Chapter 7

Understanding the Issues of the Digital Economy in the Philippines

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Chapter 7
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1. The Growth of the Philippine Digital Economy

The Philippine Statistics Authority (PSA) defines the digital economy as the activities that leverage knowledge, information, and information and communication technology (ICT) to spur economic growth. This encompasses digital-enabling infrastructure, digital transactions (e-commerce), and digital media (PSA, 2022). In 2022, the digital economy reached P2.08 trillion, contributing 9.4% to the country's gross domestic product (GDP) (Table 7.1). Despite a downturn in 2020 due to the coronavirus disease (COVID-19) pandemic, the digital economy rebounded in 2021 and 2022. In 2022, the digital economy employed 6.05 million people, marking a slight recovery in its share of total employment compared with the pandemic period (Table 7.2).[1]

Whilst the PSA definition aligns closely with the framework of Bukht and Heeks (2017), which has been used in various studies (Dacuycuy and Serafica, 2023; CPBRD, 2022; Albert, 2020) to describe the digital economy, other components such as the platform economy, gig economy, Industry 4.0, sharing economy, and algorithmic economy are not specifically discussed. The following sections provide a brief overview of the current state of these components.

1.1. High adoption of digital platforms in industry and services

Due to limited data available from official statistics regarding the adoption of digital platforms, this study relies on the Survey of Innovation Activities 2021 (PSIA2021) conducted by the Philippine Institute for Development Studies (PIDS). According to PSIA2021, 27.7% of firms used digital platforms in 2021. Digital platforms serve as intermediaries and infrastructures that connect various parties through the internet in a multi-sided market.

Foreign-owned platforms, with Facebook leading at 24.3%, are the most often used, whilst GCash (2.3%) is the only domestically owned platform identified by the firms. Other platforms identified by the establishments include social messaging platforms and digital marketplaces.

[1] Google, Temasek, and Bain (2020) observed that despite the pandemic, Filipinos continued to purchase goods and services, largely relying on e-commerce and digital platforms. Consequently, the digital economy grew slightly, from US$7.1 billion in 2019 to US$7.5 billion in 2020, a trend inconsistent with official PSA figures.

In terms of income, platform owners within the industry sector reported having average revenues of P535 million, which is five times higher than those in services and around seven times that of agriculture. Digital platforms contribute to employment. In 2021, approximately 1.26 million people were employed through digital platforms.

Table 7.1. Gross Value Added of Digital Economy at Current Prices, 2018–2022
(P trillion)

Sub-components	2018	2019	2020	2021	2022
E-commerce	0.41	0.44	0.30	0.33	0.42
		(8.9)	(-31.4)	(8.0)	(26.5)
Digital media/content	0.05	0.05	0.05	0.05	0.06
		(5.7)	(-10.8)	(10.1)	(11.8)
Digital-enabling infrastructure	1.39	1.46	1.38	1.49	1.60
		(5.3)	(-5.2)	(7.8)	(7.5)
Computer, electronic and optical products	0.39	0.39	0.32	0.35	0.35
		(-0.8)	(-18.4)	(9.6)	(1.1)
Wholesale trade, except of motor vehicles and motorcycles	0.04	0.04	0.04	0.04	0.04
		(11.3)	(-6.7)	(0.1)	(8.7)
Telecommunication services	0.46	0.51	0.55	0.59	0.64
		(9.9)	(7.0)	(7.7)	(8.4)
Professional and business services	0.48	0.51	0.47	0.51	0.56
		(5.3)	(-6.7)	(7.5)	(10.6)
Repair of computers and communication equipment	0.01	0.01	0.01	0.01	0.01
		(7.0)	(-22.8)	(-0.6)	(19.6)
DIGITAL ECONOMY	1.84	1.96	1.73	1.87	2.08
		(6.1)	(-11.3)	(7.9)	(11.0)
Gross domestic product (GDP)	18.27	19.52	17.952	19.41	22.02
Share of digital economy to GDP (%)	10.1	10.0	9.7	9.6	9.4

Note: 1. Values at constant 2018 prices are available from the author upon request. However, these are not official statistics released by the Philippine Statistics Authority. 2. Numbers in parentheses represent growth rates from the previous year.

Source: Philippine Statistics Authority.

Table 7.2. Employment in the Digital Economy
('000 people)

Sub-components	2018	2019	2020	2021	2022
E-commerce	1,082	1,103	1,036	1,157	1,233
Digital media/content	123	133	107	135	148
Digital-enabling infrastructure	4,337	4,410	3,868	4,300	4,672
Computer, electronic and optical products	3,419	3,443	3,002	3,257	3,541
Wholesale trade, except of motor vehicles and motorcycles	433	454	438	527	563
Telecommunication services	280	301	243	307	336
Professional and business services	103	116	97	111	129
Repair of computers and communication equipment	102	97	88	98	104
DIGITAL ECONOMY	5,542	5,645	5,010	5,592	6,053
Gross domestic product (GDP)	41,157	41,938	39,378	43,989	46,890
Share of digital economy to GDP (%)	13.47	13.46	12.72	12.71	12.91

* Data from ADB Key Indicators.

Source: Philippine Statistics Authority.

2. Industry 4.0 Technologies and High Acquisition Cost

As the world transitions to Industry 4.0, it is crucial to understand its implementation across various sectors within the country. According to PSIA2021, the most widely adopted Industry 4.0 technologies are the Internet of Things (IoT) and 5G networks. IoT is utilised by more than half of all establishments across most industry groups, except non-manufacturing, whilst 5G networks are used by 3–5 out of 10 establishments. Genomics, Blockchains, and SMART manufacturing are the least adopted Fourth Industrial Revolution (FIRe) technologies whilst automation and artificial intelligence (AI) are amongst the most commonly used FIRe technologies, particularly in agriculture, food manufacturing, and other manufacturing sectors.

The findings of PSIA2021 are consistent with Aldaba (2020), which observed high awareness of FIRe technologies amongst firms but limited usage. The most significant barrier to adoption, as identified in the 2021 PSIA report, is the high cost of technology, cited by 47.5% of respondents.

3. The Gig Economy in the Philippines[2]

The Philippines is one of the most active participants in online platform work globally. Seifreid et al. (2020) found that the Philippines ranks third in market size on Upwork, following India and the United States. According to the Payoneer and GCash (2022) Philippines Freelance Market Report, the country boasts one of the fastest-growing freelance markets, currently ranking sixth worldwide. Interviews conducted by Serafica and Oren (2023) with users of digital platforms reveal that Filipinos are highly competent and offer competitive pricing. Research by Bayudan-Dacuycuy et al. (2020a, 2020b) shows that platform work has expanded income opportunities for workers, particularly women and youth. Platform work offers flexibility, which benefits women with commitments such as childcare or household responsibilities (Serafica and Oren, 2023). However, despite these income opportunities, Filipino freelancers express concerns about the lack of benefits, income uncertainty, and isolation (Payoneer and Gcash, 2022).

4. The Sharing Economy

Despite its complexity (Albert, 2020), the sharing economy in the Philippines remains unmeasured in official statistics. However, Balbieran and Mabbagu (2022) attempted to quantify it, defining the sharing economy as a subset of the digital economy involving the sharing of tangible or intangible assets without transferring ownership or full consumption facilitated through internet networks or digital platforms.

Using this methodology, Balbieran and Mabbagu (2022) estimated the value of the sharing economy at US$2.58 billion in 2019, which declined to US$1.878 billion in 2020, likely due to the pandemic. By 2021, the sharing economy bounced back to US$6.47 billion, representing 38% of the digital economy. The significant contribution of the sharing economy under this methodology is attributed to the inclusion of e-commerce services such as transport, food delivery, and online travel, as well as services not digitally delivered, such as hiring legal advisors via digital platforms. This approach is consistent with the definition used by Vaughan and Davario (2016), which includes household and professional services within the sharing economy.

[2] The gig economy pertains to labour platforms (Schmidt, 2017; Dacuycuy and Baje, 2023); Serafica and Oren, 2023).

5. The Algorithmic Economy

The United Nations Conference on Trade and Development Information Economy Report 2017 describes the algorithmic economy as the segment of the digital economy driven mainly by automation and artificial intelligence (AI). The Philippines stands to benefit from AI, with an estimated US$90 billion impact over the next 7 years (Ochave, 2023). A report on AI's impact on the economy indicates that ChatGPT alone is expected to contribute about 20% of the country's GDP through applications in content generation, summarisation, code generation, and semantic research (Ochave, 2023).

However, Rosales (2023), citing a study by the International Data Corporation (IDC), reported that the Philippines ranks 12th amongst 14 Asia-Pacific economies in AI platform investment. China leads, followed by Japan, Australia, the Republic of Korea, Singapore, India, and Taiwan. The Philippines trails Malaysia and Thailand, with Viet Nam and Indonesia ranking lower in AI spending. The IDC report also noted that AI platform usage in the Asia-Pacific region continues to grow, with the AI adoption rate soaring from 39% in 2021 to 76% in 2022.

6. Policy Environment for the Digital Economy

6.1. Evolution of Digital Economy Policies by Administration

The development plans of the administrations of Benigno Aquino III, Rodrigo Duterte, and Ferdinand Marcos Jr. have each outlined strategies for advancing the digital economy. Although the Aquino III administration's Philippine Development Plan (2011–2016) did not explicitly mention the digital economy, it recognised the importance of digital technology. The strategies during this administration focused on improving access for last-mile customers and improving the country's digital infrastructure. The National Broadband Deployment Plan was launched to address the current gaps and recommend initiatives for optimising broadband services. The government aimed to expedite the delivery of services such as education and health through the full implementation of the e-commerce law.

During the Duterte administration (2017–2022), the midterm update of the Philippine Development Plan (2020–2022) identified a comprehensive set of strategies targeting the digital economy. Table 7.3 summarises the scope of these strategies, which cover various sectors, including digital goods and services production, government, and ICT service companies.

Table 7.3.Strategies Related to the Digital Economy of the Duterte Administration (2017–2022)

Aspect of the Digital Economy	Sector	Strategy
Production of digital goods	Industry (Manufacturing)	Strengthen the implementation of the Inclusive Innovation Industrialization Strategy (i^3s) prioritising e-commerce and the digital economy
Production of digital services	Services (IT-BPM)	Facilitate IT-BPM industry growth through improved ICT infrastructure, affordable utilities, and an enabling regulatory environment
	Digital finance	Promote the development of fintech and innovative financing strategies (see next section)
Production of digital goods/services	Creative sector	Promote a resilient and inclusive creative economy by developing (1) a creative economy roadmap, (2) programmes for enterprise resilience, (3) upskilling initiatives, (4) a nation brand, and (5) specialised arts education
Digital skills	Industry and services	Reskill and upskill workers based on job transformations and future skills needs
Consumer protection	Government services	Accelerate the implementation of the PhilSys for secure transactions; Amend the Consumer Act of the Philippines (RA 7394) to protect against fraudulent schemes.
ICT access	ICT infrastructure	Accelerate the government's digital connectivity programme
Measurement of the digital economy	Government services	Develop statistics on the digital economy, creative industries, digital platforms, and online work
Digital economy incentives	Government services	Enforce the CREATE Act, offering investment incentives for digital transformation; establish a digital taxation framework to support the digital economy

CREATE = Corporate Recovery and Tax Incentives for Enterprises, ICT = information and communication technology, IT-BPM = information technology and business process management, RA = Republic Act.

Source: Midterm Update of the Philippine Development Plan 2017–2022.

Building on the policies and achievements of the Duterte administration, the Marcos Jr administration (2023–2028) is advancing the digital transformation of government and fully digitalising sectors that have yet to adapt. Maximising the potential of digitalisation is a guiding principle for the administration. The Marcos Jr administration continues to implement several policies from the previous administration, such as the Corporate Recovery and Tax Incentives for Enterprises (CREATE) law and the National Broadband Plan, whilst also introducing additional strategies and upgrades (Table 7.4).

Beyond the Philippine Development Plan 2023–2028, other roadmaps and plans, such as the E-Commerce Roadmap 2016–2020, the national innovation agenda, and the Philippine Digital Workforce Act, directly or indirectly influence the development of the digital economy. These strategies align with those outlined in the Philippine Development Plan.

6.2. The Philippine E-commerce Roadmap 2016–2020

The Philippine E-commerce Roadmap (2016–2020) emphasises the pivotal role of e-commerce in economic development, highlighting trends in global, Asia-Pacific, and Association of Southeast Asian Nations (ASEAN) e-commerce and the Philippines' positioning within these markets. Recognising that the Philippines has yet to fully capitalise on e-commerce opportunities, the roadmap advocates the following:

1. **Infrastructure.** Improved infrastructure to support e-commerce growth, including enhanced internet services in rural areas and the development of e-commerce support systems (e.g. e-payment, logistics, and online dispute resolution).
2. **Investment.** Encouragement of diverse investment.
3. **Innovation**. Promotion of innovation and support for digital start-ups.
4. **Intellectual capital**. Cultivation of skills in technology, languages, and entrepreneurship.
5. **Information flows.** Ensuring the free flow of information is crucial for the digital economy whilst safeguarding privacy and trust online.
6. **Integration**. Integration of domestic industries with the global economy enables businesses, especially micro, small, and medium-sized enterprises (MSMEs), to access international markets and integrate into global value chains.

The E-commerce Roadmap is part of broader government initiatives, including the National Broadband Plan[3] and the National Retail Payment System (see next section), and supports others such as iGovPhilippines and the Philippine Roadmap for Digital Startups. It aligns with the APEC Boracay Action Agenda to globalise MSMEs, showcasing a holistic approach to integrating the Philippines into the digital global economy.

[3] The plan's focus on improving broadband infrastructure, enhancing digital literacy, supporting local content and innovation, and integrating with national development goals demonstrates a comprehensive approach to fostering the digital economy in the Philippines. See Department of Information and Communications Technology (2017).

Table 7.4. Strategies Related to the Digital Economy of the Marcos Jr Administration (2022–2028)

Aspect of Digital Economy	Sector	Strategy
Production/Export of digital goods	Industrial, manufacturing, and transport cluster[a] (Manufacturing)	Participate in trade negotiations to formulate disciplines on the digital economy and e-commerce; position the Philippines as a hub for knowledge and technology-intensive export industries. Assist firms and industries transitioning to new technologies with tailored support and incentives.
Upgrading of digital services	Technology, media, and telecommunication cluster (IT-BPM)	Support the transition to value-adding activities, such as AI-based cloud analytics and enterprise resource planning.
	Data analytics	Promote the participation of colleges and universities in service sector data collection and analysis.
	Health and life sciences	Support the development and production of healthcare and medical devices; push for self-sufficiency in digital health products such as telemedicine solutions and AI-assisted diagnoses.
E-commerce adoption	Industry and services	Accelerate e-commerce adoption by MSMEs through awareness and advocacy campaigns.
Digital skills	Industry and services	Implement the Digital Workforce Competitiveness Act to establish facilities for enhancing the digital skills and competencies of entrepreneurs and the future workforce.
Consumer protection	Government services	Adopt a new legal framework to strengthen cybersecurity and policies and information security standards for e-commerce transactions; establish secure e-payment systems; ensure online consumer and supplier protection to promote trust and confidence.
ICT regulation and competition	ICT service providers/ Tech giants	Promote competition and improve regulatory efficiency in and through the internet and digital technologies; explore opportunities and risks in adopting ex-ante regulation whilst continuing ex-post enforcement approach to address competition issues in the digital economy.
ICT access	ICT infrastructure	Expand access to broadband internet and digital technologies to enhance consumer choice and facilitate digitalisation and innovation amongst MSMEs.
Measurement of the digital economy	Government services	Develop subnational satellite accounts for key services, including the digital economy, creative industries, and logistics.

AI = artificial intelligence; ICT = information and communication technology; IT-BPM = information technology and business process management, MSMEs = micro, small, and medium-sized enterprises.

[a] The Marcos Jr administration has implemented a cluster-based approach to industrial development: IMT (industrial, manufacturing, and transport), TMT (technology, media, and telecommunication), HLS (health and life sciences), and MBN (modern basic needs).

Source: Philippine Development Plan 2023–2028.

6.3. Strategies to Enhance Skills Development

The Digital Skills Competitiveness Act and its Implementing Rules and Regulations (IRR) are designed to enhance the digital skills of the workforce, thereby boosting the digital economy. This legislation focuses on improving digital literacy, technical competencies, and the effective use of technology across key sectors such as information technology, business process outsourcing, e-commerce, and digital marketing, ensuring the development of a technologically proficient workforce. It promotes innovation and entrepreneurship through targeted training, the cultivation of an innovative culture, and support for start-ups and small businesses. The IRR aims to democratise access to digital education, bridging the digital divide and broadening the talent pool. By enhancing digital infrastructure and skills, the act seeks to attract investments and reinforce the Philippines' position as a digital business hub.

7. Establishment of Digital Payments System and Financial Policies

The Bangko Sentral ng Pilipinas (BSP) has contributed to the digital economy through the development of a robust digital payments system. The National Retail Payment System (NRPS), launched in 2017, established a secure, efficient, and reliable electronic retail payment system, leading to the creation of interoperable systems like PESONet and InstaPay. By 2021, these systems had facilitated the digitalisation of a third of retail payments, significantly contributing to the growth of the digital economy during the pandemic.

In 2020, the Digital Payments Transformation Roadmap was introduced to create a cash-lite economy whilst promoting financial inclusivity. This roadmap outlines strategies to accelerate the adoption of digital payments, enhance regulatory frameworks, encourage new market entrants, improve transaction connectivity, and raise public awareness of the benefits of digital payments, including their application in government transactions.

The QR Ph initiative, launched in 2019, standardised the national QR code system, simplifying electronic fund transfers and payments. This initiative supports various e-wallets and banks, enabling seamless scan-and-pay transactions that benefit small businesses and street vendors by extending financial services to unbanked and underserved sectors. Other BSP policies include the financial consumer protection framework, regulations on virtual currency exchanges, and the fintech regulatory sandbox, all of which support the digital economy.

8. Expanding Government Initiatives in the Digital Economy

The government recognises the need to address various aspects of the digital economy beyond e-commerce, including the platform economy, Industry 4.0, and other emerging areas. The following plans and strategies have been identified.

8.1. Digital Platforms

The government is promoting the use of digital platforms for handling consumer complaints and dispute resolutions to boost confidence in digital transactions. To expedite the delivery of government-to-business services, interoperable digital platforms are being adopted. There is a recognised need for better statistics on digital platforms and online work, such as the gig economy, which is currently underrepresented in official classifications.

To support MSMEs and start-ups, digital platforms are used to map value and supply chains, linking farmers, producers, suppliers, distributors, and retailers with consumers. These platforms help reduce information asymmetry and search costs, thereby enhancing the resilience of domestic value and supply chains.

8.2. Industry 4.0

The Marcos Jr administration has crafted a strategy for embracing Industry 4.0, particularly for technology-mature firms. Recognising the disruptions and opportunities Industry 4.0 presents, the government aims to do the following:

a. Implement Industry 4.0 roadmaps, formulated by the Department of Trade and Industry (DTI) and the Department of Science and Technology (DOST), which outline overall strategies, required facilities, and policies.
b. Build Industry 4.0 facilities, such as pilot factories, to serve as collaborative learning environments for demonstrating industry management and production technologies.
c. Provide soft loans or technical assistance to help firms adapt to production shocks, supply chain changes, and advanced technology and automated processes.
d. Create the Industry 4.0 sandbox equipped with advanced manufacturing modules and technology for research and development (R&D) and prototyping activities. The sandbox will enable firms to experiment with Industry 4.0 solutions in settings that mimic a fully supported production environment.

8.3. Gig Economy

In response to the growth of the gig economy, accelerated by the pandemic and increased reliance on gig workers, the government is working to extend social protection to freelancers, contractors, and independent professionals in this sector. Plans include developing technology parks, centres of creative excellence, and talent hubs to support creative freelancers by providing training, mentoring, legal services, and repositories for creative works.

8.4. Algorithm Economy

The government is developing strategies to enhance AI utilisation across various sectors, thereby strengthening participation in the algorithm economy. The Center for Artificial Intelligence Research will collaborate with regional inclusive innovation centres to support MSMEs, whilst industry hubs will aid in digital transformation and AI adoption. Collaborative efforts between academia and industry will focus on skills development and training in science and technology, ensuring a workforce capable of thriving in the algorithm economy.

The government aims to enhance its role in international and regional discussions, particularly in space and satellite technology, health, and AI, to support the algorithm economy by acquiring both new and existing foreign technologies through partnerships.

The BSP is exploring its role in the algorithm economy by promoting regulatory technology (regtech) and AI to combat cybercrimes and improve measures against fraud, money laundering, and terrorist financing. Regtech and AI are expected to enhance the design and delivery of innovative financial products and services.

9. Incentives for Engaging in the Digital Economy

The CREATE Act, enacted in 2021, represents a significant tax reform with notable implications for the digital economy. The act offers several incentives, particularly benefitting firms in the digital economy. Key incentives include fiscal incentives for registered projects and activities, such as an income tax holiday of 4–7 years and a special corporate income tax of 5% on gross income after the income tax holiday period, which is especially advantageous for export-oriented businesses (Republic of the Philippines, 2021).

Enhanced deductions are available for registered projects, including deductions for labour, training, R&D, and infrastructure, thereby encouraging innovation within digital economy firms. The CREATE Act provides for a longer net operating loss carry-over, offering financial relief to digital start-ups during their initial non-profitability phase (Republic of the Philippines, 2021).

Only registered activities or businesses approved by investment promotion agencies such as the Board of Investments or the Philippine Economic Zone Authority are eligible for these incentives. The Strategic Investments Priorities Plan lists the preferred sectors or activities that qualify for incentives (Republic of the Philippines, 2021). The CREATE Act's emphasis on R&D, innovation, and reduced tax burdens is particularly beneficial to tech start-ups, e-commerce, and other digital businesses in the Philippines.

10. Critical Issues of the Digital Economy

Dacuycuy and Serafica (2023) identify several factors contributing to the Philippines' lackluster digital economy performance compared with its neighbours.

10.1. The country suffers from a significant shortage of internet service providers

According to the Department of Information and Communications Technology (DICT) 2019 national ICT and household survey, only 54% of the 2,617 surveyed barangays were covered by telecommunication companies, 36% had telecommunication towers, and around 20% lacked internet service providers altogether. There are also sub-national disparities in the types of services available. For example, households in the National Capital Region (NCR) predominantly subscribe to fixed broadband, whereas those in the Autonomous Region in Muslim Mindanao (ARMM) mainly rely on mobile broadband (DICT, 2019).

10.2. The cost of ICT services in the country remains prohibitively high, with poor internet quality exacerbating the issue

Earlier assessments of the digital economy noted deficiencies in ICT infrastructure (Quimba and Calizo, 2020; DICT, 2019). Despite pandemic-driven measures to improve internet access, these measures have had a limited impact on the price and quality of internet services. In 2022, the average cost of 1 gigabyte (GB) of data was around US$1.77, higher than most ASEAN countries, where costs ranged from US$0.49 to US$1.09. In 2021, the Philippines ranked third in ASEAN for the most expensive ICT services.

The 2022 Digital Quality of Life Index by Surfshark indicates that internet services remain unaffordable despite some improvements. A 1 GB mobile internet package requires 4 minutes and 51 seconds of work per month, 26 times longer than Singapore's 11 seconds. Whilst the affordability of mobile internet has improved since 2021, requiring 27 minutes and 3 seconds less work, the Philippines improved its global ranking only from 104th to 60th (Surfshark, 2022).

For fixed broadband, users must work around 11 hours and 5 minutes per month to afford the cheapest package, with costs rising since 2022. Although download speeds for both fixed broadband and mobile internet have improved, they remain mediocre (Piad, 2022), with mobile speeds at 38.7 megabit per second (Mbps) and fixed broadband at 75.1 Mbps, significantly lower than Singapore's 104 Mbps and 261 Mbps, respectively.

10.3. The country struggles with a scarcity of secure internet servers

In 2010, the Philippines, alongside several other ASEAN countries, had fewer than five secure internet servers per million people. By 2020, whilst all ASEAN states experienced growth, the Philippines had the lowest increase, with secure servers rising from 5 in 2010 to just 13 in 2020. In contrast, Indonesia saw an increase from 1.6 to 1,877 secure servers, and Viet Nam from 2.3 to 105 over the same period.

10.4. Trust and data privacy concerns also stymie the adoption of digital platforms and services

In the fintech industry, a persistent issue is the lack of trust in using digital technologies due to unreliable access points, connectivity issues, and the high cost of internet services (Quimba et al., 2021). Despite laws aimed at preventing cybercrime, online fraud remains prevalent (PIDS, 2023).

Whilst the government has enacted laws and regulations to promote trust in the digital economy, many need updating and stronger enforcement to effectively protect consumers online (World Bank, 2022).

10.5. The job market struggles to meet the rapidly growing demand for digital skills

A lack of skills and low digital adaptability are primary concerns in the digital economy. In 2021, the Philippines ranked 54th in digital and technological skills and 58th in the World Digital Competitiveness ranking, down from 46th in 2017, indicating a decline in talent, education, and training (World Bank, 2022).

Despite the increasing demand for digital skills, the job market fails to meet manpower needs. High-demand digital jobs include cybersecurity experts, data development engineers, database managers, and game developers (DOLE, 2021). However, most Filipinos engaged in online work perform lower-value tasks like marketing, sales, and clerical or data entry jobs (PIDS, 2023).

Skill disparities also result in a gendered income gap in online marketplaces (Bayudan-Dacuycuy and Sinsay, 2023).

10.6. Policy bottlenecks continue to hinder the digital economy despite the implementation of various plans and programmes

Although enabling policies[4] and programmes have been introduced, inadequate digital infrastructure impedes the development of smart cities, contributing to the country's lag in digital transformation (Ballesteros and Ancheta, 2023). Outdated policies and regulatory barriers hinder infrastructure development, whilst bureaucratic inefficiencies drive up expansion costs for enterprises.

10.7. Inconsistent application and delayed implementation of laws create uncertainty in the business environment

E-commerce and digital platforms face barriers to entry and investment due to blanket prohibitions, leading them to participate instead via cross-border digital services (PIDS, 2023). Serzo (2023) notes the slow implementation of policies aimed at streamlining government transactions, which reduces the efficiency of digital services. Notable delays include the national ID system and the Ease of Doing Business Act, which mandates the automation of business permitting and licensing (PIDS, 2023). Despite some effective government–private sector partnerships, coordination issues persist at both national and local levels (PIDS, 2023).

10.8. Access to financing and other support programmes is important, yet awareness of digital economy initiatives remains low

Enterprises are vulnerable to shocks, and timely information can help them adjust their business models accordingly. The costs associated with joining e-commerce platforms also reduce the profitability and sustainability of small businesses. Information on training and funding support is crucial, yet studies by Serafica and Dacuycuy (2023) and Peña and Yao (2022) have documented a general lack of awareness amongst stakeholders regarding government efforts.

[4] Recent policies in support of the digital economy in the Philippines include E-commerce Act 2000, Philippine Identification System Act (Republic Act [RA] 11055), Personal Property Security Act (RA 11057), Innovative Startup Act (RA 11337), Ease of Doing Business and Efficient Government Service Delivery Act (RA 11032), Revised Corporation Code of the Philippines (RA 11232), Free Internet Access in Public Places Act (RA 10929), recent liberalisation measures in public services, telecommunications (RA 11659), retail trade covering the e-commerce subsector (RA 11595), and businesses involved in advanced technology and start-up or start-up enablers (RA 11647). See Serzo (2023) and Serafica and Oren (2023) for a detailed discussion of these policies.

11. Conclusion and Recommendations

This study illustrates the development of the digital economy. Data from the PSA shows the digital economy's growing contributions in terms of value-added and employment. The Philippines possesses significant opportunities in the platform economy, Industry 4.0, the gig economy, the sharing economy, and the algorithm economy.

Recognising the digital economy's potential, the Duterte administration implemented comprehensive plans and policies addressing the production of goods and services, digital skills development, consumer protection, digital infrastructure enhancement, and incentives. The Marcos Jr administration is building on these policies, pushing for digitalisation and transformation, especially in industries that have yet to fully embrace digitalisation.

The BSP catalysed the growth of the digital economy through the promotion of digital payments and financial inclusion policies. The NRPS and QR Ph strategies have notably increased digital retail transactions. However, despite these efforts, challenges remain, including a limited number of service providers, high ICT costs, poor internet quality, trust issues in digital transactions, a scarcity of secure servers, policy bottlenecks, and low awareness of digital economy-supporting services and programmes.

The following recommendations are presented to enhance the already rich policy environment.

11.1. Strengthen the core of the digital economy

The government must continue to pursue policy and regulatory reforms whilst investing in specific network segments to improve internet connectivity, especially in areas outside urban centres (Mirandilla-Santos, 2021; Serafica and Oren, 2022). At the same time, it is crucial to ensure that these initiatives and programmes do not exacerbate existing inequalities. State-led initiatives should be reinforced, evaluated, monitored, and effectively promoted by agencies, including the DICT, the Technical Education and Skills Development Authority (TESDA), the Department of Public Works and Highways, the Department of Education, and the Commission on Higher Education, amongst others.

11.2. Address the fragmented policy support of the digital economy

The identification of strategies and the assessment of regulators indicate a fragmented approach to digital economy policies. The digital economy blurs regulatory lines, complicating the roles of various regulators. Quimba et al. (2023) noted the best practice within the fintech industry, where multiple agencies regulate whilst allowing for growth. This approach could be replicated in other areas of the digital economy. It is recommended that the various strategies from different government roadmaps be consolidated into a single official policy framework.

11.3. Collect data on unmeasured aspects of the digital economy

As the economy digitalises, relying on outdated definitions of the economy and industry is no longer viable. Companies are increasingly adopting servicification and digital transactions, necessitating a rethinking of industry classifications. Measuring the platform economy is particularly challenging due to its complexity, cross-sector and cross-border nature and the rapid changes in digital products. The government must collaborate with the private sector to collect data on unmeasured aspects of the digital economy and establish consistent measurement standards. Developing a comprehensive indicator is crucial for harnessing the digital economy to promote inclusiveness, growth, and sustainable development.

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