

CASE STUDY: INDONESIA

Tax Digitalization in Indonesia: Success Factors and Pathways Forward

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TAX DIGITALIZATION IN INDONESIA

Over the past two decades, Indonesia has been working to modernize its tax system through a wide range of digitalization initiatives.¹ These efforts have aimed to deliver benefits for both Indonesian taxpayers and for government authorities administering the tax system at all levels. Crucially, this includes increased revenue collection that can be used to help advance the Sustainable Development Goals, supporting Indonesia's people, prosperity, and environment.

Indonesia's tax digitalization journey has been led by the Directorate General of Taxes (DGT); Indonesia's national entity responsible for collecting federal taxes. Through its digitalization initiatives, Indonesia's tax system has taken great strides forward, although not all tax initiatives have been successful. Key achievements are set out immediately below, along with key lessons from Indonesia's tax digitalization journey that could inform other countries' reform efforts.

Of course, as in all countries, there remains much work ahead to ensure the benefits of digitalization are fully realized. This is particularly the case as Indonesia implements its new Core Tax System in the period immediately ahead and continues to explore new digitalization measures in the future. This paper sets out pathways forward to help realize the full potential of digitalization, with specific and practical recommendations as summarized below.

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Key achievements IN INDONESIA'S TAX DIGITALIZATION JOURNEY

By 2017, Indonesia had more than doubled the amount of revenue collected in 2010, to IDR 1342 trillion (~USD 91.68 billion). However, this was largely driven by Indonesia's growing economy, with the tax-to-GDP ratio falling slightly by 1.5% in the same period.

Digitalization has resulted in significant benefits to taxpayers, such as:

Reduced administrative delays and improved efficiency, resulting in a **20% reduction in business tax compliance time between 2014 and 2019,² and an average cost saving for businesses filing monthly tax returns of IDR 32 million or approximately USD 2,000 annually.**

User satisfaction with service, as measured by DGT's 1-to-5 index (5 being highest) rose from 3.90 in 2011 to 4.27 in 2017

Significant improvement in the World Bank's Ease of Doing Business Index: in the Paying Taxes category, in the decade to 2020 Indonesia rose **45 places, to 81st,³ and rose 49 places, to 73rd, in the overall rankings.**



Key lessons

FROM INDONESIA'S TAX DIGITALIZATION JOURNEY

Actively managing change and investing in people – Recognizing the need for internal change, DGT launched the 2011–2018 *Human Resource Management Blueprint*. In enacting the blueprint, DGT developed a new job classification system, improved training for tax officers, and implemented a more competitive compensation scheme to retain and recruit the highly skilled staff necessary for digitalization.⁴ The full benefits of digitalization can only be reaped with parallel efforts to update key functions and processes through an intentional institutional change management exercise; this is a continuing process in Indonesia.

Leveraging Indonesia's growing digital ecosystem – Indonesia's digital sector is expected to reach a value of IDR 1560 trillion or approximately USD 100 billion by 2025. This is creating a favorable environment in which taxpayers welcome DGT's tax digitalization efforts. DGT partnered with the private sector to reduce technology development costs and enable taxpayers to access value-added services through third-party service providers.

Aligning stakeholders to enable an effective procurement process – In the past, the procurement of technology suffered significant delays as a result of DGT's need to define excessively narrow product specifications. This created a critical bottleneck in digitalization efforts. To overcome this challenge, DGT shifted its approach, with support from the highest levels of government, and decided to procure a customized off-the-shelf technology solution.

Recommendations
TO DRIVE FURTHER PROGRESS



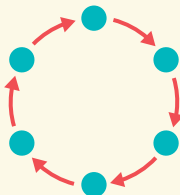
Institutional context - Improve decision-making within DGT by encouraging greater team autonomy. Lessons from the procurement process show the benefits that arise when DGT defines its desired outcomes for its various teams, rather than prescribing specific activities and requirements to internal DGT teams. For example, substantial benefits can be realized when DGT is empowered to independently define its human resource needs. Experience to date shows that greater autonomy enables more focused decision-making and speeds up the implementation process.



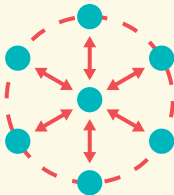
Vision and strategy - Articulate and build support for a long-term tax digitalization strategy. Indonesia’s digitalization efforts have been hindered by a lack of alignment between government entities. Going forward, close collaboration and alignment will be essential to successfully implement the new Core Tax System - the IT system for the entire tax administration process.



Data-driven organizations - Re-emphasize data standardization to improve process flows. The digital system for taxpayer reporting of VAT was designed with different data architecture from the system for reporting of personal income tax (PIT). This has made data analysis very challenging. Going forward, it will be important to ensure that data are collected in a standardized way to maximize the derived value.



Digitally fit processes - Focus on simplifying both policies and processes, especially for post-filing procedures. The tax process in Indonesia - both internal and external - should be improved in a way which helps ensure that digitalization delivers on its full potential. For example, to facilitate voluntary tax compliance, tax authorities should ensure that taxpayers will receive tax credits and refunds in a timely, hassle-free manner given that many taxes are estimates paid in advance pending reconciliation based on actuals. Government to taxpayer payments should be as seamless as taxpayer to government payments.



Keep using application programming interfaces (APIs) - Leverage the country’s growing digital payment ecosystem by continuing to use publicly available APIs as software intermediaries. APIs allow DGT to offer new services to taxpayers at a faster rate, improving the taxpayer experience, and thus increasing the likelihood of compliance. While the process must be managed carefully, there are significant advantages from further promoting and enabling collaborations between the public sector and private sector on APIs, such as faster development of user-centric solutions, lower cost, higher user satisfaction, and increased functionality.

THE BIGGER PICTURE: TAX DIGITIZATION’S
USD 300 BILLION
DIVIDEND FOR EMERGING ECONOMIES

This paper is the result of a broader study commissioned by the Better Than Cash Alliance to analyze the wider potential of digital payments across emerging economies. That study delivered the landmark finding that digitizing tax payments and related processes can raise an additional USD 300 billion in government revenues annually in emerging and developing countries. This is equivalent to almost one-third of the USD 1 trillion funding gap, which has put the Sustainable Development Goals at severe risk.

The study includes detailed case studies and comparative analysis of steps taken by other tax digitalization leaders, specifically Mexico and Rwanda, along with Indonesia. Both the broader study and this paper are motivated by a spirit of knowledge-sharing and continuous improvement, for the benefit of people, prosperity, and planet. It is the authors’ hope that they can serve as both a catalyst and a guide for other countries as they pursue their tax digitalization journeys.

2. TAX DIGITALIZATION IN INDONESIA

COUNTRY CONTEXT

In the last 10 years, Indonesia’s economy has grown at an average annual rate of 5.5%. The country’s size and labor force (adding approximately 2 million people annually) are expected to help maintain this trend. Indonesia is a member of the G20, and its USD 1 trillion economy is the 16th largest in the world, and the largest amongst South-east Asian countries.⁵ The economy benefits from declining unemployment rates,⁶ macroeconomic stability, and relatively high consumer confidence. It scores 125.5 in the Conference Board 2019’s consumer confidence index – well above the global average of 106.5.⁷ An improving business environment has bolstered economic growth. Indonesia rose more than 50 places in the World Bank’s Ease of Doing Business Index in the decade to 2020.⁸

A key feature of Indonesia’s growth has been the expansion of the service sector, especially information and communications technology (ICT). The service sector grew at an average of 7.1% annually between 2010 and 2017 – much higher than the manufacturing and agricultural sectors, which rose by 4.4% and 3.7%, respectively.⁹ Tourism is a major component underlying the service sector. It represented 10.4% of total employment and 4.3% of GDP in 2015.¹⁰ However, the ICT sector was the top performer between 2011 and 2016 with a year-on-year growth rate of around 15%.¹¹ Indonesia has a vibrant ICT business ecosystem that has enabled companies to unlock commercial digital opportunities while delivering a positive socio-economic impact for local populations and businesses.¹² The presence of unicorn companies like Gojek, Tokopedia, OVO, Traveloka, and Bukalapak exemplify the success of these efforts.

Increased use of digital payment and digital commerce has become an important factor in Indonesia’s development, but some disparities remain. Digital payments in Indonesia are more widespread than the average of all lower-middle income countries (35% vs. 29%)¹³ and continue to grow. In fact, e-money use quadrupled between 2014 and 2017 in Indonesia, and between 2016 and 2017 revenues from e-commerce grew by 22%.¹⁴ In combination with digital ecosystem growth in the private sector, a number of government programs, such as the Laku Pandai project on branchless banking,¹⁵ the SimPel project on student savings,¹⁶ as well as the National Strategy for Financial Inclusion, have supported the increased use of digital payment. In so doing, these initiatives aim to build greater financial inclusion in Indonesia.¹⁷ However, challenges remain in bridging the large urban–rural gap in digital connectivity and usage. This gap contributes to Indonesia’s below-average penetration rate of financial institution accounts (48% compared to an average of 56% among other lower-middle income countries).¹⁸

METRIC	OVERALL
Population	268 million ¹⁹
Adult population	186 million ²⁰
Country income category	Lower-middle income ²¹
Average annual growth rate of the economy (Real GDP) 2008–2018	5.5% ²²
% employment informal economy	30% ²³
% of adults with a financial account	49% ²⁴
% of adults with a mobile money account	3% ²⁵
Telecom subscriptions	459 million ²⁶
Internet users	143 million ²⁷
Adult literacy rates	95% ²⁸

Despite robust economic growth, Indonesia faces significant development challenges and has the fastest-growing wealth gap in South-east Asia. In part a result of underdeveloped national infrastructure, logistics costs have increased and are now the highest in South-east Asia, equating to 26% of GDP.²⁹ This causes regional price differences that hamper growth in areas outside Java and Sumatra. The World Economic Forum (WEF) Competitiveness Indicator ranks Indonesia’s infrastructure in 68th place. This is significantly below the average rank of 74th across East Asian and Pacific countries.³⁰ Moreover, although relative poverty figures fell to their lowest ever levels (9.82% of the total population), in 2018,³¹ the four richest people in Indonesia have greater combined wealth than the poorest 100 million Indonesians by income, or around one-third of the population.³²

Women continue to be underrepresented in the paid workforce, making up just 38.9% of paid workers. Just 52% of adult women participate in the labor force,³³ and 70% of these women work in the informal sector where their rights are not guaranteed and thus are much harder to protect.³⁴ Women use the internet and access digital services less than men. Only 64% of women use mobile phones compared to 72% of men.³⁵ Poor literacy and digital skills are a greater barrier to mobile phone ownership than affordability for Indonesian women. In contrast, Indonesian men cite affordability as a greater challenge.³⁶ Women are also more likely than men to report “not having the time to learn” as a top impediment to mobile internet usage.³⁷ Nonetheless, as of 2017, a larger share of women (51%) than men (46%) have an account with a financial institution or mobile money service provider.³⁸

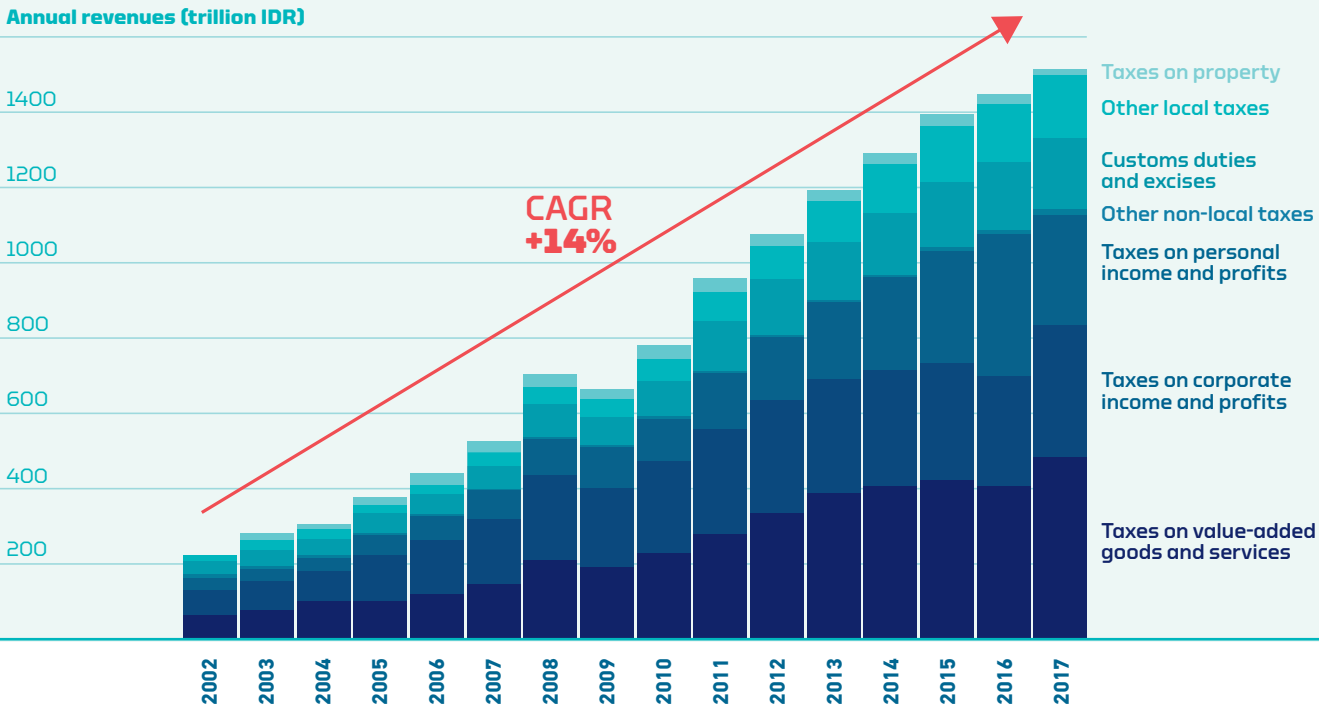
The size of the informal economy in Indonesia has decreased by 2% since 2016,³⁹ but 76.4% of the employed population and 93% of all enterprises still operate in the informal sector.⁴⁰ Many firms and workers are disincentivized from entering the formal economy by perceived barriers to the formal employment of workers, such as income and other taxes, minimum wage requirements, and regulations asserting workers’ rights.⁴¹ Individuals who work in the informal economy often lack social protection, rights at work, decent working conditions, skills development opportunities, and decent wages.⁴² This puts them at higher risk of poverty than those in the formal economy.⁴³ Informality also limits the government’s revenue and, thus limits its ability to tackle gaps in infrastructure or invest in social programs and development strategies.⁴⁴

TAX LANDSCAPE

The Directorate General of Taxes (DGT) is the entity responsible for collecting taxes levied by the national government. DGT is an agency under the Ministry of Finance (MoF) and has the task of both formulating and implementing tax policies.⁴⁵ DGT works with the Fiscal Policy Agency (BKF) – also under the MoF – to develop tax policy. Both agencies are financially dependent on the MoF but have some autonomy in various areas, for example, setting and administering performance standards in human resource management.⁴⁶

DGT collects about 75% of all revenues collected in Indonesia by governments at all levels, through corporate taxes, PIT, VAT, stamp duties, and land and building transaction taxes (except in urban areas). Other entities like the Directorate General of Customs and Excise (DJBC), subnational provincial and city government entities, and the Employees Social Security System (BPJS), collect the remainder of government revenues, including through customs duties, property taxes, and social security contributions.

FIGURE 1
Nominal annual Indonesian revenues from taxes (2002-2017)^{47,48}



Indonesia's tax-to-GDP ratio has fluctuated over the past 15 years and, at 11.5%, remains below the 15% recommended for sustainable development.

FIGURE 2
Tax-to-GDP ratio for Indonesia from 2014 to 2017^{49,50,51}

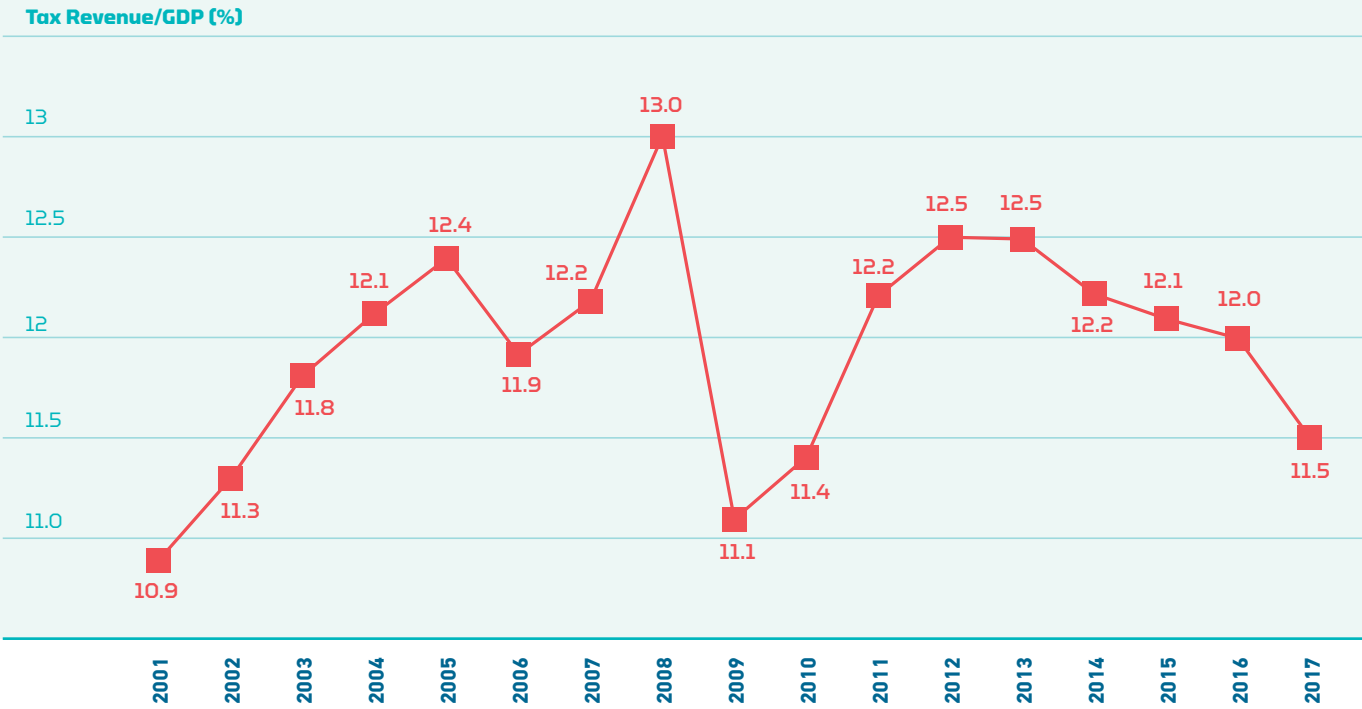
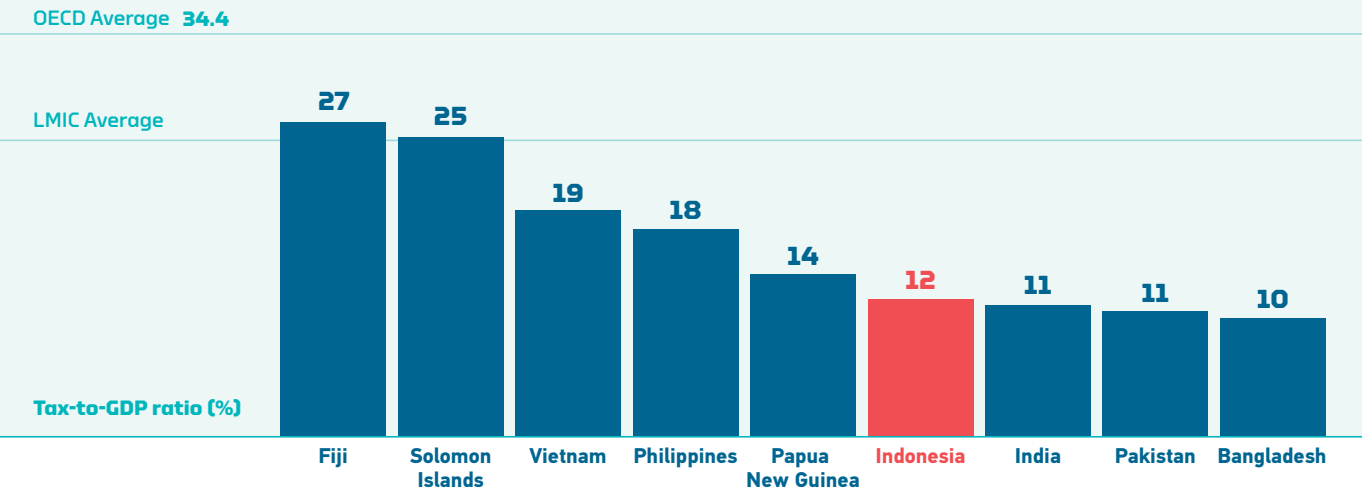


FIGURE 3
Tax-to-GDP ratio across BTCA countries in Asia and the Pacific in 2017⁵²



TAX CHALLENGES

Indonesia's relatively low tax-to-GDP ratio is largely attributable to a series of structural, administrative, and tax policy barriers, specifically:

- A highly informal economy resulting in a narrow tax base.
- PIT revenues at just 5% of GDP.⁵³
- A high earnings threshold for PIT obligations, a low tax rate (compared to other emerging economies) for medium-to-high earners, and generous tax incentives and exemptions for key industries.⁵⁴ For example, in 2016 an individual only hit the 30% marginal tax rate when their gross income was more than 20 times that of the average worker and the highest earners effectively pay only.
- Sectors such as hotels, restaurants, and entertainment are only subject to sales taxes at the subnational level.
- Low tax compliance due to the financial and opportunity costs of voluntary compliance as well as relatively weak enforcement for non-compliance. For example, the current VAT compliance rate is estimated at around 50%, which constitutes lost revenue equivalent to around 3% of GDP resulting from non-compliance.⁵⁵ In 2019, 3% of Indonesia's GDP was comparable to USD 1022.4 billion.

INDONESIA'S DIGITAL TAX JOURNEY

In 2001, DGT embarked on efforts to increase revenue collection by digitalizing the tax administration system.⁵⁶ Alongside ongoing policy reforms, DGT has viewed modernization and digitalization as key to encouraging and enforcing taxpayer compliance. In particular, administrative reforms have aimed to reduce taxpayer compliance costs and tackle non-filing, underreporting, and underpayment.

The current digital tax system reflects changes implemented during three reform periods over the past two decades. Currently, most stages of the tax cycle are digitalized from the taxpayer's perspective. However, efforts continue to digitalize late-stage aspects of the tax cycle (e.g. selecting cases for audit), and to upgrade the back-end of the digital tax system – that is, all non-user facing processes to ensure rigor, accuracy, and interoperability. The three reform periods are set out below.

First reform period (2001–2008): digitalization of taxpayer-facing DGT business processes, such as payments and tax return filing, as part of a program to expand the tax base.

Second reform period (2009–2016): expansion of taxpayer-facing digitalization efforts and initial steps to digitalize internal business processes such as data analysis.

Third reform period (2017–2024): delivery of IT systems to manage the whole tax administration process – entitled a new Core Tax System – to support a fundamental transformation in tax administration and to revamp back-end digitalization efforts.

TABLE 1
Timeline of major steps in DGT's digitalization journey

YEAR	RELEVANT STEPS REGARDING TAX DIGITALIZATION
2001	E-registration system implemented ⁵⁷
2002	E-payment (MP3) notification initiative launched ⁵⁸
2004	E-filing of annual income tax return through third-party Application Service Providers (ASPs) allowed ⁵⁹
2008	Kring Pajak online and chat launched to reply to customer queries
2012	E-filing of annual income tax return through DGT website starts ⁶⁰
2013	E-billing launched which facilitates electronic tax payments by generating a 15-digit ID billing code for tax payment
2014	DGT creates the DGT Online site (djponline.pajak.go.id) – an electronic portal to submit tax returns
2014	E-invoices (E-Faktur Pajak, FP) for VAT piloted
2016	E-billing made mandatory (Nugroho et al.) ⁶¹
2016	E-invoices (E-Faktur Pajak, FP) for VAT made mandatory ⁶²
2017	Electronic withholding tax slips (E-Bupot) for withholding income tax
2018	E-registration with tax authorities integrated within the electronic process of starting a business through other government ministries ⁶³

FIGURE 4
Timeline of major steps in DGT's digitalization journey

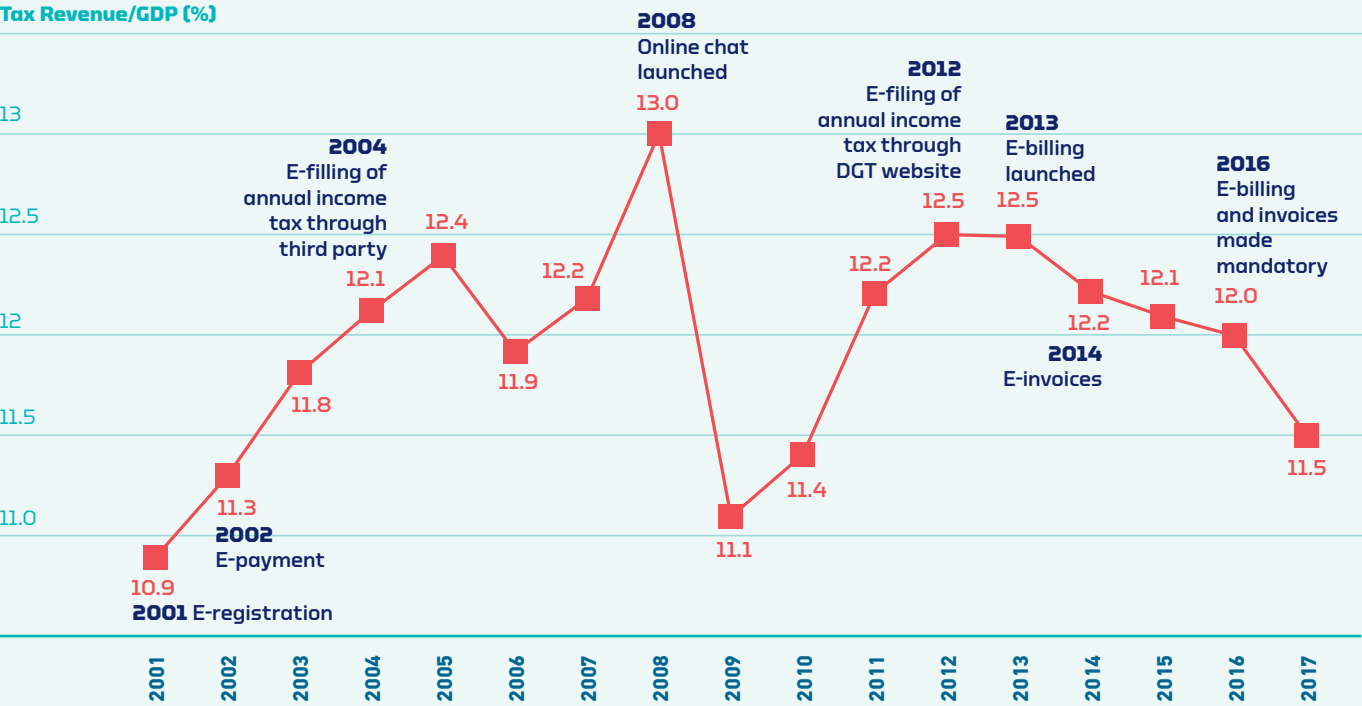


TABLE 2
State of Indonesia's digital tax system ⁶⁴
 GREEN = COMPLETE ORANGE = IN PROGRESS RED = NO ACTIVITY

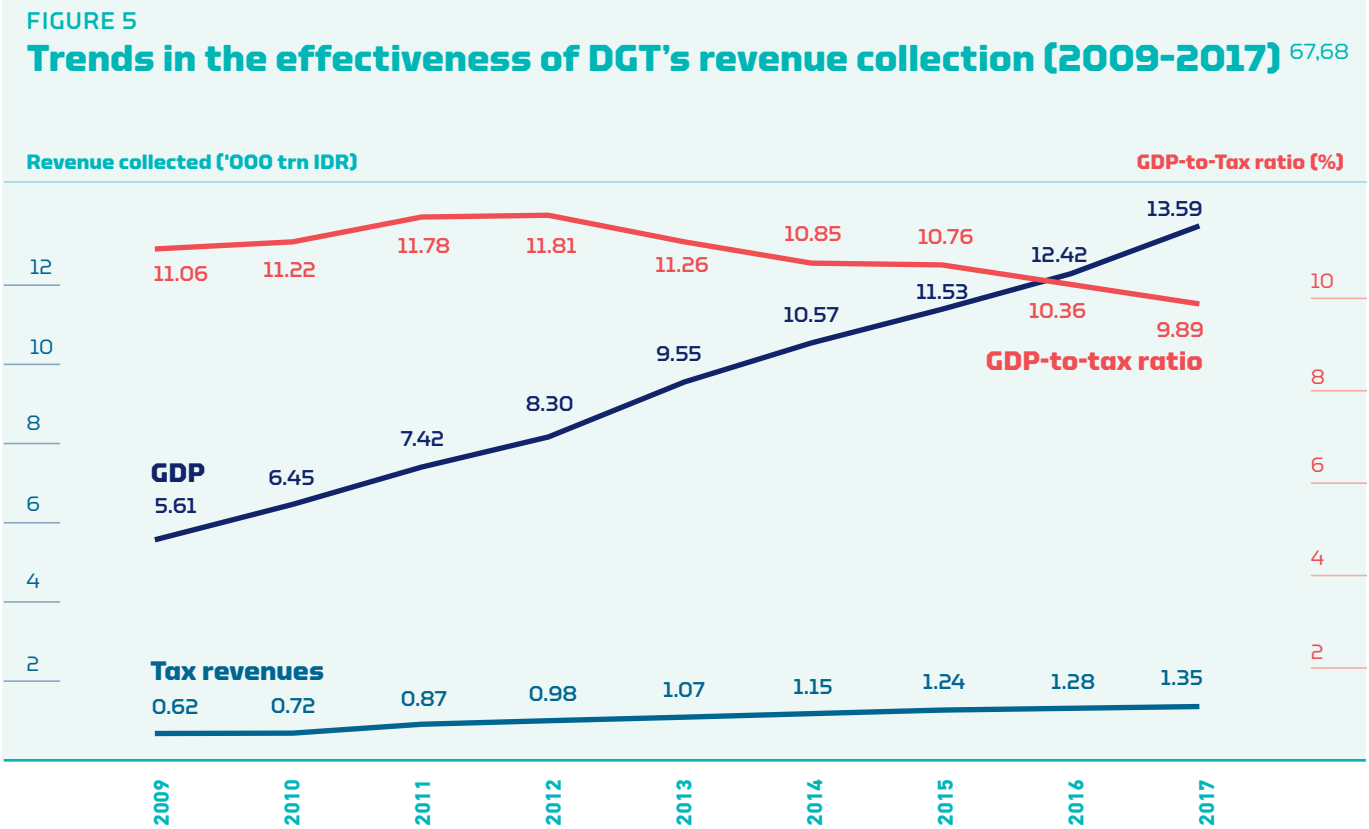
PARAMETERS (Huibregtse 2019) ⁶⁵	MATURITY	OBSERVATIONS
Digitalized stages in the tax cycle		
Registration	<div></div>	
E-invoicing	<div></div>	Mandatory (E-Faktur) with three different channel options
E-accounting	<div></div>	Currently being developed for pilots in 2020
Electronic filing of tax returns	<div></div>	Can be accomplished through Online DJP or ASPs
Digital payment of taxes	<div></div>	Payment is possible through electronic bank transfers, and more payment channels for tax payments have been enabled including e-Wallet, as of July 2019
Direct electronic interaction with tax authorities regarding specific audit, complaints, and issues surrounding tax returns	<div></div>	Not available – each larger tax paying entity has an allocated Account Representative (AR) who mediates post-filing issues (although taxpayers can file complaints electronically)
Direct electronic communication with tax authorities regarding general queries	<div></div>	Available through online chat services and hotlines ⁶⁶
Functionality of software and tools implemented by tax authorities		
Standardization of data gathering	<div></div>	Only for e-filing – there are generally different formats of tax data gathering
Exchange of information between tax authorities (local, regional, federal) or other government agencies	<div></div>	Data exchange between DGT and other authorities takes place electronically through secure web services and web portals. Standards and mechanisms are governed by MoF regulation
Exchange of information at the international level	<div></div>	Indonesia has adopted the OECD and CRS standards. Even though they have agreed to these standards, the depth of compliance has not yet been assessed
Reconciliation of historical data	<div></div>	Certain historical data has been reconciled and analyzed centrally (by the DGT)
Data analytics		
Pre-populating of tax return forms	<div></div>	Pre-populated individual tax returns through e-filing have been available since 2017
Automatic generation of calculation and/or penalties	<div></div>	Applicable, to some degree, for some penalties – but not generally
Identification of outliers/compliance risk management	<div></div>	Piloting phase started in 2017 and full rollout occurred in 2019
Audit trails with external data	<div></div>	Some degree of data cross-checking with the Directorate General of Customs and Excise
Audit trails with internal and external data both feed into the generation of outliers in the system	<div></div>	

DIGITAL TAX IMPACTS

Government

In 2017, Indonesia collected IDR 1342 trillion (USD 91.68 billion) from tax revenue. This is more than double the amount collected in 2010). The largest component of this increase was in the amount of VAT and income tax collected by DGT. Increases in local taxes and customs duties also took place during the period and contributed to the increase.

Digitalization of the central tax system and other tax reform efforts in Indonesia have not yet translated substantially into increased tax revenue, with the tax-to-GDP ratio plateauing (and even falling slightly) over the past decade. Although tax revenues doubled between 2010 and 2017, DGT's revenue collection has not kept up with general economic growth trends. This is largely because DGT has yet to substantially leverage taxpayer data and adapt its methods to improve taxpayer compliance and curb tax avoidance. For instance, audits are still carried out non-systematically, and, to date, digitalization of the tax system has not altered post-filing business processes – such as reimbursements. Additionally, digitalizing tax processes by itself has not sufficiently incentivized those in Indonesia's vast informal economy to formalize. For instance, enterprises at the border of the formal and informal economies report that they do not feel any pressure to formalize to issue e-invoices. This impedes tax base expansion.



The average business submitting monthly tax returns previously needed to allocate 12 days each year of one employee's capacity to visit the tax office monthly to submit tax return forms.

Modernization efforts have contributed to improvements in taxpayer perceptions of DGT. However, there is still significant room to improve the national compliance culture. The service's user satisfaction index increased gradually from 3.90 (out of 5) in 2011 to 4.27 in 2017. Despite these improvements, many taxpayers have expressed concerns about how tax revenues are spent nationally. A widespread lack of confidence among taxpayers that they would benefit from increased tax collection remains a significant barrier for DGT.

Taxpayers

Most taxpayers have experienced direct benefits from digitalization, notably through a reduction in the time needed to comply with tax reporting obligations. Taxpayers interviewed for this report noted that the average business submitting monthly tax returns previously needed to allocate 12 days each year of one employee's capacity to visit the tax office monthly to submit tax return forms. Digitalization means this is no longer required, providing businesses with significant savings. Changes like this have resulted in improvements in Indonesia's ranking in the World Bank's Ease of Doing Business Index. In the Paying Taxes category, Indonesia has risen 45 places since 2010 to 81st in 2020,⁶⁹ and has risen 49 places in the overall rankings, from 122nd in 2010 to 73rd in 2020.

The use of technology has reduced administrative delays and improved time and cost efficiency. This led to a 20% reduction in the time required for business tax compliance time between 2014 and 2019.⁷⁰

BOX 1

Time-poverty among women: a barrier to digital skilling and business growth

"The main barrier to growth for female-owned enterprises is time poverty. Time spent doing unpaid work like childcare, grocery shopping, and maintaining the household means female owners of small and micro-sized enterprises can dedicate less time to learning and adapting: learning about digital tools, new business opportunities, or their fiscal obligations. Therefore, a digital tax system is a double-edged sword. On the one hand, by reducing the fiscal compliance time and travel requirements, it greatly benefits female-owned enterprises who can now dedicate more time to other activities. Whereas on the other hand, it risks leaving behind those who do not have digital literacy to adapt appropriately. Going forward, it will be important for the government to consider these key gender-based constraints and tailor the design of the digital tax processes as well as the training and outreach sessions accordingly."

Chusnul Savitri, Executive Director, Indonesian Business Women Association (IWAPI)

The net benefit derived from DGT's tax digitalization depends on how willing and able taxpayers are to adapt to digitalization changes. The software used for e-filing, e-Faktur, and e-SPT are provided free of charge, so the main investment cost for businesses depends on the degree to which they already have the hardware and other technological resources needed to use the digital tax system. The extent to which taxpayers use and invest in the added-value services provided by authorized service providers (ASPs) can also impact on how much they benefit from digitalization.

Large and medium-sized enterprises are generally able to derive the most benefit from tax digitalization, primarily because they have greater technological resources and can more easily make use of added-value services from ASPs.

Companies like Mahaka Media have reaped significant rewards from tax digitalization at relatively low cost. In general, companies such as this need only invest in a few days of training for their accounting teams to learn how to use the digital tools offered by DGT. Some companies like Pixelindie have also reaped indirect benefits from tax digitalization (Box 3) using the added-value services from ASPs, and by leveraging synergies between tax digitalization and the digitalization of their other business processes. For instance, some ASPs also facilitate issuance of payroll slips for purposes of human resource management. Similarly, online accounting software that organizes information into templates speeds up the process of sending e-invoices.

Small and micro-sized enterprises incur higher investment costs and are less able to reap the indirect benefits of digitalization. This dilutes the net benefit of tax digitalization. Although DGT has taken steps to ensure that the digital tax system is user-centric, it could take further steps to increase use of digital reporting systems by small and micro-enterprises. Such enterprises often do not have ready access to a computer (see Box 1), and their employees often have low digital literacy. Therefore, complying with digital tax reporting requires investment in staff training and purchase of hardware. These costs act as barriers for some enterprises considering a transition to electronic reporting. These challenges are particularly difficult for female-owned enterprises, as women are often more time-poor than men⁷¹ – often because of unpaid domestic work – making it harder to find the time needed to learn digital skills. Further, women often have limited access to resources, making it harder to invest in the hardware needed to use these digital skills.

20% The use of technology led to a reduction in the time required for business tax compliance between 2014 and 2019.



For the many self-employed entrepreneurs engaged in multiple economic activities, the digital tax system provides significant benefits.

This group also has high expectations for user-friendliness. The urban centers of Indonesia are home to a growing middle class of workers who embrace digital lifestyle choices. They use mobile transportation apps and mobile money daily, and participate in social media for entertainment and networking purposes. For this group, digitalizing the tax system was a natural step in line with the digitalization of the broader economy. As a result, this group quickly adapted to digital tax processes, and reaped the benefits of doing so. Some used digital products and services to simplify their tax obligations, such as GoSend – which delivers physical invoices and documents to clients and suppliers (Box 5). Using their experience with other digital platforms as a benchmark, this group is typically quick to identify areas for improvement in the digital tax system. For example, despite their high level of digital literacy, some taxpayers with multiple jobs have noted difficulty in understanding how much they are being taxed for each job, as their digital report only generates a single number for their aggregate tax obligations. As a result, many feel they are being asked to pay more taxes than they owe, but do not know which employer to follow up with. Moreover, challenging tax obligations through account representatives can be extremely difficult.

BOX 2

The ease and benefits of digitization for large and medium-sized enterprises: a case study

Satya Dharma is the tax manager for a multi-platform media company acting as the holding company for 15 business entities, including newspapers, radio, and TV channels. The entire conglomerate employs 3000 staff, although only 26 were hired directly. Prior to this job, he worked as a tax manager for another large company.

“Overall, as a tax manager, the current digital tax system offers everything I imagined I needed 10 years ago when my monthly or bi-monthly trips to the tax authority offices seemed endless.”

Reflecting on his experience with the digital tax system in Indonesia, Mr. Satya describes how companies such as those in which he has worked – which have significant digital resources – have incurred almost no costs associated with these changes. This is because DGT’s free platforms change how tax returns are reported and submitted, but do not change their data inputs.

“Before, my accounting team received information on sales and made physical invoices manually with specific data points regarding what was sold, what the value was, who bought it, and who sold it, etc. Today, my team takes exactly the same information, but instead of making physical invoices, they make electronic invoices. The step is not automated or fundamentally altered just digitalized, so the process of creating invoices itself has not changed or been expedited. The accounting team only took one day to learn how to use the new system.”

Mr. Satya acknowledges that some ASPs provide services that would fundamentally change the process by which tax returns are created by automating and facilitating steps prior to reporting, but he believes that investing in such services and changes may only be viable for companies with very high-volume operations.

BOX 3

Digital tax reporting - the journey of a medium-sized enterprise

Bram Kristofer is a co-founder of the digital printing company Pixelindie Print Shop. The company started operations in 2015 and produces a variety of products from business cards to brochures and posters, for both businesses and individuals. The company currently employs 22 staff across two offices – one in West Jakarta and the other in Gading Serpong, Tangerang.

“My co-founder and I both have backgrounds in information technology and design, having met studying IT together at Binus University in Jakarta. Therefore, since the onset, we have tried to digitize everything in our company from the initial queuing system for walk-in clients, to the point-of-sale, to a stock management system, and our system for complying with our tax obligations.”

Initially, Pixelindie used a simple web-application for accounting and finance. As their business grew and had more requirements, Pixelindie built a separate web-application for point-of-sale and bought another subscription to a web-application, Jurnal, for accounting. For taxes and reports, they hired a consultant that used the government’s official tax applications, such as e-Faktur. However, about two years ago, they started using the free services offered by Online Pajak to file and report their taxes. Aided by their high digital literacy, Pixelindie’s accounting team learned how to navigate the Online Pajak system with just one or two weeks of training.

“I learned how to operate Online Pajak and then taught the rest of my accounting team. The actual interface is more user-friendly than the ones offered by DGT. Online Pajak allows you to carry out all the processes of invoicing, filing, reporting, and billing in one platform. However, we also went a step further and leveraged the synergies between other digitized business operations and Online Pajak. We use Jurnal as our online accounting system. Although it is not directly linked to Online Pajak, it is designed in such a way that we can export information from Jurnal in a format that facilitates data import into Online Pajak. The results have been extraordinary. What used to take four hours a day now takes us only one. I have cut down my accounting team from four people to two people, with the others now better positioned in jobs with more added-value such as Business Development and Customer Relations.”

“In the future, I hope Online Pajak will be connected automatically with the other digital business operations so that we can eliminate the process of manually inputting information into the system altogether. Thus, information inputted into Jurnal would automatically create an invoice and a payment slip.”

The business having gone through an audit process in recent years, Mr. Bram believes that having a digital record of all financial and fiscal data would enable data reconciliation and thus monitoring of appropriate tax compliance in a cost-efficient way.

BOX 4

Progress but barriers remain: the digitization journey of a medium-sized, female-owned business

Uthie Mintiarto is a female entrepreneur and owner of Dewi Sambi Boutique, a batik clothing line that she founded in 2011. She currently employs 30 full-time dressmakers and tailors, and sells her products through multiple platforms. Her distribution channels include clothing bazaars, online websites such as Instagram and Facebook, and partnerships with larger businesses for the bulk procurements of government batik uniforms. She has also participated in several international clothing exhibitions, most recently, in Thailand and Malaysia.

Eight years ago, Mrs. Mintiarto started accepting credit card payments, which have proved highly beneficial. This encouraged her to digitalize other aspects of her business. However, when trying to do so, she faced barriers in terms of limited digital know-how and poor customer service.

BOX 4 CONTINUED

“When I started accepting card payments, I instantly identified efficiency improvements, especially in large events when we sold a lot of merchandise in one day. It used to take me ages to calculate how much I had earned and deposit it in my bank account. Now I feel safer leaving these events almost cash-less but satisfied with my sales.”

“When I saw the benefits that digitalization could bring me, I explored the use of financial and accounting software called Zahir. However, it didn’t meet my specific needs, and I wasn’t sure how to use it. My staff don’t have the skills required to learn to use it, and I am very busy with other things, so I couldn’t find a way to make good use of it. Additionally, the provider company didn’t offer post-sales support services. Therefore, after a few months, I stopped using it.”

To date, Mrs. Mintiarto has not transitioned towards using the digital tax services offered by DGT. She attributes this largely to the investment barriers she faces in accessing and using these services, and time poverty – a common barrier facing Indonesian women in business.

“My experience with Zahir showed me that using these digital tools requires a significant investment to learn how to use them. At the moment, I don’t have the time to do that, and my current system works okay. A friend of mine is a tax consultant. Every year I give her access to my books, and she manages my tax obligations.”

Going forward, Mrs. Mintiarto does see the value in using digital tax services, especially if they come with tools to manage her accounting and stocks.

“A tool in which I can record my company’s transactions, and which automatically calculates my stock and finances would be fantastic! If, in the meantime, it also helps me comply with my tax obligations, all the better.”

BOX 5
Individual

Thea Wioreno is a freelance copywriter who works with a variety of clients to write advertisements, annual reports, company profiles, and online profiles. Since the onset of the digital revolution, she has embraced digitalization and technology. She uses transportation apps such as Gojek and Grab to move around the city and benefits from the cashback offers of mobile money companies such as Ovo and GoPay. Her use of social media has also opened up new business opportunities with friends and connections linking her with potential clients after seeing examples of her work online. She communicates digitally with clients who request physical invoices as well as electronic ones.

“Gojek has been life-changing for me. I used to have trouble sending invoices and documents to clients, especially since I live in a neighborhood outside Jakarta. I now use GoSend to deliver these documents to my clients. This has saved me a lot of time whilst also giving me the confidence that documents arrive safely.”

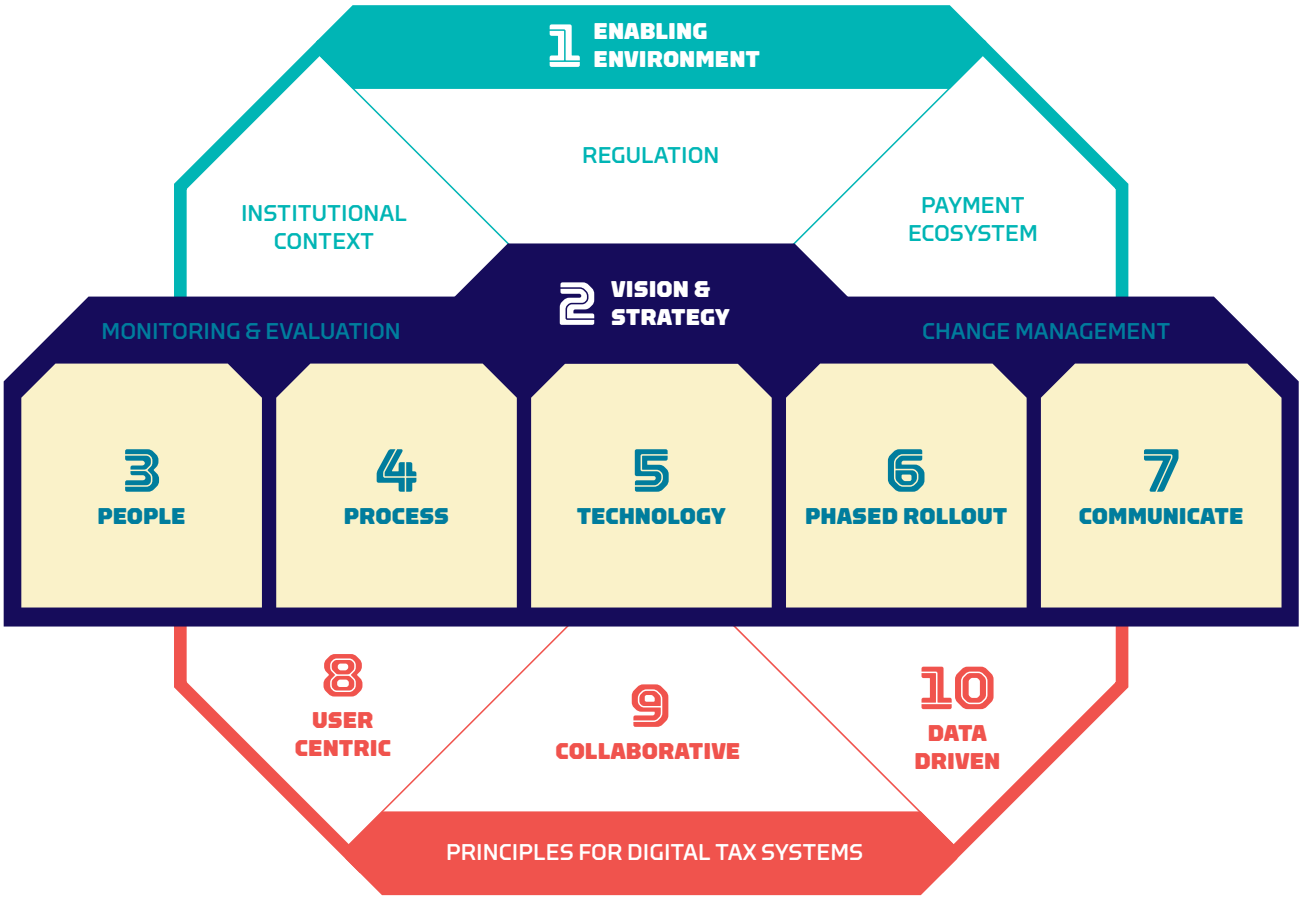
She now files, reports, and pays all of her taxes through the digital platforms offered by DGT. She estimates that the use of this system has saved her at least three to four hours in the tax office per year. Although she is very satisfied with the reduction in compliance time, she admits that the platforms are not always as user-friendly as she’d like and that the systems sometimes crash. For instance, despite her high digital literacy and ability to carry out tax obligation research online, she still asks her mother’s tax consultant for help occasionally. She also avoids submitting her tax returns near the deadlines, when the website tends to be more likely to crash.

“Fulfilling my tax obligations is much easier now. I don’t have to go to the tax office and instead can do it from home. However, the system isn’t very user-friendly. Although I have been doing it for three or four years, I am still confused about where to put what information. I’ve called the support service a few times, but they can’t always tell me how to navigate the online system either. I think the staff there sometimes aren’t well familiarized with the digital tax components.”

HIGHLIGHTS FROM INDONESIA'S DIGITALIZATION EFFORTS

Several factors have contributed to the advancement of Indonesia’s digitalization efforts over the last decade, and many lessons can be derived from DGT’s endeavors. These can inform other digitalization efforts taking place at national and international levels. In particular, DGT itself has already applied many of the lessons learned during digitalization to their outlook on upcoming administrative reforms. The following section leverages the action plan framework to identify highlights across four areas:

- 1 the enabling environment
- 2 vision and strategy
- 3 implementation, and
- 4 the principles underlying the digital tax system.



Enabling environment

Indonesia’s growing digital economy, expected to reach IDR 1483 trillion (USD 100 billion) by 2025, provides a favorable environment for DGT’s tax digitalization efforts.

The emergence of technology giants such as Traveloka, Gojek, and Grab, has shifted the culture surrounding digitalization to such an extent that there is now growing demand-driven momentum for tax digitalization. Thus, national stakeholders – including large national businesses – increasingly see tax digitalization and the corresponding digital business transformations as an inevitable step. Most recognize that tax digitalization benefits the tax authorities and other government entities, but also that it improves business operations, provided it is implemented effectively. As a result, a broad range of stakeholders in the country are willing to engage with the tax authorities with a view to helping ensure their tax digitalization vision meets taxpayers’ needs.

“Digital technology has created immense opportunities for the Indonesian economy. It is disrupting every sector and rapidly changing the lives of ordinary Indonesians. For instance, online apps are transforming the livelihoods of lower-income people by providing them with platforms for economic empowerment. Illiterate drivers are using smartphone apps to connect with the market and provide added-value services to society, such as food delivery. From a taxpayer perspective, this blatant visibility over how digital tools are transforming the Indonesian economy not only increases the extent to which they expect and demand e-governance services, it also increases their willingness to engage and support these efforts as viable business opportunities.”

Jaffar Al Rikabi, World Bank



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In 2019, the total transaction value of digital payments was IDR 482.35 trillion (USD 32.4 billion), up from IDR 393.03 trillion (USD 26.4 billion) in 2018 - a 22.8% increase

Growth in the digital payments ecosystem strongly supports tax digitalization. In 2019, the total transaction value of digital payments was IDR 482.35 trillion (USD 32.4 billion), up from IDR 393.03 trillion (USD 26.4 billion) in 2018 – a 22.8% increase.⁷² This increase was helped substantially by the Bank Indonesia establishing the National Payment Gateway in 2017. This facilitated DGT’s plans to promote digital tax payments through means such as mini ATMs (Box 6) and online transfers. A key objective of the program has been to create an interconnected and interoperable ecosystem of payment products. The cost saving on payments made via electronic data capture (EDC) devices or on inter-bank transactions has boosted uptake of digital payment mechanisms by taxpayers. Similarly, interoperability between mobile money providers⁷³ has also created an incentive for the spread of digital payments across the economy. This, in turn, helps DGT access and use national economic transaction data.

BOX 6
Using digital technologies to improve how taxes are paid

In Indonesia, digital tax payments are possible at regular ATMs, at mini ATMs, and through internet banking. Modern payment methods can deliver significant benefits to taxpayers, revenue bodies, and the finance sector. For taxpayers, digital payments reduce compliance costs, such as those associated with mailing checks⁷⁴ or visiting a local tax office or an agent (including banks) during business hours to make payments. Fully digital payment methods are also much less costly for revenue bodies to administer, and typically enable taxpayer accounts to be updated more quickly. For banks too, digital processing costs are much lower than those associated with cash or check payments.

Mini ATMs are electronic payment devices, which were launched by DGT in 2015 to facilitate tax payments for a broad segment of the population. Mini ATMs use EDC technology, which allows taxpayers to swipe debit cards to pay taxes. Currently, four financial institutions, from both the public and private sectors, provide the EDC machines: Bank Rakyat Indonesia, Bank Negara Indonesia, Bank Mandiri, and Bank Central Asia. To initiate the payment process, taxpayers must obtain an E-billing code from one of several channels, including the official DGT website internet banking sites, and application service providers. Once obtained, taxpayers can use the billing code to complete their tax payment procedures using the mini ATMs, which can be found in every tax office across the country.⁷⁵

As the digital economy grows, DGT is taking steps to adapt systems and regulations to ensure digital companies are taxed fairly. In 2013, DGT tasked a specialized team with developing policy and business processes to tax the emerging digital sector. In 2015, this team carried out audits of eight e-commerce taxpayers. Through these audits, the team sought to better understand e-commerce business models and to examine tax compliance in this sector.⁷⁶ The team also collaborated with external parties, such as the Japanese International Cooperation Agency, to gain insights from their experience taxing e-commerce. DGT then coordinated with the Ministry of Trade to formulate draft regulations governing trade transactions that are executed through electronic systems. The government launched these regulations as part of the Presidential Regulation entitled Road Map of e-Commerce 2017–2019.⁷⁷

Vision and strategy

Execution of past digitalization strategies has been hampered by a failure to align on a reform vision and implementation strategy. Many of the upcoming reforms – including procurement of a new Core Tax System and new compliance risk management process – were already part of the previous reform processes. However, in the past, limited alignment and insufficient buy-in from stakeholders impeded decision-making and slowed implementation of the reforms. Another important factor considered as key to success is that the third reform is seen as much more driven by internal actors. Local ownership has been key.

DGT has articulated a clear vision and strategy for this third phase of tax reform. DGT allocated resources specifically for engaging stakeholders, developing a clear vision, and encouraging buy-in from key national players. As part of this effort, with the backing of a ministerial-level decree, DGT formed a dedicated reform team (Tim Reformasi) in 2016 to prepare and oversee the third phase of tax reform.⁷⁸ Unlike past reform teams, it consists of both internal stakeholders from the Ministry of Finance and external parties, including representatives from the business sector and from the Corruption Eradication Commission, international institutions, and experts. The Reform Team is divided into four sub-teams: (i) the Steering Committee, (ii) the Advisory Team, (iii) the Observer Team, and (iv) the Executive Team. The last of these teams oversees internal organization, human resources, infrastructure, budgeting, laws and regulations, business processes, data, and information technology.⁷⁹

However, non-government stakeholders still cited a lack of information about tax digitalization plans. Although DGT formulated strategic plans and business plans that set out the roadmap for digitalization and reform, this information is not publicly available.⁸⁰ The resulting lack of transparency may reduce political buy-in and support for the reforms. This, in turn, limits the ability of DGT and MoF to fully and efficiently implement their reforms, and thus deliver the envisaged economic and social benefits.

Implementation steps

PEOPLE

Since the early 2000s, DGT has recognized that its digitalization reforms require human resource changes.

DGT has taken significant strides towards ensuring that human resources and organizational structures support its digitalization reforms. This includes replacing some low-skilled tasks with automatization and introducing more high-skilled tasks focused on data analytics, among other changes.

In 2011, DGT launched its 2011-2018 Human Resource Management Blueprint to implement changes and attract and retain the best talent. Based on a human resource strategic map, and building on previous human resource management steps, DGT developed new practices and policies, including:^{81,82}

- Modern staff selection procedures.
- A code of conduct.
- A new job classification system.
- A new appraisal system.
- A new compensation system.
- Technical, functional, and leadership training programs for new and existing tax officers.⁸³

DGT also secured greater autonomy over human resource matters, helping the organization to bring about desired changes effectively and efficiently.

In 2015, the Minister of Finance delegated some human resource responsibilities to senior DGT officials. Among other things, this change enabled DGT to introduce a more competitive remuneration scheme to retain and recruit the high-skilled staff needed for the digitalization process.⁸⁴

Over the past two decades, internal organizational changes have been critical to maximizing the benefits of digitalization. Initially, DGT was separated into departments based on tax types, resulting in inefficient resource allocation and siloed decision-making. Its structure was then reconfigured into functional roles subdivided by taxpayer types. Now, it is organized into Tax Service Offices based on the size of taxpayers enterprises (i.e. large, medium, and small enterprises).⁸⁵ As digitalization expands, this structure is expected to shift towards a more process-oriented approach to make the best use of Indonesia's growing digital infrastructure at each step of the tax cycle.⁸⁶

DGT's new organizational performance measurement system has been essential in providing the incentives required for digital transformation. Traditionally, DGT relied on annual revenue collection targets as the primary measures for assessing and rewarding performance. However, a 2004 review of international best practices led to the development of Key Performance Indicators (KPIs) at the strategic, operational, and individual levels, in three broad

“The backbone of the new Core Tax System is improving and integrating business processes to make them more reliable, fair, accountable, and standardized. The changes will improve data quality and allow for automatization, which are both essential to improving tax administration effectiveness and efficiency.”

**Pak Robert Pakpahan,
Former Director General
of Taxes, DGT**

areas: tax administration programs, taxpayer satisfaction, and employee satisfaction.⁸⁷ The KPIs have improved accountability and transparency in the administration of DGT. Looking ahead, there is a need to update performance measures to align with the new Core Tax System, once implemented. In particular, individual revenue collection indicators for account representatives are currently misaligned with DGT’s upcoming plans to automate the audit selection process by means of a compliance risk management system.⁸⁸

PROCESS

The simplification of tax processes has been a key pillar of DGT’s strategy. The e-billing process was launched to increase and improve tax payments. Rather than using a hard copy tax payment slip, which was prone to input errors and mismatched transaction records, the e-billing system allows automized cross-checking. The system generates a 15-digit ID billing code, which is then used to carry out the tax payment.⁸⁹

Despite these efforts, more can be done to simplify processes in a way that would reduce taxpayer compliance costs and increase DGT’s administrative efficiency.

The new Core Tax System should enable automized cross-checking of taxpayer information and pre-population of tax return forms. To maximize its benefits, the data capture system should be structured so that all interactions between an individual taxpayer and different working groups in DGT can be collected in a single taxpayer account. Currently, because of weak internal business processes, data on VAT payments at customs cannot be reconciled with data on VAT payments that are made domestically.⁹⁰

TECHNOLOGY

DGT’s past digitalization efforts were critically delayed by excessively narrow specifications for the technology it wished to procure. During the second reform period, DGT’s desire for a customized Core Tax System that fit its unique needs led to very specific technical requirements being prescribed. The procurement team stipulated stringent selection criteria to address concerns over perceived business corruption or collusion during procurement. The resulting procurement process took several years. By the time that DGT was ready to finalize its procurements, the technology being procured had become outdated. Consequently, the project was cancelled.

DGT is applying the lessons learned from the previous Core Tax System procurement process. To achieve better cost efficiency, address corruption concerns, and expedite the decision-making process, a Presidential Decree and a Minister of Finance Regulation have been passed by the President and the MoF to mandate and regulate the procurement of the new Core Tax System. Additionally, DGT changed its approach to the specification of criteria. Instead of insisting that the system fit all their existing business processes, DGT decided to procure a commercialized off-the-shelf solution. In this way, DGT has demonstrated its willingness

and capacity to adapt its processes to ensure digitalization reforms are successfully implemented.

Despite DGT’s efforts to expedite the procurement process, some national stakeholders have expressed concern over how long it is taking. The new Core Tax System is not expected to be fully implemented until 2023.

PHASED ROLLOUT

DGT consistently uses pilot programs and phased implementation to test digital innovations and adapt them to best suit user needs. Overall, this rollout approach has proven successful. However, limited tools for enforcing adoption have hampered the uptake of certain digital components.

COMMUNICATE

DGT is using digital channels to overcome Indonesia’s low compliance tax culture and change taxpayers’ perspectives.

On an annual basis, as part of their public relations campaigns, DGT identifies priority programs that require specific communication strategies. In 2017, these included a Tax Amnesty period. To encourage taxpayers to pay taxes within a short time frame, the Indonesian government launched a tax amnesty and repatriation of assets program, which took place between July 2016 and March 2017. The objective for implementing the tax amnesty program was to boost the income generated from taxes in the state budget. After the amnesty ended, increased supervision and enforcement was implemented. This was followed by supervision and law enforcement, the launch of Kartini1 (a secure multi-identity platform in the form of a contactless smartcard applet, a mobile app, and a web-based app. It can be used to integrate multiple official IDs into a single location.), e-Commerce tax, general tax reform, and tax inclusion awareness. DGT launched 747 television announcements and 758 radio announcements in this effort. It also ran social media campaigns under the hashtags #payingtaxiscool, #proudoftax, and #ministryoffinanceistrusted. Collectively these campaigns helped increase DGT’s Instagram, Twitter, and Facebook followers by 626%, 67%, and 17%, respectively. Through these methods, DGT promotes itself as a friendly, young, and energetic organization; its aim is to change the public narrative surrounding tax. Moreover, DGT carries out regular surveys to assess how effectively its chosen communication tactics reach the intended audiences, how much taxpayers understand the content, and to what extent the messages drive the desired changes in behavior.⁹¹

DGT drives behavior change and increases tax revenues by tailoring its digital communication with taxpayers.

DGT employed a behavioral insights team to test the effectiveness of different email interventions intended to reduce last-minute tax filing. The results showed that emails that helped with tax compliance planning were the most effective in bringing about the desired outcomes. Through use of this email template, DGT increased early filing by 2.1% and increased overall filing by 1.2%, resulting in a net gain of IDR 27 billion (USD 1.93 million) in tax revenue.⁹²

#payingtaxiscool
#proudoftax
#ministryoffinanceistrusted

Social media campaigns
increased DGT’s followers
+626% Instagram
+67% Twitter
+17% Facebook

DGT increased early
filing by 2.1% and
increased overall filing
by 1.2%, resulting in a
net gain of
IDR 27 billion
(USD 1.93 million)
in tax revenue.

Principles

A DATA-DRIVEN ORGANIZATION

DGT’s efforts to make more use of data through back-end digitalization are still nascent. From DGT’s perspective, the benefits of digitalization have been curtailed by a limited ability to extract meaningful insights from new data. For example, existing corporate income tax (CIT) returns do not provide a way for taxpayers to indicate what tax incentives or exemptions they are claiming. This gap means that to validate proper compliance, DGT must perform manual auditing.

To overcome data collection issues, DGT is piloting a host-to-host⁹³ integrated system with State-Owned Enterprises (SOEs). The first company to test this system was Pertamina, Indonesia’s state-owned oil and natural gas corporation. In 2018, Pertamina provided DGT with real-time access to its information system, including data on purchases and sales, payroll, and transactions with third parties.⁹⁴ Subsequently, other SOEs, such as the government-owned electricity distribution entity Perusahaan Listrik Negara and the multinational telecommunications conglomerate Telekomunikasi Indonesia, followed suit.⁹⁵ By increasing transparency and accountability, the move towards integration is meant to increase compliance while simultaneously reducing compliance costs for taxpayers.

Upgrades to the new Core Tax System are expected to involve three key elements that will enable DGT to better use data.⁹⁶

- 1. Updated and standardized tax forms will ensure that data are collected in a way that allows automated cross-checking and reconciliation. DGT will facilitate sharing of taxpayer data by engaging different working groups to collaboratively design these forms.
- 2. A taxpayer account feature containing all taxpayer information will serve as a master file and will enable advanced data analytics.
- 3. Models designed to make efficient use of data will enable new business operations. These models include features designed for compliance risk management, quality management, business intelligence, and knowledge management.

The new Core Tax System must be adaptable to new data sources and capable of meeting the data needs of external parties. DGT is working hard to ensure the effective implementation of the Automatic Exchange of Information (AEOI). This will require that the data shared through AEOI meet common report standards (CRS). Also, DGT must be able to prove that its inter-state data transmission systems are adequate and assure confidentiality and security.

BOX 7
Online Pajak: an example of an ASP in tax digitalization efforts in Indonesia

Operating since 2015, Online Pajak is a provider of e-taxation services in Indonesia. Its innovations support the government of Indonesia’s efforts to mobilize greater domestic resources, reform tax administration, and reduce tax compliance costs for taxpayers. In addition to its free tax-filing software, Online Pajak offers a set of non-tax related value-added services.

TABLE 3
Comparison of services offered by Online Pajak and those offered by DGT

SERVICES OFFERED BY ONLINE PAJAK	ALSO OFFERED BY DGT
Annual e-filing for both corporate and personal income taxes (CIT and PIT)	Yes
E-filing for monthly value-added taxes	Yes
Integrated tools to deposit, calculate, report, and pay taxes through the same online platform	No
Multi-user access	No
Data import feature	No
Online help service features	Yes
Automatic updates with no need to reinstall	No
Partial integration with human resource management to send salary slip	No
Integration with the business accounting system to provide operational insights	No

It is estimated that tax payments through the application reached IDR 100 trillion (USD 6.43 billion in 2018), which equates to approximately 5-10% of total Indonesian tax revenue. Online Pajak also reports high customer satisfaction, which it says has helped drive further adoption of Online Pajak.



COLLABORATIVE APPROACH

DG has partnered well with the private sector to reduce ICT development costs and enable taxpayers to access value-added services. This has been a key factor in Indonesia's digitalization success. As early as 2005, DGT issued a regulation that authorized third-party ASPs to facilitate electronic filing of CIT returns.⁹⁷ Today, eight ASPs are available to all taxpayers. ASPs add value by integrating the different digital services provided by DGT into one platform and enabling a more user-friendly experience. For instance, the government provided e-SPT, e-Faktur, and e-Filing services all operate as different systems. However, ASPs such as Online Pajak (Box 7) have combined all of these digitalized tax services into one. From a government perspective, allowing private sector actors to provide services is a low-cost and effective method to drive innovations in digitalized tax collection. Most of the basic services provided by these ASPs are free, with providers collecting revenue from value-added services such as tax payment processing, company invoice processing, payroll software, and short-term financing for invoice factoring and tax payments.

USER-CENTRICITY

DGT has worked with private-sector collaborators on a user-centric approach to designing the digital tax system.

ASP services tend to target specific taxpayer groups. For example, Klik46 provides MSMEs with a tailored digital platform, which enables them to record transactions and payment data. In addition to its online cashier service, Klik46 offers tax analysis and tax payment features that allow MSMEs to meet their tax liabilities more easily.⁹⁸

DGT centers its approach to technological development on the taxpayer to drive use and help users maximize the benefits of the technology. An example of this is evident in the design of Kartin1 (Box 8), which is currently being piloted. Kartin1 is an application developed by DGT with the aim of combining Tax Identification Numbers (TIN) and National ID numbers into individual cards. To increase uptake and ensure that taxpayers would derive most benefit from the service, DGT developed the technology to allow additional identities to be included, such as the Social Insurance Administration Agency ID and the Driving License. DGT also designed Kartin1 to meet the high standards of data and information security present in the banking business. This has allowed for the integration of debit cards and electronic money.^{99,100} Kartin1 can also provide added value to government institutions through data integration. Specifically, the dissemination of Kartin1 as a payment method can provide DGT with increased oversight of economic transactions at a national level.

BOX 8

Kartin1: a multi-identity platform for service and data integration

What it is

Kartin1 is a secure multi-identity platform in the form of a contactless smartcard applet, a mobile app, and a web-based app. It can be used to integrate multiple official IDs into a single location.

The vision

By housing multiple IDs in one place, Kartin1 enables service and data integration that benefits citizens, the private sector, and the government.

Benefits to taxpayers

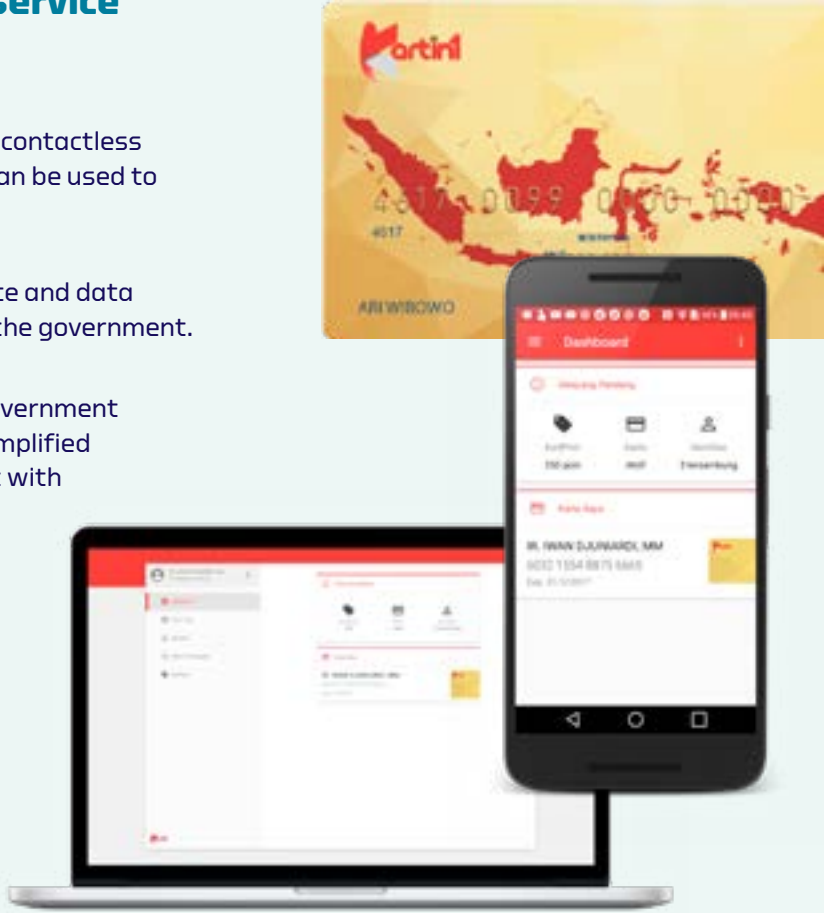
Easier access to government services, easier people-to-government (P2G) or business-to-government (B2G) payments, and simplified use of private sector services (e.g. opening a bank account with information stored on the card).

Benefits to the government

Reduced cost to provide citizen/taxpayer services and improved services through the use of data analytics.

Where the project stands

Use of Kartin1 as a contactless debit or credit card is being piloted among DGT employees.



1

Stage 1 - ID Integration

House all IDs in one platform, and choose one ID as a common ID

IDs are integrated but the data remain in each ID provider's data center

2

Stage 2- Service Integration

Develop one portal as a gate for all public/government services

Public and private services are also combined. For instance, Kartin1's e-wallet is linked to government systems to enable automatic payments (e.g. tax and customs)

3

Stage 3 - Data Integration

Kartin1 combines and stores user profiles from all IDs into one database

Stakeholders can share components of their data using blockchain technology

Kartin1 becomes the digital ID of Indonesia

Conclusions and recommendations

Indonesia’s tax digitalization efforts focus on the incremental development of solid technological foundations, which gradually increase the government’s tax revenue, and thus the government’s return on its investments in these technologies. Indonesia’s experience offers important lessons for other countries seeking to implement a digitalization vision, and provides insights into the impacts of such efforts on various types of taxpayers. Together, these lessons and insights also inform the following recommendations that key stakeholders in Indonesia can use to maximize the benefits of digitalization.

MINISTRY OF FINANCE AND CENTRAL BANK

1 Pursue policies that promote digital payments. The Ministry of Finance and Central Bank could work closely with DGT to draft and implement legislation to ensure payments, such as those that are VAT-deductible for companies, meet specific criteria so they can be made digitally. This would allow DGT to have greater oversight of transactions across the economy while simultaneously creating incentives for business to formalize.

THE PRIVATE SECTOR

2 Tech firms should continue to innovate and collaborate with DGT. The private sector has played a key role in enabling digitalization to be implemented in a way that is cost-effective and also benefits taxpayers. Continued collaboration between the private sector and DGT will remain crucial as DGT seeks to expand the tax base, draw in foreign direct investment, and tax the digital economy, multinational companies, and others. Two areas for potential developments include enabling e-invoicing from the point-of-sale and the integration of accounting and financial data.

3 Banks and microfinance institutions can help DGT use digital tools to promote formalization of the informal economy. In particular, they can help DGT explore how e-invoices can play a role in facilitating access to credit, for example through invoice factoring for MSMEs or individuals from poor communities.

DGT

4 Articulate and build buy-in for a long-term tax digitalization strategy. Indonesia’s digitalization efforts have been hampered by the limited execution of its digitalization vision. This is partially because of poor alignment among senior decision-makers on how to practically translate the vision into effective change. Looking ahead, it will be essential to work collaboratively to develop an implementation roadmap for the new Core Tax System, and assign responsibility for specific activities to particular actors. This shared roadmap will increase accountability, which, in turn, will help decision-makers initiate actions and implement change.

5 Facilitate quicker decision-making within DGT. As Indonesia upgrades its digital tax system, new advanced data analytics capabilities will require changes in the core operations of DGT, as well as in the technology available to it. It will be imperative that DGT’s senior management are able to make comprehensive changes quickly, including changes to the organizational structure and human resources. By empowering staff at all levels – including lower levels – with increased decision-making authority, DGT can enable them to innovate and change in ways critical to the success of the digital transformation. By shifting focus from prescribed activities and requirements to desired outcomes, DGT can enable more efficient decision-making and execution.

6 Re-emphasize data standardization. In the past, many of DGT’s digitalization projects were developed in isolation from other essential stakeholders, leading to a lack of integration between different component of Indonesia’s tax system. For example, the digital systems for reporting VAT and PIT were designed with different data architecture, making it very difficult to perform cross-checks and data analyses. Going forward, it will be essential to ensure data are collected in a standardized way.

7 Effectively use and safeguard digital data. Once it has invested in the new Core Tax System, DGT must ensure the increased volume and richness of data are used effectively. To do so, DGT should also invest in effective cybersecurity protocols and appropriate protection of taxpayers’ data and rights. Failure to properly integrate safeguards could expose data to theft and abuse, and, ultimately, could make collection of such data counterproductive.

8 Focus on policy and process simplification and automation, especially of post-filing steps. Improving tax authority operations and decision-making can trigger behavioral changes in taxpayers that result in increased tax revenues. Currently, despite the introduction of e-invoicing, VAT declarations of suppliers and buyers are not systematically compared for consistency. This has resulted in ongoing tax evasion through false invoicing. Similarly, both DGT and taxpayers have identified shortcomings in the selection and processing of audits. For DGT, not having an automated system for audit selection leads to inefficient resource allocation. Meanwhile, for taxpayers, the subjective way in which auditing is carried out gives rise to mistrust of DGT. It also contributes to perceptions among taxpayers at large that non-compliance with tax obligations carries little risk of being caught or penalized, and thus disincentivizes voluntary compliance. Additionally, existing reconciliation challenges and hassles in obtaining tax refunds post -payment also result in lower tax compliance. To fully realize the benefits of its new Core Tax System, DGT must accompany its new technological capabilities with better internal and external processes, which in many instances should entail simplification and streamlining, to make processes more user-friendly.

ANNEXES



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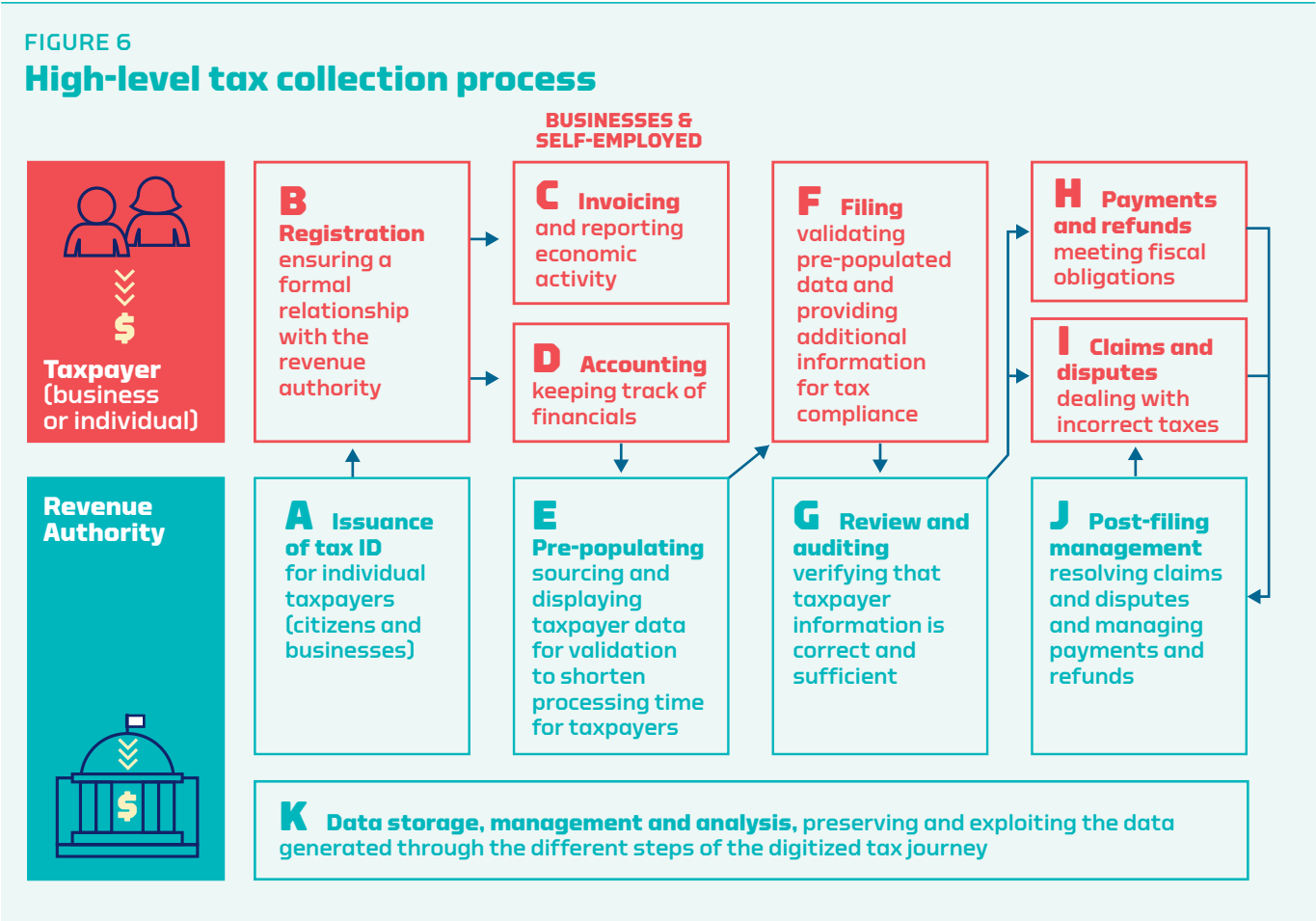
Comparative case study countries

			
COUNTRY CONTEXT	RWANDA	INDONESIA	MEXICO
Population	12 million	268 million	124 million
Adult population	7 million	186 million	90 million
Country income category	Low-income	Lower-middle income	Upper-middle income
Annual growth rate of the economy (Real GDP)	7.5% (2008–2018)	5.5% (2008–2018)	2.1% (2000–2018)
% employment in the formal economy	10%	30%	40%
Gender Gap Index	0.822 (rank 4/144)	0.691 (rank 84/144)	0.691 (rank 81/144)
% adult financial account	68%	49%	37%
% adult internet users	80%	76%	82%
TAX LANDSCAPE			
Entity studied	Rwanda Revenue Authority (RRA)	Directorate General Taxes (Direktorat Jenderal Pajak, DGT)	Tax Administration Service (Servicio Administración Tributaria, SAT)
Revenues collected by entity	All taxes	VAT, CIT, PIT, and stamp duties	VAT, CIT, PIT, and special taxes
Degree of autonomy	Semi-autonomous from MoF	Part of the MoF	Semi-autonomous from SHCP
Tax-to-GDP	16.6%	12%	16%
DIGITALIZATION OF TAX SYSTEM			
Digitalization efforts started in	2004	2001	1995
Registration digitalized	No	Yes	Partial
E-invoicing	Yes	Yes	Yes
E-accounting	No	No	Yes
Electronic filing of tax returns	Yes	Yes	Yes
Digital payment of taxes	Yes	Partial	Partial
Specific electronic interaction with TA	Yes	No	Yes
General electronic interaction with TA	Yes	Yes	Yes

Digitalization across the tax collection process

Tax digitalization involves several tax processes and tax types. Each country’s path will vary in terms of the order and extent of digitalization of individual processes. For instance, Mexico enabled digitalized tax payments in 2002, almost a decade before introducing e-invoicing in 2011.¹⁰¹ Rwanda requires e-invoices to be sent within a month of the transaction, Spain requires daily invoice submissions, and the Hungarian revenue authority requires ‘live’ reporting of e-invoices.¹⁰² In the city of Kananga in the Democratic Republic of Congo, property tax was the first digitalized tax, while many other countries have started by digitalizing VAT.¹⁰³

To identify the opportunities and potential risks of digitalization, it is important to understand the main steps that are involved. The framework below provides a high-level tax collection process applicable to a wide range of taxes across countries. Of course, it should be noted there is no uniform solution that will automatically deliver optimal results in every country or jurisdiction; as always, best practices and common approaches should be considered in the context of domestic conditions and adapted to local circumstances as needed.



A Issuance of tax ID

Issuing a tax ID, whether to a citizen, business, or other organization, is the first step to establishing a formal relationship between the taxpayer and the revenue authority. Importantly, the tax ID is used in all tax processes and for all tax types.

Digital tax ID automates the process of issuing a tax ID. This reduces mistakes, increases security (i.e. by replacing paper files), and allows for automated ID matching.

B Registration

When registering with the revenue authority, taxpayers provide all the necessary information to formalize their tax status.

At registration, several digital identification methods might be adopted, including the e-signature, the e-password, and the e-stamp for businesses. These tools allow taxpayers to identify themselves online and comply with their tax obligations digitally without having to interact with tax officers in person. In countries with limited digital infrastructure and capabilities, e-signatures might be excessively complex, so online registration and e-password settings may be preferable.¹⁰⁴

C Invoicing

Invoicing is critical for taxes, such as value-added tax (VAT) and corporate income tax (CIT), which target businesses and people who are self-employed.

The e-invoice is an electronic file that contains tax information of a commercial transaction involving the sale of goods and services. Prior to e-invoices, this record was created by means of a paper invoice. The invoice is generated electronically and transmitted in real-time by the taxpayer to the tax administration.

E-invoicing digitally notifies authorities of economic transactions.

In this way, it can reduce the time for authorities and businesses to process invoices. It also enables businesses to classify types of invoices (e.g. by using alphanumeric online codes).¹⁰⁵ E-invoicing can reduce the likelihood of corruption by boosting transparency, eliminating cash transactions, and automating internal processes. In countries like Mexico, companies can issue their own e-invoices or use third-party providers for such services.

D Accounting

Revenue authorities require accounting reports from businesses in order to properly calculate their CIT obligations, among other taxes.

Electronic accounting is often introduced with three goals: (i) to provide better information to tax authorities, (ii) to improve internal knowledge for businesses, and (iii) to improve management of internal resources. E-accounting makes information immediately available to auditors and thereby allows for faster and more frequent audits.¹⁰⁶ Tax authorities may use e-accounting to increase information requirements and reporting frequency for businesses.

E Pre-populating

Pre-populating returns can provide substantial benefits but requires extensive collaboration with third parties.¹⁰⁷ Third-party agents can provide relevant data about taxpayers (e.g. firms can provide salary information for employees). This information can then be used to pre-populate tax forms. Pre-population is particularly popular and effective for personal income tax (PIT) because it dramatically reduces the time needed for individuals to file their tax returns.

Digitalization allows for automatic pre-population. It can reduce the administrative time and cost of pre-population while minimizing the likelihood of mistakes.

F Filing

By filing tax returns, taxpayers provide the required information for tax compliance and, if applicable, validate their pre-populated forms.

E-filing allows taxpayers to provide the information requested online. Digital accounts can be developed in online portals for taxpayers to review and meet their obligations.

G Review and auditing

Tax authorities confirm the tax obligations of taxpayers by reviewing and auditing tax returns.

Digitalization allows for an algorithmic selection of which tax returns to audit. Senegal is currently experimenting with a data-driven selection mechanism to identify which taxpayers to audit.¹⁰⁸ Additionally, digitalized reviews may allow for automated alarms (reminders) to be sent to specific groups of taxpayers, including those identified as high-risk by data-driven selection mechanisms.¹⁰⁹

H Payments and refunds

Digital payments allow taxpayers and revenue authorities to shorten processing times. Some countries have authorized credit card payments for tax collection (e.g. Mexico). Additionally, because they eliminate cash transactions, digital payments can potentially mitigate corruption and theft risk.

- Digital payments are currently incipient in most low and low-middle-income countries, where they represent, on average, only 16% of received tax payments.¹¹⁰

I Claims and disputes

Claims and disputes allow taxpayers and tax authorities to settle tax disagreements. Digitalized claims are submitted electronically, eliminating mailing time and allowing fluid communication between taxpayers and tax authorities.

J Post-filing management

Post-filing management refers to the work tax authorities perform after taxpayers file tax returns.

Digitalized post-filing management allows tax authorities to rapidly validate payments and automatically identify payment delays. Digitalized refunds can be automatically approved and paid back to the taxpayer digitally. Digitalized claims are generally processed and resolved faster because they can be more easily categorized and dealt with systematically.

K Data storage, management, and analysis

Data storage, data management, and data analysis are key for tax authorities to achieve the greatest impact from tax digitalization. Data storage and management must satisfy the conditions of cost-efficiency and security. Data analysis matches and validates information, and distills insights from millions of aggregated data points, making it a key component of automation.

Digitalization of key taxes

Tax digitalization can impact all types of taxes. Each digitizing step has an impact on total revenues, overall complexity, and efficiency gains. For most emerging economies, revenue collection is the top priority, so digitalize taxes focuses on this objective. Some countries concentrate early efforts on VAT because it presents a substantial source of revenue.¹¹¹

The complexity of digitalization varies between taxes, even when similar processes are being digitalized. For example, pre-population is easier for PIT than for CIT because of third-party reporting (i.e. companies can directly report employee salaries). Efficiency gains from digitalization are likely to vary between taxes, depending on the local context and existing regulations.

Africa, Latin America and the Caribbean, and Asia collect more taxes on goods and services while OECD countries rely more on PIT.¹¹² In both Africa and Latin America and the Caribbean, VAT is the largest source of tax revenue for governments, with taxes on goods and services representing roughly half of all government revenues.

Understanding the main features of each tax type can help tax authorities prioritize and orientate their digitalization journey. Figure 7 summarizes the high-level features of the most popular taxes across countries. Critically, policymakers must consider who is liable for each tax, how it is paid, which taxpayer base it affects, and with what frequency it is paid.

In addition to these general features, each tax has particular characteristics that affect its digitalization. Set out below are some of the relevant features that policymakers should recognize and incorporate into strategies when digitizing each type of tax.

FIGURE 7
Overview of the high-level features of main taxes

	VALUE-ADDED TAX	CORPORATE INCOME TAX	PERSONAL INCOME TAX	PROPERTY TAX
Who is liable?	Business	Business	Individual	Individual
How is it paid?	Withheld from businesses	Done by taxpayer	Employer for wage-earners (who then declare) / Done self-employed	Done by taxpayer
What's the tax base?	All sales for consumption	Business' profit	Workers' gross income	Property's value
What's the typical payment frequency?	Monthly	Quarterly / Yearly	Monthly	Yearly

Value-added tax (VAT)

Tax digitalization can increase VAT compliance by enabling reported transactions to be matched, and by cutting the cost and time it takes to process invoices. VAT evasion can be one-sided, meaning only one party involved in a transaction reports it to the revenue authority, or two-sided, meaning both parties collude to underreport their transactions.¹¹³ E-invoices can significantly reduce one-sided evasion since they allow for the automated matching of reported transactions. To combat two-sided evasion, electronic billing machines may be introduced to record retailer sales and share the data with tax authorities.

Corporate income tax (CIT)

Digitalizing CIT can increase compliance and revenue. This can include e-filing, e-payments, and, for more advanced tax authorities, e-accounting. E-accounting has often been implemented at a later stage of a country’s tax digitalization journey. E-accounting requires that companies electronically report their full profit and loss data on a regular basis. This allows for closer monitoring by revenue authorities and thus reduces the risk of CIT evasion.

Tax digitalization enables greater international collaboration between revenue authorities and thus helps reduce corporate tax evasion. Some corporations underreport their profits in a given country by opaquely shifting part of their profits overseas. This risk has been exacerbated by the rise of the digital economy, with companies sometimes operating in countries where they have no physical presence. Greater collaboration between national revenue authorities is being advocated on many fronts to combat CIT evasion. Tax digitalization is essential for rapid and reliable communication between revenue authorities and for their utilization of available data.

Personal income tax (PIT)

Automated pre-population can be particularly effective for PIT compliance, since revenue authorities can get direct third-party reports from employers. In many countries, PIT is directly remitted by the employer every month via payroll withholdings. Then, at the end of the fiscal year, employees earning above a certain threshold are required to declare their annual income for refunds or to make additional payments. Revenue authorities can use the information provided by employers to automatically pre-populate employee tax forms. This can sharply reduce the time spent and mistakes made by individual taxpayers when filing preparing their PIT returns.

Collecting PIT from self-employed workers can be a challenge for revenue authorities, as there is no direct third-party reporting. Tax digitalization can increase compliance among self-employed workers by reducing the time and cost of reporting their financial situation and increasing third-party reporting via e-invoicing and e-accounting among suppliers and clients.

Property tax

Property tax often represents a relatively low share of overall tax revenues, averaging 5.7% of total tax revenues in OECD countries in 2017;¹¹⁴ however, its progressive nature makes it important.¹¹⁵ Property tax is often the largest source of discretionary revenue for local governments. As such, it is an important measure for countries pursuing fiscal decentralization. Big Data techniques that digitalize property data can help revenue authorities identify fraud and underreporting of value. Additionally, digitalized online accounts for landowners can centralize information and tax payments; the UK’s Making Tax Digital initiative is an example.¹¹⁶ In emerging economies, property tax digitalization efforts will see the greatest benefits when using computer-assisted mass appraisal and online billing and payment systems.

AAAA	Addis Ababa Action Agenda
AEOI	Automatic Exchange of Information
AGESIC	Agency for eGovernment and Information and Knowledge Society
AI	Artificial Intelligence
AMECE	Asociación Mexicana de Estánderes para el Comercio Electrónico (Mexican Association of Standards for Electronic Commerce)
APA	Advanced Pricing Agreement
API	Application Programming Interface
ASP	Application Service Providers
ASYCUD	Automated System for Customs Data
ATAF	African Tax Administration Forum
ATI	Addis Tax Initiative
ATM	Automatic Teller Machine
B2G	Business to Government
BEPS	Base Erosion and Profit Shifting
BIR	Bureau of Internal Revenue (Philippines)
BKF	Badan Kebijakan Fiskal - Fiscal Policy Agency (Indonesia)
BMGF	Bill and Melinda Gates Foundation
BPJS	Employees Social Security System
BSC	Balanced Score Card
CAGR	Compound Annual Growth Rate
CIT	Corporate Income Tax
COMESA	East African Community and the Common Market of Eastern and Southern Africa
COTS	Commercial-Off-The-Shelf
CRS	Common Reporting Standard
CSMS	Case Selection and Management System
DGII	Directorate General for Internal Taxes (El Salvador)
DGT	Tax Directorate General (Indonesia)
DJBC	Directorate General of Customs and Excise (Indonesia)
DPIDG	Division for Public Institutions and Digital Government
DRM	Domestic Resource Mobilization
DST	Digital Service Tax
EAPS	East African Payment System
EBM	Electronic Billing Machine
ECLAC	Economic Commission for Latin America and the Caribbean
EDC	Electronic Data Capture
EFD	Electronic Fiscal Devices
EGDI	E-Government Development Index
ERP	Enterprise Resource Planning
eTIS	electronic Tax Information System
FAQ	Frequently Asked Questions

ACRONYM LIST		ACRONYM LIST	
FATCA	Foreign Account Tax Compliance Act	PAN	Personal Account Number
FBR	Federal Board of Revenue	PAYE	Pay-As-You-Earn
FDI	Foreign Direct Investment	PCT	Platform for Collaboration on Tax
FIMPE	Fideicomiso para extender a la sociedad los beneficios de la Infraestructura de los Medios de Pago Electrónico	PIT	Personal Income Tax
FMP	Multiple Payment Forms	PoS	Point of Sales
FY	Fiscal Year	PPP	Public-Private Partnership
GDP	Gross Domestic Product	RAG	Revenue Analytics Group (Ireland)
GoR	Government of Rwanda	RARP	Revenue Administration and Reform Project
HMRC	Her Majesty’s Revenue and Customs	RDB	Rwanda Development Board
ICAEW	Institute of Chartered Accountants in England and Wales	RIPPS	Rwanda Integrated Payments Processing System
ICT	Information and Communications Technology	REPSS	Regional Payment and Settlement System
ICTD	International Centre for Tax Development	ROPL	Rwanda Online Platform Limited
IDR	Indonesian Rupiah	RRA	Rwanda Revenue Authority
IMF	International Monetary Fund	RSSB	Rwanda Social Security Board
ISO	International Organization for Standardization	RURA	Rwanda Utilities Regulatory Agency
IT	Information Technology	RWF	Rwandan Franc
ITU	International Telecommunication Union	SAT	Tax Administration Service (Mexico)
IWAPI	Indonesian Business Women Association	SDG	Sustainable Development Goal
KCCA	Kampala Capital City Authority (Uganda)	SHCP	Secretaría de Hacienda y Crédito Público (Secretariat of Finance and Public Credit—Mexico)
KPI	Key Performance Indicators	SMS	Short Message Service
KPP	Tax Service Offices (Indonesia)	SOE	State-owned Enterprise
LAC	Latin America and the Caribbean	SPEI	Sistema de Pagos Electrónicos Interbancario (Inter-Banking Electronic Payment System—Mexico)
LC	Capture Lines	SSA	Sub-Saharan Africa
LIRS	Lagos State Internal Revenue Service	SWOT	Strengths, Weaknesses, Opportunities, and Threats
LMIC	Lower-Middle Income Country	TA	Tax Administration
MCC	Millennium Challenge Corporation	TADAT	Tax Administration Diagnostic Assessment Tool
ME&L	Monitoring Education and Learning	TIN	Tax Identification Number
MNC	Multinational Company	UGX	Ugandan Shilling
MoF	Ministry of Finance	UMIC	Upper-Middle Income Country
MSE	Medium Sized Enterprises	UN	United Nations
MSME	Micro, Small & Medium Enterprise	UN DESA	United Nations Department of Economic and Social Affairs
MXN	Mexican Peso	UNISCAP	United Nations Economic and Social Commission for Asia and the Pacific
NF-e	Nota Fiscal eletrônica	UNIPOG	United Nations Project Office on Governance
NTA	National Tax Agency (Japan)	USAID	United States Agency for International Development
ODA	Official Development Assistance	USD	United States Dollar
OECD	Organisation for Economic Co-operation and Development	USSD	Unstructured Supplementary Service Data
OSI	Online Service Index	VAT	Value-Added Tax
P2G	Person-to-government	WEF	World Economic Forum
PAC	Authorized Certification Provider	XML	extensible markup language
		ZIRMA	Zimbabwe Revenue Authority (ZIMRA)

Automatic Exchange of Information (AEOI) is an international standard that governs how tax authorities in participating countries exchange data relating to the bank accounts and safekeeping accounts of taxpayers.

Big data is a field that focuses on ways to analyze, extract information from, or otherwise use datasets that are too large or complex for traditional data-processing application software.

Change management is a collective term for all approaches to preparing for and executing organizational change and supporting of individuals, teams, and organizations through that change.

Common reporting standard is an information standard for the Automatic Exchange of Information (AEOI). It outlines what financial account information is to be exchanged, which financial institutions are required to report, the different types of accounts and taxpayers covered, and common due diligence procedures to be followed by financial bodies.

Digital government is the production and delivery of information and services within government and between government and the public using a range of information and communication technologies (ICT).

Digitization is the process of changing from analog to digital formats.

Digitalization is the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business.

Phishing is the fraudulent attempt to obtain sensitive or valuable information such as usernames, passwords, and credit card details, by dishonestly presenting as a trustworthy entity in an electronic communication.

Tax expenditure is the revenue a government forgoes through the provisions of tax laws that allow (1) deductions, exclusions, exemptions, or credits on taxpayers’ taxable expenditures, income, or investments, (2) deferral of tax liability, or (3) preferential tax rates.

Time poverty is a state in which individuals do not have enough time for rest and leisure after taking into account the time spent working, whether in the labor market, for domestic work, or in other activities required to maintain their livelihoods.

UX design is the process that design teams use to create products that provide meaningful and relevant experiences to users.

CATEGORY	NAME	ORGANIZATION
Global	Alexander Kitain	DAI
	Andrew Zeitlin	Georgetown University
	Anne Brockmeyer	World Bank
	Beatriz Marulanda	Marulanda & Consultores
	Daniel Alvarez	World Bank
	Greg De Paepe	Independent consultant
	Jonathan Weigel	London School of Economics
	Mazhar Waseem	University of Manchester
	Pierre Bachas	World Bank
	Rex Arendsen	OECD
	Victor Thuronyi	Ex-IMF
	Vishal Gujadhur	Bill and Melinda Gates Foundation
Indonesia	Adria Widyatmoko	Gojek
	Agus Rachmadi	Bank Rakyat Indonesia
	Ari Irfano	HIS Consulting
	Azalea Ayuningtyas	Du’Anyam Social Enterprise
	Bawono Kristiaji	DDTC
	Bernand Manurung	Syngenta
	Bram Kristofer	Pixel Indie
	Brigitta Aryanti	Gojek
	Brooke Patterson	Bill and Melinda Gates Foundation
	Budi Kuncoro	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) Tax Unit
	Charles Guinot	Online Pajak
	Christoforus Pakadang	Good Hope
	Chusnul Savitri	Indonesia Business Women Association (IWAPI)
	Danny Septriadi	DDTC
	Denny Vissaro	DDTC
	Fajar Kusuma Nuguraha	Bank Negara Indonesia
	Fitri Damayanti	Syarif Hidayatullah State Islamic University
	Hermawati Setyorinny	Indonesian Association of MSMEs
	Imam Machdi	Ministry of Administrative and Bureaucratic Reform
	Iwan Djuniardi	Directorate General Taxes (DGT)
	Jaffar Al Rikabi	World Bank
	James Castle	Castle Asia
	Joe Sitorus	Coordinating Ministry of Economic Affairs
	Mei Ling	Emas Indonesia Dauribu
	Mercy Simorangkir	Fintech
	Mr. Sumedi	Bank Mandiri

INTERVIEWEE LIST			Notes		
CATEGORY	NAME	ORGANIZATION			
Indonesia (continued)	Muhammad Fadlillah Fauzukhaq	Syarif Hidayatullah State Islamic University	1	Brondolo, J., Silvani, C., Borgne, E.L., & Bosch, F., 2008, 'Tax administration reform and fiscal adjustment: The case of Indonesia (2001-07)', IMF Working Paper, IMF, viewed October 28, 2019 from https://www.imf.org/external/pubs/ft/wp/2008/wp08129.pdf .	
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	Richard Highfield	Asian Development Bank	3	World Bank, 2019, <i>Doing Business 2020, Asia & Pacific</i> , accessed November 4, 2019, from https://www.doingbusiness.org/content/dam/doingBusiness/media/Profiles/Regional/DB2020/EAP.pdf .	
	Robert Pakpahan	Directorate General Taxes (DGT)	4	<i>Comparative analysis of tax administration in Asia and the Pacific</i> , Philippines, accessed June 6, https://www.adb.org/publications/comparative-analysis-tax-administration-asia-pacific-2020	
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	Satya Dharma	Mahaka Media	6	CEIC n.d., <i>Indonesia Unemployment Rate</i> , viewed October 28, 2019, from https://www.ceicdata.com/en/indicator/indonesia/unemployment-rate .	
	Shinto Nugroho	Gojek	7	The Conference Board, 2019, <i>Global Consumer Confidence Unchanged in Q3; Index Remains at Historic High Despite Rising Anxieties, Global Consumers Remain Steadfast</i> , 9 October, viewed November 7, 2019, from https://www.conference-board.org/data/bcicountry.cfm?cid=15 .	
	Suahasil Nazara	Fiscal Policy Agency	8	The World Bank, n.d., <i>Ease of Doing Business</i> , 2011–2018, viewed June 18, 2020, https://data.worldbank.org/indicator/IC.BUS.EASE.XQ	
	Thea Wiroreno	Freelance copy-editor and writer	9	Badan Pusat Statistik, 2018, <i>Informasi terbaru</i> , viewed November 7, 2019, from https://www.bps.go.id/ .	
	Uthie Mintiarto	Dewi Sambia Butik	10	Ollivaud, P. & Haxton, P., 2019, <i>Making the most of tourism in Indonesia to promote sustainable regional development</i> , OECD Economics Department Working Papers, OECD Publishing, Paris, viewed October 28, 2019, from http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ECO/WKP(2019)4&docLanguage=En .	
	Widharmika Agung	Iwan Tirta Homa	11	Global Business Guide, 2016, <i>Indonesia services snapshot</i> , viewed October 28, 2019, from http://www.gbgindonesia.com/en/services/sector_overview.php .	
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	Yasushi Suzuki	Asian Development Bank	13	World Bank, 2018, <i>The Little Data Book on Financial Inclusion 2018</i> , World Bank, Washington, DC, viewed November 7, 2019, from https://openknowledge.worldbank.org/handle/10986/29654 .	
	Yuana Sutyowati	Ministry of SMEs	14	Kinda, T. & Yan, T., 2018, 'A digital-savvy Indonesia', in <i>IMFBlog</i> , viewed October 28, 2019, from https://blogs.imf.org/2018/02/22/a-digital-savvy-indonesia/ .	
	Yuristyarni Puspasari	Bank Negara Indonesia	15	Laku Pandai is a program to expand branchless banking using an agent network. As of December 2017, it covered 13.6 million customers in 27 banks compared to 3.7 million customers in 20 banks the previous year.	
	Zidni Agni Apriya	Regional Tax and Fees Agency (BPRD)	16	SimPel or Sempel B are student savings programs with simple accounts at conventional and Islamic banks, respectively. By March 2018, there were 11 million accounts at over 214,000 educational institutions.	
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The Better Than Cash Alliance

The Better Than Cash Alliance is a global partnership of governments, companies, and international organizations that accelerates the transition from cash to digital payments in order to advance the Sustainable Development Goals. Based at the United Nations Capital Development Fund (UNCDF), the Alliance has 75 members, works closely with other global organizations, and is an implementing partner for the G20 Global Partnership for Financial Inclusion.

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