Digital Peru.
The Path to Transformation.

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Executive Summary

"Digital transformation can improve several important indicators of a country, such as economic growth, fiscal spending efficiency, and increased productivity of citizens and public officials..."

This study presents Peru's main strengths and areas of opportunity in terms of digital transformation as a result of the COVID-19 pandemic. All of this is aimed at helping decision makers in the Executive Branch and the Legislative Branch for 2021-2026 to identify the shortcomings and opportunities for improvement in this matter.

The impact of COVID-19 was particularly severe in Peru, due to infrastructural factors such as the precarious nature of the health system and the extensive informality of the national economy. This also had an impact on essential activities such as education, health and financial services where the broad digital divide prevented remote services from being rendered, which would have partially mitigated the damaging effects of the pandemic.

In view of this situation, digital transformation can improve several important indicators of a country, such as economic growth, fiscal spending efficiency, increased productivity of both citizens and public officials, as well as increased levels of trust in the State.

Peru still has a long way to go towards digital transformation, with a modest performance in the main international rankings and indexes (71/193 in the E-Government Development Index, 55/193 in the E-Participation Index, 55/63 in the IMD World Digital Competitiveness Ranking, 10/16 in the GovTech Index Report). The most outstanding milestones of progress in recent years are in the digitization of various administrative procedures, the commissioning of the Peruvian State Interoperability Platform and the design of the future National Policy for Digital Transformation. Limitations in broadband connection, on the other hand, play against citizens' aspirations for digitization.

Both for its internal work and to provide services to citizens, the state requires a significant number of digital services. These range from the storage of large amounts of information to the provision of services using machine learning and artificial intelligence tools. In terms of digital transformation, Peru is still in the development stage, although some entities have streamlined their digitization processes in light of the health emergency caused by COVID-19. Peru also needs to exploit the potential exhibited by agile and transparent methods and processes for the procurement of digital technologies and services, such as the e-catalogs of framework agreements which are successfully used in several OECD countries. This would allow more timely and efficient purchases of innovative and scalable digital services.

Institutionally, attempts have been made to improve the regulatory framework for the Peruvian State's digital transformation, wherein the Digital Government Secretariat of the Presidency of the Council of Ministers (SEGDI) has assumed a leading role. However, this has been limited by the lack of binding and mandatory powers for SEGDI, the absence of specific baselines and goals in several of the different plans and strategies adopted in terms of digital government, state modernization and open government, and the lack of budget investment and commitment to develop digital capabilities for public officials, including the so-called "digital leaders".

At the institutional level, Peru also faces difficulties in enforcing the legal obligations of transparency, access to public information and open data, due to the lack of criteria to classify and declassify State-owned information, the lack of specific mechanisms to ensure compliance with the obligation to create and disclose open data, and the shortcomings of a National Transparency Authority that is not truly autonomous and does not have sufficient enforcement powers.

Finally, although instruments for regulatory improvement have been adopted in recent years (the Regulatory Quality Analysis, the Regulatory Impact Analysis and the Vice-Ministerial Co-ordinating Committee), none of them consider the mandatory use of public data (especially open data) as part of the decision-making process, nor are possible digital solutions taken into account in the design of regulatory policies, which is presented as a flaw on the Peruvian State's path to digital transformation.

I. Digital Transformation: Needs and Opportunity

I.1 Peru's Digital Needs During and After COVID-19

Section Summary

COVID-19 had a particularly severe impact on Peru and highlighted the urgency of digital transformation in Peru. This had an impact on essential activities such as work, education, health and financial services where the broad digital divide prevented remote services from being rendered, which would have mitigated the damaging effects of the pandemic.

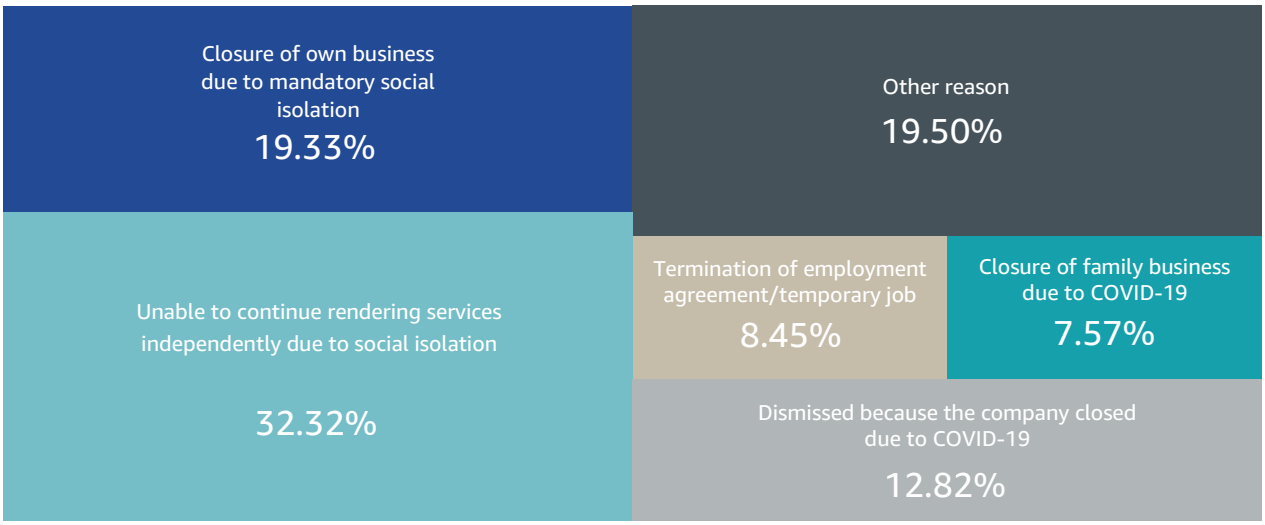
Peru was one of the countries that adopted an earlier and stronger response to the spread of COVID-19 in its population, which included declaring a State of Emergency and 106 days of public lockdown[i] and then proceeding with time restrictions (curfews), and sectoral restrictions for engaging in certain activities.

However, the public lockdown and the suspension of a large number of economic activities have dealt a severe blow to the national economy. According to World Bank projections (as of June 2020), Peru's GDP would fall by 12% by the end of the year. This is the most drastic drop of all Latin American countries after Belize.[ii] By April 2020, the Peruvian Institute of Economy estimated that there was a 50-55% GDP standstill during the emergency period.[iii]

Prior to the pandemic, national employment was already precarious due to the wide scope of the informal economy. Over 7 million production units in Peru were informal as of 2018, and almost three out of every four workers were employed in the informal economy.[iv] In this context, the effects of the pandemic in the labor sector were mainly manifested in the decrease of jobs. In the January-March quarter of 2020 (compared to 2019), the country's employed population dropped by 2.1%; i.e. 357,900 people lost their jobs.[v] While in the April-June quarter of 2020, the country's employed population dropped by 39.6%, which is equivalent to 6,720,000 people.[vi]

According to the National Household Survey [ENAHO][vii], 16.97% of those surveyed lost their jobs during the lockdown (See Figure 1). One of the most frequent reasons given for the loss of employment is the interruption of service provision due to mandatory social isolation (84.6%), whether an independent service (32.3%), the closure of their own business (19.3%), or the closure of a company for which they worked (12.8%).[viii] Only 19.5% of the reasons that jobs were lost were related to factors other than the pandemic and lockdown.[ix]

Figure 1. Reason why the person did not work last week from the beginning of the lockdown (%)



Source. ***ENAHO/Compiled by author.***

By the last month of the public lockdown (June 2020), a large percentage of dependent workers had already resumed their work in person on a daily basis (47.2%) or commuting to their workplace for a few days per week (17.7%).[x] Only 20.8% said that they were working remotely,[xi] which is a clear demonstration of the difficulty of migrating to remote work.

Regarding the provision of essential services, the most visible impact was observed in the education sector due to the indefinite suspension of all face-to-face classes in educational institutions. This meant migrating to distance learning. With respect to private colleges, secondary schools and universities, this change was implemented to the best of their ability, which represented a significant investment in technological resources to support online classes.

As for public education, there was no comprehensive measure that guaranteed effective migration to online classes. This change was implemented by each educational institution to the extent of its capabilities and resources.

In the field of university education, the National Superintendency of University Education (Sunedu) granted freedom for universities to assess their own ability to adapt to non face-to-face teaching.[xii] The delay in starting classes was widespread. By the end of June 2020, 80 private and 27 public universities were recorded to have started virtual classes, while 21 public universities and 3 private universities did so only in July.[xiii] Thirteen universities (12 private and one public) reported not having the resources necessary to implement non face-to-face education or had not reported to the Sunedu.[xiv]

The main educational strategy consisted of televised remote classes. The Ministry of Education's "Aprendo en casa" (I Learn at Home) program was broadcast through the open state-run channel, TV Perú, with only 3.5 hours of daily programming,[xv] and on some radio stations nationwide, which gave access to geographic areas without TV coverage or broadcasting in native languages.[xvi] In addition, an online, free access educational platform, *I Learn at Home*, was implemented for Kindergarten, elementary school, secondary, special basic and alternative basic levels, where the recordings of television classes, activity planners, exercises and other digital resources available to students who have internet access were stored.[xvii]

This strategy was complemented with the distribution of educational materials and the support of teachers to students with pedagogical activities and remote monitoring of the learning process.[xviii] However, there was no cross-financing of the technological, digital and connectivity tools needed to ensure remote teaching nationwide.

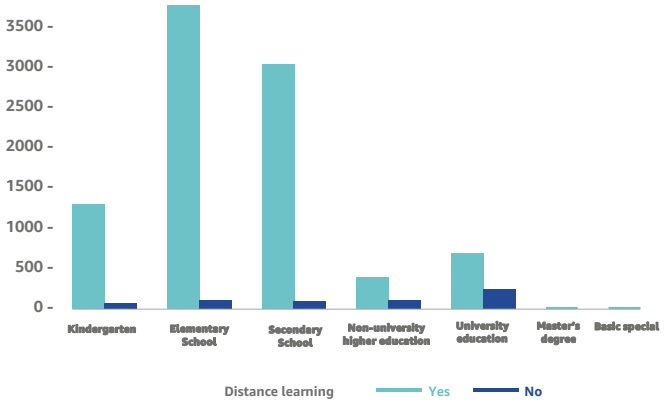
So, although the Ministry of Education ordered all 54,122 school institutions[xix] to migrate to distance learning,[xx] this was only possible to the extent of the capabilities of educational institutions themselves and their students. By September 2020, around 300,000 students, 15% of the national school enrollment, had already left school during the year.[xxi]

A similar picture is envisaged in higher education. The Higher Education's Federation of Private Institutions estimates university dropouts at 15% for private universities, and 30% in universities with students belonging to socioeconomic levels C and D.[xxii] This same federation estimated dropouts in technological institutes to be 60% by the second half of 2020.[xxiii]

The ENAHO[xxiv] measured how many enrolled students were studying remotely, with the results showing a high percentage in basic education, and lower percentages in higher education.

However, when asked about the medium used for remote education, the majority of students based their education on non-digital media, such as radio and TV. Only 22.6% of preschool students used a virtual platform or website, 25.6% in the case of elementary school students, and 33.6% for secondary school students.[xxv] In contrast, university education was mainly supported by Internet-based tools (95.7%).[xxvi]

Figure 2. Total survey respondents according to degree of education and if they were enrolled in the remote education modality



Source. ENAHO/Compiled by author.

Another essential service that faced a major challenge was the health sector. Peru had 13.6 doctors per 10,000 inhabitants,[xxvii] well below the average in OECD's countries, amounting to 35 doctors per 10,000 inhabitants.[xxviii]

During the COVID-19 health emergency, face-to-face care was prioritized for cases of infection or suspected infection. This, in turn, led to the quick implementation of telemedicine services for all other medical care. According to the Ministry of Health, there were about 3.5 million teleconsultation, teleinterconsultation, telemonitoring and teleorientation appointments during the first half of 2020.[xxix] And, by the beginning of September, 234 healthcare facilities were incorporated into the National Telehealth Network.[xxx]

According to the National Registry of Service Provider Institutions of Health - Renipress, Peru had 24,328 Health Service Providers Institutions (IPRESS) nationwide by 2020.[xxxi] Of the total, only 512 IPRESS provide telemedicine services.[xxxii] There are also 465 IPRESS male teleconsultants, and 147 IPRESS female teleconsultants.[xxxiii]

Another sector in which a significant gap was noted for the digitization of services was the financial sector. Peru is an underbanked country. According to the annual 2019 ENAHO survey, 53% of the participants had no banking products or services.[xxxiv] These figures are consistent with The Global Findex survey, conducted in 2017, which showed that 57% of Peruvians did not have a bank account and 60% stated that this was due to the high cost of having an account.[xxxv] Paradoxically, according to the 2018 Fintech Report in America, Peru had 57 Fintech startups that only corresponds to 5% of the total in Latin America, despite the potential that this sector would have in an underbanked country.[xxxvi] Furthermore, Peru presented a 19% failure rate for its ventures, ranking second in that indicator.[xxxvii]

In light of this context, it was challenging for the Peruvian government to implement the delivery of the various Social Assistance Payments to mitigate the negative economic impacts of the lockdown on millions of families nationwide. This is because the vast majority of the beneficiary population did not have a bank account, nor did they use digital media such as mobile wallets. The Government implemented a solution to hand out a Standalone Assistance Payment, which involved sending a password and a subsequent collection code through cell phone messages. With this information, users could go to a Banco de la Nación ATM to withdraw the money without even having a card.[xxxviii]

By November 2020, 60.2% of households had already collected the money from the Social Assistance Payments provided by the State, 6% had not yet done so, and 33.8% were not deemed beneficiaries.[xxxix] The reports for the four main Social Assistance Payments from the State ("Bono Independiente" [Standalone Assistance Payment], "Bono Rural" [Rural Assistance Payment], "Bono Yo me quedo en casa" [Istay at home Assistance Payment], and "Bono Familiar Universal" [Universal Family Assistance Payment]) show an advance of over 80% in the collection of each one.[xl] However, due to underbanking and low use of digital tools, there were recurrent crowding situations at the locations where government Social Assistance Payments were collected.

> "Digital transformation should be understood not as an isolated phenomenon in a fixed period of time, but as a process that is constantly evolving."

Up to November 2020, the State had not yet used e-wallets for Social Assistance Payments.[xli] This is explained by their poor uptake. Despite the fact that e-wallets have been in the Peruvian market since 2016,[xlii] the incumbent BIM reported barely 681,000 users (2.11% of the total population) by November 2019.[xliii] In recent months, however, there has been a considerable growth in the use of mobile payment applications. In August 2020, the Yape mobile application had over 3.7 million (11.51% of the total population),[xliv] while Tunki, in May 2020, registered over 300,000 users (0.93% of the total population), and reported that 40% of its new users were people who did not own a bank account.[xlv]

Only in the first week of December 2020, the Peruvian State implemented Social Assistance Payments through private BIM, Yape and Tunki digital wallets, paying 180,000 families.[xlvi]

This data, therefore, shows a country that was in a very vulnerable situation in light of the COVID-19 pandemic, and with a huge digital gap for access to essential services such as education, health and financial services, which could be provided remotely. The health emergency highlighted the urgency of digital transformation in Peru.

I.2 Digital Transformation and Economic Growth

Section Summary

Digital transformation can positively affect several of Peru's economic indicators, such as economic growth, fiscal spending efficiency, time saving for citizens and public officials, and increasing levels of trust in the State. One of the first steps towards Peru's digital transformation would be to expand the procedures that can be initiated and/or completed online.

Although the COVID-19 pandemic has highlighted the urgency of closing the digital transformation gaps in different aspects of people's lives, digital transformation should be understood not as an isolated phenomenon in a fixed period of time, but as a process that is constantly evolving.

Several countries have been implementing digital transformation strategies for some years now, seeking significant achievements in efficiency, productivity, economic growth, equality and social inclusion.

A study by the Inter-American Development Bank [IDB] shows a correlation between the growth of the gross domestic product [GDP] and an enhanced e-government.[xlvii] The study argues that the intensive use of technology by the public sector increases its productivity and causes positive external factors for both citizens and companies.

In Katz (2015), an econometric model was implemented to determine the impact of the development of information and communication technologies [ICTs] on the GDP, revealing that the variables with the greatest impact are fixed capital stock (indicator obtained from the World Bank) and the digitization index (variable that represents ICTs), and that a 10% increase in the digitization index generates a 0.63% and 0.75% increase in GDP per capita.[xlviiii] This increase can reach 2.42% in OECD countries when they reach an advanced stage of digitization.[xlix] Thus, the contribution of digitization to Latin American GDP between 2005 and 2014 is estimated at USD 216 million, i.e. approximately 4.93% of cumulative growth.

Regarding the generation of efficiencies, the Development in the Americas Report shows that fiscal spending inefficiencies in Latin America amount to 4.4% of the region's GDP,[l] a third of which could be corrected thanks to a greater use of technology.[li]

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Probably one of the most tangible manifestations of digital transformation savings is bureaucratic red tape. According to the 2017 Latinobarómetro, face-to-face bureaucratic transactions represent 89% of all transactions in Latin America and the Caribbean.[liii] Digital transactions could save many documentation and human capital expenses compared to face-to-face transactions, being 74% faster on average, costing only 1.5% to 5% of the cost of face-to-face transactions, and being less vulnerable to corruption.[liv]

In Peru, for example, it takes—on average—8.6 hours to complete a transaction.[lv] Thus, only 29% of transactions are resolved in the same interaction and 41% require three or more interactions for their resolution. In other words, it is 16% higher than the regional average.[lvi] In addition, as of 2017, 15.1% of transactions could be started online, but just under 5% could be both started and completed online.[lvii] There is ample potential for digitization and generation of efficiencies in state transactions.

According to the OECD, the effective implementation of digital government would help the Peruvian government to enhance its levels of transparency, public participation and State satisfaction, in turn reinforcing trust in institutions.[lviii] According to Latinobarómetro (2018), only 13% of the Peruvian population trusts the government, ranked as one of three countries in Latin America with the lowest trust rating.[lix]

I.3 Situation of the Peruvian State in Digital Transformation

Section Summary

Peru has a long way to go towards digital transformation, with a modest performance in the main international rankings and indexes. The most outstanding milestones of progress in recent years are in the digitization of various administrative procedures, the commissioning of the State Interoperability Platform and the future design of the National Policy for Digital Transformation. Limitations in broadband connection run against citizens' aspirations for digitization.

The Peruvian State has been undertaking efforts in various areas of digital transformation. For example, in the field of digital service provision, it is found that various services and transactions are available on the Peruvian State's website (www.gob.pe). The latest public measurement available, however, showed that only 4% of these transactions (181) could be initiated and completed digitally.[lx]

In the Presentation of Results of the Comprehensive Design Process of the future National Policy for Digital Transformation, recently released by the Digital Government Secretariat [SEGDI], the goal to be achieved is the digital transformation of the central government by 2023.[lxi]

This document proposes some objectives for public procurement improvements and efficiencies, the use of digital technologies in health and justice, the training of officials, among others, even without setting more specific and measurable goals.

> "The Peruvian State's main progress was the implementation of the Peruvian State Interoperability Platform [PIDE] from 2011."

On the other hand, the "Digital Agenda towards the Bicentennial" —a management document released by SEGDI at the end of 2019— proposes 21 Peruvian State commitments for 2021, which have also been mostly written in a generic and aspirational manner, except for some that establish specific and measurable objectives, e.g. implementing the Single Digital Platform for Citizen Complaints nationwide, implementing the Single Digital Platform for Transparency and Access to Public Information, implementing the National Platform of Digital Government, digitizing the 100 public services that constitute 80% of citizen demand, and promoting the Digital Strategy of the Justice System, prioritizing the prevention of violence against women and children.[lxii]

With regard to inter-institutional cooperation, the Peruvian State's main progress was the implementation of the Peruvian State Interoperability Platform [PIDE] from 2011. This Platform is "a technological structure [...] that allows the implementation of online public services by electronic means, and the electronic exchange of data between State entities through the Internet, mobile phones and other available technological means."[lxiii] In this way, they seek greater multidisciplinary and intersectoral integration between State entities to "improve the quality and coverage of the State's public services designed for citizens, [...] and move towards a mobile government, or m-government, within the framework of State modernization and decentralization, administrative simplification and social inclusion policies."[lxiv] Around 250 services are available in the PIDE at present,[lxv] used by around 300 public entities[lxvi] from a total of about 3,000.[lxvii]

There are various international rankings and indexes that measure the digital development of countries. The 2020 E-Government Development Index [2020 EGDI], an index that evaluates the e-government development of 193 members of the United Nations, places Peru in 71st place in its ranking.[lxviii] The 2020 EGDI is used to measure the readiness and capacity of national institutions to use ICTs in providing public services, and is composed of the weighted average of three sub-indexes: the Telecommunications Infrastructure Index [TII], the Human Capital Index [HCI] and the Online Services Index [OSI].[lxix] These indexes are analyzed taking into account the answers to the survey questions sent to the members of the United Nations and information provided by the United Nations Educational, Scientific and Cultural Organization [UNESCO] and other international organizations.[lxx]

Another relevant index on the matter is the 2019 E-Participation Index, also prepared by the United Nations. According to this index, Peru is ranked 55 out of 193 members.[lxxi] The position achieved represents significant progress compared to the Index prepared in 2016, when it ranked 82nd, but a drop compared to the position it reached in 2018 (36th place). Compared to other countries in the region, it is significantly above average.[lxxii]

The concept of E-Participation revolves around the use of ICTs to involve people in public decision-making and in the administration and provision of services.[lxxiii] This variable contributes directly to creating more inclusive societies or—indirectly—through increased civic commitment. E-participation plays a role in increasing accountability, making public services respond to the needs of the population, and improving the quality of regulation.[lxxiv]

On the other hand, the 2020 IMD World Digital Competitiveness Ranking places Peru in 55th place out of 63 economies evaluated, 9 of which are from the Americas, 14 from Asia-Pacific and 40 from Europe, Middle East and Africa.[lxxv] This ranking measures the capacity and competitive nature of these countries to explore and adopt digital technologies in their economy and social transformation.[lxxvi]

> "...it is important to recognize that the path to digital transformation also requires overcoming the obstacles that citizens face on the path to digital connectivity."

Finally, it is important to note the GovTech Index Report, ranking with Latin American countries, Spain and Portugal, which analyzes the innovation environment, progress in public policies for the Government to adopt GovTech, and the relationship between startups and the government.[lxxvii] Peru ranks 10 out of the 16 countries evaluated.[lxxviii] Specifically, it has been rated with a score of 3.6/10 in the digital environment; 4.98/10 in digital government, indicating low public contracting of advanced technology products; 3.47/10 in average importance assigned to ICTs in the government's vision of the future, also indicating low R&D spending and the lack of specific GovTech policies; 4.96/10 in State acquisitions, obtaining a score that is close to the regional average.[lxxix] Furthermore, the country has the greatest room for improvement in its contracting culture, with a score of 4.37/10, but its efficacy in controlling corruption is below the regional average, thus threatening the ability of GovTech startups to enter into contracts with the government.[lxxx]

Despite what has been previously stated, it is important to recognize that the path to digital transformation also requires overcoming the obstacles that citizens face on the path to digital connectivity.

In Peru, towards the first quarter of 2020, only 40.1% of the country's households had an internet connection, and although that represents a 3.4% rise when compared to the same quarter of the previous year, it also shows the shortcomings or difficulties experienced by over half of the population in Peru.[lxxxi] Furthermore, the households most affected by this connectivity gap are those located in rural areas, whose access figure barely reached 5.9%.[lxxxii]

With respect to internet access, 60.3% of the population of Peru aged 6+ had access to the Internet, whereof it was determined that 87.9% of the population that accessed the Internet did so through a cell phone.[lxxxiii] According to information compiled by the Peruvian telecommunications regulator, by the second quarter of 2020, there were 22.7 million smartphone users.[lxxxiv]

II. The State as a Consumer and Provider of Technology

II.1 Why does the State require digital services?

Section Summary

A State requires digital services for its internal tasks and for its relations with citizens, ranging from the digitization of documents to the use of artificial intelligence to make services more efficient. The Peruvian State is still in the developmental stage of its digital transformation, but some entities have streamlined their digitization processes in light of the health emergency caused by COVID-19.

The COVID-19 pandemic has highlighted the importance of digital services in people's daily lives and, of course, also in the work of different state entities.

The State requires intensive use of digital services both for its internal activities and for interaction with citizens. The former includes communication services such as emails, messaging, storage of large amounts of information on physical servers or cloud-based servers, data processing tools and organization of electronic files, among others. Most of these are transversal to the different entities that make up the State. And with regard to the relationship with citizens, there are communication services (emails, among the most traditional), dissemination of information (websites, social media), receiving information (consultation and information sending platforms), online transactions and provision of essential services such as education, health, justice, financial services, among others.

The need for social distancing and mandatory lockdown rules have also led some public entities to implement or expand digital tools for the development of both types of activities. Those best known and used on a daily basis—mainly internationally—include the following:

- Database dissemination websites: statistical data websites, transparency websites, open data websites.
- Virtual reception desks, enabled to receive documents.
- Virtual hearing services, enabled for real-time or asynchronous communication with citizens.
- Storage services, use of online information for remote work, and data analysis and big data services (cloud-based services).
- E-transaction websites: websites for State procurement, administrative and bureaucratic transactions, e-payments.
- Service provision websites: tele-education, telehealth services, money transfer services and online payments, online counseling and guidance services.

Public entities have also been incorporating the use of artificial intelligence and machine learning tools for more agile and efficient development of their work, although Peruvian experience in these fields is scarce or—at least—not disclosed.

An online survey conducted by Carrasco, Mills, Whybrew and Jura (2019) shows citizen acceptance of the use of artificial intelligence for certain government activities.[boxv] The most widely accepted are: using real-time information to predict problems, optimizing and redirecting traffic, predicting breakdowns and maintenance requirements for machinery and equipment, matching between available jobs and job applicants, calculating taxes and providing remote assistance for customer service and question response.[boxvi]

In Peru, public entities are in the early stages of making use of the advantages that digital technology, machine learning, artificial intelligence and cloud-based services can provide. However, the COVID-19 pandemic has caused some entities to streamline the implementation of some online services for citizens, which were previously not available, such as police procedures (See Box 1), information and comparison services in telecommunications (See Box 2), and a public-private partnership to provide telemedicine services (See Box 3).

Box 1: Digital Police Service

Ever since 2019, the Peruvian National Police [PNP] began to work on digitizing procedures with the utmost priority to citizen demand, which were released to the public in 2020, during the State of Emergency:

Police Report: It allows citizens of legal age to digitally report the loss of documents (e.g. their national ID document) and obtain the Certified Copy of the Digital Police Report. This service was launched in September 2020 and, in just three weeks, 13,725 reports had been filed.[lxxxvii] It was one of the most frequent face-to-face procedures: before it was launched, over 800,000 reports were filed per year, and the process would take up to three hours.[lxxxviii]

Second Certified Copy of the Police Report: An online process was implemented for obtaining a second copy that certifies a police report, upon paying S/7.60 on the state services payment website.[lxxxix]

Police record certificate: It allows people to obtain the document with their police record information by first paying S/17.00 via pagalo.pe and then, through the PNP-enabled digital platform.[xc] The service was launched on June 10, 2019, and by October 16, 2020, one million certificates had been issued, which results in 2,091 certificates per day.[xci]

All three digital services make use of the National Platform for State Interoperability [PIDE] to validate the identity of the applicants. However, due to the rising demand for these services, there were some interruptions as these platforms use physical servers that do not allow them to achieve the desired scalability. Peru plans on migrating these services to the cloud.[xcii]

Box 2: From Operators to Users - Osiptel

The telecommunications regulatory body, Osiptel, has been recognized for developing electronic websites and an application that allows users to know, in a simple and user-friendly format, various information that operating companies must report to the state entity:

Punku

A website that allows obtaining statistical reports with telecommunications market indicators based on the information that operating companies periodically report to Osiptel,[xciii] including: voice traffic, mobile and fixed telephone lines in service, access lines to mobile and fixed Internet, Internet traffic billed and processed, and operators' income.[xciv]

Punku has been designed as an open data tool that can be used as a source of information for economic and academic analysis of the industry.[xcv]

Comparatel

This digital platform implemented by Osiptel allows the user to compare rates and conditions of fixed telephone, mobile, Internet plans or packages that combine several of these services marketed by operating companies.[xcvi] Therefore it allows each user to be matched with the most convenient plan, considering the rate they are willing to pay and their specific needs regarding speed.[xcvii]

This platform gathers information from at least 255 commercial plans offered by 16 operators.[xcviii] Also, if there are any questions about comparison or the plans offered, the virtual assistant Paulito Bot—a pop-up window on the website—can be used.[xcix]

Box 3: SmartDoctor

SmartDoctor (Peruvian startup) is a mobile application that allows users to schedule a doctor's appointment via video call or to have it immediately. It also sends a digital prescription through the application and allows communication with a doctor through a chat, after paying for the service.[c]

Before COVID-19

The application was aimed at people with disabilities, the elderly and children. The flagship service was home-based appointments, wherein users contacted a doctor through the application for the consultation. At first, the demand was from people who were not able to travel to healthcare facilities. However, it was extended to those who were not able to pay the cost of a face-to-face service.[ci]

During COVID-19 [MINSA - SD]

Due to the pandemic, the demand for teleconsultations through the official Ministry of Health [MINSA] channels drastically rose. In view of this, the MINSA and the Presidency of the Council of Ministers contacted SmartDoctor to implement a teleconsultation platform to channel part of this demand. [cii] This is how MINSA-SD emerged, achieving 1,000 consultations per day and allowing doctors in the sector to provide free care between March and August of this year.[ciii] The application had nearly 100,000 teleconsultations.[civ]

SmartDoctor currently works as a cloud-based marketplace for medical services, which channels teleconsultations nationwide, and collaborates with overcoming geographical, economic, temporal and bureaucratic barriers that prevent timely access to healthcare in Peru and Latin America as a whole.[cv]

II.1. How does the State acquire technology and digital services?

Section Summary
The methods and processes to acquire digital technologies and services can significantly enable or limit the digital transformation of a State. In several OECD countries, streamlined, efficient and transparent instruments are used, such as framework agreements that enable purchases through e-catalogs. Peru can exploit this potential through the same mechanism that is faster at procurement than at procedures, thus prioritizing the acquisition of innovative and scalable digital services, such as cloud services.

The digital services provided by the State that have been described in the previous section require, in turn, that the State acquire certain digital tools.

In estimates updated to 2018, the acquisition and procurement of ICTs, for example, constitute between 5% and 10% of public budgets.[cvi] Therefore, it is important that the State acquisition and procurement mechanisms for technology and digital services are transparent, streamlined and adapted to the nature of the goods and services being contracted.

These expenses are channeled through different procurement mechanisms, which depend on each country's respective legal framework. This section describes two successful government procurement mechanisms in technology – in the UK and in Colombia.

Public entities in the UK—7th place in the E-Government Development Index 2020[cvii]—make purchases through a Digital Marketplace where they can find verified suppliers, who have previously entered into a framework agreement with the Government.[cviii]

These framework agreements are agreements between contracting entities and suppliers that establish the technical and commercial conditions that govern technology purchase agreements.[cix] The structure whereby the price of goods or services included in the requirement will be established, the effective term of the contract, and other general contracting terms and conditions that will apply to said requirements can also be established in the framework agreements.

Some digital services that can be contracted in the UK Digital Marketplace are software and cloud services, digital outcomes, digital specialists, user research services, and the physical space of the data center.[cx]

This procurement method allows public entities to acquire the required services more quickly and at more competitive prices according to the fluctuation of their demand, paying only for what they consume.

The process of acquiring each of these services in the Digital Marketplace will depend on the rules set out in the framework agreement that comprises them, but usually consists of the following steps :[cxi]

(i) Suppliers enter into framework agreement(s) with the Government that cover the services they are interested in providing.

(ii) The public entity interested in acquiring any of the services covered thereby submits a request, describing their needs and identifying the essential requirements and the desired requirements for the acquisition. The requirement based on the description of needs uses a special list of categories, keywords and filters designed by the Digital Marketplace.

At this stage, the entity can also contact the suppliers to perfect the description of their requirements.

(iii) The entity either enters its requirements as a search in the Digital Marketplace or publishes its requirements pending proposals or quotes from suppliers.

(iv) The entity analyzes the services available in the Digital Marketplace and chooses the services that best suit their requirements and budget.

(v) Both the entity and the successful supplier enter into a private contract to start using the service, which is the subject matter thereof.

> "Some digital services that can be procured in the UK Digital Marketplace are software and cloud services, digital outcomes, digital specialists, user research services, and the physical space of the data center."

It is important to note that procuring digital services in the Digital Marketplace usually incorporates price structuring, whereby it is established that the entity only pays for the services it actually uses, and the price is determined under a variable system but with a maximum limit. In addition to its flexibility, this method of payment based on the volume of services consumed allows efficient use of state resources, avoiding either overestimation or underestimation of public investment.

In addition, this entire procurement process is audited and a record is kept of the acquiring entity's activities and interactions, in order to ensure transparency and avoid arbitrary selection. In some cases, for example, the acquiring entity is responsible for justifying the scores awarded to each bidder and rejecting the bids received.

On the other hand, Colombia—3rd place in the 2019 OECD Digital Government Index[cxii] and 67th place in the 2020 E-Government Development Index[cxiii]—has a similar mechanism for acquiring digital services and technologies.

The institution responsible for state purchases, Colombia Compra Eficiente, has been working on the implementation of several digital tools that provide greater transparency, agility and competition to public procurement. One of them, called "Tienda Virtual del Estado Colombiano" [Virtual Store of the Colombian State], was created as an online tool of the public procurement system that allows procurement through framework agreements, through aggregate demand mechanisms and through minimum value purchases in large retail outlets.[cxiv]

As for framework agreements, they contain "the identification of the goods or service, the maximum purchase price, the minimum guarantees and the minimum delivery period, as well as the conditions through which a buyer can be bound to the agreement."[cxv] Entering into this framework agreement allows the supplier to participate in the contracts regulated by framework agreements through Tienda Virtual del Estado Colombiano.

According to the Colombian authorities, this purchasing method allows centralization of the contracting decisions for these goods and services to produce economies of scale, to increase the State's bargaining power and to share both costs and knowledge among State departments.[cxvi] In this way, it is also possible to reduce the administrative burden for similar contracting processes (which results in better contracting times), to create related contractual conditions for the purchase of the same goods or services, and achieve better prices and results, in terms of value for money.[cxvii]

Framework agreements are used to enable the purchase—among other goods and services—of software by catalog, public cloud, service desk, purchase or rental of equipment and connectivity services through Tienda Virtual del Estado Colombiano.

As in these examples, the implementation of framework agreements between various governments and suppliers is becoming popular as a digital services procurement mechanism. 70% of OECD countries have some type of framework agreement to use cloud-based technologies.[cxviii] The use of framework agreements is not only less expensive, but also streamlines contracting procedures, reduces transaction costs, provides greater transparency to processes, contributes to the reduction of corruption and improves supply quality.[cxix] To achieve maximum effectiveness, these framework agreements must be structured in such a way that they allow the contracting of competing services that comply with the same functionality, although not uniform or standardized in their characteristics. Similarly, public entities must foresee that digital service procurement enables potential migration to services provided by a competitor supplier, thus avoiding the effect of confinement or lock-in.[cxx]

Moving on to the national experience, although the Peruvian State uses e-catalog framework agreements to purchase goods and services, the use thereof is still very limited. In this way, public procurement of digital technologies and services has been channeled through traditional contracting methods.[cxxi]

On average, a tendering process or public tendering lasts 52 working days, without considering the time taken for preparatory actions such as authorizations, budget management, preparation of the file and bidding documents, among others.[cxxii] In addition, in traditional procurement processes, administrative actions must be repeated for each individual procurement by the state entity. While the average time for simplified agreements, from the call to tender to the successful bid's consent, takes 18 working days[cxxiii] and contracts through the Framework Agreement's e-Catalog Platform take five working days on average.[cxxiv]

In response to this, Perú Compras—Peruvian State's public procurement agency—has proposed that the provision of routine products should be led by more efficient and modern procurement methods such as e-catalogs and electronic reverse auctions.[cxxv]

A study carried out by Perú Compras proposes that this procurement mechanism could be aimed at some routine goods and services and commodities, among others, prioritizing those with the highest amounts tendered.[cxxvi] Some of these goods and services that could form a part of future catalogs included in framework agreements are: specialized warehousing and storage, debt management, computer hardware maintenance and support, leasing or rental of office equipment, integrated circuits, customer access (online data access and transmission), security and protection software, industry-specific software, and accounting services.[cxxvii] In an interview with the owner of Perú Compras, the use of framework agreement e-catalogs for purchasing digital technologies and services, including cloud-based services, is reportedly being considered.[cxxviii]

However, there are currently only 14 framework agreements that contain 28 e-catalogs,[cxxix] wherein the presence of categories for procurement services is minimal, with the digital services procurement, such as software and cloud services, being non-existent through this mechanism.

Similar to the comparative experiences described above, procurement through e-catalogs in Peru consists of a competitive and open procurement process for suppliers who have been selected to enter into a framework agreement for the supply of goods and services identified and verified by Perú Compras. With this agreement, suppliers will be able to offer their products and services in an e-catalog (virtual store), which will be available to be chosen by public entities based on factors such as cost and availability (stock). In other words, this mechanism acts as a pre-filter for the selection of suppliers, so the tendering period for digital technologies and services would be much shorter and would not have to go through all the stages involved in traditional procurement mechanisms.

The implementation of procurement mechanisms via framework agreements for digital services is greatly benefited if it allows procurement through open e-catalogs. In other words, public entities can search for and purchase services through the suppliers' own catalogs or marketplaces. This would make it possible to make the most of innovations in digital services offered by private suppliers and encourage greater competition.

In line with the foregoing, state-run procurement systems must prioritize the selection of goods and services in response to the required needs or the expected results, and not to the technical specifications of one type of offer. This flexibility allows for greater competition, by being able to compare different technological solutions but substitutes in their functionality. To ensure transparency and legality in contracting, procurement decisions could be accompanied by supporting reports in which the functionalities of the goods or services that were available are comparatively analyzed.

Following good UK and Colombian practices, on-demand procurement services with variable budgets would help towards more efficient use of state investment and in achieving an adequate scale in the provision of digital services. This flexibility allows entities to get the most value for their money.[cxxx]

The flexibility and scalability that certain digital services allow, such as cloud services, have led some countries to adopt 'Cloud First' policies.

This policy consists of public entities turning to cloud services as the first solution strategy before considering other options.[cxxxi] Several countries have currently adopted this policy in whole or in part. For example, some states in the United States, South Korea, Singapore, Australia, Colombia, and the state of Ceará in Brazil. On the other hand, the United Kingdom has proposed a 'Cloud Native' strategy, which focuses on organizing and adapting the Government's own capacity according to the available technology, using the cloud-based services that represent the most innovative, capable and adaptable solutions on the market.[cxxxii]

Although a similar policy has not been defined in Peru, in 2018, SEGDI issued the "Guidelines for the Use of Cloud-Based Services for entities of the Public Administration of the Peruvian State." This document compiles the general principles for public entities, contains recommendations and suggestions for cloud service procurement and proposes the information security and personal data protection requirements that should be met.[cxxxiii]

III. The Digital Factor in Public Policies

III.1 Digital Governance in the Peruvian State

Section Summary

In recent years, attempts have been made to improve the institutional and regulatory framework for the Peruvian State's digital transformation, wherein SEGDI has assumed a leading role. However, the main challenges to effective digital governance in Peru have been: the lack of binding and mandatory powers for SEGDI, the absence of specific baselines and goals in several of the different plans and strategies adopted in terms of digital government, state modernization and open government, and the lack of budget investment and commitment to develop digital capabilities for public officials, including the so-called "digital leaders".

By digital governance it must be understood that the institutional framework that guides the decision-making, participation and accountability processes regarding the different aspects that involve digital services and products within an organization.[cxxxiv]

In Peru, certain basic regulatory frameworks have started to be approved in transversal aspects that involve: digital government, transparency, open data, data-based public policies, cybersecurity, protection of personal data, among others. Although the application and development of each of these regulatory frameworks present dissimilar and, in some cases, unclear governance structures, in recent years there has been an attempt to achieve greater convergence in all facets that make up a complete digital transformation system based on the leading role assigned to SEGDI.

SEGDI was established in 2017[cxxxv] to replace the National Office of e-Government and Information Technology [ONGEI], which had been in existence since 2003.

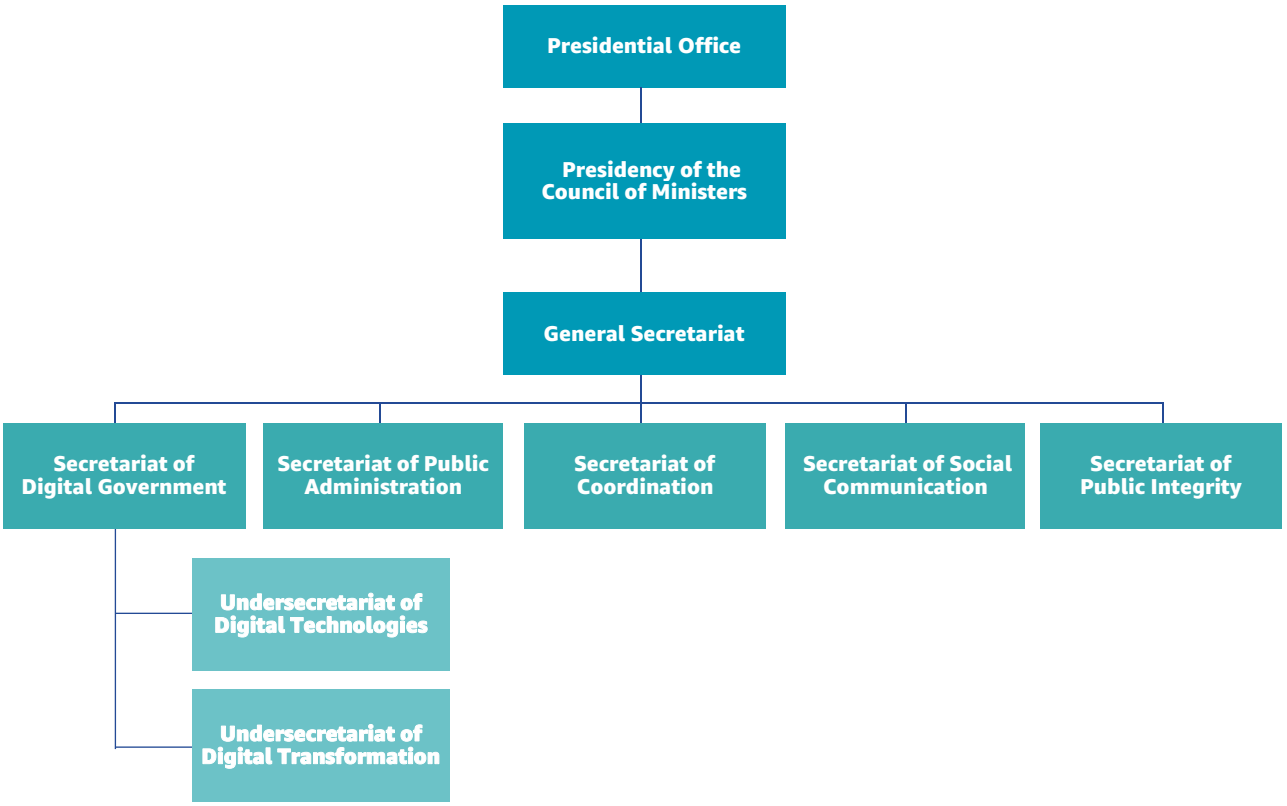
One of the most obvious differences is the replacement of the "e-Government" category by that of "Digital Government." It addresses the fact that the former involved the use of ICTs "as a tool to achieve a better government," while a digital government implies the use of digital technologies "as an integral part of the government modernization strategies to create public value."[cxxxvi]

Another difference between the two government bodies is their levels. Thus, ONGEI was part of the Ministry of Public Administration,[cxxxvii] while the SEGDI is at the same level as the Ministry of Public Administration and is independent of the latter.[cxxxviii] Additionally, although the ONGEI was in charge of directing, implementing and supervising the national policy on e-government and information technology, it had no mention of being a Line Agency or being a Governing Body such as the SEGDI.

Like its predecessor, the SEGDI is located within the Presidency of the Council of Ministers, i.e. Central Government. This characteristic is favored positively by the OECD, as it gives it visibility and political support to implement a digital government that crosses different sectors.[cxxxix]

However, at a hierarchical level, the SEGDI is located under a vice-ministerial role, as it depends on the General Secretariat. This is seen as a challenge since it does not have sufficient autonomy or political power to implement changes in other sectors, for which it will essentially require support from both the General Secretariat and the President of the Council of Ministers.

Organizational Chart of the Presidency of the Council of Ministers



Compiled by author.

The role assumed by the SEGDI is different according to the matter that is addressed. The SEGDI is responsible for the stewardship of the National Digital Transformation System, Digital Government and the National Information Technology System. However, it does not have sufficiently binding regulatory capacity as, autonomously, it can only issue Secretariat of Digital Government resolutions which, due to regulatory status, could be ignored by higher-ranking provisions adopted within the ministries (supreme decrees and ministerial resolutions) and of specialized autonomous organizations (e.g. board of directors resolutions). Something similar occurs with its enforcement capacity, which is largely constrained by the absence of any autonomous sanction or compulsion mechanism. This would be partly mitigated by continued coordination and monitoring of other entities and the preparation of compliance reports.[cxl]

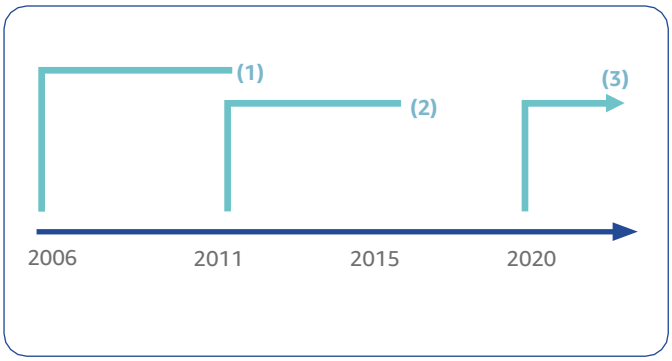
In addition, in 2018 a "High-Level Committee for a Digital, Innovative and Competitive Peru" was created.[cxli] This Committee is composed of the representatives or holders of the Presidency of the Council of Ministers, the Secretariat of Digital Government, the Presidential Office, the Ministry of Economy and Finance, the Ministry of Education, the Ministry of Production and the Ministry of Transport and Communications. However, it does not appear to have a specific or key role, and there is no further information published on the actions or decisions implemented by said committee. In October 2020, in session VI of the aforementioned committee, the plans for the National Policy for Digital Transformation were presented.[cxlii]

If approved, it would be the first digital transformation policy document in Peru. However, to date only one design proposal has been submitted, which is based on four key points: connectivity, digital education, digital government and digital economy based on the drive and entrepreneurship of innovation.[cxliii] The SEGDI is currently working on drafting the policy, after having undergone a co-design process that involved a national online survey and a series of group meetings and interviews with civil society actors.[cxliv]

In the design document published by the SEGDI, the following five strategic objectives have been identified: (i) guarantee connectivity for all citizens; (ii) link the digital economy with competitiveness and production processes in the country; (iii) develop digital services in Public Administration showing empathy towards citizens; (iv) strengthen the citizens' digital skills and produce digital technologies and make the most of its benefits; and (v) encourage a culture of innovation and safe, ethical and intelligent management of data, digital technologies and artificial intelligence.[cxlv] However, the baselines and specific goals related to these objectives have not yet been specified nor have the tools and budget for the achievement thereof.

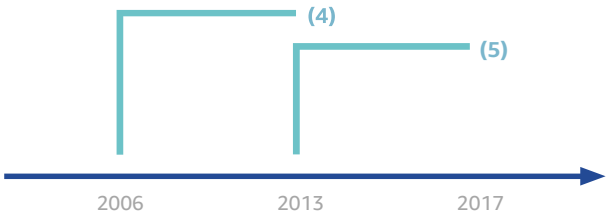
Towards the end of 2019, in addition to this national policy, the SEGDI presented a Digital Agenda to the Bicentennial. It is a management document that collects the strategies, goals and specific actions that Peru will develop in digital material during the next 18 months.[cxlvi] This agenda includes specific goals, such as deploying the digital platform for the sworn statement of interests nationwide, implementing the single digital platform for transparency and access to public information, or digitizing the 100 public services that account for 80% of citizen and company demand. In other areas, however, the objectives have been formulated generically without a specific compliance milestone being verified. This is the case of a digital strategy for public procurement, the digital transformation of strategic public entities, promoting the national connectivity plan, promoting the digital strategy in health, promoting the digital strategy of the justice system, or prioritizing regulation and compliance with the regulatory framework in digital matters, among others.

An important fact to highlight is the absence of a digital agenda in the country between 2015 and 2020, as shown in the timeline below:



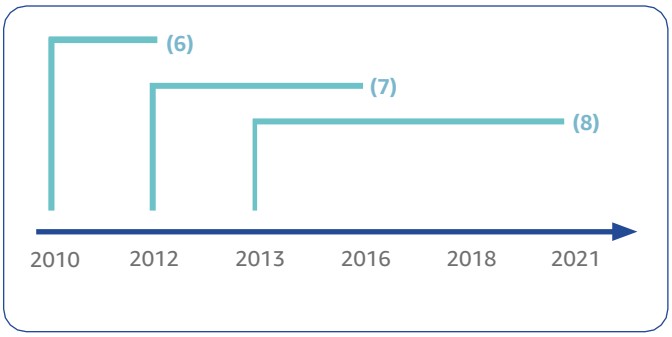
(1) Information Society Development Plan in Peru - The Peruvian Digital Agenda. Supreme Decree 31-2006-PCM (June 22, 2006).
(2) Information Society Development Plan in Peru - The Peruvian Digital Agenda 2.0. Supreme Decree 066-2011-PCM (July 28, 2011).
(3) Bicentennial Digital Agenda (January 2, 2020).

With specific regard to Digital Government, the most important milestone in recent years corresponds to the approval of the Digital Government Law in 2018. Prior to this, there was a National e-Government Strategy (2016) and a National e-Government Policy (2017). The latter, however, lacked a specific plan to achieve its objectives. [cxlvii]



(4) National e-Government Strategy. Ministerial Resolution 274-2006-PCM (July 27, 2006).
(5) National e-Government Policy. Supreme Decree 081-2013-PCM (July 11, 2013).

Within the framework of these policy documents, it is worth noting those related to the modernization of public administration, which began in 2010 and have a National Policy for the Modernization of Public Administration that are still in force. However, the latter was approved in 2013, and included a main topic on electronic government (nowadays, a digital government) and a main topic on open government, formulated very generically and imprecisely. These would have been left aside with the new regulatory and policy instruments for digital government and open government approved in recent years.

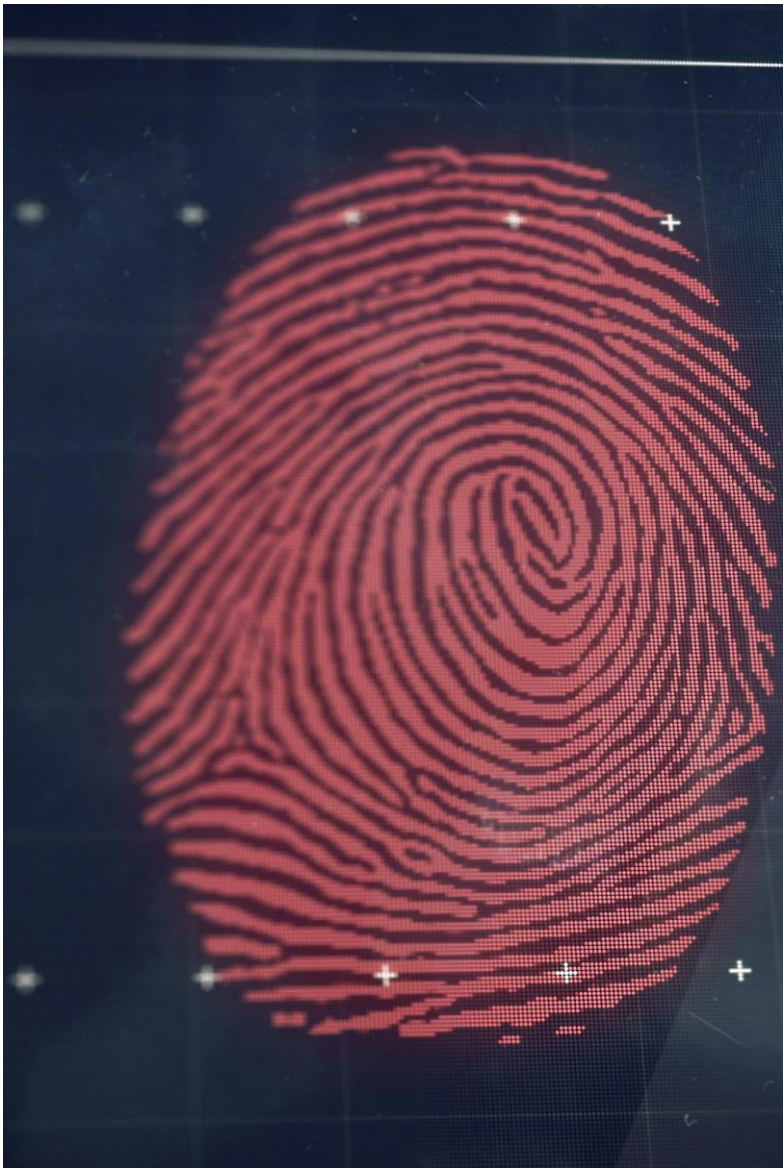


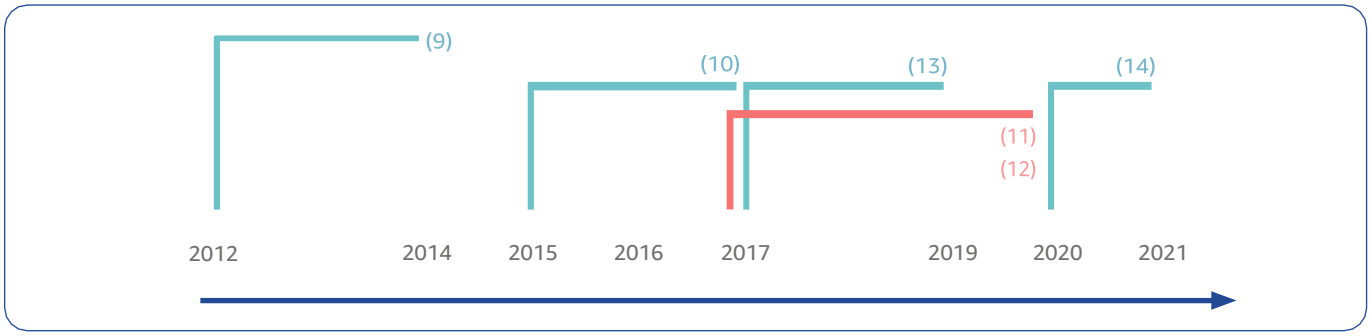
(6) State Management Modernization Strategy. Supreme Decree 090-2010-PCM (September 11, 2010).
(7) Public Administration Modernization Strategy. Supreme Decree 109-2012-PCM (November 2, 2012).
(8) National Policy for the Modernization of Public Administration. Supreme Decree 004-2013-PCM (January 10, 2013). It was issued within the framework of the Public Administration Modernization Strategy and was planned up to 2021.
(9) Peru's Action Plan for it to be incorporated into the Open Government Parnership. Ministerial Resolution 085-2012-PCM (April 10, 2012).
(10) 2015-2016 Open Government Action Plan. Ministerial Resolution 176-2015-PCM (July 18, 2015).
(11) 2017-2021 National Open Data Government Strategy. Supreme Decree 016-2017-PCM (February 13, 2017). Issued within the framework of the 2015-2016 Open Government Action Plan.
(12) Government Open Data Model of Peru. Supreme Decree 016 2017 PCM (February 13, 2017). Issued within the framework of the 2015-2016 Open Government Action Plan.
(13) 2017-2019 Open Government Action Plan. Ministerial Resolution 378-2017-PCM (December 29, 2017).
(14) 2020–2021 Open Government Action Plan Towards the Bicentennial. Supreme Decree 206-2019-PCM (January 3, 2020) and is planned up to 2021.

Within the framework of the Open Government Partnership international initiative, wherein the Peruvian Government expressed its willingness to join and for which it sought to establish commitments regarding transparency and access to public information, public integrity, citizen participation, e-government and improvements in public services, the "Peruvian Action Plan for its incorporation into the Open Government Parnership" was approved.[cxlviii] This document only established commitments for the years 2012-2014, the same ones that mostly offered programmatic compliance and others that were more specific, such as having Standard Transparency Portals in a user-friendly format, approving the 2012-2016 National Plan to Fight Against Corruption and increase the number of services provided by the Interoperability Platform.[cxlix]

However, this Plan was not updated until mid-2015, although it has subsequently had more continuity in its follow-up. It is within the framework of these Open Government Action Plans that the "National Open Data Government Strategy 2017–2021" and the "Peru Open Data Government Model" were issued in order to promote the openness of information data from public entities and the re-use of open data.[cl]

Within the framework of the 2020–2021 Open Government Action Plan Towards the Bicentennial, new commitments for progressive implementation have been formulated and others are already being implemented. Among the former, commitments have been made such as promoting social control in monitoring the execution of works through an information platform on public infrastructure works, implementing an open data portal in the State Procurement Supervisory Agency [OSCE], managing a virtual platform for accessing information on the management of socio-environmental conflicts, and incorporating citizen participation mechanisms to improve the creation of standards and regulations.[cli] Some commitments that are already being carried out are digital police reports, provision of a second copy of a digital police report, and virtual affiliation to the Comprehensive Healthcare System.





Finally, a key aspect in digital governance is the role played by public officials themselves and their capacities.

In Peru, since 2018, a Digital Government Leader figure has been present in all Executive Branch entities.[cliii] This leader must coordinate with the SEGDI in matters of digital government implementation, manage the allocation of resources to strengthen the capacities of officials and civil servants in matters of digital security, interoperability and digital government, identify opportunities to improve their processes and digitize services by making intensive use of digital technologies, and promote the use of these technologies within the entity to achieve strategic objectives.[cliii]

The main challenge, however, is more practical than regulatory. None of the revised standards ensure the budget and capabilities of public entities to recruit people who can perform the role of digital government leaders, and equip them with the powers and resources necessary to carry out this task. As shown in the table below, the new digital leader role has not been considered as a full-time position or at the highest level in administrative hierarchy within the Peruvian ministries, but instead this additional task has simply been assigned to a ministry worker. Traditionally, digital transformation or digital innovation have not been conceived as autonomous offices or assigned roles in civil service, and ICT sectors have been considered more as technical support sectors rather than strategy or facilitation.[cliv]

Table 1
Digital Government Leader according to the Ministry

Ministry	Original Title[clv]	Rank in the organization chart[clvi]	Full Time
Ministry of Transport and Communications	Consultant	-	-
Ministry of the Interior	Ministerial Office Advisor II	F-5	No
Ministry of Production	Ministerial Office Advisor II	F-4	No
Ministry of Culture	Ministry of Culture Advisory Cabinet Member	F-5	No
Ministry of Agriculture and Irrigation	General Director of Agricultural Policies	F-5	No
Ministry of Housing, Construction and Sanitation	Ministerial Office Advisor II	F-5	No
Ministry of Energy and Mines	Ministerial Office Senior Management Advisor	F-5	No
Ministry of the Environment	Ministerial Office Advisor	Trusted employee	No
Ministry of Labor and Employment Promotion	Ministerial Office Advisor II	F-5	No
Ministry of Education	Chief of the Ministerial Office's Advisory Cabinet	Trusted Employee	No
Ministry of Health	Chief of the Ministerial Office's Advisory Cabinet	F-5	No
Ministry of Foreign Affairs	Institutional Management Support General Office Chief	Special Regime	No
Ministry of Defense	Ministerial Office Advisor II	F-4	No
Ministry of Economy and Finance	Senior Management Advisor	F-5	No
Ministry of Justice and Human Rights	Cabinet Senior Management Advisor	F-5	No
Ministry of Foreign Trade and Tourism	General Director of the Information Technology Office	F-5	No
Ministry of Women and Vulnerable Populations	Did not respond to the request for access to public information	Did not respond to the request for access to public information	Did not respond to the request for access to public information
Ministry of Development and Social Inclusion	Ministerial Office Cabinet Adviser	Position of trust	No

Compiled by author.
Source: Review of the Staff Assignment Chart, Staff Analytical Budget and responses to requests for access to public information sent to each ministry.

One of the most important aspects of achieving digital transformation at the state level is the training of public officials. Although the OECD diagnosed this as one of the Peruvian Government's priorities,[clvii] to this day it has not implemented any plans for recruiting and training officials in terms of digital government. In response to a request for access to public information, the National School of Public Administration reported that there were 438 training offers for public officials between 2019 and 2020, including face-to-face and remote courses, programs, workshops.[clviii] None of them were specifically linked to digital transformation or digital government, and only one Massive Open Online Course (MOOC), delivered seven times, was related to the provision of digital services ("From face-to-face classes to remote teaching").[clix] This is despite the recognition of the need to design and implement "courses and/or training programs in the field of Digital Government to make them available to public servants, with the aim of disseminating knowledge in this field".[clx]

III.2. Transparency and Open Data

Section Summary
Although there are legal obligations to disseminate public information and for open and available data as a general rule, Peru faces practical problems for the effective compliance thereof. From an institutional point of view, these include: the lack of criteria to classify and declassify State-owned information, the lack of specific mechanisms to ensure compliance with the obligation to create and disclose open data, and the shortcomings of a National Transparency Authority that is not truly autonomous or has sufficient enforcement powers.

Transparency is one of the transcendental aspects of digital transformation. The efficient and ethical use of data is one of the enabling factors for a digital government to function correctly,[clxi] and is fundamental in designing and planning state interventions, implementing public policies, and evaluating and monitoring its results.[clxii] In addition, as previously mentioned, transparency is one of the keys to ensuring public trust in your government.

In Peru, the rules of transparency and disclosure of public information are governed mainly by Law 27806, Law of Transparency and Access to Information, which establishes as a general principle the publicity of all activities and provisions of public entities, except those exceptions specifically provided for in the law itself.

This law also establishes the obligation to disclose diverse information online, including its general data, provisions and communications, organization chart, procedures, budget, information on its personnel, acquisitions of goods and services, among others. In order to publish this information in a user-friendly and standard manner, the Standard Transparency Portal was enabled in 2010.[clxiii]

Similarly, the Transparency Law develops the fundamental right of access to public information. Everyone is entitled to request and receive information from any Public Administration entity, without being required to express the cause of the exercise of this right. The other side of this right is the public entity's obligation to provide the information it possesses, if not protected by any of the exceptions stipulated in the Constitution itself or in Law 27806, and to ensure that said information is not false, incomplete, indicative or misleading.[clxiv]

To exercise this right, some public entities have implemented an online format that offers drafting and submission of requests, a platform for monitoring the application process and direct submission of information on the status of the process and the request's response sent to the applicant's e-mail address. However, these options are not enabled in all national entities.[clxv]

Another practical problem for transparency arises with the arbitrary nature in which some entities classify information as secret, private or confidential, and therefore restrict its access to the public. To date, there is no standard or guidelines to direct actions in classifying or declassifying information to all public entities across the board. This lack of expertise in managing information restricts the possibilities of disclosure and processing of valuable information for citizens and for the State itself.[clxvi]

The decisions taken by public entities regarding access to public information may be appealed before the Court of Transparency and Access to Public Information, which is in charge of ultimately deciding whether to confirm, revoke or amend the decision adopted by the entity.[clxvii] This court works within the Ministry of Justice and Human Rights, where the National Directorate of Transparency and Access to Public Information is also located, which can propose policies on transparency and access to public information, issue directives and guidelines required to comply with the regulations within the scope of its competence, supervise compliance with the regulations on the matter, promote a culture of transparency and access to public information, supervise compliance with the updating of the Transparency Portal, answer questions that entities or natural or legal persons formulate in relation to the application of the rules of transparency and access to public information, among others.[clxviii]

However, the creation and regulation of the National Transparency Authority has been questioned, since it does not have a functional hierarchy with autonomy, it is limited as it is only a Line Agency within a ministry, which hinders its ability to supervise and enforce the entire state apparatus.[clxix]

In connection with the issue of transparency, Peru has adopted various action plans and strategies that promote the opening of data held by public entities and the generation of public value with the reuse of open data, all of which are part of public administration modernization and are in line with the rules of transparency and access to public information.[clxx]

In 2017, the National Open Data Portal was created, a website that provides and centralizes all open data held by public entities, as well as other data provided by civil society, the private sector, academic and other cooperating organizations. This website is administered by the SEGDI.[clxxi] The website (https://www.datosabiertos.gob.pe/) currently has 1,811 datasets provided by various public entities[clxxii] in line with the obligation that data should be open by default.[clxxiii]

However, the regulatory framework and the open data government policy have not established mechanisms to effectively guarantee or promote compliance with the proposed principles and objectives, but rather a programmatic implementation or compliance has been expected under inter-institutional coordination directed by the SEGDI.

In fact, situations such as the pandemic caused by SARS-CoV-2, showed that, in Peru, the institutionalization of an open data ecosystem in public administration is still a long way off.[clxxiv] Based on the latter, "publicly available information on the progress of COVID-19 in the country is scarce, irregular, and is not published in formats that can be reused."[clxxv] In addition, State-operated information platforms are built from a one-dimensional perspective of offering a statistical report on the progress of COVID-19, but not to report on the scope and effectiveness of state intervention, and they are not yet in a structured and standardized format for interoperability, traceability and effective reuse.[clxxvi]

Two of the founding pillars of the OECD Digital Government Regulatory Policy Framework consist of data-driven government and digitization by design.[clxxvii] The idea behind both aspects is that regulatory processes and the adoption of new regulations are carried out by taking into account the data that the State itself both produces and processes. Likewise, they take into account the opportunities presented by digitization to better meet the demands of citizens and the needs of public entities.

Best practices in some countries have incorporated basic rules for the use of digital services or tools by public entities in the process of adopting new regulations. They have also incorporated inquiry stages in which some agencies that are specialized in digital government, innovation and modernization must intervene.[clxxvi]

III.3. Data-Based and Digital Policies by Design

Section Summary

In recent years, instruments for regulatory improvements have been adopted, mainly in the Executive Branch, such as Regulatory Quality Analysis, Regulatory Impact Analysis and the Vice-Ministerial Coordinating Committee. However, none of them consider the mandatory use of public data (especially open data) as part of the decision-making process, nor are possible digital solutions taken into account in designing regulatory policies, which is presented as a flaw on the road to the digital transformation of the Peruvian State.

As for Peru, the frameworks that guide regulatory processes do not expressly include the consideration to take advantage of or favor the use of digital tools or services. They also don't establish specific obligations related to the use of public data or the use of digital information platforms such as the PIDE. Despite what was previously stated, there are general frameworks for conducting regulatory processes that are compatible with the government's objectives based on data and digitization by design.

Regarding the regulations issued by the Legislative Branch, the guidelines for approving laws are indicated in the Framework Law for Legislative Production and Systematization and its Regulations,[clxxviii] but they basically only point to the structure that must include a legislative project and its statement of legislative intent.

As for regulations issued by the Executive Branch, there is a Legislative Technical Guide for preparing Regulatory Projects,[clxxix] that has been updated periodically. Its main focus is on maintaining a uniform style and structure, as well as guaranteeing adequate legal support in such proposals. This Guide does not contain any reference to the use of digital tools or the use of public data.

In addition, in 2016 and 2018, the instruments for Regulatory Quality Analysis [ACR][clxxx] and Regulatory Impact Analysis [RIA] clxxxi, were expressly incorporated into the system, respectively. In the case of the ACR, this is an administrative simplification tool that forces Executive Branch entities to reduce or eliminate any procedures or requirements that are unnecessary, ineffective, unjustified, disproportionate, redundant or contrary to binding regulations. Despite this, neither the Regulations for applying ACR[clxxxii] nor the Handbook for applying ACR[clxxxiii] include the use of public data nor do they include the use of digital tools or services in the evaluation.

The RIA, on the other hand, is not mandatory for all public entities, some ministries and regulatory bodies have started to implement it for analyzing regulatory projects that will have a significant economic or social impact.[clxxxiv] However, RIA application handbooks and guides also do not include considerations regarding the use of public data, information technologies or digital services. In some cases, such as in RIAs applicable to the regulatory authority of the energy and mining sector[clxxxv] and the telecommunications sector,[clxxxvi] there may be references to the justification of initiatives or analysis considering statistical data, but the instruments to make the most of State-owned data or digital solutions have not been created for such purpose. The creation of these frameworks that guide regulatory processes also did not consider the use of open data. This shows that there is no real awareness of data as a critical infrastructure and a public asset of utmost importance that would fuel decision-making, while also seeking to improve data quality and availability.[clxxxvii]

Lastly, the Executive Branch has also implemented a coordinating mechanism for national and multisectoral policies: the Vice-Ministerial Coordinating Committee (CCV). This Commission is made up of the Vice Ministries and the General Secretariat of the Presidency of the Council of Ministers—who oversee it—and provide them with a space to: (i) express their opinion in a sustained manner on the regulatory projects that require the vote of approval from the Council of Ministers or deal with multisectoral issues; (ii) facilitate intersectoral collaboration; and (iii) facilitate the generation of contributions and recommendations on multisectoral issues of high national concern or that affect the general government policy.[clxxxviii] Although it does not establish a specific mandate for the use of public data or the leveraging of digital tools in designing regulations, this coordinating mechanism serves as a space in which SEGDI—through the PCM—can positively influence the structuring of regulatory policies based on data and digital solutions by design.

However, the lack of expertise of a large part of the Public Administration, as well as the absence of instruments of compulsion in favor of the SEGDI would advise the implementation of a regulatory framework that encourages public entities to always consider the use of public data and to take digital tools into account in the design of their regulatory policies. This could be complemented by the institutionalization of a consultation mechanism with the governing body in terms of digital transformation.

Conclusions

Although the COVID-19 pandemic has hit many countries health-wise and economically, Peru has been one of the most affected nations. This is explained by its vulnerable informal economy and by the gaps in the digital provision of essential services such as education, health, and financial services.

For some years now, several countries have been undertaking digital transformation processes, verifying a positive correlation between economic growth and greater e-government, greater development and use of information and communication technologies. In Peru, the need for digital transformation is urgent, which could not only help economic growth, but also generate considerable savings for both the State and citizens, and improve their levels of transparency, trust and public participation.

In recent years, Peru has also made significant efforts in various areas of digital transformation. However, it still has a modest performance in the main rankings and indexes in the field (71/193 in the E-Government Development Index, 55/193 in the E-Participation Index, 55/63 in the IMD World Digital Competitiveness Index, 10/16 in the Gov Tech Index Report).

The Peruvian State has been adapting incipiently to the provision of digital services to citizens and to the development of internal activities and processes based on the use of digital tools. Some digital services have been expeditiously implemented as a result of the health emergency, showing progress in the implementation of remote reception desks and online service channels, development of virtual hearings, and implementation of new entirely online procedures, as well as digital information services. However, unlike the comparative experience, there are practically none or very few known examples of widespread use of data analytics and big data processing tools, storage solutions and cloud services, and of machine learning and artificial intelligence tools.

One of the obstacles against implementing more digital solutions in the Peruvian State arises from the legal framework of state contracting. It is essential to make the most of transparent and more streamlined contracting mechanisms such as e-catalogs in accordance with the framework agreement that, in other countries such as Colombia and the United Kingdom, have been successfully used to contract digital tools in general, and cloud-based services, in particular. Contracting through open e-catalogs or digital marketplaces would allow public entities to procure the services they require with greater flexibility, scale and efficiency, in a way that prioritizes solutions rather than the technical specifications of each tool, and that allows payment solely for what is consumed.

The other main limitation for the Peruvian State's digital transformation is in public service itself. Although the regulatory framework for digital governance has been improving in recent years and the SEGDI has played a key role in that, it still faces certain difficulties, such as: (i) the lack of functional and economic decision-making autonomy; (ii) the limited capacity for binding and compulsion in their decisions; (iii) the lack of budget allocation at all levels of the government for procuring digital solutions and for the development of digital capabilities in public officials; and (iv) the lack of continuity in some national agendas (e.g. digital agendas) and policies (e.g. digital government and public administration modernization), as well as the absence of specific and measurable objectives in some of these instruments.

The public decision-making process by both the Legislative Branch and the Executive Branch shows little interest in the use of public data and the consideration of digital solutions from the design perspective. This is evidenced by the absence of these aspects in the regulatory frameworks that have been approved in recent years to improve regulatory quality and to measure regulatory impact.

Finally, Peru's digital transformation does not only go through the necessary legal and institutional reforms set out herein, but it also goes through a cultural change that should be led by senior State officials, motivated by the awareness of the benefits that digitization can bring to a country that was hit hard by a pandemic.

Annex 1: Interviews

Interviewee	Organization	Date
Fernando Masumura Jesús De Souza	Peru Purchasing	11/06/2020
Erick Iriarte	Lawyer specialized in Digital Government and New Technologies	11/07/2020
Noam López	Peruvian National Police	11/09/2020
Rafael Muente	General Director of Agricultural Policies	11/13/2020
Marushka Chocobar	Secretariat of Digital Government of the Presidency of the Council of Ministers	12/18/2020
Christian Rivera	SmartDoctor	12/21/2020

Annex 2: Personal Communications Following Requests for Access to Public Information

Entity to which the request for access to public information was addressed (date of request)	Response to the request for access to public information (date on which the response was received)
National Civil Service Authority [Servir] (11/18/2020)	Official Letter No. 000464-2020-SERVIR-ACCESO A LA INFORMACIÓN [ACCESS TO INFORMATION] and Memorandum No. 000522-2020-SERVIR-ENAP (11/24/2020)
Ministry of the Environment [Minam] (11/22/2020)	Letter No. 577-2020-MINAM/SG/OGDAC (11/26/2020)
Noam López Ministry of Foreign Trade and Tourism [Mincetur] (11/20/2020)	Letter No. 472-2020-MINCETUR/SG/OGA (11/26/2020)
Ministry of Development and Social Inclusion [Midis] (11/20/2020)	Letter No. 719- 2020-MIDIS/SG/OAC (12/15/2020)
Ministry of Education [Minedu] (11/19/2020)	Official Letter Nos. 8102-2020-MINEDU/SG-OA- CIGED and 8123-2020-MINEDU/SG-OACIGED (12/03/2020)
Ministry of Justice and Human Rights [Minjus] (11/20/2020)	Letter No. 744-2020-JUS/OILC-TRANSP (11/27/2020)
Ministry of Women and Vulnerable Populations [MIMP] (11/20/2020)	There was no response
Ministry of Foreign Affairs [RREE] (11/22/2020)	Letter (TAI) No. 0-2-B/513 (12/09/2020)
Ministry of Housing, Construction and Sanitation [Vivienda] (11/22/2020)	Letter No. 670-2020-VIVIENDA/SG-OAC-AIP (11/30/2020)
National Superintendency of Higher University Education [Sunedu] (11/18/2020)	Letter No. 3243-2020-SUNEDU-03-08-04 (12/01/2020)
National Superintendency of Higher University Education [Sunedu] (11/18/2020)	Letter (TAI) No. 0-2-B/513 (12/09/2020)

Bibliography

Agencia AFP. (September 22, 2020). Unos 300,000 escolares peruanos desertan en medio de la pandemia [About 300,000 Peruvian schoolchildren drop out amid the pandemic]. Diario Gestión. [Management Journal.] Retrieved from https://gestion.pe/peru/unos-300000-escolares-peruanos-desertan-en-medio- de-la-pandemia-noticia/

Peruvian News Agency [Andina]. (April 9, 2020a). Independientes pueden cobrar bono por celular y sin necesidad de ir al banco [Individuals can collect the Social Assistance Payment by cell phone and without having to go to the bank]. Retrieved from https://andina.pe/agencia/noticia-independientes-pueden-cobrar-bono-celular y-sin-necesidad-ir-al-banco-792351.aspx

Peruvian News Agency [Andina]. (May 26, 2020b). "Aprendo en casa": estrategia difundió más de 700 programas en lenguas originarias ["I learn at home": strategy broadcasted more than 700 programs in native languages].
Retrieved from https://andina.pe/agencia/noticia-aprendo-casa-estrategia-difundio-mas-700- programas-lenguas-originarias-798944.aspx

Peruvian News Agency [Andina]. (September 30, 2020c). Billetera electrónica podría usarse para pago de segundo bono universal [E-wallet could be used for paying a second universal Social Assistance Payment]. Retrieved from https://andina.pe/agencia/noticia-billetera-electronica-podria-usarse-para-pago- segundo-bono-universal-815896.aspx

Altamirano, J., Alva, M., & Lázaro, W. (September 2019). Statistical Compendium: Information on Human Resources for the Health Sector - Peru 2013 - 2018. Ministry of Health. Retrieved from http://bvs.minsa.gob.pe/local/MINSA/10896.pdf

World Bank. (June 14, 2020). GDP growth data. Statistical Annex: Real GDP1. (Percent change from previous year). Retrieved from http://pubdocs.worldbank.org/en/400631588785001198/Global-Economic- Prospects-June-2020-GDP-growth-data.xlsx

Bulk Scraping. (undated). Data Extraction API and How it Works. Retrieved from https://www.bulkscraping.com/blog/data-extraction-api/

Bustamante, M. (2017). Nueva "Autoridad Nacional de Transparencia y Acceso a la Información Pública": un saludo a la bandera [New "National Authority for Transparency and Access to Public Information": a salute to our flag]. Idehpucp News. Retrieved from https://idehpucp.pucp.edu.pe/analisis/nueva-autoridad-nacional-de-transparencia-y-acceso-a-la-informacion-publica-un-saludo-a-la-bandera/

Calderón, A. (May 4, 2020). No lo sé, Martín [I don't know, Martín]. El Comercio. [Commerce] Retrieved from https://elcomercio.pe/opinion/mirada-de-fondo/no-lo-se-martin-por-andres-calderon-noticia/

Carrasco, M., Mills, S., Whybrew, A., and Jura, A. (2019). The citizen's perspective on the use of AI in government. BCG Digital Government Benchmarking. Retrieved from https://www.bcg.com/publications/2019/citizen-perspective-use-artificial-intelligence-government-digital-benchmarking

Central Compras Públicas [Perú Compras]. [Public Procurement Central] (undated). Perú Compras impulsa el uso de la Plataforma de Catálogos Electrónicos [Perú Compras promotes the use of the Electronic Catalogs Platform]. Retrieved from https://www.perucompras.gob.pe/informacion/noticiaphp?npid=NP00172020

Central Compras Públicas [Perú Compras]. (2018). Modelo de Gestión para las Compras Públicas: Mapeo del abastecimiento público [Management Model for Public Procurement: Mapping of public supply]. Updated with information from 2015-2017. Retrieved from https://cdn.www.gob.pe/uploads/document/file/535578/EP_N015_2018.pdf

Central Compras Públicas [Perú Compras]. (2020). Extensiones de vigencia de Catálogos Electrónicos [Electronic Catalog validity Extensions]. Retrieved from https://www.perucompras.gob.pe/acuerdos-marco/convocatoria-extensiones-de-vigencia-catalogos-electronicos.php

Efficient Procurement in Colombia. (2013). Guía para entender los Acuerdos Marco de Precios [A Guide to understanding Price Framework Agreements]. Colombian Government. Retrieved from https://www.colombiacompra.gov.co/sites/cce_public/files/cce_documents/cce_guia_entender_acuerdos_marco.pdf

Efficient Procurement in Colombia. (2019). Circular Externa Única de Colombia Compra Eficiente [Single External Memo of Efficient Procurement in Colombia]. Colombian Government. Retrieved from https://colombiacompra.gov.co/sites/cce_public/files/cce_circulares/cce_circular_unica.pdf

Comparatel. (2020). Comparatel Fijo. [Fixed Comparatel.] Retrieved from https://www.comparatel.pe/public/index.php/comparatel_fija

Conexión Esan. [Esan Connection.] (October 1, 2020). eSalud: casos de éxito y tendencias del ehealth en el mundo [eHealth: success stories and trends in e-health around the world]. Retrieved from https://www.esan.edu.pe/apuntes-empresariales/2020/10/esalud-casos-de-exito-y-tendencias-del-ehealth-en-el-mundo/

Crown Commercial Service. (n.d.). Frameworks. Retrieved from https://www.crowncommercial.gov.uk/help-and-support/frameworks/

Medical Journal. (October 28, 2020). Smart Doctor: "Fuimos la primera línea de combate digital" [We were the first line of digital combat]. Peru Medical Journal. Retrieved from https://www.diariomedico.pe/?p=14896

Ombudsman Office (September 28, 2020). Defensoría del Pueblo: la transparencia y el acceso a la información pública siguen siendo un reto en el Perú [Ombudsman Office: transparency and access to public information continue to be a challenge in Peru]. Peruvian State Single Digital Platform. Retrieved from https://www.gob.pe/institucion/defensoria-del-pueblo/noticias/304902-defensoria-del-pueblo-la-transparencia-y-el-acceso-a-la-informacion-publica-siguen-siendo-un-reto-en-el-peru

Demirguc-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution.
The World Bank. Retrieved from https://globalfindex.worldbank.org/#:~:text=The%202017%20Global%20Findex%20database,62%20percent%20to%2069%20percent.

El Peruano. [The Peruvian.] (September 24, 2020a). Denuncia policial digital: ¿Qué documentos perdidos se pueden denunciar sin ir a la comisaría? [Digital police report: What lost documents can be reported without going to the police station?]

Retrieved from https://elperuano.pe/noticia-denuncia-policial-digital-%C2%BFque-documentos- perdidos-se-pueden-denunciar-sin-ir-a-comisaria-104268.aspx

El Peruano. [The Peruvian.] (October 19, 2020b). Más de 13,000 denuncias policiales digitales se tramitaron en tres semanas [More than 13,000 digital police reports were processed in three weeks]. Retrieved from https://elperuano.pe/noticia-mas-13000-denuncias-policiales-digitales-se-tramitaron-tres-semanas-105629.aspx

El Peruano. [The Peruvian.] (October 22, 2020c). Gobierno presenta política nacional de transformación digital [Government presents national policy for digital transformation]. Retrieved from https://elperuano.pe/noticia/105772-gobierno-presenta-politica-nacional-de-transformacion-digital

El Peruano. [The Peruvian.] (November 6, 2020d). Ciudadanía accederá a copia digital de denuncia policial [Citizens will access a digital copy of the police report]. Retrieved from https://elperuano.pe/noticia/107610-ciudadania-accedera-a-copia-digital-de-denuncia-policial

FrecuenciaOnline. (November 20, 2019). BIM, la billetera móvil peruana superó los 681 mil usuarios [BIM, the Peruvian mobile wallet exceeded 681 thousand users]. Frecuencia Mobile. [Mobile Frequency.] Retrieved from https://noticias.frecuenciaonline.com/2019/11/20/bim-la-billetera-movil-peruana-su pero-los-681-mil-usuarios/

García, A. and Iglesias, E. (2018). Cloud Computing: Opportunities and Challenges for Sustainable Economic Development in Latin America and the Caribbean. Inter-American Development Bank. Retrieved from https://publications.iadb.org/publications/english/document/Cloud-Computing-Opportunities-and-Challenges-for-Sustainable-Economic-Development-in-Latin-America-and-the-Caribbean.pdf

García, A. (October 12, 2020). Yape en crecimiento: en alianzas, usuarios (yaperos), transacciones, volumen de dinero, y en negocios afiliados [Yape in growth: in alliances, users (yaperos), transactions, volume of money, and in affiliated businesses]. Diario Gestión. [Management Journal.] Retrieved from https://gestion.pe/blog/innovar-o-ser-cambiado/2020/09/yape-yapecard.html/#:~:text=A%20 la% 20 fecha% 20 ya% 20 tenemos, de% 20 Yaperos% 20 y% 20500 % 2 C 000 % 20negocios.

García, A., Iglesias, E., Puig, P. and T. Campero (2020). Contratación pública de servicios de computación en la nube: Mejores prácticas para su implementación en América Latina y el Caribe. [Public procurement of cloud computing services: Best practices for its implementation in Latin America and the Caribbean]. Inter-American Development Bank. Retrieved from https://publications.iadb.org/es/contratacion-publica-de-servicios-de-computacion-en-la-nube-mejores-practicas-para-su

Peruvian Government. (undated). ¿Qué es el Portal de Transparencia Estándar (PTE)? [What is the Standard Transparency Portal (PTE)?]. Standard Transparency Portal. Retrieved from https://www.transparencia.gob.pe/contenidos/pte_transparencia_contenido_sobre.aspx?n_o=1#.X7vOw81KjIU

Peruvian Government. (September 20, 2016). OSIPTEL lanzó herramienta para que los usuarios identifiquen los planes más adecuados a sus necesidades [OSIPTEL launched a tool for users to identify the most appropriate plans for their needs]. Peruvian State Single Digital Platform. Retrieved from https://www.gob.pe/institucion/osiptel/noticias/211903-osiptel-lanzo-herramienta-para-que-los-usuarios-identifiquen-los-planes-mas-adecuados-a-sus-necesidades

Peruvian Government. (February 25, 2020a). Plataforma Nacional de Interoperabilidad del Estado [National Platform for State Interoperability]. Peruvian State Single Digital Platform. Retrieved from https://www.gob.pe/741-plataforma-nacional-de-interoperabilidad-del-estado

Peruvian Government. (November 21, 2020b). Reporte nacional de entrega de bonos (Bono Independiente) [National report of delivery of Social Assistance Payments (Standalone Payment)]. Retrieved from https://bonos.servicios.gob.pe/

Government Digital Service and Crown Commercial Service. (2019). Guidance: Buying services on the Digital Marketplace. UK Government. Retrieved from https://www.gov.uk/guidance/digital-marketplace-buyers-guide

Government Digital Services [GDS]. (2017). Guidance: Government Cloud First policy. UK Government. Retrieved from https://www.gov.uk/guidance/government-cloud-first-policy

IMD World Competitiveness Center. (2020). IMD World Digital Competitiveness Ranking 2020. Retrieved from https://www.imd.org/wcc/world-competitiveness-center-rankings/world-digital-competitiveness-rankings-2020/

National Institute of Statistics and Information Technology [INEI]. (2019). Producción y Empleo Informal en el Perú: Cuenta Satélite de la Economía Informal 2007-2018 [Informal Production and Employment in Peru: Satellite Account of the Informal Economy 2007-2018]. Lima: INEI. Retrieved from https://www.inei.gob.pe/media/MenuRecursivo/publicaciones_digitales/Est/Lib1701/libro.pdf

National Institute of Statistics and Information Technology [INEI] (June 2020a). Technical report. Comportamiento de los indicadores de mercado laboral a nivel nacional [Trimestre Enero-Febrero-Marzo de 2020] [Behavior of labor market indicators nationwide [January-February-March Quarter 2020]]. Report No. 2. Retrieved from https://www.inei.gob.pe/media/MenuRecursivo/boletines/infome_empleo_nacional.pdf

National Institute of Statistics and Information Technology [INEI] (July 2020b). Technical report. Comportamiento de los indicadores de mercado laboral a nivel nacional [Trimestre Abril-Mayo-Junio de 2020] [Behavior of labor market indicators nationwide [April-May-June Quarter 2020]]. Report No. 3. Retrieved from https://www.inei.gob.pe/media/MenuRecursivo/boletines/03-informe-tecnico-n03_empleo-nacional-abr-may-jun-2020.pdf

National Institute of Statistics and Information Technology [INEI]. (2020c). El 40,1% de los hogares del país tuvo acceso a Internet en el primer trimestre del 2020 [40.1% of the country's households had access to the Internet in the first quarter of 2020]. Retrieved from http://m.inei.gob.pe/prensa/noticias/el-401-de-los-hogares-del-pais-tuvo-acceso-a-internet-en-el-primer-trimestre-del-2020-12272/

National Institute of Statistics and Information Technology [INEI]. (2020d). National Household Survey - ENAHO Updated Methodology, Living Conditions and Poverty. Database: Microdata. Retrieved from http://iinei.inei.gob.pe/microdatos/

Peruvian Institute of Economics [IPE]. (April 18, 2020). Informe IPE V: Impacto del COVID-19 en la economía peruana [IPE report V: Impact of COVID-19 on the Peruvian economy]. Retrieved from https://www.ipe.org.pe/portal/informe-ipe-v-impacto-del-covid-19-en-la-economia-peruana/

Federal Institute of Telecommunications [ITF]. (2020). IFT 2020-2024 strategy. Preliminary Roadmap. Retrieved from http://www.ift.org.mx/sites/default/files/industria/temasrelevantes/16510/documentos/hrparaconsultapublicadefinitivascv390820_0.pdf

Izquierdo, A., Pessino, C. and Vuletin, G. (2018). Mejor gasto para mejores vidas: Cómo América Latina y el Caribe puede hacer más con menos. [Better spending for better lives: How Latin America and the Caribbean can do more with less]. Inter-American Development Bank. Retrieved from https://publications.iadb.org/publications/spanish/document/Mejor-gasto-para-mejores-vidas-C%C3%B3mo-Am%C3%A9rica-Latina-y-el-Caribe-puede-hacer-m%C3%A1s-con-menos.pdf

Katz, R. (2015). Elaboración de un Estudio de Evaluación de Impacto de la Implantación de un Arreglo Institucional que Impulse el Desarrollo de las TICs en El Perú [Preparation of an Impact Assessment Study of the Implementation of an Institutional Arrangement to Promote the Development of ICTs in Peru]. Lima: National Competitiveness Council. Retrieved from http://www.iriartelaw.com/sites/default/files/InformeKatz.pdf

Katz, R. and Callorda, F. (2016). Iniciativas empresariales y políticas públicas para acelerar el desarrollo de un ecosistema digital latinoamericano: Informe al Consejo Iberoamericano de la productividad y la Competitividad [Business initiatives and public policies to accelerate the development of a Latin American digital ecosystem: Report to the Ibero-American Council for Productivity and Competitiveness]. Madrid: COTEC Foundation for Innovation. Retrieved from http://informecotec.es/media/inf_CIPC_vfinal.pdf

La República. [The Republic.] (September 24, 2019). Osiptel habilita "Punku", su portal de datos abiertos en telecomunicaciones [Osiptel enables "Punku," its portal for open data in telecommunications]. Retrieved from https://larepublica.pe/economia/2019/09/24/osiptel-habilita-punku-su-portal-de- datos-abiertos-en-telecomunicaciones/

Latinobarómetro. (2018). Latinobarómetro Report 2018. Online database accessed in November 2020. Retrieved from https://www.latinobarometro.org/lat.jsp

Ministry of Education [Minedu]. (2020). Aprendo en casa [I learn at home]. Retrieved from https://aprendoencasa.pe/#/

Ministry of the Interior [Mininter]. (July 18, 2019). Obtén tu certificado digital de antecedentes policiales en seis simples pasos [Get your digital police record certificate in six simple steps]. Peruvian State Single Digital Platform. Retrieved from https://www.gob.pe/institucion/mininter/noticias/45837-obten-tu-certificado-digital-de-antecedentes-policiales-en-seis-simples-pasos

Ministry of the Interior [Mininter]. (October 18, 2020). PNP entregó un millón de certificados digitales de antecedentes policiales [PNP issued one million digital police record certificates]. Peruvian State Single Digital Platform. Retrieved from https://www.gob.pe/institucion/mininter/noticias/307709-pnp-entrego-un-millon-de-certificados-digitales-de-antecedentes-policiales

Ministry of Justice and Human Rights [Minjus]. (2017). Guía sobre el análisis de impacto regulatorio: Introducción a la evaluación post regulatoria. [Guide on regulatory impact analysis: Introduction to post regulatory evaluation]. Guía para asesores jurídicos del Estado [Guide for legal State advisors]. Lima: Minjus. Retrieved from https://www.minjus.gob.pe/wp-content/uploads/2018/02/GU%C3%8DA-sobre-el-an%C3%A1lisis-de-impacto-regulatorio.pdf

Ministry of Justice and Human Rights [Minjus]. (2019). Guía de Técnica Legislativa para la elaboración de Proyectos Normativos de las Entidades del Poder Ejecutivo [Legislative Technical Guide for preparing Executive Branch Entity Regulatory Projects]. Fourth edition. Lima: Minjus. Retrieved from https://cdn.www.gob.pe/uploads/document/file/315089/Guia_tecnica_legislativa_mayo_2019.pdf

Morachimo, M. (May 19, 2020). El problema de la falta de transparencia sobre los datos del Covid-19 en Perú [The problem of lack of transparency about the COVID-19 data in Peru]. Hiperderecho. Retrieved from https://hiperderecho.org/2020/05/el-problema-de-la-falta-de-transparencia-sobre-los-datos-del-covid-19-en-peru/

Novoa, Y. (2016). El derecho de acceso a la información pública: contenido e importancia [The right of access to public information: content and significance]. Revista Forseti, 1. [Forseti Journal, 1.] Lima: DERUP Editores. http://forseti.pe/revista/derecho-constitucional-y-derechos-humanos/articulo/el-derecho-de-acceso-a-la-informacion-publica-contenido-e-importancia

Organisation for Economic Co-operation and Development [OCDE]. (2019a). Digital Government in Peru: Working Closely with Citizens. Retrieved from https://read.oecd-ilibrary.org/governance/digital-government-in-peru_0c1eb85b-en#page3

Organisation for Economic Co-operation and Development [OCDE]. (2019b). Digital Government Index: 2019 results. Retrieved from https://www.oecd-ilibrary.org/governance/digital-government-index_4de9f5bb-en;jsessionid=9Co7i4Sbyqw36BOg0GPwQKkb.ip-10-240-5-71

Organisation for Economic Co-operation and Development [OCDE]. (2020a). Doctors [indicator]. Health resources. Retrieved from https://www.oecd-ilibrary.org/social-issues-migration-health/doctors/indicator/english_4355e1ec-en

Organisation for Economic Co-operation and Development [OCDE]. (2020b). The OECD Digital Government Policy Framework: Six dimensions of a Digital Government. OECD Public Governance Policy Papers No. 02.

National Office of E-Government and Information Technology [ONGEI]. (2013). Una mirada al Gobierno Electrónico en el Perú: La oportunidad de acercar el Estado a los ciudadanos a través de las TIC. [A look at the Electronic Government in Peru: The opportunity to bring the State closer to citizens through ICTs]. Lima: Presidency of the Council of Ministers. Retrieved from http://www2.congreso.gob.pe/sicr/cendocbib/con4_uibd.nsf/0D6D8CA5D781070305257E9200775428/$FILE/3_pdfsam_libro_ongei.pdf

Supervisory Agency for Investment in Energy and Mining [Osinergmin]. (May 2016). Guía de Política Regulatoria N°1: Guía Metodológica para la realización de Análisis de Impacto Regulatorio en Osinergmin [Regulatory Policy Guide No. 1: Methodological Guide for conducting Regulatory Impact Analysis in Osinergmin]. Retrieved from https://www.osinergmin.gob.pe/seccion/centro_documental/Institucional/RIA/Guia-Politica-Regulatoria-N-1.pdf

Supervisory Agency for Private Investment in Telecommunications [Osiptel]. (n.d.). PUNKU (The portal to telecommunications information). Retrieved from https://punku.osiptel.gob.pe/FrmLogin.aspx

Supervisory Agency for Private Investment in Telecommunications [Osiptel]. (2016). Manual de técnica normativa del Organismo Supervisor de Inversión Privada en Telecomunicaciones - OSIPTEL [Supervisory Agency Regulatory Technical Handbook for Private Investment in Telecommunications - OSIPTEL]. Retrieved from https://www.osiptel.gob.pe/repositorioaps/data/1/1/1/PAR/035-2016-pd-osiptel/Manual-tecnica-normativa-osiptel.pdf

Supervisory Body for State Contracting [OSCE]. (2018). 2017 Public Procurement Annual Report (updated in August 2018). Retrieved from https://portal.osce.gob.pe/osce/sites/default/files/Documentos/Reporte%20FINAL%202017%20Final.pdf

Organization of American States [OAS] and AWS (2019). Data Classification. White paper series. 6th Edition. Retrieved from https://www.oas.org/es/sms/cicte/docs/ESP-Clasificacion-de-Datos.pdf

Pimenta, C. (2019). Análisis estratégico de servicios de "Nube Inteligente" en América Latina y el Caribe. Recaudando Bienestar [Strategic analysis of "Smart Cloud" services in Latin America and the Caribbean. Raising Welfare.]. Inter-American Development Bank. Retrieved from https://blogs.iadb.org/gestion-fiscal/es/servicios-de-nube-en-administracion-publica/

Prado, E. (May 26, 2020). Tunki: "In the last month, we have grown 200% (in new users)." Semana Económica. [Economic Week.] Retrieved from https://semanaeconomica.com/management/estrategia/tunki-incorporaremos-plin-a-tunki-en-las-proximas-semanas

Presidency of the Council of Ministers [PCM]. (2017). Manual para la aplicación del Análisis de Calidad Regulatoria [Handbook for the application of Regulatory Quality Analysis]. Lima: Presidency of the Council of Ministers. Lima: Presidency of the Council of Ministers. Retrieved from https://sgp.pcm.gob.pe/wp-content/uploads/2017/08/Manual-Analisis-de-Calidad-Regulatoria.pdf

Presidency of the Council of Ministers [PCM]. (2018). Lineamientos para el Uso de Servicios en la Nube para entidades de la Administración Pública del Estado Peruano [Guidelines for the Use of Cloud Services for entities in the Peruvian State's Public Administration]. Lima: Secretariat of Digital Government. Retrieved from https://www.peru.gob.pe/normas/docs/Lineamientos_Nube.PDF

Presidency of the Council of Ministers [PCM]. (January 2, 2020a). Digital Agenda towards the Bicentennial [Management Document]. Peruvian State Single Digital Platform. Retrieved from https://www.gob.pe/institucion/pcm/informes-publicaciones/606643-agenda- digital-al-bicentenario

Presidency of the Council of Ministers [PCM]. (January 22, 2020b). PIDE Services Catalog. Peruvian State Single Digital Platform. Retrieved from https://www.gob.pe/institucion/pcm/informes-publicaciones/305761-catalogo-de-servicios-de-la-pide

Presidency of the Council of Ministers [PCM]. (July 29, 2020c). Digital Agenda towards the Bicentennial. Peruvian State Single Digital Platform. Retrieved from https://www.gob.pe/8258-presidencia-del-consejo-de-ministros-agenda-digital-al-bicentenario

Presidency of the Council of Ministers [PCM]. (October 30, 2020d). Presentation of the plan for the National Policy of Digital Transformation. Peruvian State Single Digital Platform. Retrieved from https://www.gob.pe/qu/institucion/pcm/informes-publicaciones/1307682-presentacion-del-diseno-de-la-politica-nacional-de-transformacion-digital

Quinto, C. (August 3, 2020). El 15% de estudiantes abandonó la universidad durante el estado de emergencia, según gremio de instituciones privadas [15% of students dropped out of university during the state of emergency, according to the private institutions union]. RPP Noticias. [RPP News] Retrieved from https://rpp.pe/peru/actualidad/covid-19-el-15-de-estudiantes-abandono-la-universidad-durante-el-estado-de-emergencia-segun-gremio-de-instituciones-privadas-noticia-1283361

Ramírez-Alujas, A. (2020). ¿Datos en cuarentena? Impacto, alcance y desafíos de los datos abiertos frente a la COVID-19 en E. [Quarantine data? Impact, scope and challenges of open data in the light of COVID-19 in E. Ford and W. Weck (Ed.), Internet and Pandemics in the Americas: First health crisis in the digital age]. Konrad Adenauer Stiftung, Digital Democracy, and International Democracy and Development. Retrieved from https://www.kas.de/documents/7851262/8887001/LIBRO+INTERNET+Y+PANDEMIA+EN+LAS+AMERICAS+VF.pdf/4a2051a3-c28a-f978-1343-5a9e4168d6ee?version=1.0&t=1608242281728

EC Editorial Office. (August 27, 2020). Aprendo en casa: programación y horario semanal de las clases virtuales para inicial, primaria y secundaria. [I learn at home: weekly schedule and schedule of virtual classes for Kindergarten, elementary and secondary school]. El Comercio. [Commerce] Retrieved from https://elcomercio.pe/respuestas/aprendo-en-casa-clases-virtuales-programacion-y-horario-semanal-para-inicial-primaria-y-secundaria-horarios-del-24-al-28-de-agosto-minedu-escolares-via-tv-peru-radio-nacional-covid-19-coronavirus-en-peru-pandemia-revtli-noticia/?ref=ecr

RPP News Editorial Room. (July 23, 2020a). Crisis en el sector educativo: Unos 5,000 colegios dejarían de funcionar. [Crisis in the education sector: About 5,000 schools would cease to function]. RPP Noticias. [RPP News] Retrieved from https://rpp.pe/economia/economia/crisis-en-el-sector-educativo-unos-5000-colegios-dejarian-de-funcionar-coronavirus-en-peru-noticia-1282150

RPP News Editorial Room. (October 22, 2020b). Ejecutivo presentó el diseño de la Política Nacional de Transformación Digital [Executive Branch presented the plan for the National Policy of Digital Transformation]. RPP Noticias. [RPP News] Retrieved from https://rpp.pe/politica/gobierno/ejecutivo-presento-el-diseno-de-la-politica-nacional-de-transformacion-digital-noticia-1299937

Roseth, B., Reyes, A. and C. Santiso. (2018a). El fin del trámite eterno. Ciudadanos, burocracia y gobierno digital [Resumen Ejecutivo]. [The end of the eternal process. Citizens, bureaucracy and digital government [Executive Summary]]. Inter-American Development Bank. Retrieved from https://publications.iadb.org/publications/spanish/document/El-fin-del-tr%C3%A1mite-eterno-Ciudadanos-burocracia-y-gobierno-digital-(Resumen-ejecutivo).pdf

Roseth, B., Reyes, A. and C. Santiso. (2018b). El fin del trámite eterno. Ciudadanos, burocracia y gobierno digital [Resumen Ejecutivo]. [The end of eternal paperwork. Citizens, bureaucracy and digital government [Executive Summary]]. Inter-American Development Bank. Retrieved from https://publications.iadb.org/publications/spanish/document/El-fin-del-tr%C3%A1mite-eterno-Ciudadanos-burocracia-y-gobierno-digital.pdf

Secretariat of Digital Government [SEGDI]. (2016). List of Peruvian State Entities. Lima: Presidency of the Council of Ministers. Retrieved from https://www.datosabiertos.gob.pe/dataset/lista-de-entidades-del-estado-peruano/resource/695019ec-79f1-4c6a-ace9-67d775de79d0

Secretariat of Digital Government [SEGDI]. (2018). Lineamientos del Líder de Gobierno Digital en el marco del Decreto Supremo N° 033-2018-PCM [Guidelines of the Digital Government Leader within the framework of Supreme Decree No. 033-2018-PCM]. Lima: Presidency of the Council of Ministers. Retrieved from https://www.peru.gob.pe/normas/docs/SGD_Lineamientos_Lider_Gobierno_Digital.pdf

Secretariat of Digital Government [SEGDI]. (2020). Política Nacional de Transformación Digital: Presentación de los Resultados del Proceso Integral de Diseño. [National Policy for Digital Transformation: Presentation of the Results of the Comprehensive Design Process]. Lima: Presidency of the Council of Ministers. Retrieved from https://cdn.www.gob.pe/uploads/document/file/1413234/PERU%CC%81_

Secretariat of Digital Government [SEGDI]. (2021). Resultados en Gobierno y Transformación Digital 2020 [Results in Government and Digital Transformation 2020]. Lima: Presidency of the Council of Ministers. Retrieved from https://indicadores.digital.gob.pe/

SmartDoctor. (undated). SmartDoctor (Version 0.9.9) [Mobile Application]. Google Play. Retrieved from https://play.google.com/store/apps/details?id=patients.com.smartdoctor&hl=es_PR

Stiglich, A. (December 20, 2020). Cinco lecciones del pago digital de bonos, por Andrea Stiglich [Five Lessons on the digital payment of the Social Assistance Payment, by Andrea Stiglich]. El Comercio. [The Commerce] Retrieved from https://elcomercio.pe/economia/peru/cinco-lecciones-del-pago-digital-de-bonos-por-andrea-stiglich-opinion-noticia/

National Superintendency of Health [SuSalud]. (undated). List of establishments registered in RENIPRESS. National Registry of Health Service Provider Institutions - RENIPRESS. Retrieved on October 14, 2020 from http://app20.susalud.gob.pe:8080/registro-renipress-webapp/listadoEstablecimientosRegistrados.htm?action=mostrarBuscar#no-back-button

Trivelli, C. (March 15, 2017). El primer año de Bim, la billetera electrónica del Modelo Perú [The first year of Bim, the e-wallet of the Peru Model]. FinDev Portal. Retrieved from https://www.findevgateway.org/es/blog/2018/04/el-primer-ano-de-bim-la-billetera-electronica-del-modelo-peru

Trujillo, J. (October 24, 2018). De 'electrónico' a 'digital' [From 'electronic' to 'digital']. CÍO Perú. Retrieved from https://cioperu.pe/articulo/26839/de-electronico-a-digital/

United Nation [UN]. (2020a). E-Government Survey 2020. Digital Government in the Decade of Action for Sustainable Development. With addendum on COVID-19 Response. Retrieved from https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2020-Survey/2020%20UN%20E-Government%20Survey%20(Full%20Report).pdf

United Nation [UN]. (2020b). UN E-Government Knowledgebase. Peru. Retrieved from https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/133-Peru

Welchman, L. (2015). Managing Chaos: Digital Governance by Design. Rosenfield Media. Retrieved from https://rosenfeldmedia.com/wp-content/uploads/2014/11/ManagingChaos-Ch1.pdf

Zapata, E., Stirling, R., Pasquarelli, W., and Shearer, E. (2020). The GovTech Index 2020 Unlocking the Potential of GovTech Ecosystems in Latin America, Spain and Portugal. CAF, Oxford Insights. Retrieved from http://scioteca.caf.com/handle/123456789/1580

Legal documents

Law 26889. Framework Law for Legislative Production and Systematization. December 9, 1997.

Law 27806. Law of Transparency and Access to Information. August 2, 2002.

Legislative Decree 1310. Legislative Decree that approves additional administrative simplification measures. December 29, 2016.

Legislative Decree 1353. Legislative Decree that creates the National Authority for Transparency and Access to Public Information, strengthens the Personal Data Protection Regime and the regulation of the management of interests. January 6, 2017.

Legislative Decree 1412. Legislative Decree that approves the Digital Government Law. September 12, 2018.

Legislative Decree 1448. Legislative Decree that amends article 2 of Legislative Decree No. 1310, Legislative Decree that approves additional measures for administrative simplification, and perfects the institutional framework and instruments that govern the process of regulatory quality improvement. September 15, 2018.

Supreme Decree 067-2003-PCM [Presidency of the Council of Ministers]. Approves Regulations for the Organization and Functions of the Presidency of the Council of Ministers. June 27, 2003.

Supreme Decree 008-2006-JUS [Ministry of Justice and Human Rights]. Regulation of the Framework Law for Legislative Production and Systematization. March 23, 2006.

Supreme Decree 31-2006-PCM [Presidency of the Council of Ministers]. Approves the Information Society Development Plan in Peru – The Peruvian Digital Agenda. June 20, 2006.

Supreme Decree 090-2010-PCM [Presidency of the Council of Ministers]. Approves Consolidation of State Reform Progress and the State Management Modernization Strategy. September 10, 2010.

Supreme Decree 066-2011-PCM [Presidency of the Council of Ministers]. Approves the "Information Society Development Plan in Peru – The Peruvian Digital Agenda 2.0." July 26, 2011.

Supreme Decree 109-2012-PCM [Presidency of the Council of Ministers]. Amends articles 2 and 4 of Supreme Decree No. 090-2010-PCM that approve the State Management Modernization Strategy and details the role of the Secretariat of the Public Administration for the Presidency of the Council of Ministers. October 31, 2012.

Supreme Decree 004-2013-PCM [Presidency of the Council of Ministers]. Approves the National Policy for the Public Administration Modernization. January 8, 2013.

Supreme Decree 081-2013-PCM [Presidency of the Council of Ministers]. Supreme Decree through which the National Policy for e-Government 2013-2017 is approved. July 9, 2013.

Supreme Decree 016-2017-PCM [Presidency of the Council of Ministers]. Supreme Decree that approves the "2017-2021 Peruvian National Strategy of Open Government Data" and the "Peruvian Open Government Data Model." February 10, 2017.

Supreme Decree 022-2017-PCM [Presidency of the Council of Ministers]. Supreme Decree that approves the Regulations for the Organization and Functions of the Presidency of the Council of Ministers. February 27, 2017.

Supreme Decree 033-2018-PCM [Presidency of the Council of Ministers]. Supreme Decree that creates the Peruvian State's Single Digital Platform and establishes additional provisions for the development of the Digital Government. March 22, 2018.

Supreme Decree 118-2018-PCM [Presidency of the Council of Ministers]. Declares the development of Digital Government, innovation and digital economy as a matter of national concern with a territorial approach. November 29, 2018.

Supreme Decree 061-2019-PCM [Presidency of the Council of Ministers]. Supreme Decree that approves the Regulation for the application of the Regulatory Quality Analysis of administrative procedures established in article 2 of Legislative Decree No. 1310 - Legislative Decree that approves additional administrative simplification measures. April 4, 2019.

Supreme Decree 206-2019-PCM [Presidency of the Council of Ministers]. Supreme Decree that approves the IV Open Government Action Plan towards the Bicentennial 2020 - 2021 and creates the Multisectoral Commission called the Open Government Multistakeholder Forum. December 30, 2019.

Ministerial Resolution 251-2013-PCM [Presidency of the Council of Ministers]. Approves Vice-Ministerial Coordinating Committee General Rules and renders the M.R. ineffective. No. 229-2002-PCM. September 26, 2013.

Ministerial Resolution 274-2006-PCM [Presidency of the Council of Ministers]. Ministerial Resolution that approves the National e-Government Strategy. July 25, 2006.

Ministerial Resolution 085-2012-PCM [Presidency of the Council of Ministers]. Approves Peru's Action Plan for its incorporation into the Open Government Society. April 9, 2012.

Ministerial Resolution 176-2015-PCM [Presidency of the Council of Ministers]. Approves the Open Government Action Plan 2015 - 2016. July 15, 2015.

Ministerial Resolution 129-2017-MINCETUR [Ministry of Foreign Trade and Tourism]. Amends the Ministry of Foreign Trade and Tourism's Occupation Classification. April 4, 2017.

Ministerial Resolution 378-2017-PCM [Presidency of the Council of Ministers]. Approves the Open Government Action Plan 2017 - 2019. December 27, 2017.

Ministerial Resolution No. 119-2018-PCM [Presidency of the Council of Ministers]. Stipulates the creation of a Digital Government Committee in each Public Administration's entity. May 8, 2018.

Vice-Ministerial Resolution 097-2020-MINEDU [Ministry of Education]. Approves the regulatory document entitled "Provisions for teachers working remotely that ensure development of non-face-to-face educational services of public educational institutions and programs, in light of the COVID-19 outbreak." May 21, 2020.

Resolution of the Secretariat of Digital Government 004-2018-PCM/SEGDI [Department of Digital Government]. Approves "Leader's Guidelines for the Digital Government." December 10, 2018.

Board of Directors Resolution 096-2015-CD/OSIPTEL [Supervisory Agency for Private Investment in Telecommunications]. Approves the Regulation for Periodic Information Requirements. August 20, 2015.

Board of Directors Resolution 039-2020-SUNEDU-DC [National Superintendency of Higher University Education]. Approves the criteria for the supervision of the adaptation of off-site education, on an exceptional basis, of subjects by universities and graduate schools as a consequence of measures taken to prevent and control COVID-19. March 27, 2020.

i The widespread lockdown was declared by Supreme Decree 044-2020-PCM (article 1) and the end date was indicated in article 2 of Supreme Decree 094-2020-PCM. Article 2 of Supreme Decree 116-2020-PCM initiated the targeted lockdown.
ii World Bank, June 14, 2020
iii IPE, 2020
iv INEI 2019, p. 7
v INEI, 2020a, p. 3
vi INEI, 2020b, p. 3
vii INEI, 2020d
viii INEI, 2020d
ix INEI, 2020d
x INEI, 2020d
xi INEI, 2020d
xii Board of Directors Resolution No. 039-2020-SUNEDU-DC.
xiii Sunedu, personal communication, November 30, 2020
xiv Sunedu, personal communication, November 30, 2020
xv EC Editorial Office, 2020
xvi Andina, 2020b
xvii Minedu, 2020
xviii Vice-Ministerial Resolution No. 097-2020-MINEDU
xix Minedu, personal communication, December 3, 2020
xx Minedu, personal communication, December 3, 2020
xxi AFP Agency, 2020
xxii Fifth, 2020
xxiii RPP News Editorial Room, 2020a
xxiv INEI, 2020d
xxv INEI, 2020d
xxvi INEI, 2020d
xxvii Altamirano, Alva and Lázaro, 2019
xxviii OECD, 2020a
xxix Esan Connection, 2020
xxx Esan Connection, 2020
xxxi SuSalud, undated
xxxii SuSalud, undated
xxxiii Data retrieved from: http://app20.susalud. gob.pe:8080/registro- renipress- webapp/listadoEstablecimientosRegistrados.htm?action=mostrarBuscar#no-back-button. Last date of access: November 8, 2020.
xxxiv INEI, 2020d
xxxv Demirguc-Kunt 2018
xxxvi Inter-American Development Bank, 2018, p. 28
xxxvii Inter-American Development Bank, 2018
xxxviii Andina, 2020a
xxxix Government of Peru, 2020b
xl Government of Peru, 2020b
xli Andina, 2020c
xlii Trivelli, 2017
xliii FrecuenciaOnline, 2019
xliv García, 2020
xlv Prado, 2020
xlvi Stiglich, 2020
xlvii García, Iglesias, Puig and Campero 2020, p. 3
xlviii Katz, 2015, p. 16
xlix Katz and Callorda, 2016, p. 41
l Katz and Callorda, 2016, p. 112

li Izquierdo, Pessino and Vuletin, 2018, p. 69
lii García et al., 2020, p. 4
liii Roseth, Reyes and Santiso, 2018a, p. 9
liv Roseth et al., 2018a, p. 12
lv Roseth et al., 2018a, p. 5
lvi Roseth et al., 2018b, p. 53-54
lvii Roseth et al., 2018a, p. 13
lviii OCDE, 2019a, p. 56
lix Latinobarómetro, 2018
lx Roseth et al., 2018a, p. 13
lxi SEGDI, 2020, p. 13
lxii PCM, 2020c
lxiii Government of Peru, 2020a
lxiv ONGEI, 2013, p. 61
lxv PCM, 2020b
lxvi SEGDI, 2021
lxvii SEGDI, 2016
lxviii UN, 2020a
lxix UN, 2020a, p. xx
lxx UN, 2020a, p. xx
lxxi UN 2020b
lxxii UN, 2020b
lxxiii UN, 2020a, p. 115
lxxiv UN, 2020a, p. 115
lxxv IMD World Competitiveness Center, 2020, p. 24, 36 and 37
lxxvi IMD World Competitiveness Center, 2020
lxxvii Zapata, Stirling, Pasquarelli, and Shearer, 2020
lxxviii Zapata et al., 2020
lxxix Zapata et al., 2020
lxxx Zapata et al., 2020
lxxxi INEI, 2020c
lxxxii INEI, 2020c
lxxxiii INEI, 2020c
lxxxiv Osiptel, undated. According to the report from the 2019 Residential Survey of Telecommunications Services (ERESTEL), OSIPTEL considers smart phones as being any cell phone that can connect to the Internet via a Wi-Fi or a mobile network.
lxxxv Carrasco, Mills, Whybrew and Jura, 2019
lxxxvi Carrasco, Mills, Whybrew and Jura, 2019
lxxxvii El Peruano 2020b
lxxxviii El Peruano 2020a
lxxxix El Peruano 2020d
xc Mininter, 2019
xci Mininter, 2020
xcii Noam López, personal communication, November 9, 2020
xciii Osiptel, undated
xciv Annex I of Board of Directors Resolution No. 096-2015-CD/OSIPTEL.
xcv La República, 2019
xcvi Government of Peru, 2016
xcvii Government of Peru, 2016
xcvii Comparatel 2020
xcix Comparatel 2020
c SmartDoctor, undated
ci Medical Journal, 2020
cii Christian Rivera, personal communication, December 21, 2020
ciii Christian Rivera, personal communication, December 21, 2020
civ Medical Journal, 2020
cv Christian Rivera, personal communication, December 21, 2020
cvi García et al., 2020, p. 1
cvii UN, 2020a, p. 51
cviii Government Digital Service and Crown Commercial Service, 2019
cix García et al., 2020, p. 36
cx Government Digital Service and Crown Commercial Service, 2019
cxi The description of this process has been elaborated based on the content of some of the framework agreements designed for contracting digital services in the Digital Marketplace, such as the following:
The G-Cloud framework, available at:
https://www.gov.uk/government/publications/g-cloud-12-framework-agreement
The Digital Outcomes and Specialists framework, available at:
https://www.gov.uk/government/publications/digital-outcomes-and-specialists-4- framework-agreement#:~:text=Digital%20Outcomes%20and%20Specialists%204%20is%20a%20framework%20agreement%20between,room%20to%20conduct%20research%20sessions
Information about the Crown Hosting Data Centers framework was also reviewed, which is available at:
https://www.gov.uk/guidance/the-crown-hosting-data-centres-framework-on-the- digital-marketplace#the-crown-hosting-data-centres-framework
Date of access: November 10, 2020.
cxii OCDE, 2019b, p. 54. This index measures the level of maturity of the digital government strategies of the member countries and partners of the Organization for Economic Co-operation and Development (OECD), which is understood as the early adoption of digital technologies, data and ICTs to increase transparency, public participation and efficiency in the public sector (OECD, 2019b). South Korea and the United Kingdom lead this index (OECD, 2019b, p. 54).
cxiii Zapata et al., 2020, p. 19
cxiv Colombia Compra Eficiente, 2019, p. 13
cxv Colombia Compra Eficiente, 2013, p. 2
cxvi Colombia Compra Eficiente, 2013, p. 2
cxvii Colombia Compra Eficiente, 2013, p. 2
cxviii García et al., 2020, p. 35
cxix García et al., 2020, p. 47
cxx García et al., 2020, p. 38
cxxi The contracting mechanisms stipulated in the Peruvian legal system: public tender, public procurement, simplified adjudication, electronic reverse auction, direct contracting and e-catalogs of framework agreements, depending on the contracting purpose and values.
cxxii OSCE, 2018, p. 45
cxxiii OSCE, 2018, p. 46
cxxiv Perú Compras, undated
cxxv Perú Compras, 2018, p. 61
cxxvi Perú Compras, 2018, p. 23 and 61
cxxvii Perú Compras, 2018, p. 25
cxxviii Fernando Masumura and Jesús De Souza, personal communication, November 6, 2020
cxxix Perú Compras, 2020
cxxx García et al., 2020, p. 23-24
cxxxi ITF, 2020, p. 165; Pimenta, 2019; GDS, 2017
cxxxii García and Iglesias, 2018, p. 3 and 31
cxxxiii PCM, 2018
cxxxiv Welchman, 2015, p. 11
cxxxv Supreme Decree 022-2017-PCM
cxxxvi Trujillo, 2018
cxxxvii Article 22 of Supreme Decree 067-2003-PCM
cxxxviii Article 24 of Supreme Decree 022-2017-PCM
cxxxix OCDE, 2019a, p. 11-12

cxl Marushka Chocobar, personal communication, December 18, 2020
cxli Supreme Decree 118-2018-PCM
cxlii Newsroom RPP Noticias, 2020b
cxliii El Peruano, 2020c
cxliv PCM, 2020d
cxlv PCM, 2020d, p. 62
cxlvi PCM, 2020a
cxlvii OCDE, 2019a, p. 51
cxlviii Ministerial Resolution 085-2012-PCM
cxlix Ministerial Resolution 085-2012-PCM
cl Supreme Decree 016-2017-PCM
cli Supreme Decree 206-2019-PCM
clii Supreme Decree 033-2018-PCM
cliii Ministerial Resolution 119-2018-PCM and Secretariat of Digital Government Resolution 004-2018-PCM/SEGDI
cliv OCDE, 2019a, p. 12
clv Position that the digital leader originally held prior to assuming that role.
clvi The rank corresponds to the remunerative and functional category of employees according to the Employee Assignment Chart or Employee Analytical Budget of the entity in question. The F-5 category usually corresponds to employees who direct, plan, coordinate, supervise and evaluate the work of the organization for which they are responsible, with the F-8 category being the highest in a ministry.
clvii OCDE, 2019a, p. 16
clviii National Civil Service Authority, personal communication, November 23, 2020
clix National Civil Service Authority, personal communication, November 23, 2020
clx SEGDI, 2018, p. 6
clxi OECD, 2020b, p. 14
clxii OECD, 2020b, p. 16
clxiii Government of Peru slf clxiv Novoa, 2016
clxv Ombudsman Office, 2020
clxvi OAS, p. 6
clxvii Articles 6 and 9 of Legislative Decree 1353
clxviii Articles 3 and 4 of Legislative Decree 1353
clxix Bustamante, 2017
clxx Articles 4 and 5 of Supreme Decree 016-2017-PCM
clxxi Article 6 of Supreme Decree 016-2017-PCM
clxxii Last date of access: December 7, 2020.
clxxiii Legislative Decree 1412
clxxiv Calderón, 2020
clxxv Morachimo, 2020
clxxvi Morachimo, 2020
clxxvii OECD, 2020b, p. 6
clxxviii OECD, 2020b, p. 12-13
clxxix Article 1 of Law 26889
clxxx Minjus, 2019
clxxxi Legislative Decree 1310
clxxxii Legislative Decree 1448
clxxxiii Supreme Decree 061-2019-PCM
clxxxiv PCM, 2017
clxxxv Minjus, 2017, p. 29-30
clxxxvi Osinergmin, 2016
clxxxvii Osiptel, 2016
clxxxviii Ramírez-Alujas, 2020, p. 92-93
clxxxix Articles 3 and 4 of Ministerial Resolution 251-2013-PCM

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The Path to Transformation.

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