m³/detik** Additional Industrial & Domestic Raw Water [2022 : 10,18 m³]
- 63** Multi-Purpose Reservoir [2022 : 38 Reservoir]
- 65%** Decreased Accident Fatality Ratio [2022: 62%]



ECONOMIC INFRASTRUCTURE

- Java High Speed Train**
Jkt-Smrg & Jkt-Bdg [2022: Construction]
- Goods Train Makassar-Parepare** [2022: Construction]
- Integrated Major Ports Network**
[2022: Port Standardization Makassar, Tanjung Priok, Bitung]
- 43 Air Bridge Routes** [2022: 42 Route]
- 12 New Airports**

- 2.500 km** New and/or operating toll roads [2022 : 142 km]
- 3.000 km** New National Road [2022 : 467 km]
- 97%** Good Condition of National Roads [2022 : 92%]
- 1,9 hours/100 km** Travel Time on Main Island Roads [2022 : 2,09 Jam/100 km]
- 27%** Interconnected Shipping Routes (loops) [2022 : 26% Loop]



URBAN INFRASTRUCTURE

- Urban Mass Transit System in 6 Metropolitan Areas**
[2022: Development of public transport development of road and rail-based urban public transportation in Metropolitan Jakarta, Medan, Surabaya, Bandung, Semarang, and Makassar]
- Residential with Access to Well-Managed Waste**
80% Handling | 20% Reduction
[2019: 54,85% | 2019: 0,88%]



DIGITAL TRANSFORMATION

- 95% Village (Desa)** Broadband Mobile Network Infrastructure Affordability [2021 : 88.64%]
- 60% Subdistrict (Kecamatan)** Fiber Optic Network Coverage [2022 : 61%]
- 80% Population** [2022 : 76,44%]
- 3 New Unicorn** [2022 : 13]



ENERGY AND ELECTRICITY

- 4 Million** New House Connection of City Gas Network [2022 : 1,1 juta sambungan rumah]
- 1.400 kWh** National Electricity Consumption Per Capita [2022 : 1.173 kWh]
- ~ 100%** Electrification Ratio [2022 : 99,63%]
- 1.276.000 BPCD** Construction and Development of Oil Refinery [2022 : 1.151.000 BPCD]



Existing Condition Based On Digital Economy and Climate Change Risk

Indonesia's growing digital economy

221 Millions
(79,5 % Indonesia Population)
(Source: APJII, 2024)

Internet user

67,88% Indonesia Population
(Source: BPS, 2022)

Mobile phone users

6 billion dollar

**Funding value for
startups in Indonesia**

Climate change risks that need to be mitigated

The Top 10

**The world's top
emitting countries**

**1/3 Top
Countries**

Vulnerable to climate change

Strategic Issues Transformation Digital in the Technocratic Medium-term Development Planning (RPJMN) 2025-2029

Digital Transformation Infrastructure

- There are blankspot villages/sub-districts
- The reliability of the quality of telecommunications networks via fiber optic cables is not evenly distributed
- Management, integration and interconnection of the National Data Center (NDC)*
- Digital broadcasting coverage

Digitalization of Strategic Sectors

- There are education and health services without internet access
- Strengthening digital government (SPBE and SDI)
- Digital adoption for MSME players is still low (e-commerce)
- Innovation and development of digital finance (FinTech)
- Management of tourist destinations, agriculture, fisheries, logistics and technology-based industry

Digital transformation Enabler

- National Cyber Security
- Protection of personal data and privacy
- Society's digital literacy is not evenly distributed
- Providing quality human resources and digital talent to master and implement technology adoption
- Utilization of Artificial Intelligence (AI), Big Data Analytics, Blockchain

Digital Transformation Indicator

Indicator Development	Baseline	Target 2029
Digital Competitiveness Index	45	40

Note : Baseline and Target are still Technocratic indications



Intervention Highlights

1. Completion and Improvement of ICT Infrastructure Quality
2. Strengthening Digital Human Resources
3. Digitalization of the economic sector and public services, including government, education, health, industry, etc.
4. Strengthening cybersecurity
5. Research in the context of mastering technology
6. Development of digital super platforms

Institutional, Regulatory and Funding Frameworks Needs for Economic Transformation

Institutional Framework:

- Governance of Indonesia's Digital Super Platform

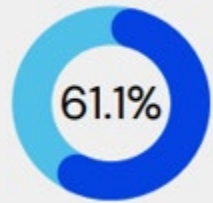
Regulatory Framework:

1. Assignment to State-owned Company (BUMN) competent in digital infrastructure and services to build a Digital Super platform
2. Financing and incentives for the development and utilization of the Digital Super platform

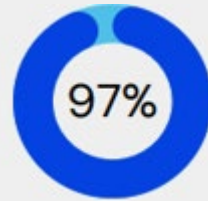
Funding Framework:



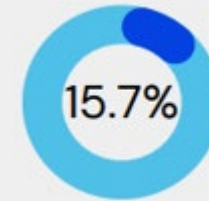
1. Increase national budget allocation (APBN) for all ministries related to digital transformation policy
2. Develop and utilize others national budget mechanism (PPP scheme, sustainable finances, blended finance, etc)



MSMEs' contribution
to Indonesia's
total GDP
(Kemenkop UKM, 2021)



MSME **labor
absorption** of the
total workforce
(ADB, 2022)



Contribution of
MSMEs to **Indonesia's
total exports**
(ADB, 2022)



Only **12% of MSMEs**
are involved in
the digital ecosystem
(Kemenkop UKM, 2022)




36% of MSMEs lack
literacy and **31%**
lack financial inclusion
(OJK, 2022)




**Urgency to Accelerate
Digital Transformation**

Development Policy Direction Related To Digital Transformation In RPJMN 2025-2029



1 Completion of areas that are not yet covered by high-speed communication services, according to the needs of each region



2 Ensure governance and regulations, both central and regional, that can support the acceleration of digitalization network development



3 Encourage digital adoption in all public and government services



4 Increasing digital literacy and digital capabilities from user to innovator level as a whole



5 Encouraging the strengthening of the domestic ICT Industry



6 Ensure affordable prices for telecommunications services so that they can be utilized by all levels of society




7 Digital media transformation in broadcasting institutions as an instrument for disseminating information to the public



8 Accelerating data integration to support targeted, data-based development



9 Ensuring digital sovereignty by increasing the security and conduciveness of digital space



10 Creating a digital super platform to ensure effective and transparent public service quality



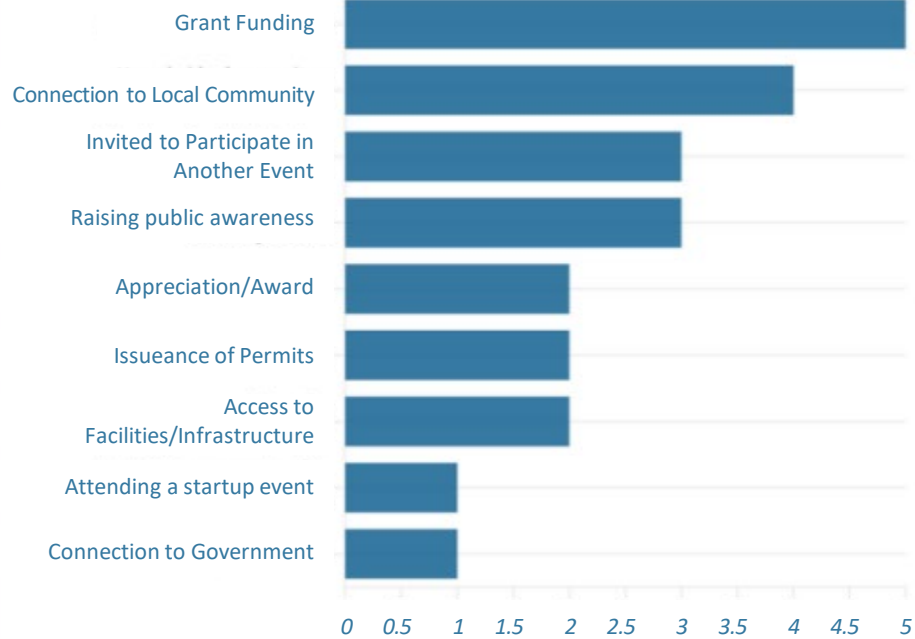
Kementerian PPN/
Bappenas



Green Entrepreneur Landscape

GOVERNMENT SUPPORT RECEIVED BY STARTUPS INDONESIA'S GREEN TECHNOLOGY SECTOR

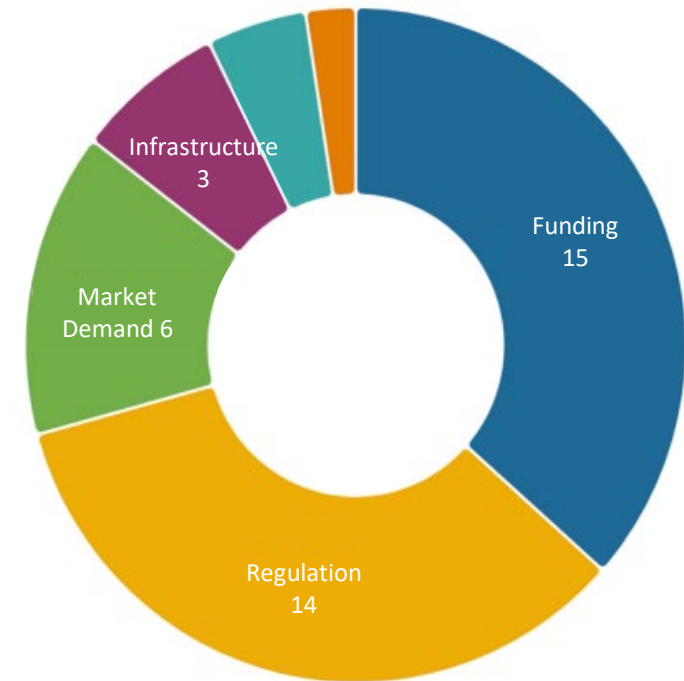
Government support received by startups
Indonesia's green technology sector



Source: Questionnaire GIZ x Bappenas

STARTUPS CHALLENGES INDONESIA'S GREEN TECHNOLOGY SECTOR

Startups Challenges
Indonesia's green technology sector



Source: Questionnaire GIZ x Bappenas

Sectors That Have The Potential to be Driven by Digitalization in Achieving A Green Economy in Indonesia



Agriculture

Precision Agriculture, the application of technologies such as drones, sensors and data analysis to optimize the use of fertilizers, pesticides, water, and monitor plant health

Supply Chain, digitalization can improve supply chain efficiency, from production to distribution, reduce food waste, and ensure product quality

Agricultural Marketplaces, digital platforms can connect farmers directly with consumers, reduce intermediaries, and increase farmer incomes



Energy

Renewable Energy, digitalization can accelerate the development of renewable energy such as solar, wind and hydro, by optimizing network management, performance monitoring and integration with existing energy systems

Energy Efficiency, digital technologies can help identify areas of energy waste in buildings, industry and transportation, enabling significant savings



Tourism

Sustainable Tourism, digital apps and platforms can promote sustainable tourism, such as ecotourism and agrotourism

Destination Management, digitalization can help manage tourist destinations more efficiently, including ticket bookings, accommodation, and transportation



Waste

Waste Management, digital applications and platforms can facilitate waste sorting, waste tracking and recycling facility management

Circular Economy, digitalization can support the development of a circular economy model, where waste from one production process becomes raw material for another production process



Forestry

Forest Monitoring, the use of satellite and drone imagery to monitor deforestation, forest fires and forest degradation

Circular Economy, digitalization can support the development of a circular economy model, where waste from one production process becomes raw material for another production process

Findings and Recommendation

I



Strengthening Supply Side

Strengthening the supply side aims to ensure digital infrastructure and ecosystems that support inclusive and sustainable digital economic growth.

Recommendations include increasing investment in digital infrastructure to support an inclusive digital ecosystem supply chain.

II



Capacity Building for Human Resources in Technology

Capacity of human resources in technology utilization is key to adopting and developing the latest technologies that support digital transformation.

Recommendations include research and development (R&D) to advance local technology and human resources, as well as collaboration with local industries. The government is also expected to provide incentives for the adoption of advanced technologies in the industrial sector.

III



Strengthening Demand Side

Strengthening the demand side aims to boost demand for digital products and services and accelerate the adoption of digital technology across various sectors.

Recommendations include developing widespread and structured digital fabrication literacy programs for all relevant segments of society, as well as encouraging all sectors to adopt and innovate in green technologies.

Thank You

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