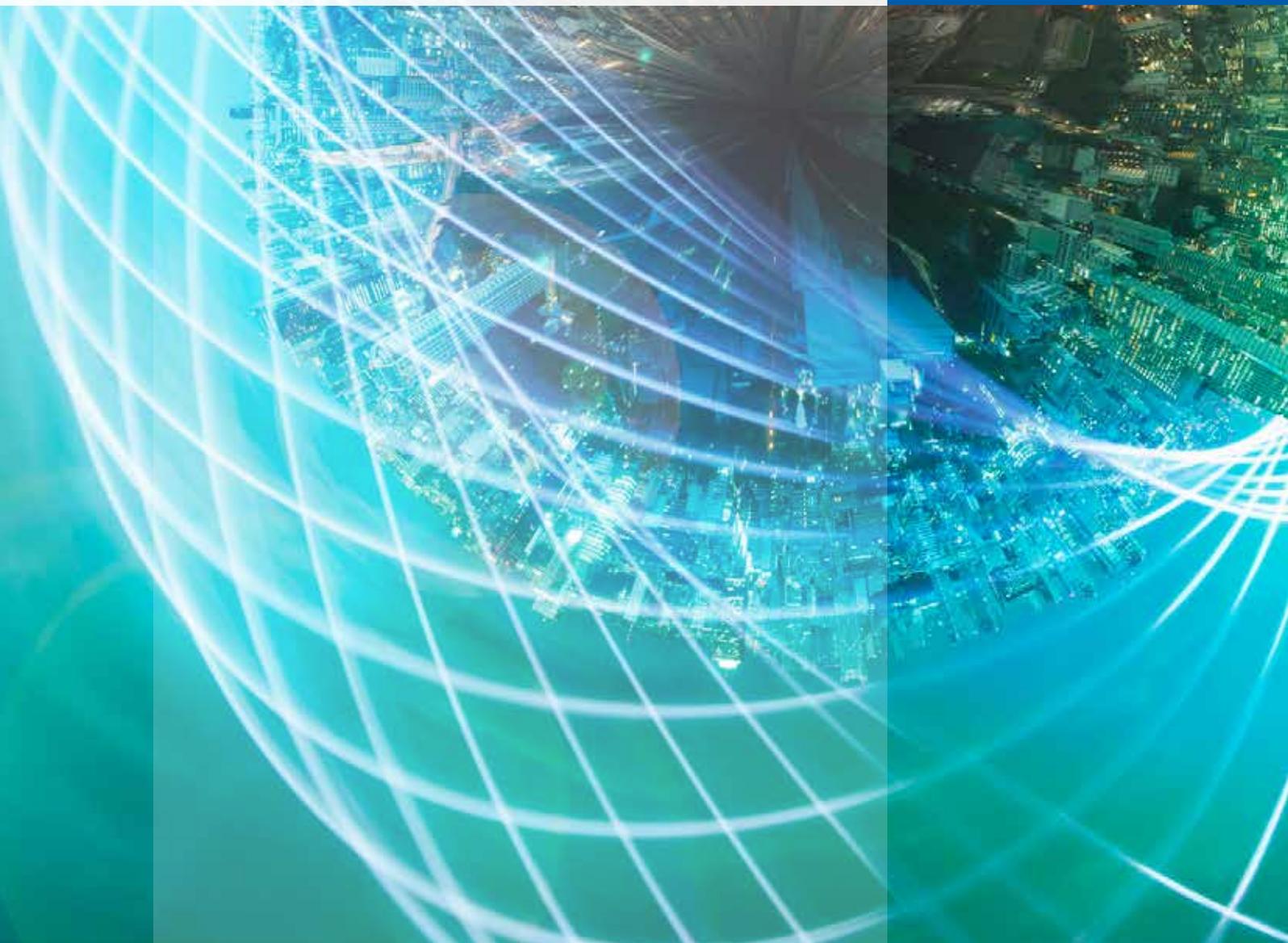


The digital economy and digital postal activities – a global panorama



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The views expressed in this paper reflect the opinions of the authors alone, and do not necessarily reflect those of the Universal Postal Union or its development partners.

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The digital economy and postal digital activities – a global panorama



Executive Summary

In 104 countries, more than 20% of the youth population is still offline¹. However, a growing body of evidence suggests that access to, and use of, financial, e-commerce and e-government services contributes to socio-economic development. The Universal Postal Union (UPU), as the UN specialized agency for the postal sector, is convinced that Posts can be key players in contributing to that agenda.

Why are Posts important digital inclusion players?

Currently, 93% of Posts (116 out of 125 responding to our survey) provide digital postal services, either directly or in partnership with other companies. Posts are comparatively well positioned to provide e-government, e-commerce and e-finance services to populations that tend to be excluded, such as women, the poor, the less well educated and those in the informal economy. As such, postal networks should be an integral part of discussions in which governments, policymakers and international organizations design strategies for fostering digital inclusion.

A call to action: increase the pace of digital transformation

With the world embracing digital technology at an ever faster rate, customers (both senders and receivers) are increasingly expecting to interact directly with the Post through digital channels. In addition, 73% of Posts indicate that they have increased their investment in digital postal services. Therefore, it is clear that the digital postal services landscape will continue to evolve in a number of directions.

Posts are therefore at a turning point: they need to adapt in order to remain relevant, competing with digital native companies in different areas of their product portfolio. To be able to compete effectively, Posts need to speed up the digitalization of their products. This means that postal operators that have not fully digitalized need to do so urgently, or risk being excluded as digital service providers for e-government, e-commerce and e-finance services.

¹ <https://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx>

Key success factors for Posts to advance on digitalization

In order to offer sustainable digital postal services, Posts will need to rely on their competitive advantages and transform key aspects of their business. In this report, we have identified the four key factors highlighted below, which make the Post especially well positioned, but which need to be developed:

- **Complementing post offices with new digital services to expand competitive edge in terms of network size and density:** With 661,000 post offices worldwide – and an additional 1.4 million postmen going door-to-door daily – Posts own one of the largest physical networks in the world.
- **Access to financing for digital projects:** At the operational and product level, Posts need to invest to fully digitalize their organization. According to the research underlying this report, 56% of Posts feel that their investment resources are not yet sufficient to ensure full deployment of services. Therefore, it is key to get access to funding for digitalization projects by being part of donors' round tables organized by international organizations.
- **Partnerships:** Over the past 20 years, most Posts have transitioned from traditional postal administrations to corporations which have to balance their social impact and financial sustainability. Advancing in terms of digitalization, 70% of Posts are building partnerships with private companies in order to be agile, share risk and reduce financial burdens.
- **Alignment with government's digital strategies** to recognize the postal network as a tool for advancing digital inclusion: it is critical for Posts be part of regional and national digital strategies where their role is recognized.

Digital postal services capacity index

Using data provided by 125 postal operators, we have established a digital postal services capacity index, which illustrates postal operators' potential to provide digital inclusion (e-government, e-commerce and e finance) in their country.

Based on this index, we have identified countries and territories where the e-government rate is low and where the postal operator has strong capacity. To mention but a few, Anguilla, Macao, Hong Kong and Switzerland all stand out as countries or territories where there is a strong potential for Posts to partner with the government to provide e-government services. Meanwhile, the Posts of Anguilla, Slovakia, Curaçao, Indonesia, Hong Kong, Ukraine and Kazakhstan are shown to be ahead of the e-commerce potential of their countries.

Realizing this potential depends on each Post's willingness to take the necessary steps to compete in this crucial market and on its government's support in this endeavour. The index can be used as a guide to help each postal operator compare its capacity with that of Posts in its region or of countries with similar development levels. It could also constitute a tool for governments and policymakers to assess whether, and how, they can use the Post to advance the digitalization in their country.



Chapter I:
Introduction

Foreword

The world is on the cusp of a new digital era. Digitalization is dramatically reducing the costs of collecting, storing and processing data, thus transforming economic activities around the world. Digital technologies open the way for micro, small and medium-sized enterprises, especially those in developing countries, to participate in global trade through e-commerce. This new digital era will require changes to existing legal and regulatory frameworks, and has tremendous implications for the transformation of Posts.

The 26th UPU Congress approved Istanbul Business Plan work proposal 34, entitled “postal electronic services”, in which the Postal Operations Council was instructed to work on the development of market research studies providing best practice information and monitoring the development of digital postal services worldwide.

This report is intended primarily for policymakers, senior directors of postal operators and analysts considering the impact that digital postal services can make in the digitalization era. It is the outcome of a collective effort to shed light on the digital transformation of postal operators worldwide – an effort that goes far beyond the authors’ own contributions. Numerous experts from the UPU International Bureau and other institutions have provided insightful comments and suggestions. The authors also wish to thank the UPU’s member countries for providing the information and data that fed their research and studies.

Motivation

The International Bureau (IB) has been closely following the evolution of digital postal services since 2012, conducting surveys on postal capability and publishing two reports on “Measurement of digital postal services development”. The IB strives to serve as a centre for knowledge for member countries in all areas, including the digital transformation of Posts, by gathering the many resources currently available and producing an analytical publication which can serve not just as a guide but as a tool with which to plan for future changes to the postal market.

The IB also works closely with governments and the international community via platforms such as the UN World Summit on the Information Society (WSIS) to position the postal sector and its digital postal services as an important public network for digital inclusion, serving citizens and businesses in the digital economy and helping governments achieve the UN Sustainable Development Goals (SDGs).

The report also highlights broad trends among countries and across regions by providing better understanding of the emerging patterns of countries’ performance across the world. It contributes to the ongoing discussion of the critical role of information and communication technologies (ICTs) in

the postal industry, identifying countries and areas where the potential of ICTs and digital services has not been yet fully exploited.

In addition, the publication intends to serve as an authoritative reference for the international community and institutions, providing a holistic approach to Posts in the digital age and their role as facilitators in addressing global policy issues, and the SDGs in particular.

Conceptual framework

Since its inception in 2012, the UPU digital postal services survey has taken a holistic view of digital postal services development, resting on three important dimensions: i) the scope of e-services provided; ii) the external environment; and iii) innovation capacity. The methodological framework has remained consistent across the survey periods, while individual components have been carefully updated to reflect evolving successful digital postal services strategies, best practices and innovative approaches to tackling common challenges for the digital transformation of the postal industry.

The digital postal services survey is based on the following guiding principles: first, digital postal services in this survey are considered to be the means to an end, the end being development for all. They are considered to be a strategic product and services, which, if applied effectively, can contribute substantially to serving citizens, businesses and governments. The intention is to support the development efforts of UPU member countries; second, the survey and its results must be placed in the context of the overall pattern and level of development of each country concerned; and lastly, the survey assesses the readiness of digital postal services worldwide, taking the view that the ultimate objective remains the innovation, integration and inclusion of all.

Study objective and methodology

Every four years, the IB’s Policy, Regulation and Markets Directorate (DPRM) gathers and disseminates information concerning the structure and status of member countries’ designated operators that provide digital services at national and regional level. This information is provided on a country-by-country basis, so that member countries and designated operators can refer to the database in researching best practices, dissemination of digital services, planning for changes and drafting strategies for digital postal policy, regulations and services. The report, which is based on a survey, provides a snapshot of e-services development in UPU member countries.

This publication shows broad trends among countries and across regions, and provides a better understanding of the emerging patterns of countries' performance across the world. It contributes to the ongoing discussion of the critical role of information and communication technologies (ICTs) in the postal industry, identifying countries and areas where the potential of ICTs and e-services has not yet been fully exploited. It reviews digital policy models at national and regional levels, identifying best practices of the UPU member countries concerned. It will also be useful in planning for future adjustments to postal policy in order to allow for proactive regulation, if necessary.

Study objectives

- Benchmark the development of digital postal services in UPU member countries.
- Identify and evaluate the impact of possible barriers and trends affecting the development of digital postal services.
- Evaluate the development and strategic importance of digital postal services at a global level since the 2012 and 2015 report.
- Develop a framework of digital postal services strategies.

Definitions

- **Definition of Posts:** In this study, Posts are the designated operators (DOs) of UPU member countries. The digital postal services provided in a country are considered to be the ones provided by its DO directly or through agreements with third parties, such as governments or businesses.
- **Definition of digital postal services:** In this study, we refer to digital postal services as services delivered by Posts to their end customers (individuals, businesses or governments) through digital channels. The Internet is the main digital service delivery channel, while other telecommunications channels (e.g. mobile phones, tablets, call centres or televisions) are also considered. The use of ICTs for the sole objective of automating the internal postal process, such as the use of sorting machines, is not within the scope of this study.

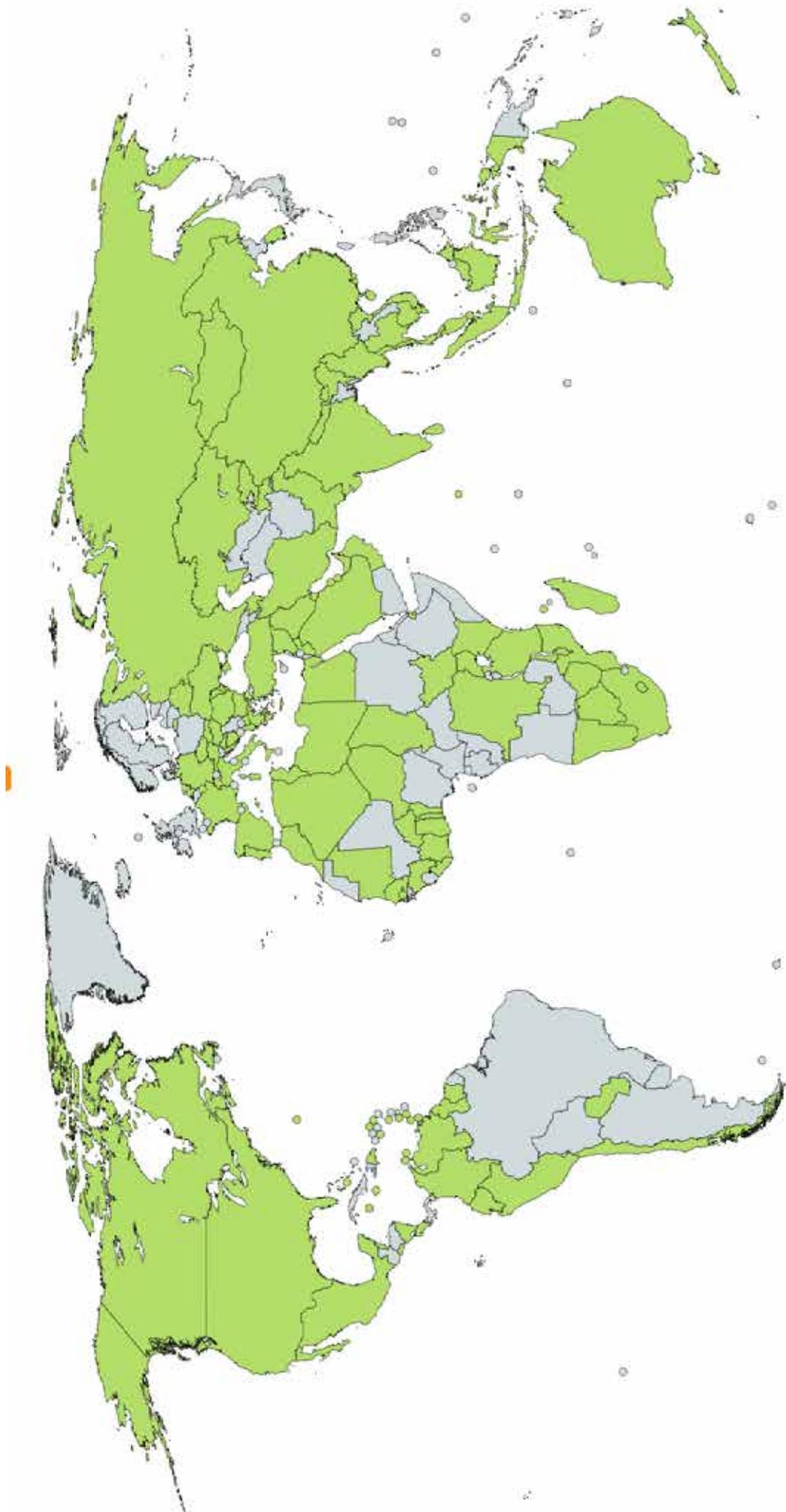
Methodology

- **Designing the survey:** Initially, members from the Electronic Services Development Group identified 42 digital postal services to be included in the survey. The e-services were divided into four categories: e-post and e-government; e-commerce; digital financial and payment solutions; and support services. A Post can integrate a number of these services and provide them as one service. To assess the availability and value of these digital services at the country level, a survey was developed, in which Posts were asked to indicate whether they provided each of these services, the service's name, whether the service was under development, whether it was accessible to customers residing in other countries, whether it could be accessed via a mobile app, the end user of the service, and the source of revenue. While the study measures the number of e-services offered by Posts and reflects their importance from the postal organization's perspective, it does not assess the success of these services in terms of market adoption or customer satisfaction. The survey also asked more general questions related to Posts' strategy for the development of new e-services.

This 2017 version of the questionnaire is an enhanced version of the one that served as reference for the report published in 2012 and 2015, which has been revised by rearranging the list of digital services and adding new ones relevant to the market in 2017. However, the same structure has been used, so as to enable results to be compared with the 2012 and 2015 reports and the evolution of digital postal services developments to be documented.

- **Study participants:** The survey was sent by letter to the Posts of the UPU's 192 member countries. The restricted unions and UPU regional project coordinators were informed of the survey. Participants were asked to return their responses to the UPU International Bureau by post, e-mail or fax. In all, 125 Posts responded to the questionnaire.
- **Regional groups of countries:** Participating countries were grouped into regions, based on the UPU's geographical and economic development regions: industrialized countries; Europe and the Commonwealth of Independent States (CIS); Asia-Pacific; Arab countries; Africa; and Latin America and the Caribbean. The 125 survey participants represented 25 African countries, 16 Arab countries, 22 Asia-Pacific countries, 17 Europe and CIS countries, 30 Latin American and Caribbean countries, and 15 industrialized countries.

Figure 1.1 - Participants in the 2017 digital postal services survey



Linkages between postal electronic services, SDGs and ICT for Development

Digital postal services and the Sustainable Development Goals

The UN Sustainable Development Goals (SDGs) are ambitious universal agendas to achieve a better and more sustainable future for all. They aim to address urgent global challenges that we face in relation to poverty, inequality, climate change, environmental degradation, prosperity, peace and justice. The goals are interlinked and, in order to leave no one behind, the aim is to achieve each goal and target by 2030. In order to achieve this ambitious Agenda 2030, 17 goals have been identified, which are further broken down into 169 targets and 244 indicators. As an UN specialized agency, the UPU, with the support of its member countries, is actively researching and analyzing the contribution of the postal sector in efforts to achieve the SDGs.

This section aims to identify SDG indicators that are closely linked to digital postal development and the role of the postal sector in achieving the UN's Agenda 2030. It also presents the concrete contribution made by the postal sector to advance the implementation of the SDGs through the use of technology to create a social impact. The report focuses on four goals which, according to the UPU study, produced high correlations for postal development as a proxy measure. (The four goals identified as having a high correlation with postal development are goals 8, 9, 11, and 17.)



Goal 1: End Poverty

This goal encapsulates the aim to ensure inclusive prosperity, and eliminate poverty in all its forms by 2030. Posts as a major provider of postal infrastructures across regions play a critical role in facilitating financial inclusion. The UPU data shows that Posts in Bangladesh and Paraguay have been contributing to their respective countries' visions to lift millions out of extreme poverty by providing mobile money transfers to the most vulnerable segment of society.

Case: Bangladesh

Bangladesh Post Office has been contributing to the country's Vision 2021 to lift millions of Bangladeshis out of poverty. In particular, it has issued over 11 million mobile money orders, worth 7 million USD, and the postal Cash Card service has built a customer base of 52,000 cardholders, many of whom live in rural areas.

Goal 2: End Hunger



This goal promotes sustainable agricultural practices by ensuring investment in infrastructure and technology to improve agricultural outputs. As enablers of infrastructure for rural development, Posts play a prominent role in addressing the need for rural infrastructure and development. The UPU research shows that there is a strong positive correlation between a wide-reaching postal network and achievement of the SDGs.²

Case: Korea (Rep.)

In Korea, postal ICT services for e-marketplaces help local communities distribute their products nationally and abroad.

DISCLAIMER: The following part of the report contains numerous "Case Studies" done by the UPU staff or research affiliates, documented in the UPU database. The "Case Studies" do not necessarily imply official endorsement or acceptance by the countries where the studies are being conducted. Therefore, the documents represent the official material in possession of the UPU and can be fully accessible upon request by an individual or a group.

² http://news.upu.int/no_cache/nd/new-upu-report-shows-worlds-postal-networks-are-an-engine-for-economic-development/



Goal 3: **Good Health and well-being**

This goal aspires to ensure healthy lives and promote well-being for all. It aims to achieve universal health coverage

and access to safe and effective medicine and vaccine for all, expanding affordable medicines. Through its network for social inclusion, the postal sector provides services that enable health workers to reach out to disabled people in Japan. The digital postal services ease access to universal e-health coverage for all physically challenged members of the population.

Case: Japan

Japan Post Group, IBM and Apple collaborated on a first-of-its-kind initiative aimed at improving the quality of life for millions of Japanese senior citizens. Japan Post Group will expand the service in stages with the objective of including 4 to 5 million customers in Japan by 2020.



Goal 4: **Quality Education**

This goal seeks to ensure inclusive and equitable quality education and promote lifelong learning opportunities.

It also aims to provide equal access to affordable vocational training, and to eliminate gender and wealth disparities with the aim of achieving universal access to quality education by 2030. The postal network has been at the heart not only of communications and commerce but also of efforts to enable knowledge diffusion and capacity building. More than 1,500 participants are trained through the UPU's Trainpost platform each year, with training centres in four regions. In the United Kingdom, digital postal services using e-learning help provide access to affordable online learning opportunities for all.

Case: Royal Mail Education

Royal Mail provides teachers with educational resource packs. Almost 55,000 resources have been downloaded, and 98% of schools that took part in the course of the year requested future programme packs, a great result for pupils and the company.



Goal 8: **Decent work and Promote economic growth**

Goal 8 promotes inclusive decent work and sustainable economic growth for all. It also aims to promote policy

actions to eradicate forced labour, slavery and human trafficking. The UPU postal development report for 2018³ shows the postal sector making a major contribution towards the achievement of this goal through trade facilitation for MSMEs by offering products and services tailored to the needs of businesses. Posts are serving over 100,000 people per post office; they also provide businesses and consumers alike with access to a massive logistical, financial and communication network. The postal sector is also a valuable contributor to job creation, and sustained and inclusive economic growth.

In 2016, the postal sector employed 5.32 million⁴ staff worldwide, and Posts throughout the world strive to achieve the goal of providing decent work and promoting inclusive economic growth.

The result of multivariate regression analysis by the UPU⁵ shows postal development and the targets of goal 8 to be highly correlated. It also reveals that countries with well-developed postal services, on average, have a large percentage of adults holding a bank account, which is an indicator for financial inclusion. Digital postal services such as e-shops foster growth of MSMEs through access to global market services.

Case: Iran (Islamic Rep.)

Iran Post provides Bazaar Post, a cutting edge e-commerce technology solution allowing businesses to scale their business across the country while providing a highly localized and customer-centric shopping experience. The service recorded 5.4 million transactions in 2014

³ www.upu.int/uploads/tx_sbdownloader/postalDevelopmentReport2018En.pdf

⁴ www.upu.int/uploads/tx_sbdownloader/postalDevelopmentReport2018En.pdf

⁵ www.upu.int/uploads/tx_sbdownloader/postalDevelopmentReport2018En.pdf



Goal 9: **Build resilient infrastructure**

This goal promotes the building of a resilient and sustainable infrastructure to foster sustainable development. The

SDGs also aim to promote investment in infrastructure and innovation to help build inclusive growth. As an indicator of inclusive innovation, postal services provide universal postal services in 146 countries. Fifty-one Posts worldwide hold 1.6 billion savings and deposit accounts, and 1 billion people are banked through the Post. In Botswana, the postal network is providing digital services that help to provide financial, technological and technical support to underserved communities.

Case: Botswana

In Botswana, the development of Internet access and the provision of various communication services in post offices through knowledge centres has increased the revenue of the connected post offices by an average of 25% and provided the local communities with a full range of e-services.



Goal 10: **Reduce inequality within countries**

This goal aims to reduce inequality within and among countries: *"By 2030, progressively achieve and sustain*

income growth of the bottom 40% of the population at a rate higher than the national average". Posts can serve as a channel for economic and social inclusion, providing worldwide access to cash payment services through post offices. Digital postal services for e-commerce are helping to create a strong social inclusion tool to achieve social and economic progress in the disadvantaged segments of society, a correlating factor for financial inclusion.

Case 1: Armenia

Haypost identified a perfect opportunity to both develop a new business line using modern e-commerce technologies and create a strong social inclusion tool. The operator's ICT services created "Shop in America", a new platform to make world-class shopping accessible in the remote regions of Armenia. Haypost created an online network of more than 700 post offices, installing 2,900 new computers in Yerevan and the regions. Internet corners were installed in all renovated post offices. Shop in America helps to foster social inclusion through e-commerce development, offering individuals a tax-free allowance for imports ranging between 600 and 4,800 USD per year. Decentralization of customs clearance with the integration of automated customs clearance software in 700 online post offices enables customers to get their goods cleared in their home towns and villages. Haypost has set up a subsidiary company in the United States, based in Glendale, California – the centre of the largest Armenian community in North America – where customers can register for free and get a free U.S. address for their online purchases.

Case 2: Tanzania (United Rep.)

Tanzania Post Corporation has 36 Internet cafés where customers can access information. Community information centres have been installed at six post offices; these are currently offering e-learning services.



Goal 13: **Climate action**

This goal advocates for strengthening resilience and building adaptive capacity to deal with climate-related threats and natural disasters in all countries. "By 2030, the UN predicts

that disaster losses in the Asia-Pacific region alone could average 160 billion USD a year, up from just over 50 billion USD annually now." ⁶ As a key contributor to the global response to climate change, postal ICT services help governments integrate climate change measures into their national policies.

The UPU, as a coordinator of worldwide postal services, has developed advanced climate solutions for analyzing and reporting the postal sector's carbon footprint. The OSCAR. POST tool simplifies data collection, aligns with postal organizations' reporting requirements and automatically produces individual reports for each user. OSCAR provides participating postal organizations with an analysis of their individual greenhouse gas emissions and a detailed report of these emissions by scope, source and product, including comparisons with previous years to highlight the results of their mitigation efforts.

Posts are now offering digital postal solutions for mail distribution, reducing the need for printed-paper. They allow senders and recipients to transmit and receive their mail in digital form.

Case: Switzerland

Swiss Post's E-Post Office allows mail to be sent and received digitally. Once the service is activated, all items from a particular sender will be delivered automatically in digital format. Recipients can also subscribe to a scanning service which automatically scans mail and makes it available to view, edit and archive digitally.



Goal 16: **Peace, justice and strong institutions**

This goal aims to promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable

and inclusive institutions at all levels. In the UK for example, the postal sector, as an agent of trust and communication, served as a platform enabling more than 113,000 people to vote by post or proxy through Royal Mail during the 2015 general elections. Swiss Post's e-voting solutions were used by up to 50% of voters in 2017. La Poste Maroc acts as a certification authority issuing electronic identities on behalf of the government. And France's La Poste is entrusted by the French Government to fulfil the fundamental obligation of delivering newspapers in all parts of France at tariffs lower than those required by the universal service obligation. Postal ICT services can therefore assist in developing inclusive, effective, accountable and transparent institutions and help governments to provide identity and certification services.

Case: Morocco

In 2011, the Moroccan Post launched Barid eSign, to satisfy the need for a certification platform that ensures the safety, integrity and probative value of all electronic exchanges. This launch was followed by the publication of law enforcement decree 53-05, following approval by the National Agency for Radio and Telecommunications in 2011. Through "Barid eSign", the Moroccan Post has reached a first milestone of its development strategy for digital post services and positioned itself as a leader in the market of secured electronic correspondence/exchanges.



Goal 17: **Partnerships for the goals**

This goal aims to “strengthen the means of implementation and revitalize the global partnership for sustainable development”, which is closely correlated with postal development. Postal operators act as enablers of communication services, and facilitate trade by leveraging partnerships. The goal also has a strong link to the percentage of individuals using the Internet, as the rise of ICTs triggers mail substitution, reducing Posts’ revenues in the traditional letter-post segment. As the Internet drives demand for new products and services through e-commerce, the need for a trusted reliable intermediary to deliver orders also increases.

The UPU data⁷ shows the relationship between the percentage of individuals using the Internet and postal development to be positively correlated. The rise of ICTs allows the postal sector to innovate, which in turn contributes to the expansion of e-commerce and, in order to adapt to pervasive digitalization, the postal sector has to evolve across the board. Around 60 postal operators have partnerships with insurance companies to offer micro-insurance services. An increase in the availability of high quality data is one of the targets of the SDGs, and the UPU records 100 billion data points every year. One example of postal transformation is Tanzania Post Corporation. This operator has 36 Internet cafes, serving to promote Internet connectivity. The Post is also an enabler for trade facilitation through leveraging partnerships. For instance, in Brazil, postal ICT services boost the country’s exports by working in partnership with MSMEs and government, while in Paraguay the Post’s e-money service helps the poor to receive money transfers.

Concluding remarks

The rise of information and communication technologies has brought both opportunities and challenges to the growth of postal development. ICTs are also vital tools for expanding access to online government services for all global citizens, which is a crucial principle of Agenda 2030. As a result, there is tremendous pressure on the postal sector to fast track the transformation of its operations into online services. Posts need to improve on the progress made thus far, so as to be more agile, responsive and adaptive vehicles for socio-economic development. In particular, they need to continue expanding their reach to the most vulnerable segments of society. They also need to work towards implementing the SDGs to achieve the universal agenda.

The IB strives to serve as a centre for knowledge for member countries in all areas, including the digital transformation of Posts, by gathering the many resources currently available and producing an analytical publication which can serve not just as a guide but as a tool with which to plan for future changes to the postal market.



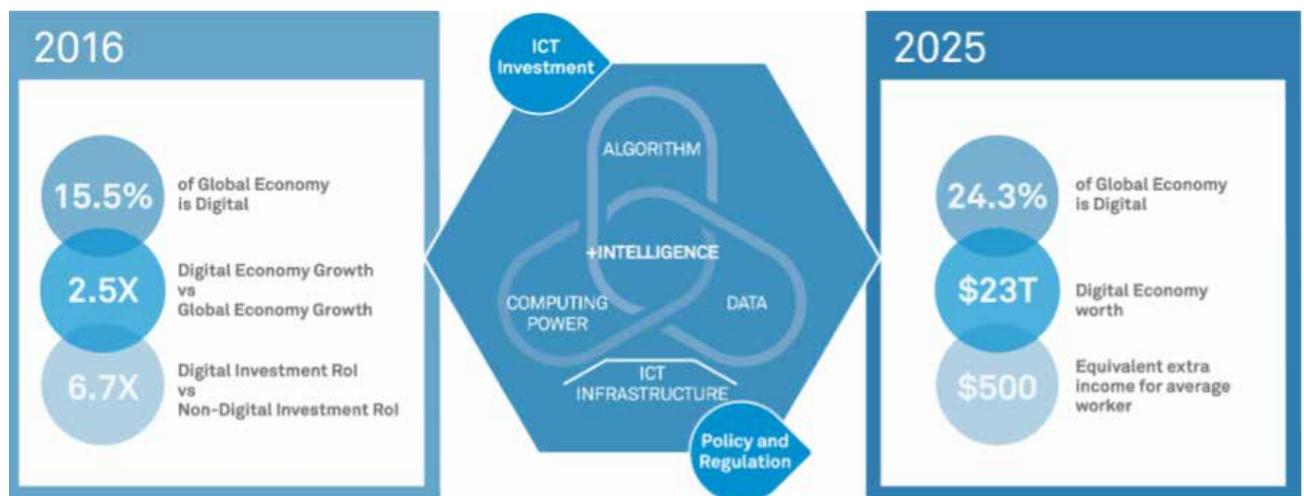
Chapter II:

Digital Economy Panorama

Global trends in digital economy development

This part summarizes opportunities enabled by emerging digital technologies, in rising new business models that have affected postal development. Digital technologies accelerates economic growth. In 2016, the value of global digital economy was worth US\$11.5 trillion, or 15.5 % of global GDP. The global digital economy has been growing at a rate two-and-a-half times faster than global GDP over the past 15 years. By 2025⁸, the digital economy is projected to reach an estimated value of \$23 trillion, or 24.3% (vs. 17.1% in 2016) of global GDP.

Figure 2.1 - **Forecasted Digital Economy Growth**



Source: Huawei, Oxford Economics

A disruptive impact of digital technologies also creates new challenges. The digital tools are driving new business models by altering how companies are structured and how they communicate and sell. This has triggered the digital transformation of the postal industry. Some of the challenges that will increasingly impact future of digital postal strategies includes Trust/cybersecurity, Digital Identify, Inclusion, Big Data and Digital Ecosystem.

Trust/cyber security

The importance of digital trust is manifold. Despite the opportunities provided by digital technologies, people are worried about their digital future. Digital trust is critical to posts in order to develop and maintain positive long-term relationships with their customers and other stakeholders. The acquisition and retention of customers and stakeholders value is reliant on posts' level of digital trust. It also means that the relationship between posts and its customers are no longer solely focused on digital postal services, but also the belief that their customers' private information is protected.⁸

The growth in cybercrime can also endanger both postal customers' private data and posts' critical digital infrastructures. Posts need to build customer resilience and capabilities and require more effort to improve the security of postal digital processes and e-services. Therefore, a cybersecurity framework is required to instil trust among digital postal customers and stakeholders and deter cybercriminals.

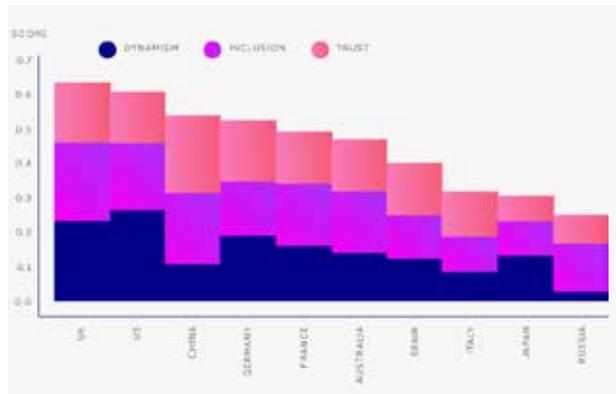
Digital identity

Digital identity is becoming increasingly important. It allows individuals to prove who they are and will be. It enables postal customers for accessing benefits and services via digital platforms. This move toward Digital Identity platforms can increase efficiency of postal service delivery, reduce transaction costs, increases transparency and enable postal development. Research shows that countries both from emerging and developed economies are making the transition to digital. The digital identity enabler score⁹ compiled by Dentsu Aegis Digital Society Index 2018 offers a snapshot of 10 economies ranking based on aggregated performance by country across three dimensions (Dynamism, Inclusion and Trust) of the index. Except China and Russia, all those top 10 scorers are all from industrialized countries, as shown in the figure 2.2.

8 <https://www.huawei.com/minisite/gci/en/digital-spillover/index.html>

9 https://dan.hu/wp-content/uploads/2018/03/DAN_Digital-Society-Index-2018.pdf

Figure 2.2 - The Digital Society Index 2018



Source: Dentsu Aegis Digital Society Index 2018

Inclusion

Only half of the world's population access and use the Internet. Post can leverage its vast infrastructure to help people access and use the Internet by removing digital divides. The primary means by which digital drives inclusion is via providing accessible information on postal products and services and connecting customers who may never have connected through traditional channels. The intrinsic value of digital platforms are serving as a bridge, maximizing scale, reach across income, and gender divides. Postal services can leverage its vast digital structures in providing digital products and services to people who are excluded via traditionally channels.

Big Data

According to some estimates¹⁰, 90% of the data in the world was created in the past two years. This puts more pressure on UPU to improve postal capabilities to measure Big Postal Data to support evidence-based decision-making to foster the postal digital development. UPU's Postal Technology Centre collects Electronic Data Interchange (EDI) messages based on real-time scans for each individual postal exchange between DOs in more than 150 countries. UPU can exploit analytical power of Big Postal Data for measurement digital postal development at regional and international level. This also enables UPU to use Big Data techniques for postal capacity building, create postal digital awareness and deliver technical assistances to the DOs of its member countries.

Digital ecosystem

Digital ecosystem is a platform enabling digital economy including digital postal development. It comprises companies, people, data, processes and IoT that are connected by shared use of digital platform. By 2025, emerging digital ecosystems could account for more than \$60 trillion in revenue¹¹. The new digital platform enables companies including posts to be more agile and adaptive. It also enables collaborative and provide mutually benefits to all parties involved. The digital ecosystem is an ideal place for posts to create a digital postal services platform that can shift around and quickly be adapted to the ever-changing needs of its customers and stakeholders.

Regional trends in digital economy development

Below we consider some examples of policies from around the world. There are numerous similarities and differences between them, but one thing they all have in common is a lack of direct relevance to services provided by national postal providers.

World Economic Forum National Digital Policy Playbook 2017

In its 2017 publication, the WEF produced a white paper that reviewed the impact of digital change throughout the world. Its premise was *"as the Fourth Industrial Revolution begins to affect the economic and societal layers of the digital economy, the challenges related to ensuring fair and accountable outcomes for that economy are complex. Uncertainty, opacity and the velocity of change demand new approaches for strengthening trust and inclusion."* The white paper identified four key themes that were part of national digital policy, and gave country examples within each theme:

Ensuring innovation in digital governance and access

- **Brazil:** Developing a multi-stakeholder Internet governance model
- **Colombia:** Increasing Internet access and the use of information and communications technology
- **Rwanda:** Fostering Internet access and use as a strategy for innovating and rebuilding a nation
- **Lebanon:** Building out post-conflict Internet infrastructure through multi-stakeholder efforts
- **Switzerland:** Creating networked transformation processes through dialogue

¹⁰ <https://www.forbes.com/sites/bernardmarr/2018/05/21/how-much-data-do-we-create-every-day-the-mind-blowing-stats-everyone-should-read/#6cf4fae460ba>

¹¹ <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-strategy-and-corporate-finance-blog/if-youre-not-building-an-ecosystem-chances-are-your-competitors-are>

Developing a smart society and public services

- **Singapore:** Empowering citizens in a smart nation
- **Estonia:** Expanding digital identity and literacy for innovative public services
- **India:** Catalyzing transformation through digital identity
- **United Arab Emirates:** Accelerating the digital dividend in government services

Growing the digital economy

- **United Kingdom:** Developing the digital economy through careful targeting of government support
- **Sweden:** Laying the foundations for a generation of technology entrepreneurs
- **Kenya:** Harnessing digital technology to drive economic development and provide employment
- **Costa Rica:** Establishing tax incentives and a commitment to free trade to attract foreign investment in high-tech

Protecting digital infrastructure, business and fundamental rights

- **Australia:** Strengthening national cybersecurity in pursuit of innovation, growth and prosperity
- **Israel:** Delivering a national cybersecurity initiative
- **Japan:** Promoting security by design in policy and practice
- **Germany:** Enabling a trustworthy digital agenda

Source: www3.weforum.org/docs/White_Paper_Digital_Policy_Playbook_Approaches_National_Digital_Governance_report_2017.pdf

The four pillars focus on soft issues such as governance, smart society, digital economy growth and digital security. There is little to provide comfort for the postal sector!

European Union Digital Single Market Strategy

Adopted in 2015, the EU digital strategy has three pillars with 16 specific initiatives:

Pillar 1 – Access

1. **Rules to simplify cross-border e-commerce**
2. Enforcing consumer rules
3. **More efficient and affordable parcel delivery**
4. Preventing unjustified geo-blocking
5. **Launching anti-trust competition inquiry into e-commerce**
6. A modern more European copyright framework
7. A review of the satellite and cable directive
8. Reducing VAT-related burdens across borders

Pillar 2 – Environment

9. Making telecoms rules fit for purpose
10. A review of the audio-visual media framework
11. An analysis of the role of online platforms
12. Reinforcing trust and security in digital services
13. A partnership with industry on cybersecurity

Pillar 3 – Economy and society

14. Addressing barriers in European data economy
15. Defining priorities for standards for interoperability
16. Supporting an inclusive digital society

Source: <https://ec.europa.eu/digital-single-market/en>

Of the 16 initiatives, three are related to the postal sector, and more specifically e-commerce. Two relate to laws and regulations, and the third to more efficient and affordable parcel delivery. None are specifically beneficial to national postal operators, and none of the other 13 initiatives are related to traditional postal services.

Digital Middle East

A report by McKinsey identifies four pillars and 10 initiatives to develop the digital agenda in 10 countries in the Middle East.

Government	<ol style="list-style-type: none"> 1. Move from e-government-focused digital initiatives to full digital economy development 2. Empower national digital agencies 3. Create policy frameworks that foster, and do not hamper, digital innovation 4. Seize the opportunity of large public IT spending to create home-grown IT players at scale
Business	<ol style="list-style-type: none"> 5. Take the once-in-a-lifetime opportunity to create critical digital platforms for the region 6. Step up the collaboration among corporations and digital disrupters in the region 7. Embrace agility through digital to address the ever-faster business environment
Funding	<ol style="list-style-type: none"> 8. Scale digital venture capital funding and increase visibility of investment opportunities
Talent	<ol style="list-style-type: none"> 9. Create digital curricula and seamless learning pathways from primary schools to higher education and into employment 10. Rethink how to attract and retain digital talent and reconsider applicability of nationalization to digital

Source: McKinsey – Digital Middle East: Transforming the region into a leading digital economy

None are related to the postal sector.

United Kingdom

The UK developed a digital policy in 2017 focused on seven key areas:

The United Kingdom Digital Policy 2017

1. Building world class digital infrastructure for the UK – this strand is mainly about implementing a universal service obligation to ensure every individual and business has access to high speed broadband connectivity.
2. Giving everyone access to the digital skills they need – this strand will ensure no one in the UK is left behind with regard to digital skills by providing access to free digital skills training.
3. Making the UK the best place to start and grow a digital business – this strand will work with regulators to encourage innovation-friendly regulations to help create the right conditions for economic growth.
4. Helping every British business become a digital business – this strand will provide incentives and training for businesses to adopt digital practices to ensure they can compete globally.
5. Making the UK the safest place to live and work online – this strand will ensure the UK cyberspace is as safe as it can possibly be from hacking and protect the interests of vulnerable users such as children.
6. Maintaining the UK government as a world leader in serving its citizens online – this strand aims to provide more online content to citizens when accessing local and national governmental services and education.
7. Unlocking the power of data in the UK economy and improving customer confidence in its use – this strand aims to make the UK a data-driven economy that fuels economic and social opportunities for everyone, while protecting consumer data through better data regulations.

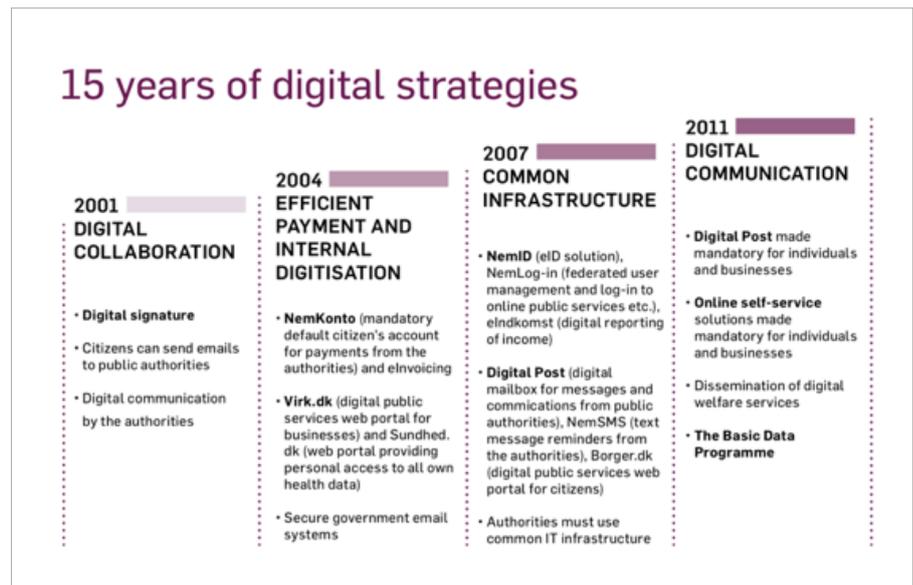
Source: <https://www.gov.uk/government/publications/uk-digital-strategy>

The UK digital policy was written in 2017, and none of it relates specifically to either the postal sector or the development of the national postal operator. The UK is an interesting case, because its designated operator, Royal Mail, is a private company operating in a fully liberalized market. Meanwhile, the UK post office network is owned by the government, although the majority of outlets are offered through an agency model.

In fact, the digital policy potentially detracts from the interests of both Royal Mail and the Post Office. A universal service offering broadband access to everyone means that people will rely less on visiting post offices for government services. The aim to be a world leader in serving citizens online also suggests relying less on physical mail and physical interaction in postal outlets. Digital opportunities for both companies will therefore be seen as business strategies rather than public policies.

Denmark

Denmark has been at the forefront of digital government since 2001. In 2016 it launched its fifth digital policy aiming for a “stronger and more secure digital Denmark”. As early as 2007, public authorities were sending mail electronically through a digital mailbox, and its use became mandatory in 2011. A government initiative to transfer from physical to electronic mail was bad news for the national postal operator, with mail volumes falling by 90% since 2000.



The consecutive digital policies implemented in Denmark have led to it being described as the most highly-digitized country in the world. This can be seen as good news for the wider economy, but the negative impact on the national Post has been significant. It is therefore essential that alongside any digital policy there is a parallel postal sector policy that can anticipate and plan for any negative impact on the national Post. In the case of Denmark, a 90% reduction in mail volumes has a massive impact on the unit cost of providing universal service, and there is a need for this to be addressed through a review of the universal service definition.

Digital policy summary

Be they global, regional or national digital policies, the common theme is that the Post does not specifically feature in them. Indeed, the policies shy away from government control and seek to enhance the economy through participation of individuals and businesses. The policies are providing the tools to enable citizens and businesses to access services more easily, more equitably and with transparency.

At the same time, the digital policies are not holding Posts back, although some of the policy aims will impact negatively on traditional postal services in terms of reducing physical mail and physical transactions at postal outlets. The general objective of all the digital policies is to use the power of technology to enhance peoples' lives. Posts therefore have a part to play in delivering the digital agenda as much as any other business, but they must fight for their right to play a role alongside the private sector.

The only clear link between Posts and digital policy was in the EU digital strategy, where three objectives were linked to the postal sector. The first is to simplify cross-border e-commerce and the second is to make parcel deliveries more efficient and competitive. Since the parcels market is fully liberalized – even for small packets below 2 kg – these two objectives may be good news for neither the national operators nor the private carriers. The third area with a link to the postal sector was a legal inquiry into antitrust in e-commerce, which may have a marginal impact. But even these three objectives were linked to the wider postal sector, which includes all players in the “traditional” postal market, and not just national postal operators.

The digital transformation of the postal industry

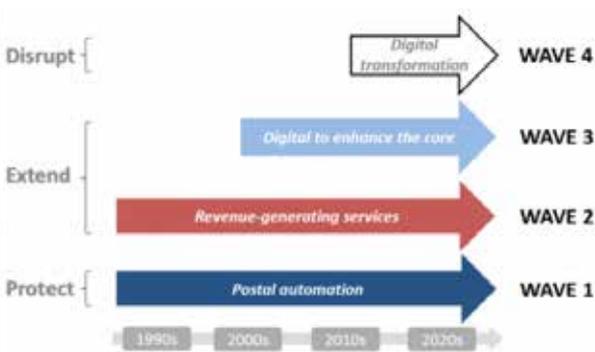
This chapter reviews the different waves of digital innovation over the past few decades, and the key steps that postal operators need to take to progressively implement digital transformation. It then addresses the different ways to measure its results and impacts. Finally, the chapter presents some examples of successful digital innovations that illustrate some of the Posts’ recent achievements in this area.

The technological drivers of digital transformation

The four waves of digital innovation

Almost 30 ago, the first waves of digital innovation started to impact postal operators. Digital means of communications slowly caused what was then called “e-substitution” – a gradual switch from paper-based to electronic communications. In recent years, the scope of digital innovation has grown considerably. It now impacts all processes and functions of a Post, from operations to customer service. On the one hand, it has spawned the emergence of new types of competitors, such as on-demand delivery platforms, which may threaten the postal “last mile”. On the other, it can help Posts protect their core business, increase cost efficiencies, and innovate in new products and services. In a nutshell, digital transformation provides opportunities for Posts to ensure their long-term relevancy and diversify by creating new sources of revenue. The following section describes the waves of digital innovation that major Posts have undergone.

Figure 2.3 - The four waves of digital innovation in the global postal sector



Source: OIG analysis, “Riding the Waves of Postal Digital Innovation”, RARC-WP-16-014, 2016, <https://www.uspsaig.gov/sites/default/files/document-library-files/2016/RARC-WP-16-014.pdf>

Wave 1 – Postal automation: Starting in the early 1990s, in a context of fast-growing mail volumes, the digital efforts of Posts were primarily focused on rationalizing and automating sorting centres. Mail tracking, then a novel technology, was first introduced for high-end express items, then extended through massive projects like the intelligent mail barcode in the United States. Additionally, machines that sort letters and flats together into carriers’ walk sequences have been installed in sorting facilities. Now, with mail volumes shrinking and e-commerce growing, Posts are shifting investments from mail-centred to parcel- and recipient-centred value chains. Robotics, the Internet of Things, and on-demand delivery apps are likely to bring more efficiencies to sorting and delivery in the near future.

Wave 2 – Revenue-generating services: Many Posts hoped they could replace lost mail revenue with income from digital services. They anticipated a role for themselves in the management of electronic communications and transactions between governments, businesses (such as banks or utilities), and citizens. They would attain that role through their physical proximity to citizens and government, as well as their reputation for trust, reliability, and security. A few Posts have, at least in part, enacted that vision.

Wave 3 – Digital to enhance the core: As broadband penetration and Internet use increased in the early 2000s, so did efforts to digitize parts of the mail chain, in particular the upstream stages of mail creation. The objective was to expand customer access to postal services and create new services at the intersection of physical and digital mediums. Many Posts introduced services that combine elements of a digital first mile – that is, using digital means to enter a piece into the mail stream – and the ubiquity of the physical last mile – such as hybrid mail or print management. These operators also put basic services online (e.g., postcode lookup, change of address, and price calculators) to increase customer convenience and simplify access. More recently, the emergence of mobile apps and new data collection technology, for example, have improved customers’ experience. Through these, Posts strive to bridge their digital and core businesses to provide customers with the level of immediacy, control and information granted by the Internet. In the future, by further integrating their information systems with those of mailers, e-merchants, technology partners, and even individuals, Posts will be able to respond to customer needs in real time.

Wave 4 – Digital transformation: Digital transformation is not about any particular function: rather, it is about updates in technology, processes, culture, and business models. For example, connectivity, cloud and data analytics can enable faster innovation, more informed data-driven decisions, and quicker execution. These technologies create opportunities to experiment with new models and respond faster to retailers’ and consumers’ evolving preferences for faster, more flexible delivery options. For postal operators, investing in and implementing digital innovation across the organization is a long-term roadmap, whose impacts are just starting to be felt.

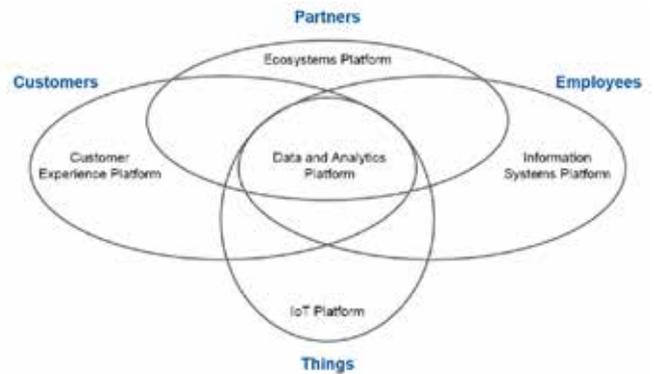
12 By Jean-Philippe Ducasse jpducasse@uspsaig.gov and Christopher Montgomery cmontgomery@uspsaig.gov (US Postal Service Office of Inspector General, Digital and Global Team). The views expressed in this chapter do not necessarily represent the views of the US Postal Service Office of the Inspector General.

The digital technology platforms

From a technical standpoint, digital transformation requires Posts to acquire or improve their IT capabilities in several areas. Here, Posts can benefit greatly from developing what Gartner Inc., the IT research and advisory firm, refers to as “the digital business technology platform”. This platform includes five major capabilities:

- Information platform systems that support back office and operations such as Enterprise Resource Planning (ERP) and core systems;
- A customer experience platform containing outward-facing elements such as customer portals, multichannel commerce and mobile customer applications such as delivery management apps;
- Data and analytics platforms that improve information management and decision-making capabilities. Big data repositories store operational and tracking data, while data management programs and analytical applications organize the data and help managers act on them. For example, data analytics, supplemented by machine learning, can help predict volumes and prevent and mitigate operational bottlenecks;
- An Internet of Things (IoT) platform that connects physical assets to a central warehouse for monitoring, optimization, or control and monetization. This may include sensor-based management of a postal fleet. Capabilities include the capture of sensor data, location intelligence (for example, the digital mapping of postal vehicles or routes and customers’ actual locations), analytics applied to the data, and their integration to the Posts’ operational technology systems;
- Ecosystem platforms supporting the creation of, and connection to, external marketplaces, communities, or supply chain partners. Sharing postal data with external partners allows for a smooth exchange of data between Posts’ and partners’ information systems, mainly through APIs (application programming interfaces). This is where Posts connect, for example, to e-commerce websites and shipping platforms, large mailers and consolidators, and, potentially, cities, government agencies or private delivery or financial services partners.

Figure 2.4 - The digital business technology platform

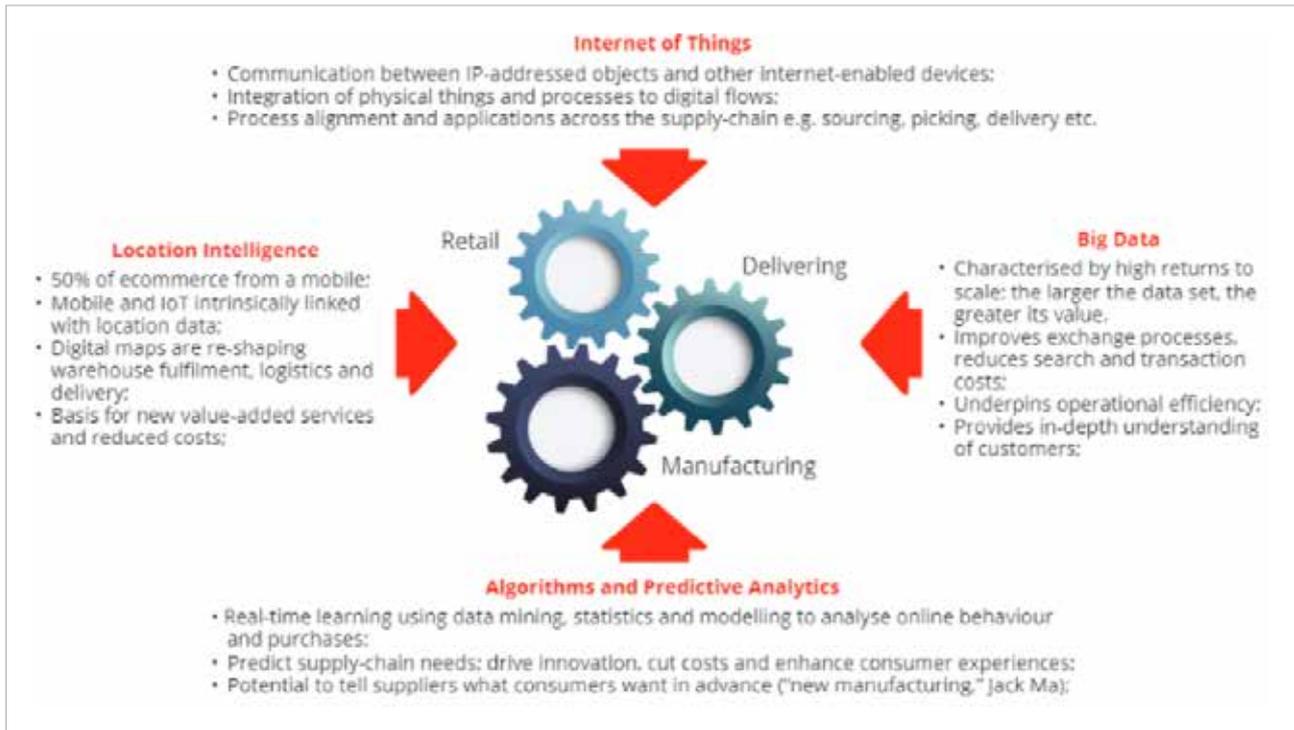


Source: Gartner, Building a Business Technology Platform, 8 June 2016, https://www.gartner.com/binaries/content/assets/events/keywords/symposium/esc28/esc28_digitalbusiness.pdf

Together, these platforms make up the technological “engine” that will allow Posts over time to solve some of today’s key problems, such as:

- Synchronization of the supply chain – from shipping to delivery both domestically (figure 2.5) and across borders.
- The reinvention of parcel delivery in urban areas, through collaboration between the Post and different partners, such as on-demand delivery companies, parcel locker firms and retailers.

Figure 2.5 - Supply-chain synchronization



Source: Tim Walsh (Pitney Bowes), Synchronized Commerce, Mail and Express Review, Summer 2017, p.64.

Data governance systems

Digital technologies allow the collection, sharing and storage of huge quantities of operational and customer data. For example, the increased automation of letter and parcel processing generates billions of tracking data points: over 3 billion data points are measured through UPU systems annually. To mitigate the risks involved in the handling of such data, postal operators are strengthening data governance systems – internal company rules regulating the management, usability, integrity, and security of data generated in an enterprise.

The main factors that provide the impetus for data governance initiatives are risk mitigation, revenue optimization, and cost control. Poor data governance creates losses in end-user productivity and results in bad business

decisions based on poorly organized, low quality and inaccessible data.

Regarding data security specifically, one of the main challenges Posts face is combating the rising threat of cyberattacks and safeguarding the information of postal customers, business partners, and employees. For example, the United States Postal Service has set up a Corporate Information Security Office, whose role is to ensure that information security is a top priority for the Post by “investing in infrastructure, assets, and personnel to defend against advanced cyber threats” (figure 2.6).

While the level of investment and the technologies required may vary across countries, Posts’ efforts to better manage and protect their data assets will be key to the success of their digital transformation.

Figure 2.6 - Fostering a culture of information security: the USPS Corporate Information Security Office (CISO)



Source: USPS Corporate Information Security Office, Presentation to MTAC, April 2017, https://ribbs.usps.gov/mtac/documents/tech_guides/2017/presentations/opensessions/APR2017MTACOpenSessionPresentations/CIOMTACAPRIL2017.pptx

The “cultural” drivers of digital transformation

Faster, more effective innovation is a key aspect of Posts’ digital transformation. Posts, like private companies, need to harness the brainpower of their own employees, but also benefit from collaborating with external partners.

Innovation programmes

Simple e-mail invitations to employees to contribute ideas are not sufficient to inspire innovation. Rather, structures must be put in place to encourage collaborative brainstorming. A number of Posts have rejuvenated the antiquated “ideas box” concept found at many workplaces and turned it into an effective tool to unlock employees’ ability to ideate new processes or products.

Posts are also developing capabilities to work with external innovators. Historically, Posts were close to a few large suppliers and partners that catered to their automation and information systems requirements. As they embarked on their digital transformation journey, Posts increasingly sought to team up with new types of agile innovators, many of them start-ups (figure 2.7). Engaging the assistance of start-ups often calls for specialized forms of partnership, like incubators and accelerators, which involve a trade of mentorship for intellectual property.

For example, Swiss Post’s PostVenture17 sought new business ideas from employees but also external innovators and companies. The ideas had to support the Post’s strategic objectives in seven areas: cross-channel communications, Business process outsourcing and shared services, digital banking, solutions aimed at large business customers, digital trust, e-commerce, and mobility.¹³

Of all the concepts proposed, the best were selected as finalists by a jury of experts, and a few were chosen for full-fledged testing. Swiss Post has introduced a process to get promising projects ready for market quickly, ideally less than eight months after generation. To do so, innovators are assisted by experts from the Post and from academia, and also receive initial seed funding.

Such collaboration allows start-ups to benefit from a Post’s know-how, infrastructure and network. Posts get a unique opportunity to identify best-in-class innovators early, help shape the company’s output, and test their services in a “real-life” environment. However, Posts are not always comfortable with these forms of collaboration, and end up missing out on some opportunities because of culture issues. While start-up culture is based around high-risk, bold ideas, Posts often move slowly and tend to be conservative in considering cultural changes.

Incubators and accelerators are not the only examples of collaborative innovation research. Other outreach programs include:

- **Hackathons** – gatherings where developers work collaboratively over one or two days to develop new software applications, often based on postal datasets. One example is Australia Post’s Hack Dayz.
- **Information-sharing workshops and seminars**, such as Deutsche Post DHL’s Innovation Days.
- **Innovation monitoring**, either through offices as outposts or through market intelligence companies in Silicon Valley that report back and help Posts identify suitable technology partners. USPS has recently partnered with such a company.
- **Innovation centres**. Deutsche Post DHL was a postal pioneer in the creation of dedicated platforms for collaborative innovation, first in Germany then since 2015 in Singapore (Asia-Pacific Innovation Center). Research areas include self-driving vehicles, robotics, the Internet of Things and augmented reality.
- **Venture capital units**, as pioneered by La Poste Group as early as 2004.

In addition to collaborative innovation efforts, a number of Posts choose to make small, highly targeted acquisitions to investigate the potential of new market segments and new technologies. In last-mile delivery, for example, La Poste Group’s GeoPost has invested in Stuart, an on-demand crowdshipping delivery company active in three European countries. Belgium’s bpost has taken over Bringr, a peer-to-peer parcel delivery platform in Belgium.

¹³ PostVenture — Swiss Post Innovation Programme, <https://www.post.ch/en/about-us/company/innovation/postventure>

Figure 2.7 - Selected external innovation programs from sector players (2017)

	Goals	Activities
Australia Post Accelerator	Accelerator provides funding, resources and Australia Post assets to help start and rapidly scale businesses.	Incubate, invest in and support companies that are aligned to one or more of the following three arenas: e commerce, trusted services (digital solutions) and social inclusion.
La Poste Start 'inPost	Accelerator to support startups active in La Poste's growth areas: B2B e commerce, local logistics, Internet of Things, e-health and services for older people, and digital trust services (secure ID, archiving, payment solutions).	Mentoring, assistance with business tests, strategy and operations. Support is free but La Poste reserves the right to take a minority share in the company.
PostNord Logistics Lab	Developed a rapid prototyping capability based on a cloud platform. Takes ideas from inception to live prototype in three-week iterations.	Prototyping, developing, testing new services.
Poste Italiane	Identify, screen, and test innovative solutions applicable to the Post. Partnership with incubator Digital Magics.	Creation of Poste Italiane's Open Innovation Campus in Rome.
Swiss Post	PostVenture: identify and select new business ideas proposed by staff or external innovators.	Selected entrepreneurs are asked to create a prototype and develop a business plan. Outcomes include partnership or commercialization of new product by Swiss Post.
Polish Post	"Looking for innovative companies that could complement our offerings and increase effectiveness of our services". Partnership with Polish Industrial Development Agency.	Launched an external innovation site (https://synergia.poczta-polska.pl/en/home-page) that innovators can use to propose ideas in seven different areas.
DPD UK (La Poste Group)	Last Mile Lab programme: identify and support innovators in digital technologies that could shape the future of delivery (delivery experience, real-time vehicle/customer interaction, data analytics). Partnership with a technology investment fund.	Selected teams receive mentoring from industry entrepreneurs, access to DPD parcel data, and initial funding. Annual budget is about five million USD.
FedEx	Since 2014, provides financial support to a logistics accelerator in Memphis EPICenter. The Entrepreneurship-Powered Innovation (EPI) Centre aims to support local innovative startups.	Mentoring, accelerator and incubator programmes, networking and investment.

Source: USPS OIG

Building a digital human capital

To fully take advantage of new digital technologies, Posts must also make adjustments to staff skillsets. Figure 2.8 shows the type of highly-specialized jobs that are required to create data analytics models (data scientists), interpret results, communicate these insights and, last but not least, make informed strategic and operational decisions.

Figure 2.8 - Description of data science and analytics (DSA) jobs

	DSA Framework Category	Functional Role	Sample Occupations
 Analytical Rigor	Data Scientists & Advanced Analytics	Create sophisticated analytical models used to build new datasets and derive new insights from data	Data Scientist Economist
	Data Analysts	Leverage data analysis and modeling techniques to solve problems and glean insight across functional domains	Data Analysts Business Intelligence Analyst
	Data Systems Developers	Design, build and maintain and organization's data and analytical infrastructure	Systems Analyst Database Administrator
	Analytics Managers	Oversee analytical operations and communicate insights to executives	Chief Analytics Officer Marketing Analytics Manager
	Functional Analysts	Utilize data and analytical models to inform specific functions and business decisions	Business Analyst Financial Analyst
	Data-Driven Decision Makers	Leverage data to inform strategic and operational decisions	IT Project Manager Marketing Manager

Source: The Quant Crunch: How the Demand for Data Science Skills is Disrupting the Job Market, Burning Glass Technologies, 2017, p.5. http://burning-glass.com/wp-content/uploads/The_Quant_Crunch.pdf

Besides hiring experts, or partnering with software firms, there are many actions Posts can take to boost their data analytics capabilities. First, Posts should define the data jobs and skills they need and identify talent already available or ready for “upskilling” in the organization. Second, all employees, regardless of position or job function, need to gain a minimum level of “data literacy”. “Boot camps”, internal training programmes, or data labs can help with that. (Data labs bring together learners, experts from the industry and universities to collaborate on the Post’s data “problems”.)

The focus on new digital skills as such is not the only critical aspect of the transformation of Posts’ culture. As recently noted by the MIT (Box 1), traditional soft skills, such as communications, leadership and teamwork remain essential components of successful digital organisations.

Box 1: The Importance of Soft Skills

“The rise of tools such as predictive analytics, the Internet of Things and blockchain places greater demand on supply chain professionals for the technical skills to understand and apply the dizzying array of new technologies in modern business [...]. In the rush to keep up with these technological demands, we may be leaving behind attention to the soft skills such as communications, leadership and teamwork that are critical to managing organisations and turning corporate strategies into reality”.

Prof. Yossi Sheffi (MIT), Solving the Soft Skills Gap in Supply Chain Management, UPS Longitudes, 26 November 2017, <https://longitudes.ups.com/solving-the-soft-skills-gap-in-supply-chain-management/>

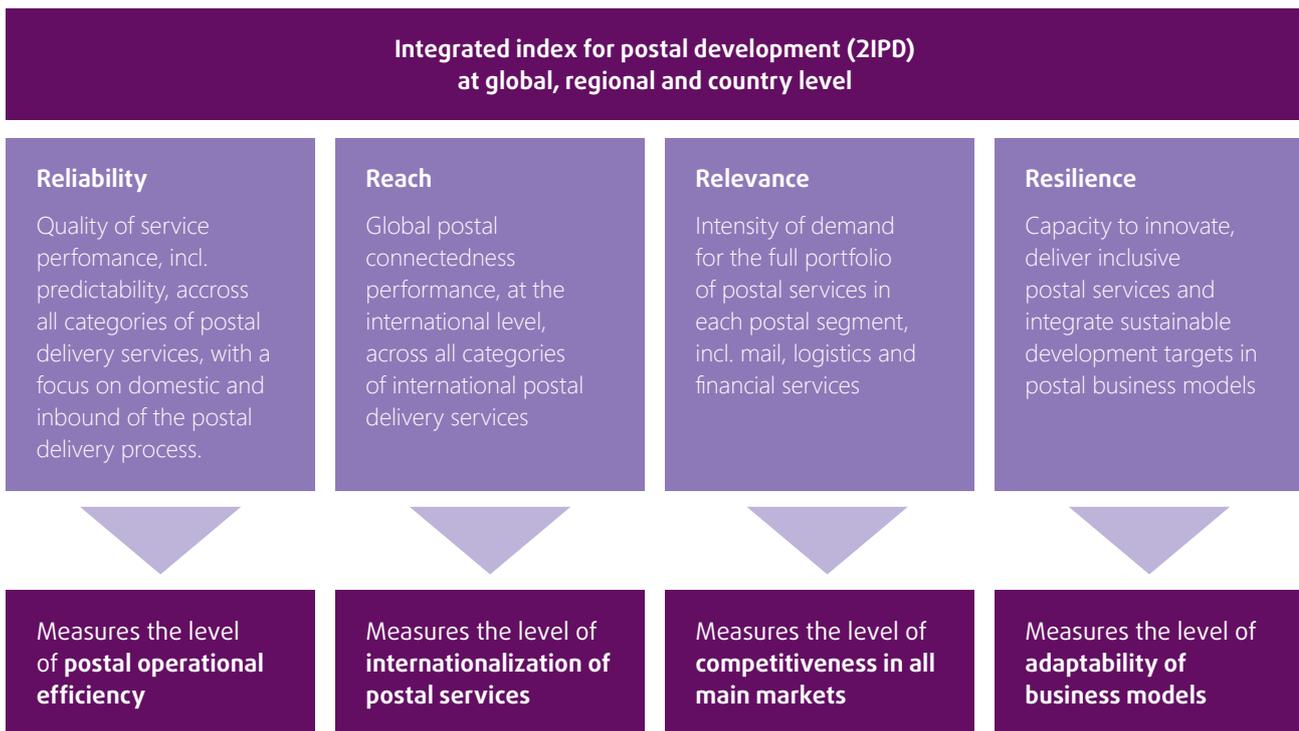
Measuring the strategic value of digital transformation

The impact of digital transformation on a Post’s long-term sustainability is multi-pronged: it may impact a Post’s costs and productivity, revenue and profits, customer satisfaction, quality of service, and ability to compete. Its combined effects are therefore difficult to comprehend. Several complementary tools, serving different purposes, have recently been proposed.

Relating innovation to resilience and overall postal development. The capacity to innovate helps Posts build resilient business models (figure 2.9). 2IPD is a composite index providing an overview of postal development around the world, at a global, regional, and country level.¹⁴

Figure 2.9 - **The Structure of the UPU 2IPD Index, Overview of the methodology**

Source: Universal Postal Union



Measuring how Posts perceive their peers’ innovation capabilities. A 2017 survey by Escher Group, a provider of postal automation solutions, used experts’ views to assess how innovative Posts are. The main conclusion was that Deutsche Post, Swiss Post and Singapore Post are the “three organizations most admired by the postal industry”.¹⁵

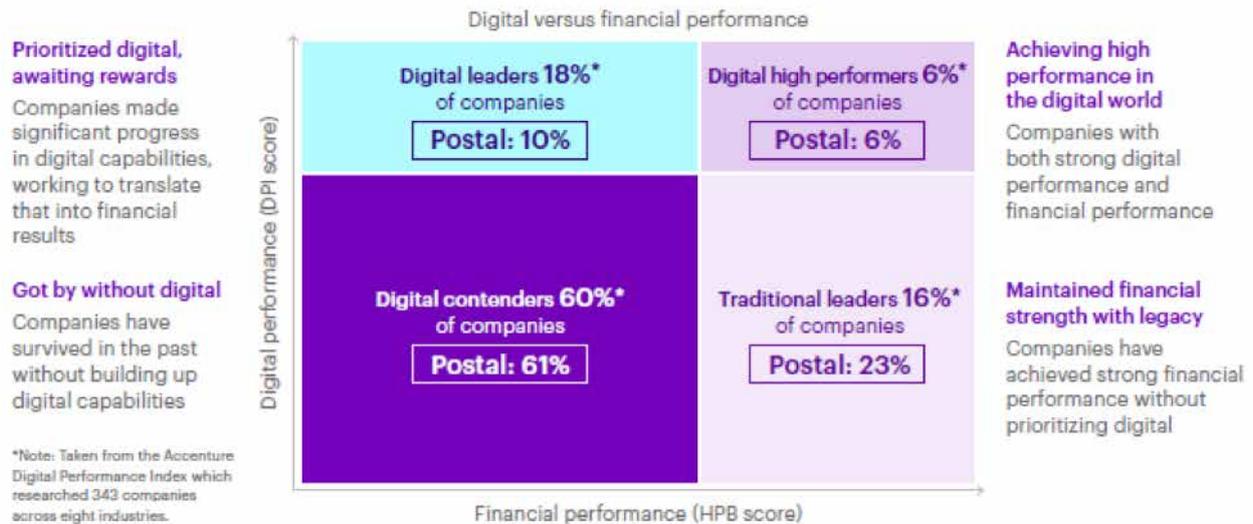
Linking digital innovation to financial performance. Accenture, the management consulting and professional services company, has developed a post and parcel digital performance index to compare Posts’ current digital capabilities. One of the main conclusions is that Posts overall are successful at developing digital strategies. However they seem to struggle when it comes to implementation and profit realization. According to Accenture, only 6% of operators, called “digital high performers”, are achieving high performance both financially and digitally (figure 2.10).¹⁶

¹⁴ UPU, Integrated Index for Postal Development (2IPD) 2016 results, March 2017, www.upu.int/uploads/tx_sbdownloader/integratedIndexForPostalDevelopmentEn.pdf

¹⁵ Escher Group, The Future of Post Survey 2017.

¹⁶ On the profitability of Posts’ letter mail business and its drivers, see also USPS OIG, Mail Profitability in International Posts, RARC-WP-17-008, 2017, <https://www.uspsig.gov/sites/default/files/document-library-files/2017/RARC-WP-17-008.pdf>.

Figure 2.10 - Accenture post and parcel digital performance index



Source: Accenture, The New Delivery Reality, Achieving High Performance in the Post and Parcel Industry; 2016, <https://www.accenture.com/us-en/insight-new-delivery-reality-post-parcel-players>.

Measuring the return on investment (ROI) of digital transformation. Forrester, the market research company, has proposed that the success of digital strategies be measured on four dimensions: increased revenue, decreased operational costs, improved customer satisfaction, and enhanced differentiation of products vis-à-vis the competition (figure 2.11). The company must also identify the transformation costs incurred in transforming the organization into a digital one: for example, training, consulting, or technology purchasing costs.

Figure 2.11 - Measuring the impact of the digital transformation

Type of impact	Main metrics
Revenue	New customer acquisition Customer retention Sales revenue Customer lifetime value
Costs	Decreased operational costs resulting from more efficient processes Transformation costs: training, salary for new staff, cost of purchasing technology...
Customer experience	Customer satisfaction Reduced complaints
Differentiation	Lower time to market for new initiatives (e.g., creation of new products) Time to onboard new customers

Source: Adapted from Forrester, The ROI of Digital Business Transformation, 15 March 2017.

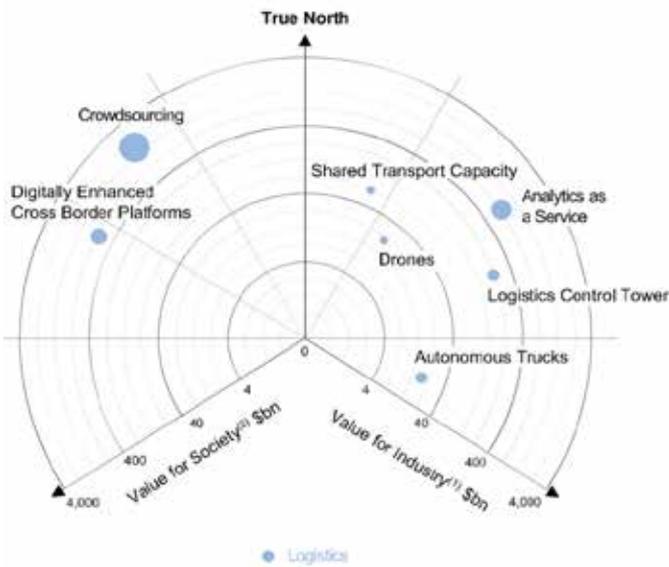
Estimating the relationship between digital postal services and human capital. Researchers at the University of Pardubice in the Czech Rep. have analyzed the relationships between the level of development of a country's Postal eServices (PeS) Index as measured by the UPU and its level of human capital development. One of the conclusions is "once human capital reaches a certain level, the speed of e-service adoption is higher, which leads to greater provision of digital postal services".¹⁷

Quantifying the impact of digital innovation on the Post and on society. In a 2016 report, the World Economic Forum (WEF) attempted to quantify, at a worldwide level, the total value that the digital transformation of the logistics industry could bring in the coming years not only to the industry, but also to society (figure 2.12).¹⁸ The WEF's "value-at-stake" methodology covers the years 2016 to 2025. It estimates the part of the industry's profits that will be generated by digital initiatives ("value addition"), as well as the "value migration", which is the part of the industry's profits that is expected to shift between different players. The impact on society measures the contribution that digital transformation could make to customers, society and environment in that nine-year time frame. This approach is fully relevant to postal operators, which represent a significant segment of the wider logistics industry.

¹⁷ Dalibor Gottwald, Libor Švadlenka and Hana Pavlisová, Human Capital and Growth of E-postal Services: A Cross-country Analysis in Developing Countries, Mechanics, Material Science and Engineering, May 2016, <http://mmse.xyz/Papers/ID20160425.pdf>

¹⁸ See <http://reports.weforum.org/digital-transformation/wp-content/blogs.dir/94/mp/files/pages/dti-logistics-industry-white-paper.pdf> and <http://reports.weforum.org/digital-transformation/wp-content/blogs.dir/94/mp/files/pages/dti-logistics-industry-slideshare.pdf>

Figure 2.12 - Delivering value through digital transformation for the logistics industry and society



Source: World Economic Forum, The Digital Transformation of Logistics, Threat and Opportunity, June 2016, <http://reports.weforum.org/digital-transformation/wp-content/blogs.dir/94/mp/files/pages/files/dti-logistics-industry-slideshare.pdf>

More research is likely to be conducted in the coming years to quantify the impacts of digital transformation on Posts, customers, and society as a whole. An under-explored but promising research area is the current and future impact of digital transformation on postal jobs, in terms both of number of positions and skills required. The UPU can play a key role in monitoring and encouraging such research or suggesting novel approaches.

The digital transformation of postal operators: select case studies

Over the past couple of years, Posts have piloted or launched a number of new digital services that leverage new digital platforms and technologies. The services described in this section demonstrate the value of digital in protecting and growing the Posts’ core business or extending it into new areas. They also represent first steps along their digital transformation journeys.

Swiss Post: autonomous passenger transport vehicle

Unlike most other Posts, Swiss Post has provided transportation services for its citizens for more than 100 years: its PostBus unit accounts for over 10% of the Post’s total revenue. In June 2016, Swiss Post debuted two autonomous shuttle buses in the city of Sion. These driverless shuttles, which cost 200,000 USD each, travel in a one-mile loop through the city centre, picking up and dropping off passengers. Up to now they have functioned well in predictable situations, but have required driver intervention when confronted with unexpected obstacles, such as a double-parked car.

Figure 2.13 - Swiss Post’s Autonomous PostBus



Source: <https://www.postauto.ch>

Support for the project has been strong before and since its launch. Sion city officials backed the idea while transportation authorities helped fast-track the technical inspections. On the customer side, feedback has been positive. By May 2017, the autonomous shuttles had carried 23,000 passengers, and a September 2017 study showed that 62% of citizens in Sion had no or very minor concerns about boarding a self-driving bus.

People seem willing to trust the technology with their safety – sometimes too willing. Pedestrians will occasionally jump in front of a moving shuttle to see if it stops, which, so far, it always has. Being the first European company to offer a driverless bus service, the Post said, also strengthened the Swiss Post brand.

After a year of successful pilot testing, Swiss Post and the city of Sion have announced their intention to continue the pilot up to the end of 2018. Moving forward, it plans to double the length of the autonomous shuttles' route and introduce them to higher congestion situations.

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<https://www.postauto.ch/en/news/initial-study-indicates-public-acceptance-self-driving-buses>

Posta Kenya MPost: making the mobile number the postal address

According to Kenya's National Transport and Safety Authority, more than 4,000 driving licences are returned every two months owing to failed delivery. MPost is a new e-service that enables any mobile phone user to use their phone to receive letters. By allowing users to make their mobile numbers their formal postal address, it provides them with access to letters and parcels wherever they are in Kenya. After registering, MPost users are asked to select the most convenient out of 622 nationwide post offices. Once the selected post office receives a mail item, the MPost user gets an SMS message notifying them that they have received mail.

Figure 2.14 - Posta Kenya's MPost



Source: <https://www.posta.co.ke>

Users can then choose to pick up the mail in person at the post office, or request that the Post deliver the mail to a specified location for an extra fee. In the event that an MPost user changes location, they can quickly update their preferred post office. The Postal Corporation of Kenya's MPost service costs 300 KES per year (2.90 USD), which is about 13% of the price of owning a physical post office box in Kenya. Within months of MPost's rollout, by June 2016, an estimated 21,000 Kenyans had already signed up for MPost.

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Moyi, John. "Postal Corporation of Kenya Goes Digital with MPost." Kenya Free Press. 06/18/2016. <http://www.kenyafreepress.com/business/technology/151/postal-corporation-of-kenya-goes-digital-with-mpost----posta-mkononi>

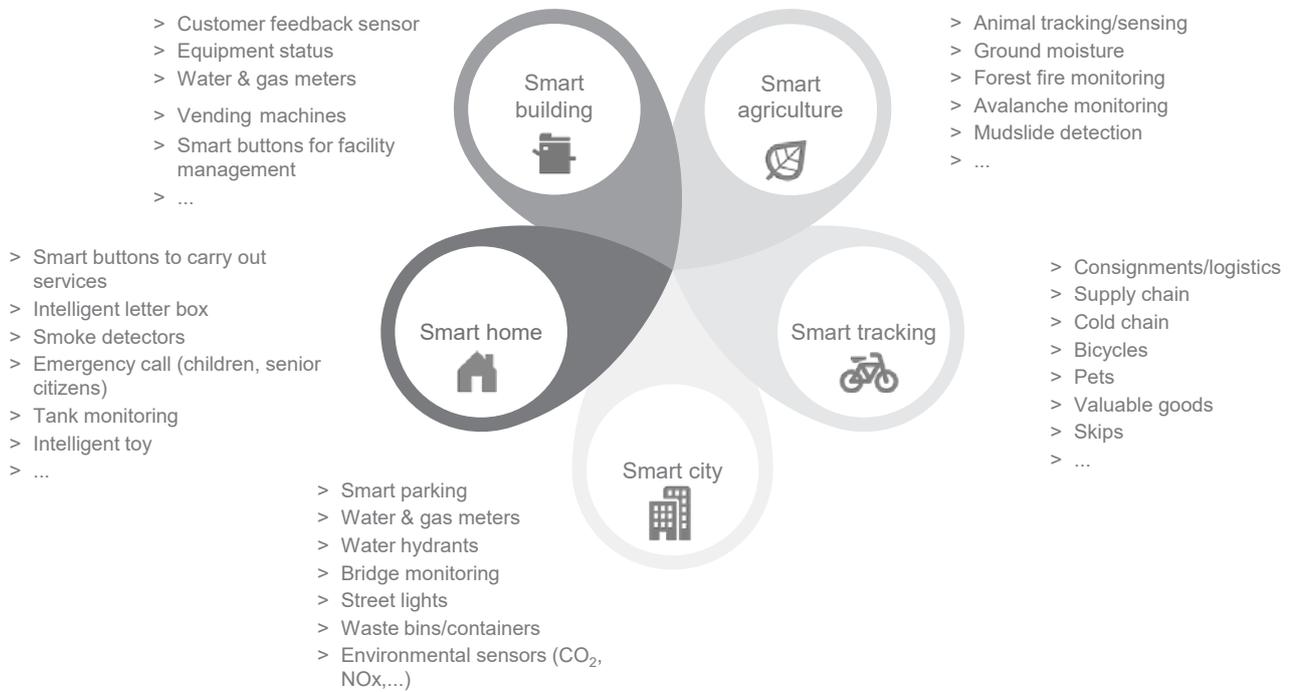
Swiss Post expands its Internet of Things platform

In early 2016, Swiss Post began developing its own “long-range wide area network” or LoRaWAN, with the intention of creating an Internet of Things (IoT) infrastructure throughout Switzerland. LoRaWAN and IoT would allow Swiss Post and others to connect a diverse range of objects and devices with a low cost and footprint. Swiss Post believes IoT can provide a number of useful postal applications such as inventory automation or consignment security, and even help facilitate on-demand delivery. The Post has already successfully tested a wireless button used to reorder medical supplies when supplies at a local hospital fell below a specified level. Additionally, Swiss Post has said it plans to open its IoT platform up to third-party customers as a means of creating an additional revenue stream.

After a year of testing its own IoT network, Swiss Post announced in March 2017 that it will partner with Swiss telecommunications provider Swisscom. Through this joint partnership, Swiss Post will allow

Swisscom to install approximately 200 low-power network reception stations. The Post estimated that the joint IoT infrastructure would cover approximately 90% of the Swiss population by the end of 2017. Swiss Post intends to continue expanding its use of IoT applications in the future.

Figure 2.15 - **Potential applications for Swiss Post’s Internet of Things**
Many areas of application for the low power network



Source: Swiss Post, <https://www.post.ch/-/media/post/ueber-uns/dokumente/anwendungen-lpn.pdf?la=en>

References:

<https://www.post.ch/en/about-us/company/media/press-releases/2017/swiss-post-and-swisscom-team-up-with-a-joint-network-for-the-internet-of-things>

“Swiss Post is Developing an Internet of Things.” Swiss Post press release, 2 March 2016. <https://www.post.ch/en/about-us/company/media/press-releases/2016/swiss-post-is-developing-an-internet-of-things>

“Swiss Post and Swisscom Team up With a Joint Network for the Internet of Things.” Swiss Post, 22 March 2017. <https://www.post.ch/en/about-us/news/posted/swiss-post-and-swisscom-team-up-with-a-joint-network-for-the-internet-of-things>

Sub-Saharan countries explore mobile applications

Recently, a number of Posts in developing countries have identified the importance of mobile technology in enhancing postal service access. In August 2015, Botswana Post unveiled its self-titled mobile app. The app was originally designed to allow customers to purchase prepaid electricity remotely. However, with future updates, the Botswana Post app will integrate additional services. Botswana Post plans to enhance the app to allow subscribers to access a number of postal services, as well as transacting third party payments and purchasing mobile airtime. Ultimately, Botswana Post hopes its app will allow more citizens to access Botswana Post's services, especially among the populations that live in remote and rural areas that lack a robust postal infrastructure.

Figure 2.16 - Advertisement for Botswana Post app



In addition, Posts in other sub-Saharan countries have increasingly turned towards developing mobile apps. The South African Post Office launched its free app in 2016, which allows customers to track their parcels, and locate the nearest branch. In 2017, the Postal Corporation of Kenya (Posta) released an expression of interest memorandum for the design, development and maintenance of a new mobile application. In the announcement, Posta Kenya lists an ambitious number of products and services it intends to offer on its app, including mail tracking, stamp purchase, postage calculator, and post office locator.

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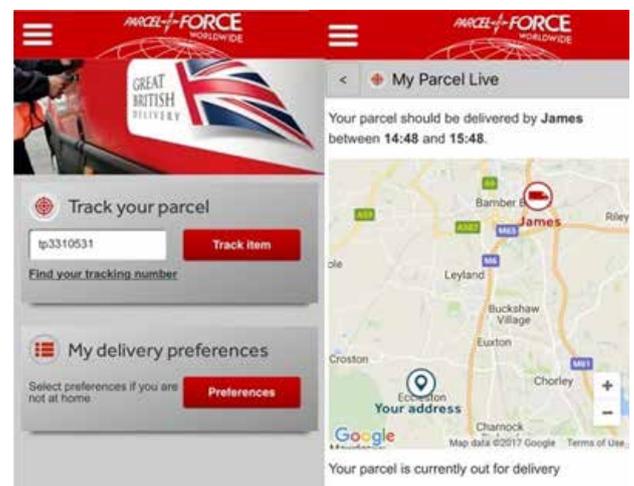
Parcelforce Mobile App, a step forward for on-demand delivery

In October 2017, the Royal Mail Group subsidiary Parcelforce Worldwide launched a range of digital tools designed to give package recipients more control of their delivery. The digital rollout includes a new Parcelforce app and "start-of-day" notifications.

With the Parcelforce app, package recipients can specify their delivery preferences beyond a static home address. Instead, customers can choose to leave a parcel with a neighbour in the same postcode area, a specified post office, or a designated "safe place". Users can access "My Parcel Live", Parcelforce's robust parcel tracking service, which shows users their delivery driver's name, a map showing the driver's proximity to the address, and an estimated one-hour delivery window.

In addition to the app, Parcelforce Worldwide has released a "start-of-day" notification service. Subscribers can receive daily text messages that contain the estimated hour of day their parcel will arrive, as well as the delivery driver's name, and a link to tracking and the My Parcel Live service. When faced with adverse weather conditions, for example, the start-of-day notification service provides subscribers with real-time delay notifications. This includes alerts to any delays to their delivery caused by unexpected circumstances such as bad weather or traffic delays.

Figure 2.17 - Subscribers can locate their Packages in Real Time Using the Parcel force App



Source: parcelforce.com

References:

"Parcelforce Worldwide Launches Range of Digital Tools, Giving Recipients More Control Over Their Delivery." Parcelforce Worldwide press release, 18 October 2017. <https://www.royalmailgroup.com/media/press-releases/parcelforce-worldwide-launches-range-digital-tools-giving-recipients-more>

Australia Post consolidates identification verification processes on digital ID platform

Figure 2.18 - The social benefits of digital identification in Australia

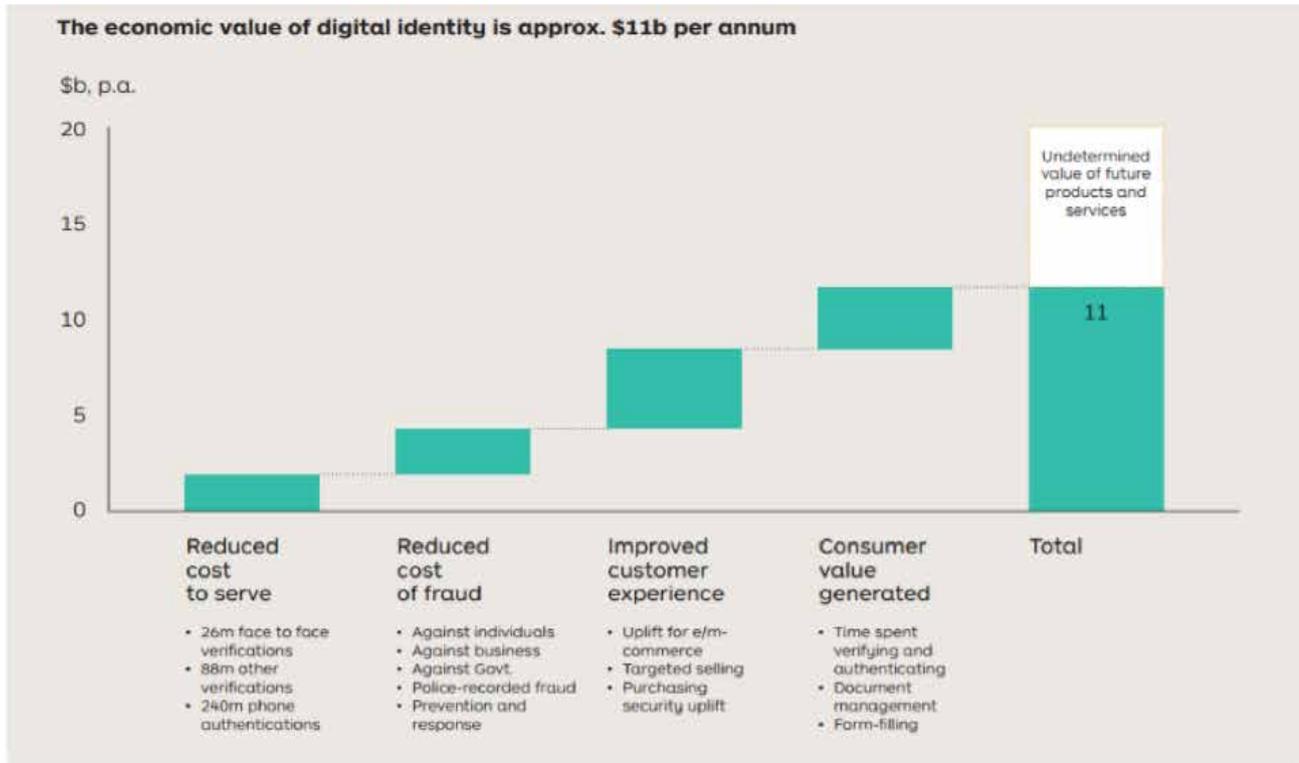
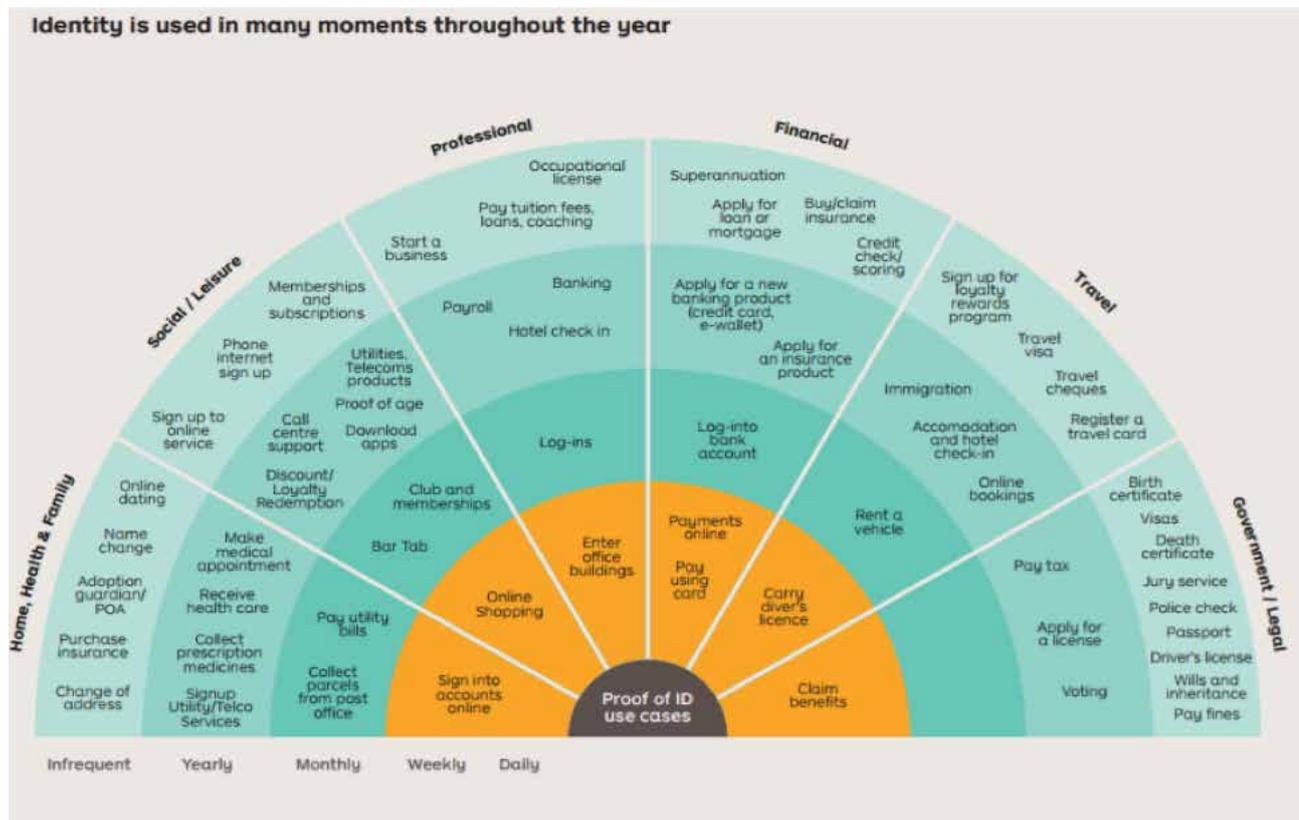


Figure 2.19 - Potential digital ID use cases



Source : Australia Post

Every year, Australians need to prove or verify their identity hundreds of millions of times to carry out everyday transactions. Australia Post estimates that current identity verification procedures cost billions of dollars in economic value. The Post believes that streamlining the identity identification process can save the economy an annual 11 billion AUD (8.36 billion USD) through:

- Reduced cost to serve;
- Reduced cost of fraud;
- Improved customer experience;
- Consumer value generated.

To combat the costs of such cumbersome verification requirements, Australia Post introduced its own digital identity platform in early 2016, called the Digital ID. The Digital ID app offers a simple interface through which users perform a one-time verification of their identity using a physical identification item (such as a passport, driver's licence or Medicare card). Upon completing the one-time identity verification, the Digital ID can be used to prove user identity wherever it is accepted. In addition to its already existing partnership with Queensland Police, Australia Post announced in August 2017 its first partnerships with online job marketplace Airtasker, credit union CUA, and foreign exchange company Travelex. Ultimately, Australia Post hopes the Digital ID will be universally accepted, allowing users to conveniently verify their identity anywhere from financial institutions the local pub.

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Tunisian eDinar: the first national currency using blockchain technology

The Tunisian Post handles approximately 700,000 active eDinar cards (eDinar is an electronic form of the nation's paper currency). In October 2015 Tunisia Post announced a partnership with a financial technology company in order to pilot blockchain integration into its existing eDinar platform. While cryptocurrencies are not authorized for use in Tunisia, the Post wanted to assess the merits of a "blockchain-inspired" platform. In this system, transactions between e-Dinar wallets are recorded securely and in a verifiable way in a "distributed ledger".

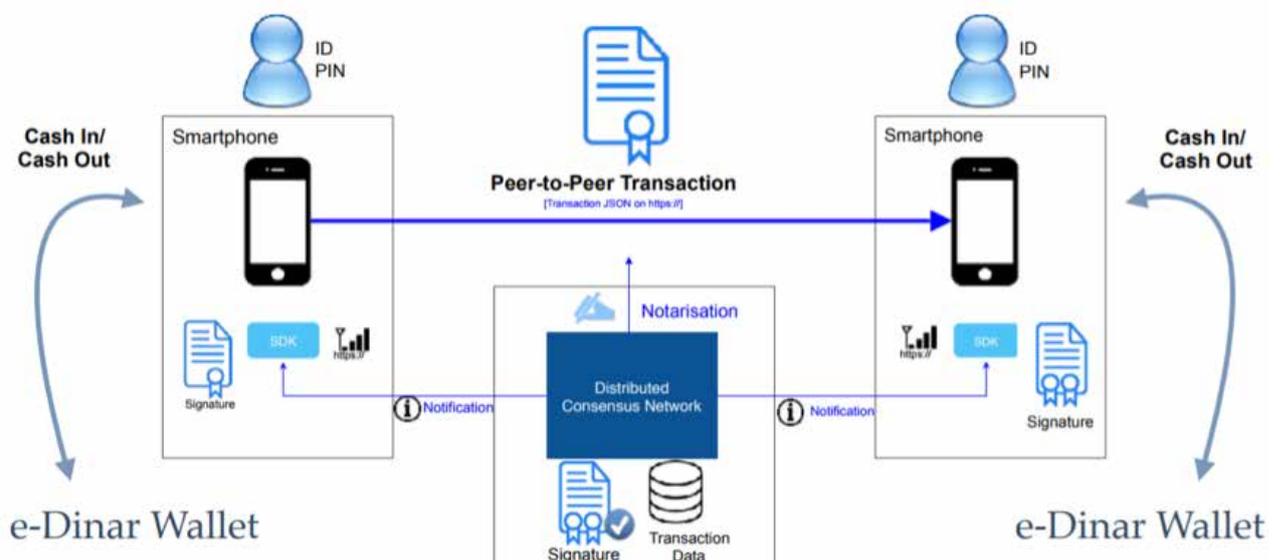
The first concrete outcome was the launch, in March 2017 of the blockchain-backed Digicash mobile wallet (see figure 2.20). The Digicash app allows eDinar card holders to send remittances and pay bills, and soon they will also be able to pay for e-commerce purchases.

Because blockchain technologies considerably lower transaction costs, Tunisia Post hopes, in the future, to leverage this technology as part of its strategies to increase financial inclusion.

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Figure 2.20 - Tunisia Post's "blockchain-inspired" Digicash platform – transaction architecture VIII.



Chatbots: customer service of the future

Every day, advances in artificial intelligence continue to improve the quality of natural language processing platforms. Natural language processing software applications, often nicknamed “chatbots”, are capable of identifying and processing written or spoken language (the type of language depends on the platform), and then send appropriate responses. Chatbots of varying levels of intelligence are becoming increasingly popular in customer service areas, as companies attempt to automate their client-facing operations. In fact, the Spanish postal operator (Correos) has long been operating its chatbot, Sara, to help customers with their postal-related questions. Sara can process text written in twelve different languages and directs customers with a list of links to helpful resources related to users’ queries.

In October 2017, La Poste Group (France) unveiled its own chatbot. It has been rolled out for use in La Poste’s new job recruitment website. The chatbot can understand the semantics, syntax and grammar of user queries. It responds to queries in real time, at any time, and guides applicants throughout their employment search. La Poste Group views its chatbot project as a means of enhancing its brand reputation as a modern and technologically integrated company.

Figure 2.21 - La Poste Chatbot



Source: <https://www.laposterecrute.fr>

Figure 2.22 - Correos’ customer assistant, Sara



Source: <https://www.inbenta.com/en/customers/correos/>

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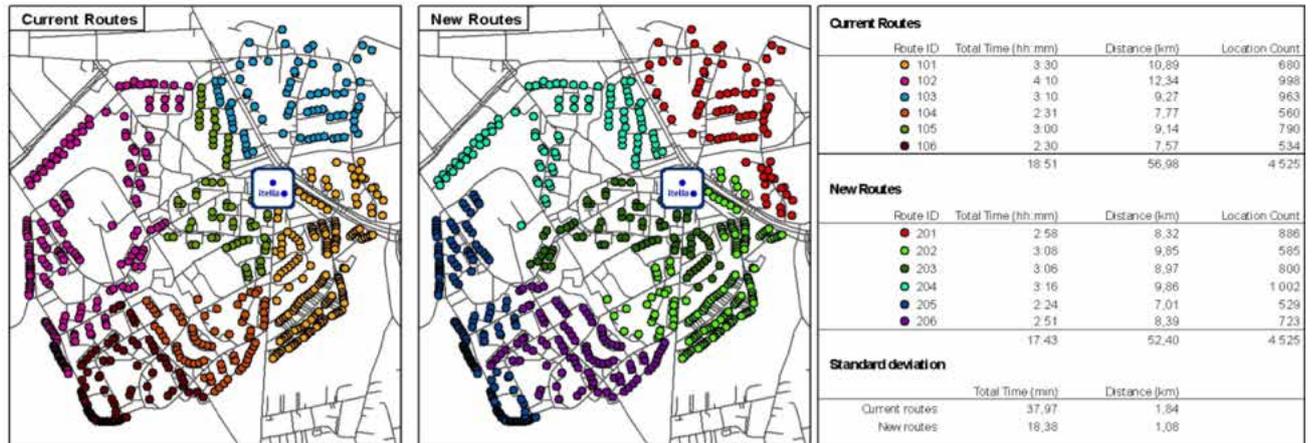
Post leverages GIS technologies for route optimization applications

Geographic information software (GIS) has become an increasingly important tool for Posts to cope dynamically with traffic congestion and for city infrastructure planning. Many Posts are leveraging GIS in order to further improve the efficiency of traditional delivery routes. Finland’s Posti Group has long utilized GIS to reduce the total number of routes, route distances and excess vehicle capacity while maintaining the same level of customer service. Additionally, the Finnish operator has used GIS data to reconfigure its compensation terms for delivery operations in a more equitable manner. With the help of GIS, Posti Group has exceeded its targeted minimum of 5% cost savings for each delivery centre where GIS-based route optimization strategies were introduced. Currently, Posti utilizes GIS software for:

- Service time window modelling;
- Volume and vehicle resource modelling;
- Delivery route optimization;
- Delivery network modelling.

With GIS data, Posti can combine historical data with information collected in real time, allowing Posti to identify demand shift patterns and adjust routes and work shifts accordingly. In so doing, Posti’s delivery routes have become increasingly dynamic and more reflective of the situation on the ground.

Figure 2.23 - Posti routes before and after GIS optimization



Source: www.routesmart.com/wp-content/uploads/2012/03/Itella_PPT_March2012.pdf

References

"How Posti Group Implemented RouteSmart to Realize Significant Cost Savings." RouteSmart, . www.arcumsoft.com/images/PostGroup_Final.pdf

Juha Tolvanen (Posti), GIS usage in Posti's Postal Operations, Presentation, POST-EXPO, 2017.

La Poste Group (France): delivery drone pilot

In December 2016, La Poste subsidiary DPDgroup announced the testing phase of a new commercial parcel delivery line serviced exclusively by unmanned aerial vehicles (drones). This announcement makes La Poste the first postal service in the world to use drones exclusively for last-mile parcel delivery along a commercial route. Following more than two years of testing, DPDgroup deployed a drone along a 15 km corridor in the south of France. Currently, the drone delivers parcels to a single delivery point, an isolated incubator that hosts over a dozen start-ups specialized in technology.

Equipped with six electric rotors, the drone can carry a maximum payload of 3 kg and travel at a maximum speed of 30 km/h. On-board GPS and camera systems allow researchers to watch and track the drone in real time. Currently, the drone has a range of 20 km, and requires specific delivery terminal infrastructure loading, departure and landing phases.

Following a successful completion of the testing phase, DPDgroup will continue to experiment with drone delivery along its current route. Ultimately, DPDgroup believes that drone delivery will first have important applications in parcel delivery to isolated and difficult-to-access areas. Expanding delivery drone usage to logistically challenging areas could one day generate real cost savings while improving brand recognition.

Figure 2.24 - DPD delivery drone



Source: www.madeinmechelen.be

References:

Margolin, Madison. "France Becomes First Federal Postal Service to Use Drones to Deliver Mail." Vice News, 20 December 2016. https://motherboard.vice.com/en_us/article/ezp8ke/france-becomes-first-federal-postal-service-to-use-drones-to-deliver-mail

"DPD group Drone Delivers Parcels Using Regular Commercial Line." DPDgroup press release, December 2016. https://www.dpd.com/home/news/latest_news/dpdgroup_drone_delivers_parcels_using_regular_commercial_line

Deutsche Post pilots “follow-me” self-guided companion robot, the PostBOT

In October 2017, DHL’s parcel delivery subsidiary, Deutsche Post, announced that it had selected the German town of Bad Hersfeld as its test site for its new autonomous delivery robot, the “PostBOT”. This four-wheeled, 130-kilogramme self-guided robot will accompany mail deliverers on their daily routes, carrying their mail items. It is equipped to carry up to six post trays, with a maximum carrying capacity of approximately 150 kg. Using sensors, the PostBOT syncs to the movements of the postal employee, following him or her along the street while navigating around people and obstacles. The PostBOT can travel at a maximum speed of 6 km/h and stop automatically to avoid collisions. Deutsche Post claims that it can be used in all weather conditions.

will initially run for roughly six weeks, followed by a period of assessment. The insights gathered from this pilot will then flow into another round of tests and improvements.

References:

“New delivery robot helps mail carriers make their rounds.” Deutsche Post DHL Group, 4 October 2017. www.dpdhl.com/en/media_relations/press_releases/2017/new_delivery_robot_supports_mailmen.html.

Figure 2.25 - PostBOT Specifications



Technical data
 Dimensions:
 150cm x 70cm x 120cm
 Unloaded weight:
 180 kg
 Maximum load:
 150 kg
 Maximum speed:
 6 km/h

Automatic stop function and collision avoidance.

Source: www.dpdhl.com

During this pilot Deutsche Post will monitor the delivery robot’s efficacy in reducing the physical demand of delivery for the deliverer. DHL believes that this will increase not only employee satisfaction, but also delivery productivity. The test

USPS Informed Delivery: leveraging a digital interface to enhance the value of mail

In response to increased customer demands for information and immediacy, the United States Postal Service developed its Informed Delivery service. With Informed Delivery, enrollees can digitally preview their incoming mail for free. Subscribers can view greyscale images of the address side of incoming letter-sized mail pieces via a daily e-mail or through the Informed Delivery mobile app. Just like a physical mailbox, the Informed Delivery feature is provided at a household level, based on the delivery-point user address. In addition, Informed Delivery users are able to click on a piece of direct mail to access promotional codes, vendor websites, and bill payment. Multiple residents of a single home can sign up for the feature.

In a July 2017 survey, 91% percent of respondents said they were satisfied or very satisfied with Informed Delivery, and 9 out of 10 would recommend the service to friends, family, or colleagues. Additionally, 88% of respondents said that they check their Informed Delivery notification more frequently than their physical mailboxes (88% vs. 79%). As of January 2018, more than 7.6 million USPS customers had already signed up for Informed Delivery.

Figure 2.26 - USPS leverages a virtual mailbox with Informed Delivery



Source: <https://www.usps.com/business/pdf/informed-delivery-overview.pdf>

References:

Roy Betts. "Informed Delivery®: Check Mail and Track Packages Online." Inside USPS, Postal HQ, USPS Did You Know and Tips, 19 October 2017. <https://uspsblog.com/informed-delivery-online/>

"Informed Delivery Overview" (presentation). United States Postal Service, July 2017. <https://www.usps.com/business/pdf/informed-delivery-overview.pdf>

Ule e-commerce platform catalyzes China Post's transformation into "the backbone of a national retail-commerce transport network"

With a 43.7% stake in Ule, (which translates roughly as "Happy Post") China Post has secured its position as a cornerstone in the interaction between logistics, big data, and China's small businesses. Using Ule, a shopping service platform which combines e-commerce and offline retail, consumers and small shops in China's rural countryside can access a user-friendly e-commerce portal for both shopping and sales. On the Ule online platform, participating retailers can offer discounts and group promotions, and sell virtual stock-keeping units (SKU), goods not housed at the brick-and-mortar retailer. Likewise, local customers can look online to see what promotions or special items will be for sale at the local retailer. China Post employees provide the logistical support, delivering the customer's virtual SKU orders to the brick-and-mortar retailer daily. While at that physical outlet,

China Post carriers pick up products destined for outbound locations.

Additionally, the Ule platform provides an important data generation function for small retailers and Ule alike. Using Ule's point-of-sale system, retailers can gather sales data to provide important insights as to what products are popular and when, as well as daily sales, revenue, and profit figures. Using trading data from the Ule platform has allowed the postal Savings Bank of China to more easily identify good borrowers, thus reducing interest rates on loans for many Ule subscribers. Ule aggregates sales data from its online portal, allowing it to track more than three million SKU's. This provides important insights as to where and when goods should be stocked in preparation for future sales.

Ule estimated that 330,000 stores would use its platform by the end of December 2017. China Post senior management sees Ule as "a catalyst for China Post renewal" and transformation into "the backbone of a national retail-commerce transport network".

References:

David Rowan. "How an army of postmen is turning China's rural stores into the world's largest retail network." Wired.uk, 5 March 2017. www.wired.co.uk/article/ule-china-retailers

Figure 2.27 - China Post connects thousands of brick-and-mortar stores using its delivery fleet and Ule e-commerce platform

Source: Ule.com



Chapter III:

**Digital postal services –
Technical Analysis**

Defining digital postal services

In measuring the development of digital postal services in UPU member countries, these services first have to be defined. Postal members of the Products and Services Development Group (PSDG) helped the International Bureau with the updating of the list used for the first iteration of the survey in 2010. E-services that had lost their relevance were deleted, while some which were very similar were merged, and new ones added. A new list was then prepared, identifying and defining 42 services (see Annex 1).

The e-services were classified into four groups: e-post and e-government; e-finance and payments solutions; e-commerce; and support services. However, the same structure has been retained, so as to enable results to be compared with the 2012 report and the evolution of postal e-service developments to be tracked. The focus was on the digital capabilities of the services; the “physical” elements of the electronic services (for example, delivery or logistics) are excluded.

This was not a straightforward exercise: defining and categorizing digital postal services is a new discipline, and some of these services overlap (for instance, e-commerce services also require e-finance payment services). Broad consultation with industry experts and Posts resulted in the definitions and classification presented in the following tables.

We refer to digital postal services as services delivered by Posts to their end customers (individuals, businesses or governments) through digital channels. The Internet is the main e-service delivery channel, while other telecommunications channels (e.g. mobile phones, tablets, call centres or televisions) are also considered.

To ensure the consistency of the data and make the questionnaire easier to understand, definitions are provided where necessary.



Data shows how Posts can help governments implement international, regional and national digital transformation strategies. Posts are becoming key to ensuring digital inclusion for every society.

Technical analysis and trends of digital postal services

Introduction

This section presents a descriptive and comparative analysis of digital postal services' global trends, digital postal services' penetration rates, the dissemination of digital postal services, the development of mobile app usage in digital postal services and the current state of development of digital postal services (under development) across the regions.

To measure the development of digital postal services, the 42 postal e-service indicators previously identified by the UPU surveys are used to provide a detailed analysis of their respective importance to each country. The different services provided in each country are then presented, and the gaps are analyzed. The first part summarizes global trends in digital postal services and highlights indicators that showed continuous growth over time, followed by the analysis of regional-level emerging trends. In addition, global and regional postal e-service penetration rates and disseminations are presented.

The final part discusses the development of mobile app usage in digital postal services and a regional analysis of e-services that are currently under development.

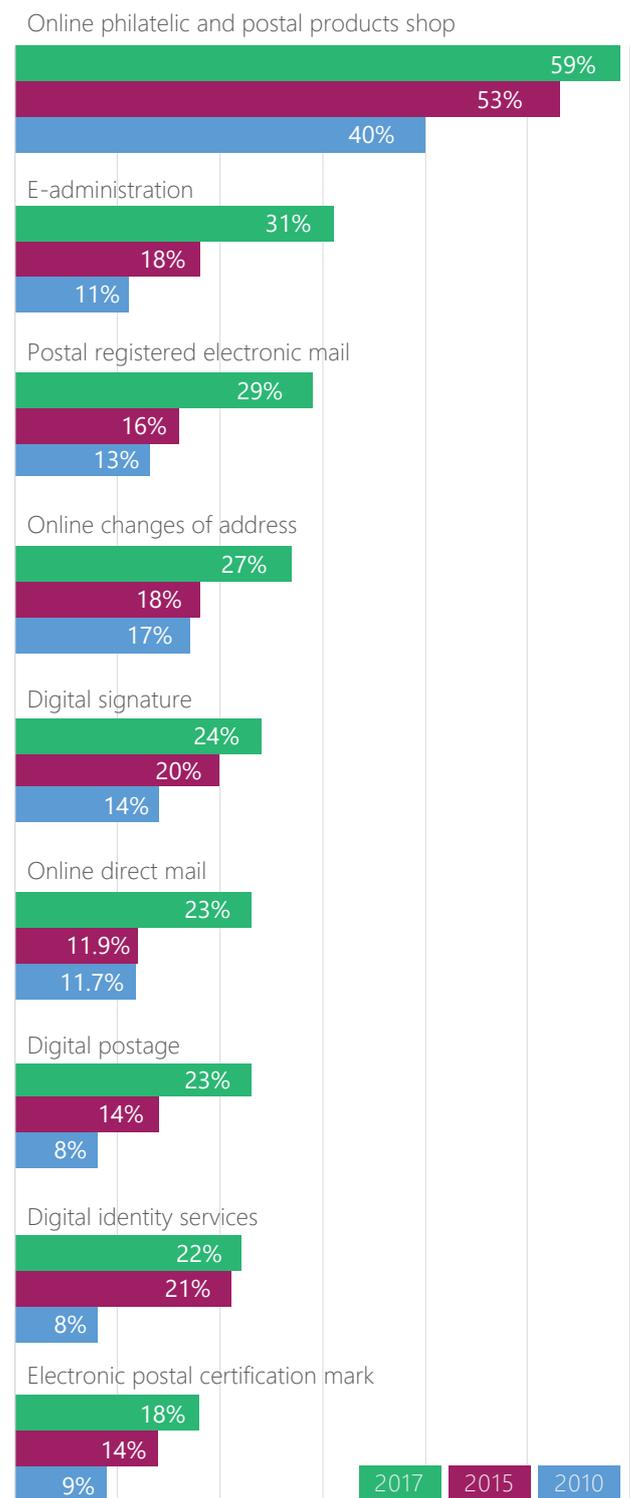
Trends 2012–2017

Global trends

Over the past five years, digital postal services have seen uninterrupted growth. The global spread of 16 of the 42 digital postal services measured in the 2012–2017 surveys and all indicators in the 2015–2017 surveys expanded during this period. Figure 3.1 presents the growth in e-services over the years for selected services.

- On average, the digital postal services set to continue growing steadily (in terms of the percentage of countries providing them) are e-administration (from 11% in 2012 to 18% in 2015, to 31% in 2017), postal registered electronic mail (from 13% in 2012 to 15% in 2015, to 29% in 2017), digital postage (from 8% in 2012 to 14% in 2015, and to 23% in 2017), the electronic postal certification mark (from 9% in 2012 to 14%, and to 18% in 2017), and online changes of address (from 17% in 2012 to 18%, and to 27% in 2017).

Figure 3.1 - Growth in digital services over the past five years



Source: UPU Digital Postal Survey 2017

Other services on average recorded significant growth:

- Online philatelic and postal products shop: from 39% in 2012 to 53% in 2015, to 59% in 2017.
- Online direct mail: from 11.7% in 2012 to 11.9% in 2015, to 23% in 2017.
- Digital signature: from 14% in 2012 to 20% in 2015, to 24% in 2017.
- Digital identity services: from 8% in 2012 to 21% in 2015, to 22% in 2017.

Regional trends

The regional analysis discloses four trends:

- Broadly widespread:** the global spread of track and trace services has increased in the Arab and Africa regions (from 64% in 2012 to 75% in 2015, and to 88% in 2017 in the Arab countries, and from 81% in 2012 and 73% in 2015, to 100% in 2017 in Africa), and in the industrialized countries (from 92% in 2012, to 88% in 2015 and 100% in 2017).
- Growth in all regions:** a rising trend in support services in almost all regions. For example, the percentage of countries having implemented online contact and customer services increased in Africa (from 19% in 2012 to 50% in 2015, and to 65% in 2017), in the Arab countries (from 18% in 2012 to 50% in 2015, and to 63% in 2017), in Asia-Pacific (from 24% in 2012 to 73% in 2015, and to 95% in 2017), and in the industrialized countries (from 85% in 2012 to 81% in 2015, and to 87% in 2017). Also falling within this category is, to a lesser extent, online service information and tariffs (57% to 50% to 70% in Africa; 73% to 75% to 88% in the Arab countries; and 76% to 91% to 95% in Asia-Pacific). Over time, in several of the regions, support services such as electronic notifications and public Internet access points in post offices are expected to move to the “broadly widespread” category.
- Reorientation of strategies:** this category includes services whose level of provision has decreased in some regions. Examples are public Internet access (in the Arab countries and Africa). It is likely that the greater reach of the Internet has reduced the demand for such services; other examples related to digital identity services (in Asia-Pacific and Europe and CIS), or services that may have not met their revenue or profit targets, or may not have fitted with a Post’s new business strategy: for instance, postal electronic mailbox (Asia-Pacific, Europe and CIS, industrialized countries, and Latin America and Caribbean); online change of address (Asia-Pacific and industrialized countries); hybrid mail (Arab countries, Europe and CIS, industrialized countries and Latin America and Caribbean); online bureaux (in Asia-Pacific and the Arab countries); and postal registered electronic mail (in Latin America and Caribbean).
- Heterogeneous priorities across regions:** certain services showed high growth in some regions, but no or little growth in others. This pattern reflects different products positioning across regions, because of different market environment, capabilities, or investment resources. Examples include e-cards, online direct mail, electronic postal certification mark, e-health and online philatelic and postal products shop.

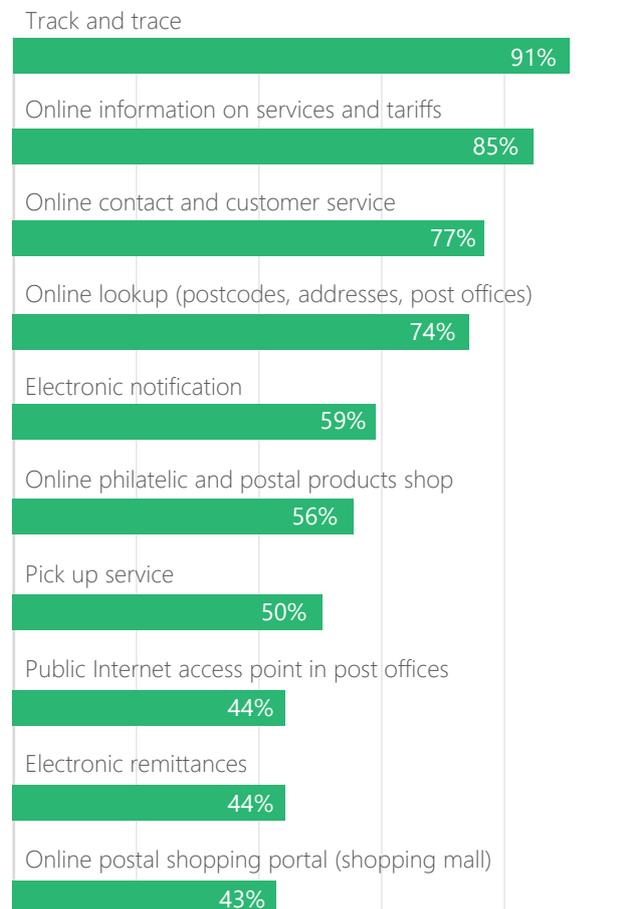
Global penetration rates for digital postal services

Global results

Figure 3.2 shows global penetration rates for the 10 most widespread digital postal services. The main outcomes of this analysis are as follows:

- More than half of the Posts surveyed have implemented six of the top 10 services: track and trace (91%); information on services and tariffs (85%); online contact and customer services (77%); online lookup (postcodes, addresses, post offices) (74%); electronic notification (59%); and online philatelic and postal products shop (56%). Overall, the digital postal services now ranked in the top four in terms of penetration are the same as in 2015.
- Seven of the top 10 most widely provided services are “support services”. The online philatelic and postal products shop and online postal shopping portal (shopping mall) are e-commerce services, while electronic remittances are the sole representative of digital financial and payment services in the top 10.

Figure 3.2 - Global top 10 penetration rates for digital postal services

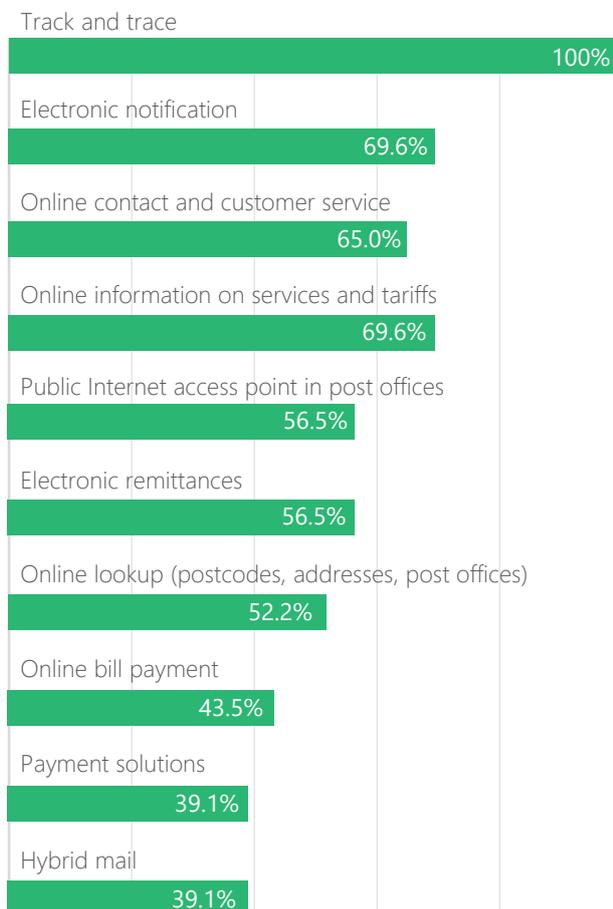


Source: UPU Digital Postal Survey 2017

Regional results

Africa: Seven of the top 10 most widespread services have been implemented by more than half of Posts: track and trace (100%), online information on services and tariffs and electronic notification (70% each), online contact and customer service (65%), public Internet access point in post offices and electronic remittance (57% each), and online lookup (postcodes, addresses, post offices – 52%). As was the case globally, support services are the most widespread category in the region, followed by digital financial and payment services and e-post and e-government. Figure 3.3 reports digital postal services' penetration rates in Africa, while table 3.4 shows big changes in e-service penetration rates for the top five services.

Figure 3.3 - Penetration rates for digital postal services in Africa



Source: UPU Digital Postal Survey 2017

Figure 3.4 - Changes in service penetration rates: Africa



Source: UPU Digital Postal Survey 2017

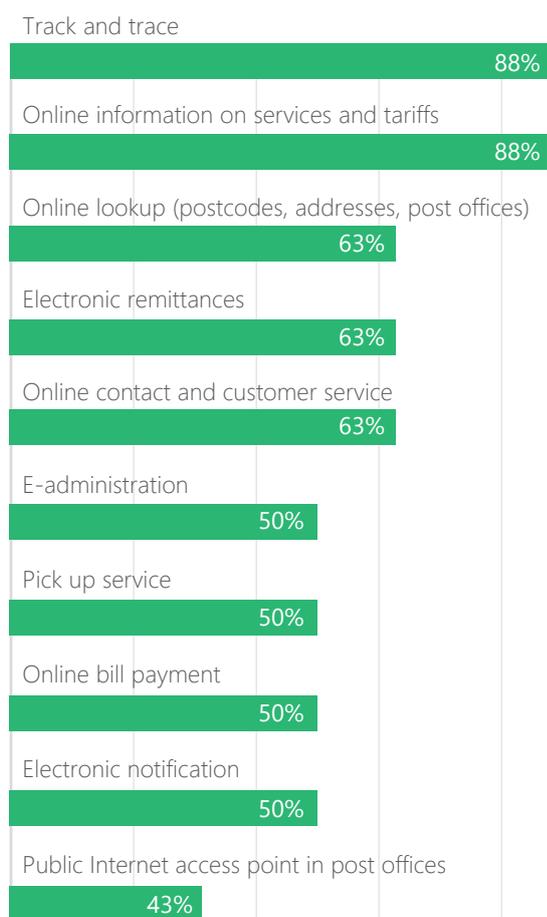
Table 3.1 presents a country-level perspective of the four portfolios (e-post and e-government, e-commerce, digital financial and payment services and support services) that support digital postal services development for DOs in the Africa region. (In the tables below, "O" represents an e-service that is being offered by designated operators, while "D" denotes an e-service that is not currently provided but is under development by DOs.)

Table 3.1 - Development of digital postal services in Africa

		Africa																									
		Benin	Botswana	Burkina Faso	Chad	Comoros	Cote d'Ivoire	DR Congo	Gambia	Ghana	Gumee-Conakry	Kenya	Lesotho	Liberia	Madagascar	Malawi	Mozambique	Namibia	Niger	Senegal	South Africa	South Sudan	Tanzania (United Rep.)	Togo	Uganda	Zimbabwe	
E-post and e-government	Postal electronic mailbox						D				D										O						
	Online direct mail																										
	Postal registered electronic mail						D				O			D								O					
	E-cards						D																				
	Online burofax						D																				
	E-Invoicing		D		D		D															O					
	Hybrid mail	D	O		D		O			D	D			D							O	O					
	Reverse Hybrid mail			D	D														D								
	Online facilitation of hybrid mail	D										O							O								
	Electronic postal certification mark						D					O															
	Digital signature		D				D															O					
	Digital identity services														O							O					
	Credentialing services		O				D																				
	Digital archive																										
	E-health services																										
E-administration		O								D										O							
E-commerce	Online philatelic and postal products shop		O	D			O			O								O					O		O		
	Online postal shopping portal (shopping mall)	D		D			O		D	D								D			O				D		
	Online customs declaration		D	D					D	D	D							D							D		
	Integration of postal webservices with e-merchants' sites		D	D					D	D											O						
	Performance reports and analytics								D	D								D			O						
	Virtual international address service			D																							
	Calculation of estimated total landed costs																				O						
	Online management: documents/merchandise delivery						D			D	O							D			O						
Digital financial and payment services	Online account management			D			O													O					D		
	Electronic remittances	O	O		O		O		O	D		O	D		O		O		O	O	O				O		
	Payment solutions		O	D			O		D	D	O	O								O			O				
	Online bill payment		O	D			O		D		O		D					D		O	O				O		
	Escrow services for e-commerce									D																	
Support Services	Public Internet access point in post offices	O	O	O			D			D		O		O	O		O		O			O		O	O	O	
	Online information on services and tariffs	O	O	O		O	O			D	O	O	O				O	O		O			O	O	O	O	
	Online lookup (postcodes, addresses, post offices)	O	D	D		O	D			D	O		D				D		O				O			O	
	Online contact and customer service	O	O	O			D		O	O	D	O	D				O	O		O				O	O	D	
	Track and trace	O	O	O	O	O	D	O		O	D	O	O	O	D	O	O	O	O	O	O			O	O	O	O
	Electronic notification	O	O	O			D		D	O	O	O	O	O		D				O	O			O	O	D	O
	Online change of address			D		O								D								D					
	Holding of mail delivery online	O				O																			D		
	Online address cleansing services							D																			
	Electronic postal invoicing							D										O			D					D	
	Digital postage										D											O				D	
	Digital customized postage							D				D							O							D	
	Pick up service	O								D	D	O						O	O					O		D	

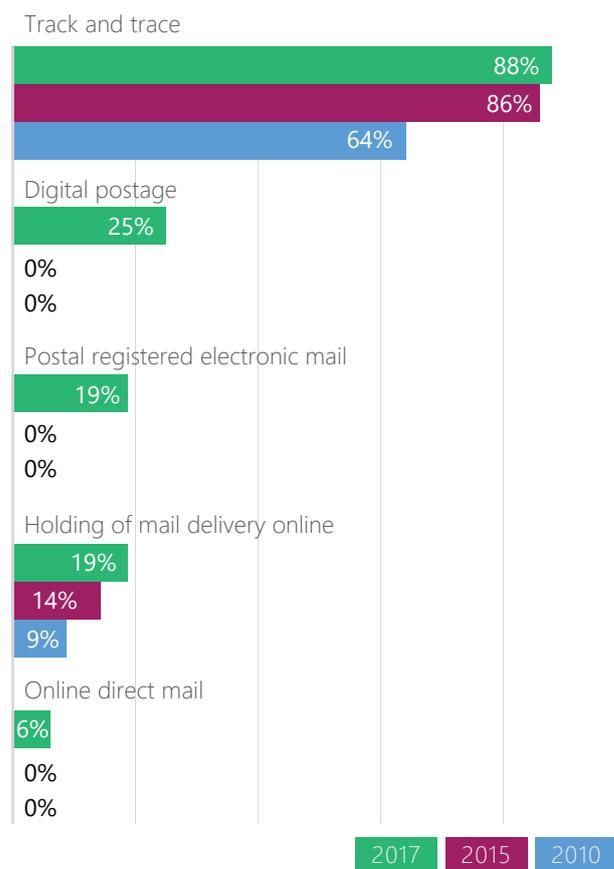
Arab countries: In contrast with the worldwide or African picture, pick-up and e-administration services have been implemented by more than two fifths of Posts, and track and trace, online information on services and tariffs, online lookup (postcodes, addresses, post offices), electronic remittances, and online contact and customer service have been introduced by more than half of the countries. Figure 3.5 shows postal e-service penetration rates for the Arab countries, while figure 3.6 shows trends in digital postal services for the region.

Figure 3.5 - Penetration rates for digital postal services in the Arab countries



Source: UPU Digital Postal Survey 2017

Figure 3.6 - Changes in service penetration rates in the Arab countries



Source: UPU Digital Postal Survey 2017

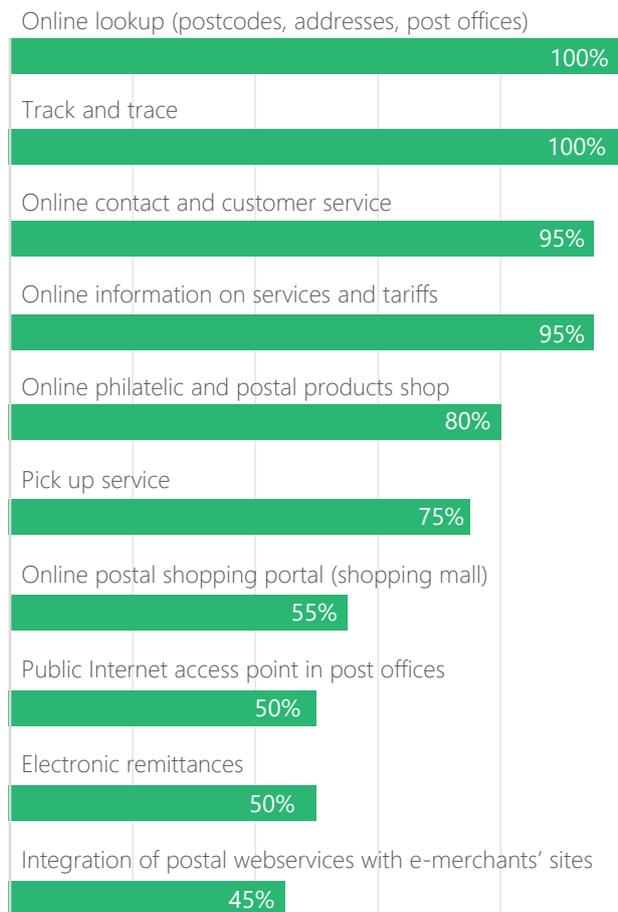
Table 3.2 presents a country-level perspective of the four portfolios (e-post and e-government, e-commerce, digital financial and payment services and support services) that support digital postal services development for DOs in the Arab region. (In the tables below, "O" represents an e-service that is being offered by designated operators, while "D" denotes an e-service that is not currently provided but is under development by DOs.)

Table 3.2 - Development of digital postal services in Arab region

		Arab region																
		Algeria	Bahrain	Djibouti	Egypt	Jordan	Lebanon	Libya	Mauritania	Morocco	Oman	Qatar	Saudi Arabia	State of Kuwait	Syria	Tunisia	UAE	
E-post and e-government	Postal electronic mailbox	O	O							O	O	D				O	D	
	Online direct mail									O							D	
	Postal registered electronic mail									O		D					D	
	E-cards									D						O		
	Online burofax									O								
	E-Invoicing				D					O						O	O	
	Hybrid mail	O			D		O			O						O		
	Reverse Hybrid mail									O								
	Online facilitation of hybrid mail									O			D					
	Electronic postal certification mark									O								
	Digital signature									O								D
	Digital identity services		O							O								D
	Credentialing services									O						O		D
	Digital archive				O					D	D							
E-health services		O							D									
E-administration	O			O		D			O		D	D		O	O	O		
E-commerce	Online philatelic and postal products shop				D	O		D	O			D			O	O		
	Online postal shopping portal (shopping mall)				D				O	D	D	O			O	D		
	Online customs declaration				D				O	D					O	D		
	Integration of postal webservices with e-merchants' sites				D				O	D					O	D		
	Performance reports and analytics				D	O			O	D	O	D				D		
	Virtual international address service								D		D	O				D		
	Calculation of estimated total landed costs				O				O	D	D					O		
	Online management: documents/merchandise delivery	O			O				D	D					O			
Digital financial and payment services	Online account management	O							O			D			O			
	Electronic remittances	O		O	O	O		O	O	D	O				O	D		
	Payment solutions	O			O	O			O			D			O	O		
	Online bill payment	O			O	O	D		D	D	D	D			O			
	Escrow services for e-commerce			O					D							D		
Support Services	Public Internet access point in post offices		O						O		D			O	O	O		
	Online information on services and tariffs	O	O	O	D	O	D	O	O	O	D	O		O	O	O		
	Online lookup (postcodes, addresses, post offices)		O	O	D	O	D		O	O	D	O			O	O		
	Online contact and customer service		O		D	O	D	O	O		D	O		O	O	O		
	Track and trace	O	O	O	D	O	D	O	O	O	D	O		O	O	O		
	Electronic notification	O		O	D		O		O		D	O			O	O		
	Online change of address								D	O		O				O		
	Holding of mail delivery online								D	D		D				O		
	Online address cleansing services								O									
	Electronic postal invoicing				D				O	D		D				O		
	Digital postage	O			O	O			D							O		
	Digital customized postage	D				O			D									
	Pick up service	O	O		D	O	D		O			O			O	O		

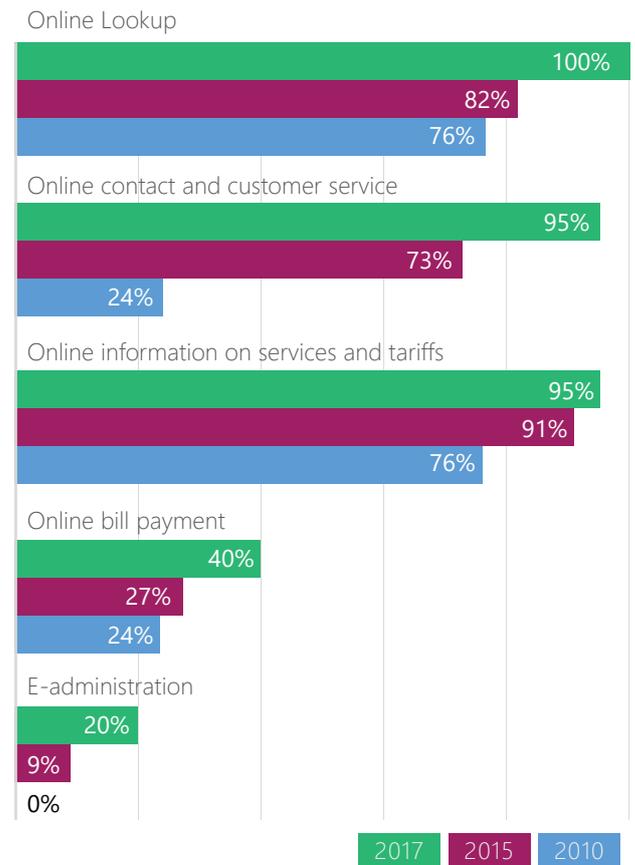
Asia-Pacific: Interestingly, a modern core postal e-service, integration of postal web services with e-merchant sites, is among the top 10 most commonly provided services by Posts in the region. Almost all the top 10 services have been implemented by more than half of the countries. Support services such as track and trace and online lookup (postcodes, addresses, post offices) have achieved maximum implementation objectives with 100% of Posts. Figures 3.7 and 3.8 below report the penetration rates and changes in penetration rates for selected e-services in the region.

Figure 3.7 - **Penetration rates for digital postal services in Asia-Pacific**



Source: UPU Digital Postal Survey 2017

Figure 3.8 - **Changes in service penetration rates in Asia-Pacific**



Source: UPU Digital Postal Survey 2017

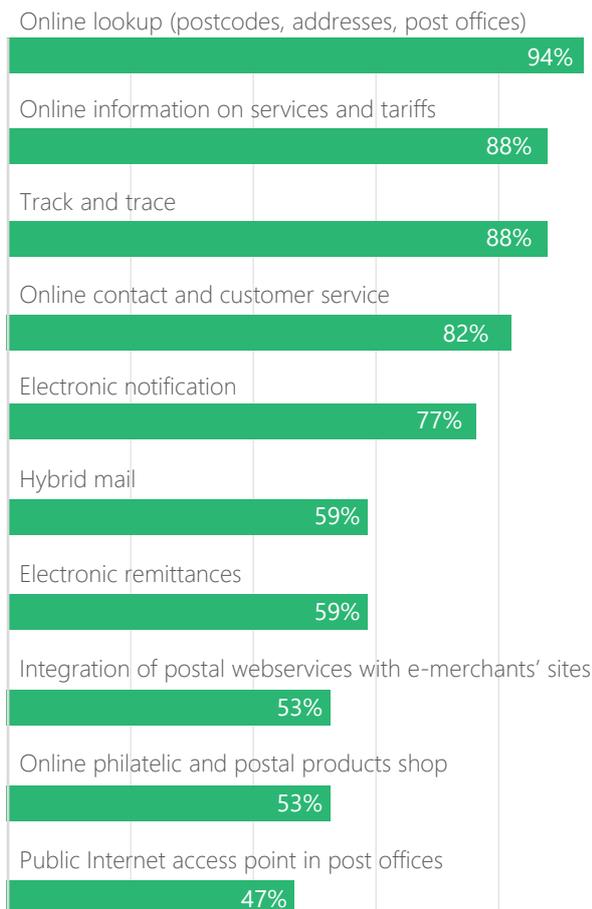
Table 3.3 presents a country-level perspective of the four portfolios (e-post and e-government, e-commerce, digital financial and payment services and support services) that support digital postal services development for DOs in Asia-Pacific. (In the tables below, "O" represents an e-service that is being offered by designated operators, while "D" denotes an e-service that is not currently provided but is under development by DOs.)

Table 3.3 - Development of digital postal services in Asia-Pacific

		Asia-Pacific																					
		Bhutan	Cambodia	China	China (Hongkong)	China (Macao)	French Polynesia (F)	India	Indonesia	Iran	Kiribati	Malaysia	Maldives	Mongolia	Myanmar	Nepal	Pakistan	Republic of Korea	Singapore	Sri Lanka	Thailand	Tonga	Vietnam
E-post and e-government	Postal electronic mailbox					O			D	O									O				
	Online direct mail					O			D														
	Postal registered electronic mail			O		O			D			D					O						
	E-cards				O				D	O		D						O					
	Online burofax					O																	
	E-Invoicing				O	O				O		D							O				
	Hybrid mail							O	O			D		O				O	O	O			O
	Reverse Hybrid mail							O											O				
	Online facilitation of hybrid mail							O											O				
	Electronic postal certification mark					O						O						D	O				
	Digital signature				O	O			D			O		D									
	Digital identity services				O				D			O											
	Credentialing services								D			O											
	Digital archive					O	O					O											
	E-health services								D														D
E-administration											O		D				D					D	
E-commerce	Online philatelic and postal products shop	D	O	O	O	O	O	O	O	O	O	O	O				O	O		O	O		
	Online postal shopping portal (shopping mall)	D		O	O	O		O	O		D	D					O			O		O	
	Online customs declaration	O			O							O	D							D			
	Integration of postal webservices with e-merchants' sites	D			O			O	O		D						O	O		O		O	
	Performance reports and analytics									O		D					O					O	
	Virtual international address service								D			O						O					
	Calculation of estimated total landed costs					O			O			D	O	O			O					O	
	Online management: documents/merchandise delivery	D							O								D					O	
Digital financial and payment services	Online account management						O	O			D						O						
	Electronic remittances			O	O		O	O			D	O				O	O			D		O	
	Payment solutions						O	D	O		D											O	
	Online bill payment				O		O	D	O		O						O	O				O	
	Escrow services for e-commerce						O	D														O	
Support Services	Public Internet access point in post offices		O							O	D			O	O	O							
	Online information on services and tariffs	O	O	O	D	O	D	O	O	O	D	O		O	O	O							
	Online lookup (postcodes, addresses, post offices)		O	O	D	O	D			O	O	D	O			O	O						
	Online contact and customer service		O		D	O	D		O	O		D	O		O	O	O						
	Track and trace	O	O	O	D	O	D	O		O	O	D	O		O	O	O						
	Electronic notification	O		O	D		O			O		D	O			O	O						
	Online change of address									D	O		O				O						
	Holding of mail delivery online									D	D		D				O						
	Online address cleansing services									O													
	Electronic postal invoicing				D					O	D		D				O						
	Digital postage	O			O	O				O	D						O						
	Digital customized postage	D				O				D													
	Pick up service	O	O		D	O	D			O			O			O	O						

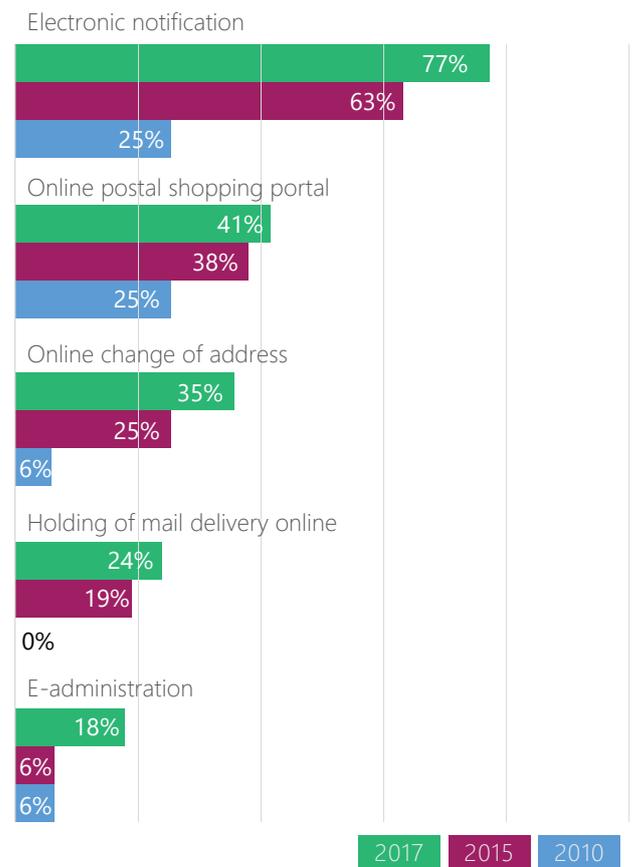
Europe and CIS: Figure 3.9 shows that all the top 10 services have been implemented by more than half of respondents. For example, the figure for hybrid mail is 59% (vs. 39% in Africa). Figure 3.10 reports big changes in digital postal services' penetration rates for the top five services between 2012 and 2017.

Figure 3.9 - **Penetration rates for digital postal services in Europe and CIS**



Source: UPU Digital Postal Survey 2017

Figure 3.10 - **Changes in service penetration rates in Europe and CIS**



Source: UPU Digital Postal Survey 2017

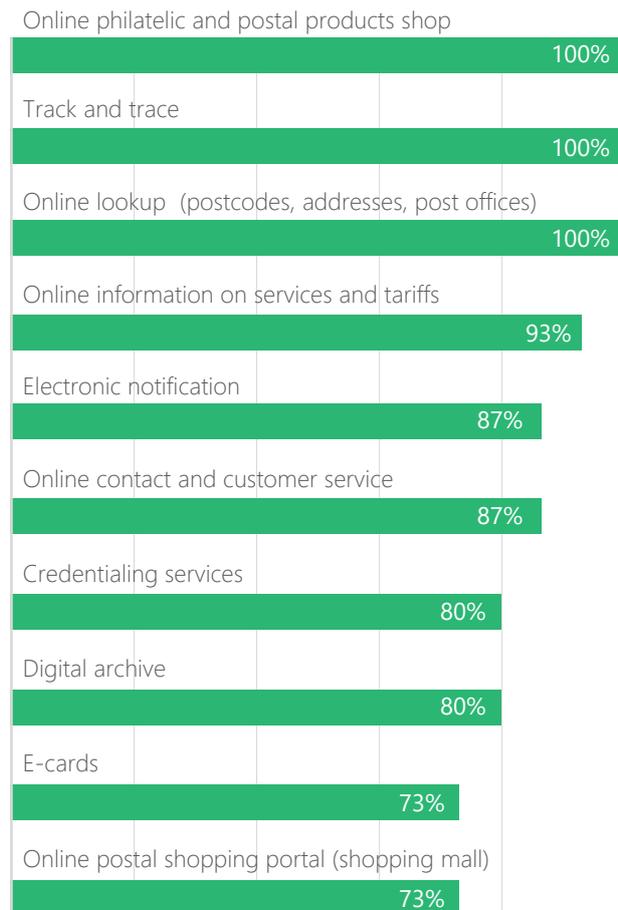
Table 3.4 presents a country-level perspective of the four portfolios (e-post and e-government, e-commerce, digital financial and payment services and support services) that support digital postal services development for DOs in the Europe and CIS region. (In the tables below, "O" represents an e-service that is being offered by designated operators, while "D" denotes an e-service that is not currently provided but is under development by DOs.)

Table 3.4 - Development of digital postal services in Europe and CIS

		Europe and CIS																
		Albania	Azerbaijan	Belarus	Bosnia & Herzegovina	Bulgaria	Czech Republic	Hungary	Kazakhstan	Kyrgyz Republic	Republic of Macedonia	Republic of Moldova	Romania	Russian Federation	Slovakia	The Republic of Tajikistan	Turkey	Ukraine
E-post and e-government	Postal electronic mailbox			O	D			D	O									
	Online direct mail			O	O			O	O					D				
	Postal registered electronic mail			D			O	D	O				O				O	
	E-cards			O	D		O	O	O				O					
	Online burofax			O														
	E-Invoicing			O				O	O					O				D
	Hybrid mail			O	O	O	O	O	O		O			O	O		O	
	Reverse Hybrid mail							O	D						O			
	Online facilitation of hybrid mail				O			O	O					O				
	Electronic postal certification mark						O	D										
	Digital signature		O				O	O						O				
	Digital identity services						O	D	O									
	Credentialing services								O									
	Digital archive						O		O						O			
	E-health services													O				
E-administration								O					O	O				
E-commerce	Online philatelic and postal products shop			O	D		O	O	O		D			O	O			O
	Online postal shopping portal (shopping mall)			O	D		O		O					O	O		D	
	Online customs declaration			O				D	O					O	O			O
	Integration of postal webservices with e-merchants' sites		O		D		O	O	O					D	O		D	O
	Performance reports and analytics				D			O						O	O			
	Virtual international address service								O									
	Calculation of estimated total landed costs			O				O	O			O		O	O			O
	Online management: documents/merchandise delivery			O				O	O						D		O	
Digital financial and payment services	Online account management								O						O			
	Electronic remittances	O	O	O	D	O			O	O		O		O				O
	Payment solutions			O					O					D	O			
	Online bill payment			O	D				O					O	O	O		
	Escrow services for e-commerce								O									
Support Services	Public Internet access point in post offices		D	O			D	O	O			O			O	O		
	Online information on services and tariffs	O	O	O	O	O	O	O	O	O	O	O	O	O	O			O
	Online lookup (postcodes, addresses, post offices)	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O		O
	Online contact and customer service	O		O	O	O	O	O	O		O	O	O	O	O	O		O
	Track and trace	O	O	O	O	O	O	O	O	O	O	O	O	O	O			O
	Electronic notification	O	O	O	D	O	O	O	O			O		O	O		O	O
	Online change of address			O		D	O	O	O						D			
	Holding of mail delivery online	O					D	O							D			
	Online address cleansing services							O							D			
	Electronic postal invoicing			O				O							O			
	Digital postage			O														
	Digital customized postage	O													O			
	Pick up service				O	O	O	O							O			O

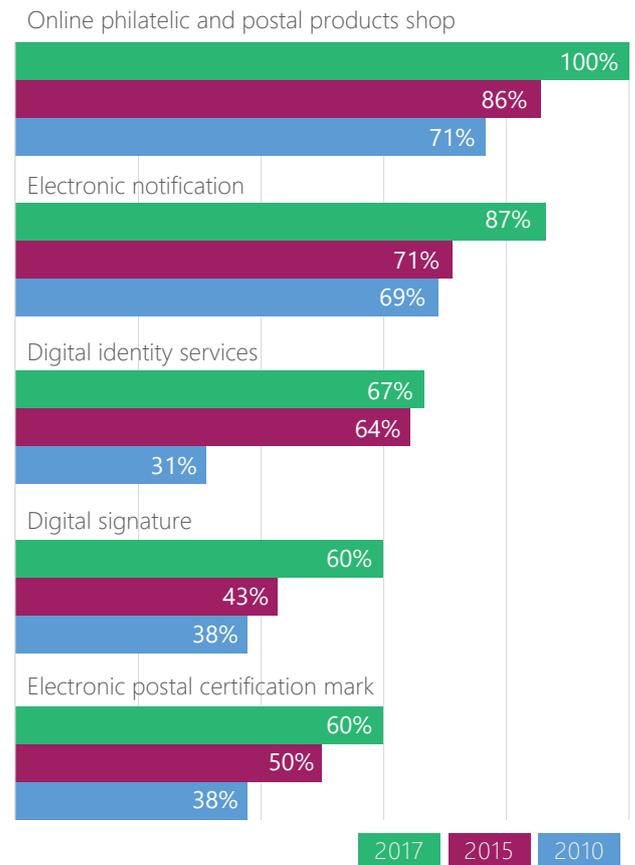
Industrialized countries: Figure 3.11 shows three of the top 10 services (track and trace, online lookup and online philatelic and postal products shop) implemented by 100% of the countries. Unlike other regions, this region has implemented credentialing services and digital archives (both 80%), and e-cards (73% of Posts). Figure 3.12 reports the big changes in penetration rates in the region between 2012 and 2017.

Figure 3.11 - Penetration rates for digital postal services in the industrialized countries



Source: UPU Digital Postal Survey 2017

Figure 3.12 - Changes in service penetration rates in the industrialized countries



Source: UPU Digital Postal Survey 2017

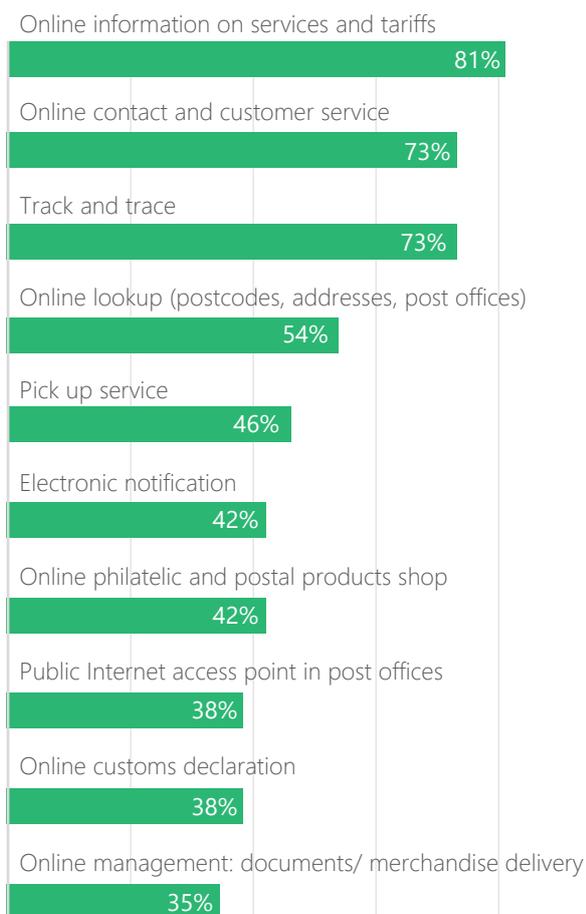
Table 3.5 presents a country-level perspective of the four portfolios (e-post and e-government, e-commerce, digital financial and payment services and support services) that support digital postal services development for DOs in the industrialized countries. (In the tables below, "O" represents an e-service that is being offered by designated operators, while "D" denotes an e-service that is not currently provided but is under development by DOs.)

Table 3.5 - Development of digital postal services in the Industrialized countries

		Industrialized countries														
		Australia	Austria	Canada	Croatia	France	Germany	Greece	Italy	Luxembourg	Netherlands	New Zealand	Portugal	Spain	Switzerland	USA
E-post and e-government	Postal electronic mailbox	D	O	O	O	O	O			O		O	O	O	O	
	Online direct mail	O	O	O	O	O			O	O	O	O		O		
	Postal registered electronic mail		O		O	O	O		O				O	O	O	
	E-cards	O	O	O	O		O			O	O	O	O	O	O	
	Online burofax		O				O							O		
	E-Invoicing		O		O	O			O		O		O	O	O	
	Hybrid mail	O	O		O	O	O		O	O			O	O	O	
	Reverse Hybrid mail	O	O				O						O		O	
	Online facilitation of hybrid mail	O	O		O	O					O		O	O	O	O
	Electronic postal certification mark		O	O		O	O		O	D			O		O	O
	Digital signature	O	O			O	O		O	D				O	O	D
	Digital identity services	O		O		O	O		O	D		O		O	O	D
	Credentialing services		O	O	O	O	O		O	D		O	O	O	O	D
	Digital archive	O	O	O		O	O		O	D		O	D	O	O	D
	E-health services														O	O
E-administration	O				O		O	O	O			O		O	O	
E-commerce	Online philatelic and postal products shop	O	O	O	O	O	O	O	O	O	O	D	O	O	O	
	Online postal shopping portal (shopping mall)	O	O		O	O			O	O		D	O	O	O	
	Online customs declaration		O	O		O					O	O	D		O	
	Integration of postal webservices with e-merchants' sites	O	O	O	D		O				O	O	O		O	
	Performance reports and analytics				O	O		O			O		D		O	
	Virtual international address service				O			O			O	O	O			
	Calculation of estimated total landed costs	D		O	O		D			D		D	D			
	Online management: documents/merchandise delivery						O				O		D		O	
Digital financial and payment services	Online account management					O		O	O			O		O		
	Electronic remittances	O				O		O	O			O		O		
	Payment solutions	O	O			O	O	O	O			D	O	O		
	Online bill payment	O		O	O	O	O	O	O			O		O		
	Escrow services for e-commerce		O	O	O	O	O	O	O			O		O		
Support Services	Public Internet access point in post offices	O	O			O			O	O		O				
	Online information on services and tariffs		O	O	O	O	O	O	O	O	O	O	O	O	O	
	Online lookup (postcodes, addresses, post offices)	O	O	O	O	O	O	O	O	O	O	O	O	O	O	
	Online contact and customer service	O	O	O		O	O	O	O		O	O	O	O	O	
	Track and trace	O	O	O	D	O	O	O	O	O	O	O	O	O	O	
	Electronic notification	O	O	O		O	O		O	O	O	O	O	O	O	
	Online change of address	O	O	O		O	O		O	O	O	O			O	
	Holding of mail delivery online	O		O			O		O	O	O	O			O	
	Online address cleansing services	O		O		O	O		O		O				O	
	Electronic postal invoicing		O			O	O		O		O		D	D	O	
	Digital postage		O				O		O	O	O			O	O	
	Digital customized postage		O				O		O	O				O	O	
	Pick up service	O		O	O		O		O		O		O	O	O	

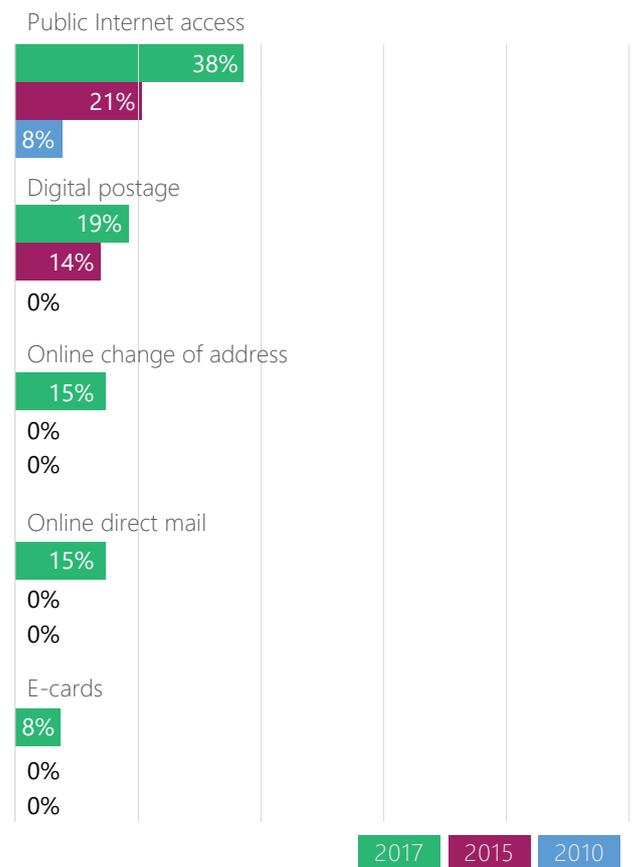
Latin America and Caribbean: In terms of widespread implementation of digital postal services (penetration rates), this region appears to fall behind others. Thus, according to figure 3.13, only four out of 10 services have been implemented by more than half of the countries. There is limited take-up of e-commerce services, online customs declarations (38%) and online management of documents/merchandise delivery (35%) in the region. Figure 3.14 reports huge changes in digital postal services' penetration rates over the past five years.

Figure 3.13 - Penetration rates for digital postal services in Latin America and Caribbean



Source: UPU Digital Postal Survey 2017

Figure 3.14 - Changes in service penetration rates in Latin America and Caribbean



Source: UPU Digital Postal Survey 2017

Table 3.6 presents a country-level perspective of the four portfolios (e-post and e-government, e-commerce, digital financial and payment services and support services) that support digital postal services development for DOs in the Latin America and Caribbean region. (In the tables below, "O" represents an e-service that is being offered by designated operators, while "D" denotes an e-service that is not currently provided but is under development by DOs.)

Table 3.6 - Development of digital postal services in Latin America and Caribbean

		Latin America and Caribbean																														
		Anguilla	Antigua	Aruba	Bahamas	Belize	Bermuda	Bonaire	Cayman Islands	Chile	Colombia	Comm. of Dominica	Costa Rica	Curacao	Ecuador	El Salvador	Grenada	Guyana	Jamaica	Mexico	Montserrat	Nicaragua	Paraguay	Peru	Saint Lucia	St. Kitts	St. Vincent and The Grenadines	Suriname	Trinidad and Tobago	Venezuela	Virgin Islands	
E-post and e-government	Postal electronic mailbox	O																		D												
	Online direct mail	O										O		O						D												
	Postal registered electronic mail	O					O			O							O															
	E-cards	O																		D												
	Online burofax																			D												
	E-Invoicing	O								O					O																	
	Hybrid mail												O							D												
	Reverse Hybrid mail												O							D												
	Online facilitation of hybrid mail																			D												
	Electronic postal certification mark																			D												
	Digital signature												O		O					D												
	Digital identity services											O								D												
	Credentialing services																			D												
	Digital archive	O					O			O					D					D												
	E-health services																															
E-administration	O								O		O	O	O						D		D									D		
E-commerce	Online philatelic and postal products shop	O	D			D	O		O	O	O	O							D	O									D	D		
	Online postal shopping portal (shopping mall)	O	D									O							D									D	D	D		
	Online customs declaration		D			D	O					O	O	O					D			O					O	D				
	Integration of postal webservices with e-merchants' sites	O								O		O							D									D	D			
	Performance reports and analytics	O								O	O	O	O						D													
	Virtual international address service	O	O				O					O	O						D													
	Calculation of estimated total landed costs										O	O	O						O										D			
	Online management: documents/merchandise delivery	O					D			O	O	O	O	O					D										D			
Digital financial and payment services	Online account management						D					O							D													
	Electronic remittances		D			D																										
	Payment solutions			O								O	O						O										D			
	Online bill payment	O				D	D					D											O				O	O				
	Escrow services for e-commerce													O																		
Support Services	Public Internet access point in post offices	O				O	O				O	O		O		O			D	O							D			O		
	Online information on services and tariffs	O	O	O		D	O	O	O	O	O	O	O	O				O	O	O	O	O	O				O	O	O	O	O	
	Online lookup (postcodes, addresses, post offices)	O				O	O	O	O	O	O	O	O	O					O	O	O	O	O				O	D	O			
	Online contact and customer service	O	O	O		D	O	O	O	O	O	O	O	O					O	O	O	O	O					D	O	O		
	Track and trace	O	O			O	O	O	O	O	O	O	O	O					O	O	O		O			O	O	O	O		O	
	Electronic notification	O	O			D	D					O	O						O		O		O				O	D	O			
	Online change of address						D													D			O					D				
	Holding of mail delivery online	O					D													D												
	Online address cleansing services												O							D												
	Electronic postal invoicing						D						O							D										D		
	Digital postage						D	O												D									D	D		
	Digital customized postage																			D												
	Pick up service	O					D	O	O	O	O		O	O					O				O					O	O			

Development of mobile applications

The figure below shows the five countries whose postal operators provide the most digital services via mobile apps. Switzerland takes first place, with 29 services offered through a mobile app, followed by Malaysia, Costa Rica, Kazakhstan and the United States of America.

Figure 3.15 - Designated operators providing a mobile app

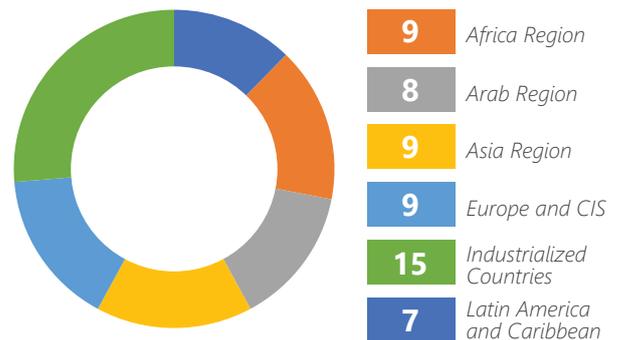
Country	Number of services provided via mobile app
Switzerland	29
Malaysia	23
Costa Rica	19
Kazakhstan	19
United States of America	18

Source: UPU Statistics

The past five years saw an expansion of mobile application usage in digital postal services. In 2012, only 16 postal operators reported that they had adopted mobile phone apps, compared to 57 operators in 2017 (and 51 in 2015). Growth in mobile app e-service usage varies by country, but there is an upward trend in all UPU regions. Fifteen postal operators in industrialized countries, nine each in Asia-Pacific and Africa, seven each in Europe and CIS and Latin America and Caribbean, and eight in the Arab countries reported that they use smartphone apps for their digital postal services.

Figure 3.16 presents postal operators that told the 2017 survey that they were providing e-services through a smartphone app, by region. Industrialized countries are early adopters of mobile applications for digital postal services, representing more than a quarter of the global total, followed by Europe and CIS, Asia-Pacific and Africa. In terms of regional distribution in adopting mobile phone technology, no region appears to be far behind. Postal operators in the Arab and Latin America and Caribbean countries are also increasingly adopting mobile app technology in their e-services. Despite smartphones being relatively expensive, and low mobile Internet penetration rates acting as a barrier to the adoption of mobile apps, interestingly, regional Posts in Africa are increasingly adopting mobile apps in their digital postal services.

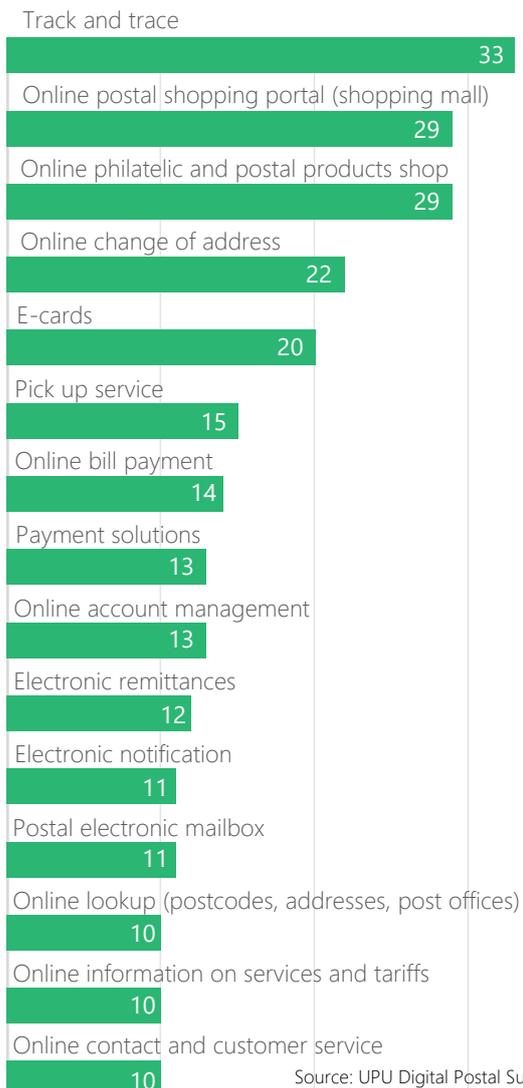
Figure 3.16 - Number of designated operators providing a mobile app



Source: UPU Digital Postal Survey 2017

The figure below shows the top 10 digital postal services accessed through a mobile phone. Track and trace is the most widely provided e-service, followed by online postal shopping portals (shopping malls) and online philatelic and postal products shops. E-cards and online change of address are also digital postal services that are increasingly growing.

Figure 3.17 - Top 10 digital postal services accessed via mobile



Source: UPU Digital Postal Survey 2017

Digital postal services under development

This part looks at services that postal operators do not currently provide but which are under development. The table below presents the top 10 “under development” services, to be used as a proxy indicator to approximate/measure postal operators’ product development priorities or product pipeline. For example, online postal shopping portals (shopping malls) and online customs declarations are under development by 22 and 18 designated operators worldwide, respectively.

The outcome shows a clear uptrend of digital services in support of expanding e-commerce.

- The top five priority areas for development are in the area of new services supporting the expansion of e-commerce: online postal shipping portal (shopping mall); online customs declaration; integration of postal web services with e-merchants’ sites; online philatelic and postal products shop; and online management (documents/merchandise delivery). This is closely followed by e-finance (online bill payment) and, last but not least, support services: online lookup (postcodes, addresses, post offices); online contact and customer service; electronic postal invoicing; and electronic notification.
- There remains a gap in terms of technological capabilities. A significant number of modern digital postal services are under consideration for launch by countries: for example, in many countries the top five digital services “under development” are actually at an early stage of adoption, or the countries face a wider technological gap.
- Few of the top 10 digital services are broadly prevalent; as a result, they are currently under development by a handful of designated operators. Those services with highest penetration rates are: online contact and customer services (77%); online lookup (74%); electronic notification (59%); and online philatelic and postal products shop (56%).
- Digital services with low penetration rates that are under development are either at the early stage of penetration rates, or are niche products that have great appeal to a certain segment of the market but which are only attractive in the context of a few countries.

Figure 3.18 - **Top 10 digital postal services accessed via mobile**



Dissemination of digital postal services

It is important to point out that all the tables for the dissemination of digital postal services (E-post and E-government, E-commerce, Digital financial and payment services and Support services) below report the averages of DOs in the region offering e-services. The colours indicates that regional posts’ relative position against global average, which was computed from all 125 DOs participated in the Survey. The colours represents (Red = below global average, Yellow = same as global average, Green = above world average).



E-post and e-government

The results in the table below show that there are wide regional disparities in the distribution of e-post and e-government services. In the industrialized and Europe and CIS countries, the spread of services is very strong and above the world average. However, most of the e-services are not yet ready for widespread use in Africa and Latin America and the Caribbean, as well to a lesser extent in the Arab and Asia-Pacific regions. In Latin America and the Caribbean, dissemination of all e-services is below the world average. In Africa, only two e-services (hybrid mail and reverse hybrid mail) are in line with the world average. Digital postal services in the Arab countries have a strong showing when it comes to the postal electronic mailbox (38%) and e-administration (43%). In Asia-Pacific and the Europe and CIS countries, the spread of digital postal services such as e-cards, e-invoicing and hybrid mail exceeds the worldwide average.

Table 3.7 - Percentage of designated operators in the region offering services - E-post and e-government

E-post and e-government	Region					
	Africa	Arab countries	Asia-Pacific	Europe and CIS	Industrialized countries	Latin America and Caribbean
Postal electronic mailbox	13%	38%	25%	24%	73%	8%
Online direct mail	0%	7%	15%	31%	67%	15%
Postal registered electronic mail	17%	21%	25%	38%	53%	15%
E-cards	4%	7%	25%	38%	73%	8%
Online bureaufax	4%	0%	5%	6%	20%	4%
E-invoicing	17%	21%	25%	31%	53%	12%
Hybrid mail	38%	29%	40%	63%	67%	8%
Reverse hybrid mail	13%	0%	10%	19%	33%	8%
Online facilitation of hybrid mail	13%	0%	10%	25%	60%	4%
Electronic postal certification mark	8%	0%	20%	13%	60%	4%
Digital signature	13%	7%	25%	25%	60%	12%
Digital identity services	8%	14%	15%	19%	67%	8%
Credentialing services	8%	14%	10%	6%	80%	4%
Digital archive	0%	21%	15%	19%	80%	19%
E-health services	0%	7%	10%	6%	13%	0%
E-administration	13%	43%	20%	19%	53%	27%

Source: UPU Digital Postal Survey 2017

E-commerce

The dispersion of e-commerce services across the UPU regions is more even, except in Africa, where implementation of e-services is below the world average. The industrialized countries exceed the world average for all services, and Asia-Pacific and Europe and CIS do so for half of the services, while only two e-services in the Arab countries and three in Latin America and the Caribbean are above the average. Africa is the only region where none of the e-services exceed the worldwide average.

Posts in the industrialized countries and Europe and CIS have a very strong showing in the online philatelic and postal products shop and online postal shopping portal (shopping mall) categories, as do those of the Arab countries in performance reports and analytics and virtual international addresses services, and Asia-Pacific for integration of postal web services with e-merchants' sites and calculations of estimated total landed costs. The presence of services relating to online management of documents/merchandise delivery in the Europe and CIS, industrialized and Latin America and Caribbean countries exceeds the world average.

Table 3.8 - Percentage of designated operators in the region offering services - E-commerce

E-commerce	Region					
	Africa	Arab countries	Asia-Pacific	Europe and CIS	Industrialized countries	Latin America and Caribbean
Online philatelic and postal products shop	30%	44%	80%	53%	100%	42%
Online postal shopping portal (shopping mall)	35%	38%	55%	41%	73%	27%
Online customs declaration	30%	25%	25%	35%	47%	38%
Integration of postal web services with e-merchants' sites	22%	25%	45%	53%	67%	23%
Performance reports and analytics	17%	38%	20%	24%	47%	19%
Virtual international address service	4%	19%	15%	6%	33%	23%
Calculation of estimated total landed costs	4%	25%	35%	41%	47%	19%
Online management: documents/merchandise delivery	22%	25%	20%	29%	33%	35%

Source: UPU Digital Postal Survey 2017

Digital financial and payment services

In all regions other than Latin America and the Caribbean, where the dissemination of digital financial services is not just very low but far below the world average, financial services are expanding: in the industrialized countries, Arab countries and Asia-Pacific region, and to some extent in Africa and to a lesser extent in Europe and the CIS. Digital postal services in Africa and the Arab countries have a strong showing for electronic remittances, payment solutions and online bill payment. Electronic remittances are strongly represented in Asia-Pacific and Europe and CIS (50% and 59%, respectively). Digital postal services such as payment solutions, online bill payment and escrow services for e-commerce are offered by 60% of Posts in industrialized countries.

Table 3.9 - Percentage of designated operators in the region offering services - Digital financial and payment services

Digital financial and payment services	Region					
	Africa	Arab countries	Asia-Pacific	Europe and CIS	Industrialized countries	Latin America and Caribbean
Online account management	17%	25%	20%	12%	40%	12%
Electronic remittances	57%	63%	50%	59%	47%	8%
Payment solutions	39%	44%	25%	24%	60%	19%
Online bill payment	43%	50%	40%	35%	60%	27%
Escrow services for e-commerce	4%	19%	15%	6%	60%	4%

Source: UPU Digital Postal Survey 2017

Support services

Like e-post and e-government, penetration rates for support services show a high degree of correlation with the level of advancement of economies. Public Internet access points in post offices, track and trace, and electronic postal invoicing, for example, are broadly accessible across the regions. Online lookup (postcodes, address, post offices) and track and trace have achieved 100% dissemination in Asia-Pacific and the industrialized countries. Online contact and customer services and online information on services and tariffs are also widespread in the industrialized countries, Asia-Pacific, Arab countries and Europe and CIS, while online address cleansing services have not come into widespread use in Africa, the Arab countries and Latin America and the Caribbean.

Table 3.10 - Percentage of designated operators in the region offering services - Support services

Support services	Region					
	Africa	Arab countries	Asia-Pacific	Europe and CIS	Industrialized countries	Latin America and Caribbean
Public Internet access point in post offices	57%	31%	50%	47%	40%	38%
Online information on services and tariffs	70%	88%	95%	88%	93%	81%
Online lookup (postcodes, addresses, post offices)	52%	63%	100%	94%	100%	54%
Online contact and customer service	65%	63%	95%	82%	87%	73%
Track and trace	100%	88%	100%	88%	100%	73%
Electronic notification	70%	50%	40%	76%	87%	42%
Online change of address	17%	19%	5%	35%	67%	15%
Holding of mail delivery online	13%	19%	15%	24%	60%	12%
Online address cleansing services	4%	0%	15%	12%	53%	8%
Electronic postal invoicing	17%	25%	15%	18%	60%	15%
Digital postage	13%	25%	15%	6%	60%	19%
Digital customized postage	17%	13%	10%	12%	47%	4%
Pick up service	35%	50%	75%	35%	67%	46%

Source: UPU Digital Postal Survey 2017

Future trends: UPU technology radar

Global analysis

The UPU technology radar measures the postal operators' perception of new technological trends that could affect (positively or negatively) their digital postal business in the future. The radar can be seen as a good tool for identifying strategic new projects (e.g., new pilots, or topics that need to be further researched or monitored). This 2017 version of the radar is an enhanced version of the one published in 2014. The International Bureau gathered the information through the survey sent to the member countries in 2017. In all, 125 designated operators responded to the survey.

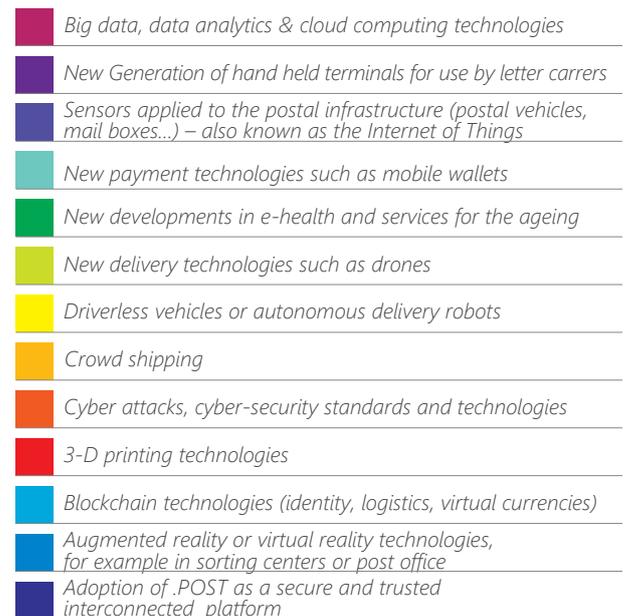
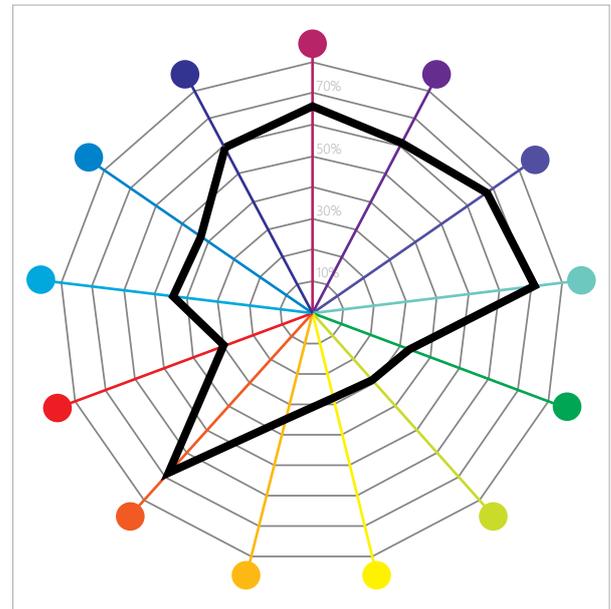
The areas perceived as having the highest potential impact are:

- Big data, data analytics and cloud computing technologies;
- Cyberattacks, cybersecurity standards and technologies;
- New payment technologies such as mobile wallets;
- Sensors applied to the postal infrastructure (postal vehicles, mailboxes) – also known as the Internet of Things;
- Adoption of .POST as a secure and trusted interconnected platform.

The last layers include areas given a still high but slightly lower level of importance, being cited as important by 28% to 42% of respondents. These include emerging technologies such as new delivery technologies, such as drones, driverless vehicles or autonomous delivery robots; 3-D printing technologies; new developments in e-health and services for older people; augmented reality or virtual reality technologies, for example in sorting centres or post office; and blockchain technologies (identity, logistics, virtual currencies), whose positive impacts on postal e-service operators are still imprecise, or limited to a few Posts.

Figure 3.19 - New technological trends expected to impact digital postal services: global analysis

Do you expect any of the following technological trends to impact your organization's e-service offerings in the coming years?



Source: UPU Digital Postal Survey 2017

Regional analysis

There is still a high degree of alignment between the various UPU regions when it comes to viewing the impact of future technological trends. Data shows a growing convergence in the perception of different regions' Posts about the positive impact of new technology.

The topics covered in this question were divided into two categories:

- High degree of alignment among UPU regions: In each region the overwhelming majority of Posts see new payment technologies such as mobile wallets, big data, data analytics and cloud computing technologies (except in Africa and Asia-Pacific) and sensors applied to the postal infrastructure as having a high impact. New delivery technologies such as drones, driverless vehicles or autonomous delivery robots and 3-D printing technologies are not considered high impact areas for digital postal services for the time being.
- Low degree of alignment among UPU regions: An example is adoption of .POST as a secure and trusted interconnected platform. Potential interest is relatively lower (between 33% and 54%) in the industrialized countries and Europe and CIS countries, Asia-Pacific and Latin America and the Caribbean, but is much higher in Africa and the Arab countries (70% and 71%, respectively). Gaps were also observed in adapting new technologies to others: for example, the new generation of handheld terminals for use by letter carriers was perceived as being of high importance in Africa (70%), with other regions rating it between 50% and 65%, and .POST received high ratings from Africa (70%) and the Arab countries (71%), but between just 33% and 54% in other regions. The impact of big data analytics was perceived as being very high in almost all regions (between 56% and 73%), except, interestingly, in Asia-Pacific, where its impact was perceived as much lower (45%), even lower than in Africa (61%). New developments in e-health and services for older people were perceived as being a modest impact area in the various regions (30 to 43%), and doubly so in Europe and the CIS (19%).

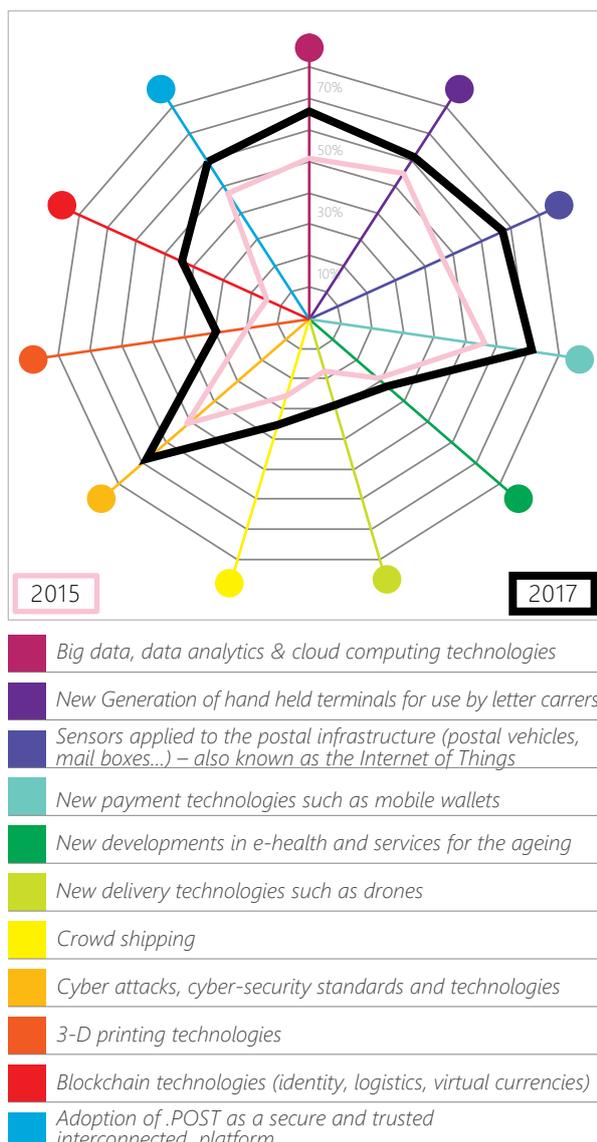
This result points to an important, but inconclusive trend. It highlights two important outcomes: firstly, the different regions exhibit signs of convergence in most cases, considering new technologies as a high impact area for digital postal services. The perception of technology as a high impact area for digital postal services has increased since the last survey in 2015. Overall, in their responses to UPU technology radar questionnaires, Posts concur that technology is a high impact area; and secondly, with the exception of industrialized countries, Posts still consider new delivery technologies as a low-impact area. The reason for the latter is not obvious. Possibly Posts are either not fully aware of the benefits of new delivery technologies, or there may be other limits on viewing new delivery technology as a high impact area.

UPU technology radar trends 2015–2017

Global trends

Overall, Posts' perception of new technology as a high impact area is reflected in a steep increase on all fronts between 2015 and 2017. In 2017, on average, global postal operators' perception of the impact of new technology was 51%, 13 percentage points higher than in 2015. New technologies whose perceived impact on digital postal services saw an increase by a big margin included: blockchain technologies (up by 30 percentage points); sensors applied to the postal infrastructure (postal vehicles, mail boxes, etc.), also known as the Internet of Things (up 21 points); cyber-attacks, cyber-security standards and technologies (up 17 points); new payment technologies such as mobile wallets and big data, data analytics and cloud computing technologies (up 15 points each); and adoption of .POST as a secure and trusted interconnected platform, and new delivery technologies such as drones (up 12 points each). Posts' perception of 3-D printing technologies and crowd

Figure 3.20 - New technological trends expected to impact digital postal services: global trends



Source: UPU Digital Postal Survey 2017

shipping as a high impact area also saw a positive trend (up 10 points). Other new technologies whose perception improved slightly compared to 2015 are the new generation of handheld terminals for use by letter carriers, and new developments in e-health and services for older people (up by 6 and 3 points, respectively).

Africa region

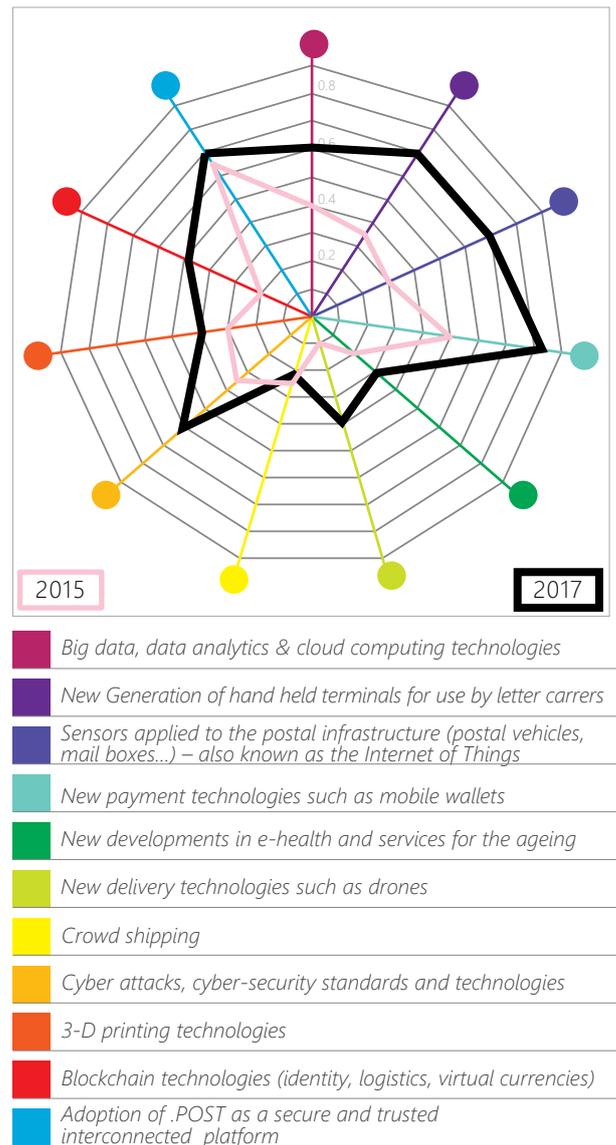
Between 2015 and 2017, the perception of new technology as having a positive impact on digital postal services saw a steep uptrend in the region. In 2017, on average, African Posts saw it as a high impact area: 54% vs. 33% in 2015, an increase of 21 percentage points.

New technologies whose perceived importance rose by a large margin included sensors applied to the postal infrastructure (postal vehicles, mail boxes, etc.), also known as the Internet of Things (up by 40 points); the new generation of handheld terminals for use by letter carriers (35 points); new payment technologies such as mobile wallets (33 points); blockchain technologies (28 points); and new delivery technologies such as drones (29 points).

In addition, issues critical to data privacy and security (cyber-attack, cyber-security standards and technologies) and big data, data analytics and cloud computing technologies trended positively (26 and 21 points, respectively).

The trend suggests that regional Posts have understood the positive impact of new technology and are increasingly moving towards adoptions to improve their postal e-service operations.

Figure 3.21 - New technological trends expected to impact digital postal services: Africa



Source: UPU Digital Postal Survey 2017

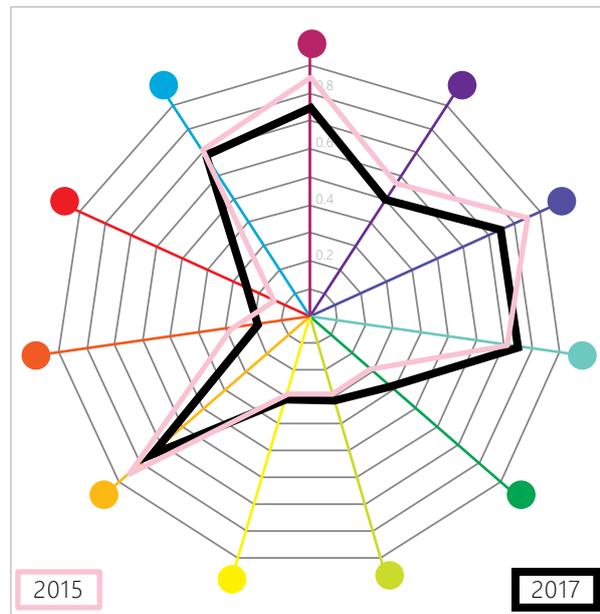
Arab countries

Overall, the perception of new technology as having a high impact on Posts in the region slightly decreased from 53% in 2015 to 51% in 2017. New technologies for which there was an uptrend in perception (between four and 11 percentage points) were new developments in e-health and services for older people; new delivery technologies such as drones; blockchain technologies, and new payment technologies such as mobile wallets.

In contrast, there was a fall of 10 points in the perceived importance of new technology for e-finance and data privacy and security such as big data; data analytics and cloud computing technologies; and cyber-attacks, cyber-security standards and technologies. Emerging technology such as 3-D printing and adoption of .POST as a secure and trusted interconnected platform also saw a slight decrease (between two and five points).

Even though the perception varies from country to country, overall, the region's Posts see new technologies as increasingly important for their operations.

Figure 3.22 - **New technological trends expected to impact digital postal services: Arab countries**



- Big data, data analytics & cloud computing technologies
- New Generation of hand held terminals for use by letter carriers
- Sensors applied to the postal infrastructure (postal vehicles, mail boxes...) – also known as the Internet of Things
- New payment technologies such as mobile wallets
- New developments in e-health and services for the ageing
- New delivery technologies such as drones
- Crowd shipping
- Cyber attacks, cyber-security standards and technologies
- 3-D printing technologies
- Blockchain technologies (identity, logistics, virtual currencies)
- Adoption of .POST as a secure and trusted interconnected platform

Source: UPU Digital Postal Survey 2017

Asia-Pacific region

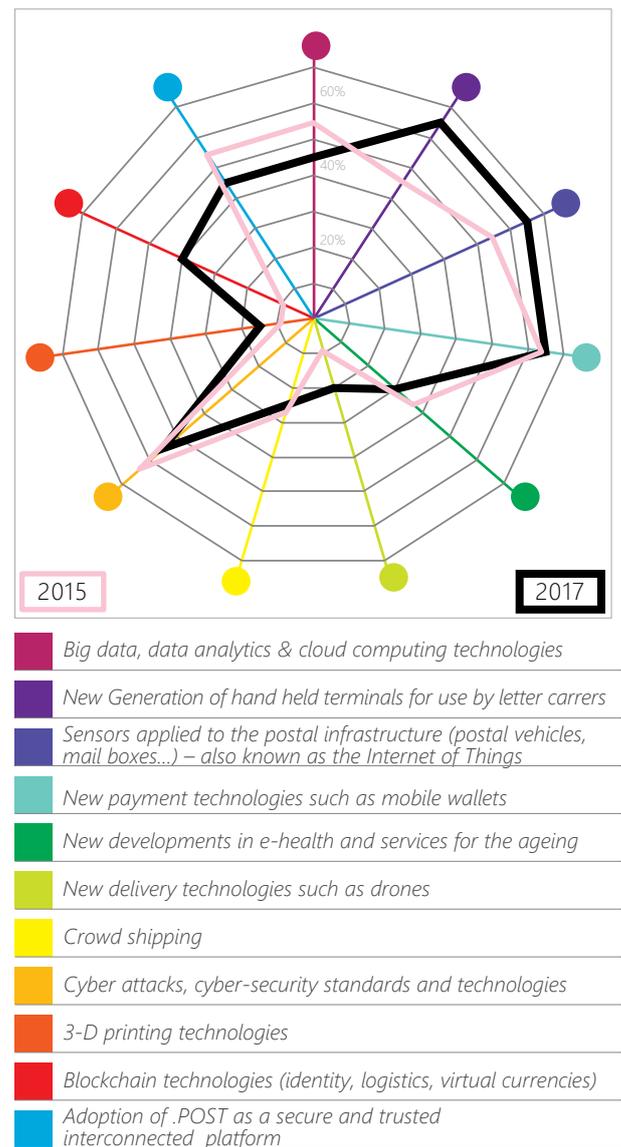
Overall, the perception of new technology as having a positive impact on digital postal services rose slightly, from 39% in 2015 to 43% in 2017. Interestingly, there was a very steep increase in the perceived impact of blockchain technologies (identity, logistics, virtual currencies), rising to 40% in 2017 compared to just 9% in 2015.

Other areas with a positive trend were the new generation of handheld terminals for use by letter carriers (up by 20 percentage points); new delivery technologies such as drones (up 11 points); sensors applied to the postal infrastructure (postal vehicles, mail boxes, etc.), also known as the Internet of Things (up 10 points); 3-D printing technologies (six points); and new payment technologies such as mobile wallets (up just one point).

By contrast, the new technologies perceived as having no or negative impact included big data; data analytics and cloud computing technologies; adoption of .POST as a secure and trusted interconnected platform; and cyber-attacks, cyber-security standards and technologies, each decreasing by 10 points. New developments in e-health and services for older people, and crowd shipping, decreased by six and two points, respectively.

The perception of new payment technologies such as mobile wallets having a high impact was graded at just one percentage point higher than in 2015, and it is hard to explain why big data, data analytics and cloud computing technologies were considered by Posts as having no impact or less impact, with a fall of 10 points between 2015 and 2017.

Figure 3.23 - New technological trends expected to impact digital postal services: Asia-Pacific



Source: UPU Digital Postal Survey 2017

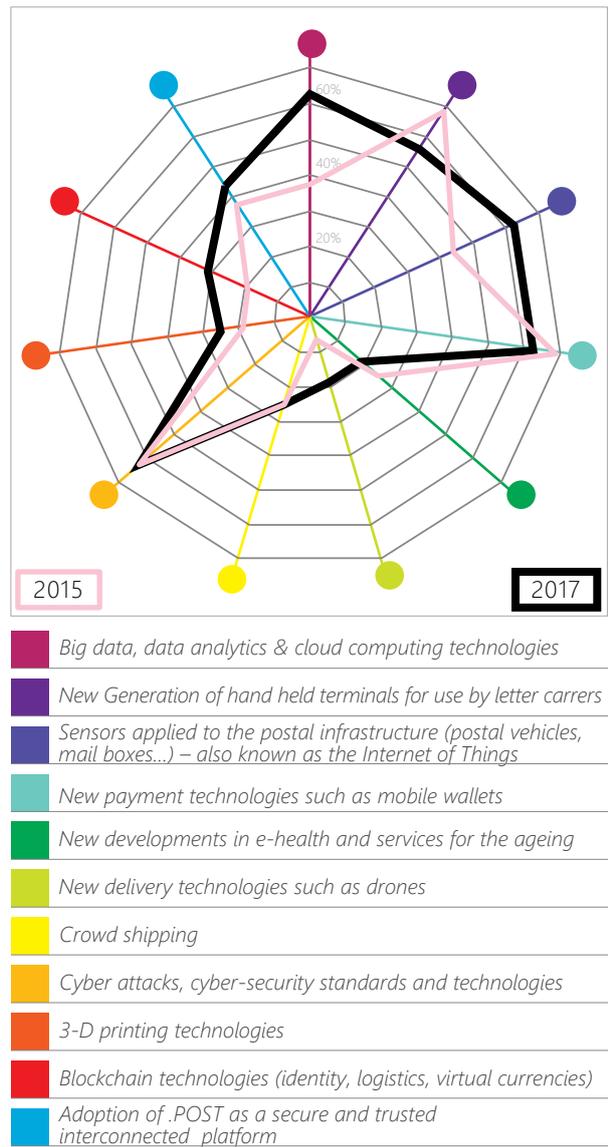
Europe and CIS countries

Generally, Posts in this region consider the latest technology to have a strong impact on their operations. On average, the perception of new technology as having an impact on digital postal services rose slightly to 43% in 2017, five points up from 2015. Examples of new technologies with uptrends in percentage points included big data, data analytics and cloud computing technologies (up 25 points), and 3-D printing technologies (up six).

Likewise, sensors applied to the postal infrastructure (postal vehicles, mail boxes, etc.), also known as the Internet of Things, and blockchain technologies and adoption of .POST as a secure and trusted interconnected platform were up by 19 and six percent points respectively, while new technological issues such as cyber-attacks, cyber-security standards and technologies and crowd shipping remained at 63% in 2017 as in 2015.

In contrast, new technologies for which the perceived impact on digital postal services fell in percentage terms were the new generation of handheld terminals for use by letter carriers (down 13 points), and new payment technologies such as mobile wallets and new developments in e-health and services for the ageing (each down six points).

Figure 3.24 - **New technological trends expected to impact digital postal services: Europe and CIS countries**



Source: UPU Digital Postal Survey 2017

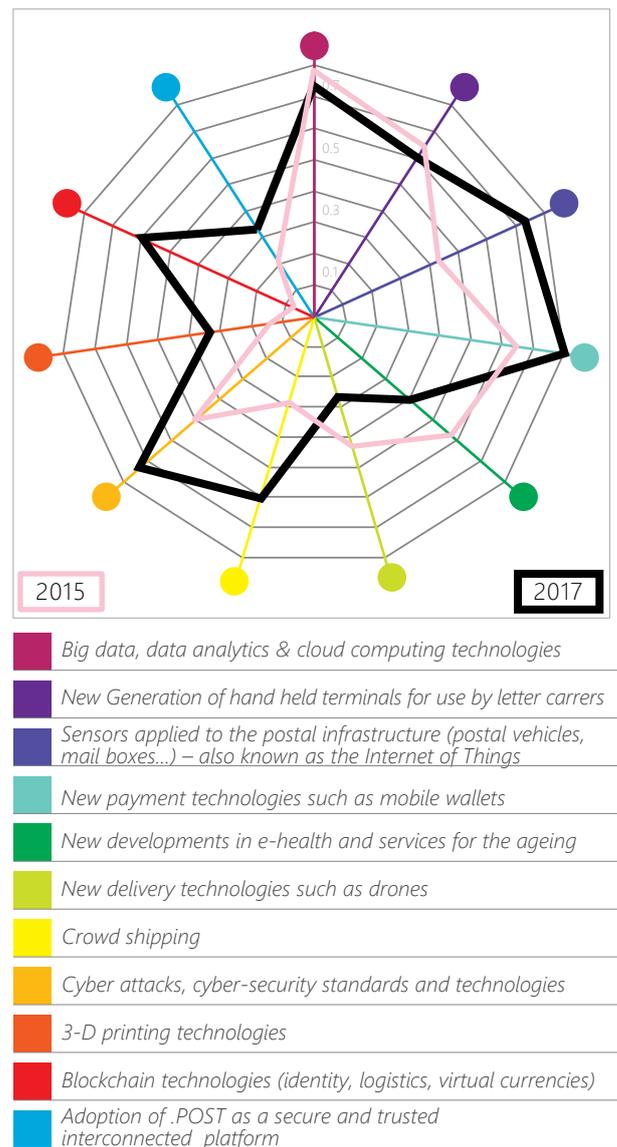
Industrialized countries

In the industrialized countries, Posts' overall perception of the impact of adopting new technology saw a huge increase between 2015 and 2017, rising from an average of 43% to 56%.

Among the new and emerging technologies whose perceived importance rose significantly were blockchain technologies (up 53 percentage points); sensors applied to the postal infrastructure (postal vehicles, mail boxes, etc.), also known as the Internet of Things (up 31); crowd shipping (also up 31); cyber-attacks, cyber-security standards and technologies (23); 3-D printing technologies (19); new payment technologies such as mobile wallets (16); and adoption of .POST as a secure and trusted interconnected platform (up 10 points).

Meanwhile, there were falls in the perceived impact of new developments in e-health and services for older people (down 17 points); new delivery technologies such as drones (down 16); big data, data analytics and cloud computing technologies (down five); and the new generation of handheld terminals for use by letter carriers (a drop of four points).

Figure 3.25 - New technological trends expected to impact digital postal services: industrialized countries



Source: UPU Digital Postal Survey 2017

Latin America and Caribbean

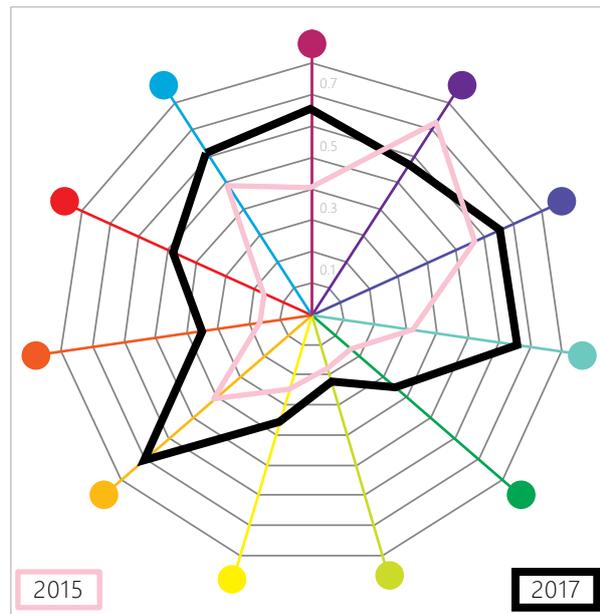
In general, Posts in this region perceive new technology as having a high impact on their digital postal services, with the overall average rising to 45% in 2017 from 31% in 2015.

Those new technologies whose perceived impact on digital postal services rose significantly (by between 22 and 29 percentage points) between 2015 and 2017 include new payment technologies such as mobile wallets, blockchain technologies, cyber-attacks, cyber-security standards and technologies, and big data, data analytics and cloud computing technologies.

Other new technologies for which the perceived impact on digital postal services increased were new developments in e-health and services for older people, and 3-D printing technologies (each up 17 points); adoption of .POST as a secure and trusted interconnected platform (up 11); crowd shipping (up nine); sensors applied to the postal infrastructure (postal vehicles, mail boxes, etc.), also known as the Internet of Things (up eight); and new delivery technologies such as drones (up four points).

Meanwhile, Posts in Latin America and the Caribbean overall consider the new Generation of handheld terminals for use by letter carriers as having less impact on their digital postal services than in 2015, with a drop of 14 percentage points.

Figure 3.26 - **New technological trends expected to impact digital postal services: Latin America and Caribbean**



- Big data, data analytics & cloud computing technologies
- New Generation of hand held terminals for use by letter carriers
- Sensors applied to the postal infrastructure (postal vehicles, mail boxes...) – also known as the Internet of Things
- New payment technologies such as mobile wallets
- New developments in e-health and services for the ageing
- New delivery technologies such as drones
- Crowd shipping
- Cyber attacks, cyber-security standards and technologies
- 3-D printing technologies
- Blockchain technologies (identity, logistics, virtual currencies)
- Adoption of .POST as a secure and trusted interconnected platform

Source: UPU Digital Postal Survey 2017

Posts are comparatively well positioned to provide e-government, e-commerce and e-finance services to population that tend to be excluded, such as women, the poor, the less educated and those in the informal economy.

Chapter IV:
**Digital Postal Services –
Strategic Analysis**



Strategies and actions followed for the provision of digital services

This section identifies the wider actions executed by UPU members to help accomplish their digital postal services business objectives. The classifications measured include strategic planning (“dedicated digital market strategy”), organizational responses, human resource strategies, funding, acquisition and partnerships. The aim is not to cover the specific characteristics of any service or market strategy, but rather to emphasize some of the critical decisions that Posts take when expanding into innovative segments.

Global analysis

Globally, digital strategies for digital postal services have become increasingly prevalent over the past few years. More than half of the Posts that responded to the question pursue one or more of the following seven strategies and actions: increased funds for the development of an electronic infrastructure (69%); development of a new dedicated digital market strategy (68%); new business department for e-services (65%); recruitment of individuals with specific know-how in relation to the digital world (60%); specific training programme (55%); creation or strengthening of internal innovation capabilities (research team, innovation lab) (54%); and encouraging third parties such as developers, start-ups etc. to propose new digital postal services (through initiatives such as “hackathons” – 47%).

The results show massive growth in the creation of new business departments for e-services, with the number of countries reporting the creation of a separate unit up 40 percentage points from 2015.

Another strategic area that is less prevalent:

- **Partnership strategies:** 47% of designated operators have encouraged third-party developers and start-ups to propose new digital postal services. However, more than half of the countries did not respond to this question as to whether they apply the methodology, which aims to build a partnership for digital postal services.

Figure 4.1 - Global strategies and actions used for the provision of e-services



Source: UPU Digital Postal Survey 2017

Regional analysis

- **Strategy:** Between 67 and 87% of Posts in the Arab countries, industrialized countries, Europe and CIS, Asia-Pacific and Africa have implemented a new dedicated digital strategy for digital postal services. The figure is somewhat lower in Latin America and the Caribbean (50%).
- **Funding:** All regions stated that they had “increased funds for the development of an electronic infrastructure”. The result shows that the industrialized countries (64% vs. only 30% in 2015) and the Latin America and Caribbean region (54% vs. 36% in 2015) have invested more in the development of electronic infrastructure.
- **Organization:** Overall, there are big rises in the number of operators creating a new business department for digital postal services, with 93% (vs. 50% in 2015) of Posts in the Arab countries and 75% (50% in 2015) of Posts in Asia-Pacific reporting in 2017 that they had taken this step. In Latin America and the Caribbean the figure is 46% (compared to just 10% in 2015), and 54% (vs. 27% in 2015) in the industrialized countries.
- **Human resources:** respondents in the Arab countries, Asia-Pacific and Africa gave high importance to the need for external experts (87%, 70% and 68%, respectively) and the development of internal skills (specific training programmes – 86%, 63% and 68%). The percentages vary considerably for other regions: only 21% of Posts use

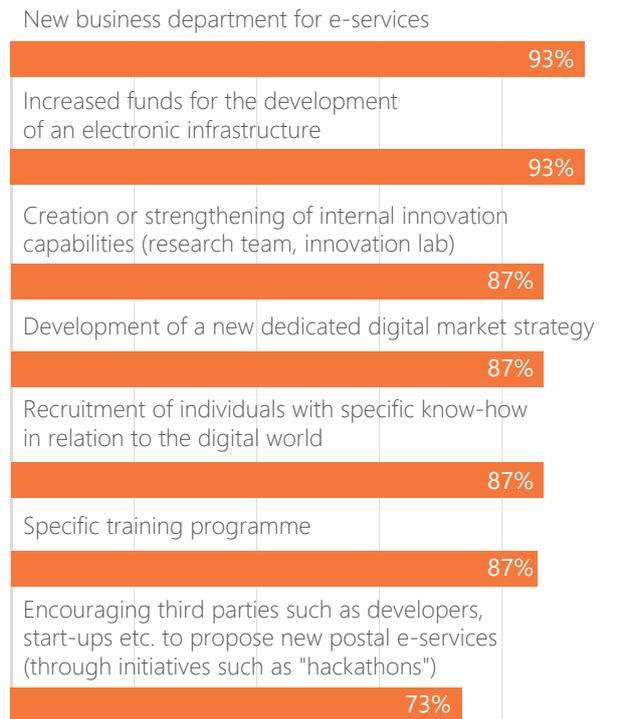
specific training programmes in industrialized countries, compared to 42% in Latin America and the Caribbean, and 60% in Europe and the CIS. Overall, countries have increased efforts to acquire both internal and external skills to achieve postal e-service business goals.

Figure 4.2 - **Strategies and actions used for the provision of e-services: Africa**



Source: UPU Digital Postal Survey 2017

Figure 4.3 - **Strategies and actions used for the provision of e-services: Arab countries**



Source: UPU Digital Postal Survey 2017

Figure 4.4 - **Strategies and actions used for the provision of e-services: Asia-Pacific**



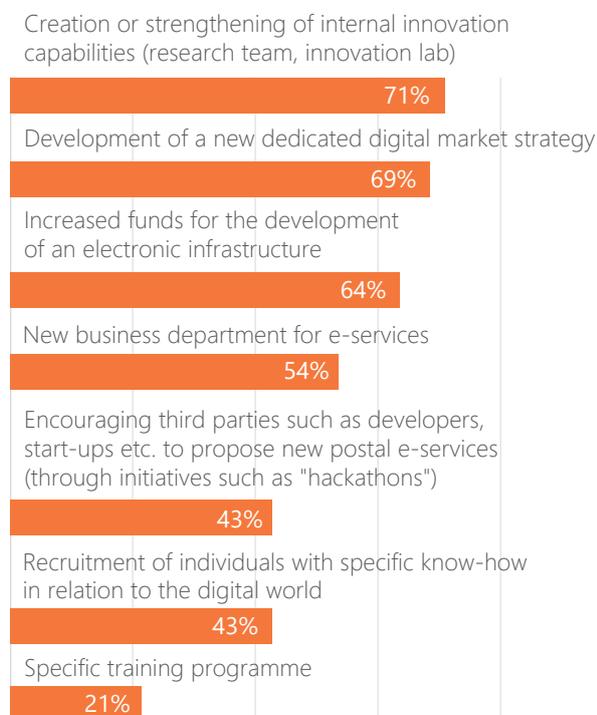
Source: UPU Digital Postal Survey 2017

Figure 4.5 - **Strategies and actions used for the provision of e-services: Europe and CIS**

Source: UPU Digital Postal Survey 2017

Figure 4.7 - **Strategies and actions used for the provision of e-services: Latin America and Caribbean**

Source: UPU Digital Postal Survey 2017

Figure 4.6 - **Strategies and actions used for the provision of e-services: industrialized countries**

Source: UPU Digital Postal Survey 2017

Reasons for launching digital postal services

Global analysis

The table below lists the percentage of Posts' reasons for launching postal electronic services that they see as very significant, somewhat significant, or not significant for their e-services. (Responses on a 5 to 1 scale: very significant = 5 or 4; somewhat significant = 3 or 2; not significant = 1.)

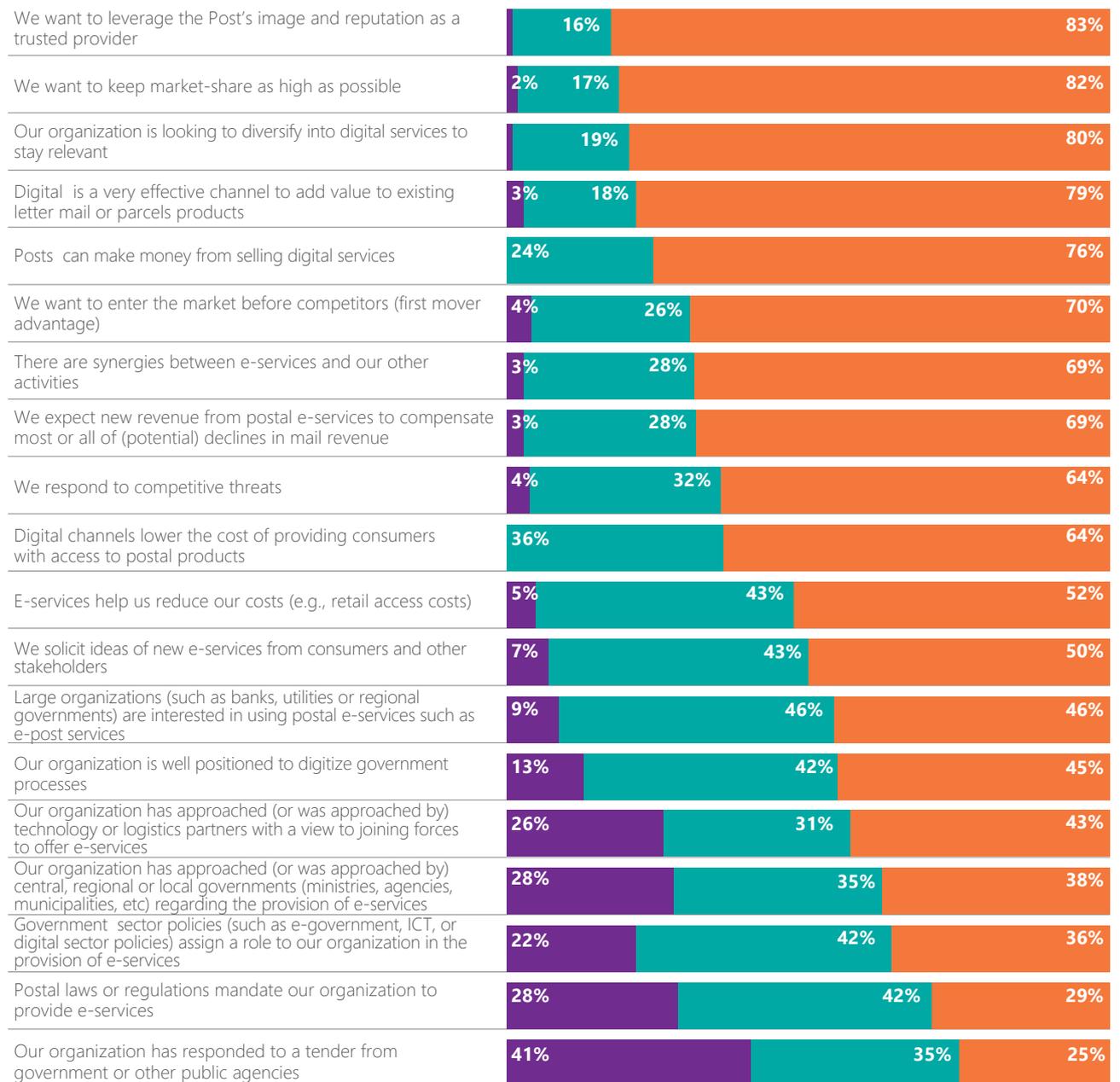
Top drivers related to three strategic objectives:

- Leveraging competencies:** Globally, the most commonly shared reason for launching digital postal services (reason 1) is "leverage Post's image and reputation as a trusted provider" (with 83% of Posts characterizing it as "very significant", up from 72% in 2015). Meanwhile, 69% of Posts (reason No. 7) express their desire to create and exploit "synergies between e-services and their other activities".
- Diversification:** The overwhelming majority (80%) of Posts say that they are "looking to diversify into digital services to stay relevant" (reason No. 3). Moreover, 76% of countries agree that Posts "can make money from selling digital services" (reason No. 5). In addition, a significant number (69%) of countries expect that digital services will help them generate "new revenue from digital postal services to compensate most or all of the (potential) declines in mail revenue" (reason No. 8).

Protecting and strengthening the core business:

Many Posts wish to use digital services to make "market share as high as possible" (reason No. 2, 82%); "respond to competitive threats" (reason No. 9, 64%); "enter the market before competitors" (reason No. 6, 70%); "add value to the core" (reason No. 4, 79%); and "lower the cost of providing consumers with access to portal products (reason No. 10, 64%). Over half of all respondents state that digital postal services will "improve efficiency in reducing [their] costs" (reason No. 11), and exactly half of the countries indicated that they will proactively "solicit ideas for new e-services from consumers and other stakeholders" (reason No. 12).

The reasons ranked between 13th and 19th include Posts' relations with stakeholders, clients, governments, or technology partners: 46% of DOs referred to an interest in using e-postal solutions among large organizations such as banks or utilities (reason No. 13); 38% said they had been "approached by national, regional or local governments" (reason No. 16), while only 25% of Posts responded to tenders (reason No. 19). Of all the DOs responding, 45% said they were "well positioned to digitize government processes" (reason No. 14). Overall, legal and regulatory aspects do not play a significant role in the launching of digital postal services. For example, the two low-ranking drivers (reasons 17 and 18): "government sector policies (such as e-government, ICT, or digital sector policies) assign a role to our organization in the provision of e-services" and "postal laws or regulations mandate our organization to provide e-services" scored only 36% and 29%, respectively.

Figure 4.8 - **Reasons that lead (led) your organization to launch digital postal services: global**

Source: UPU Digital Postal Survey 2017

very significant somewhat significant not significant

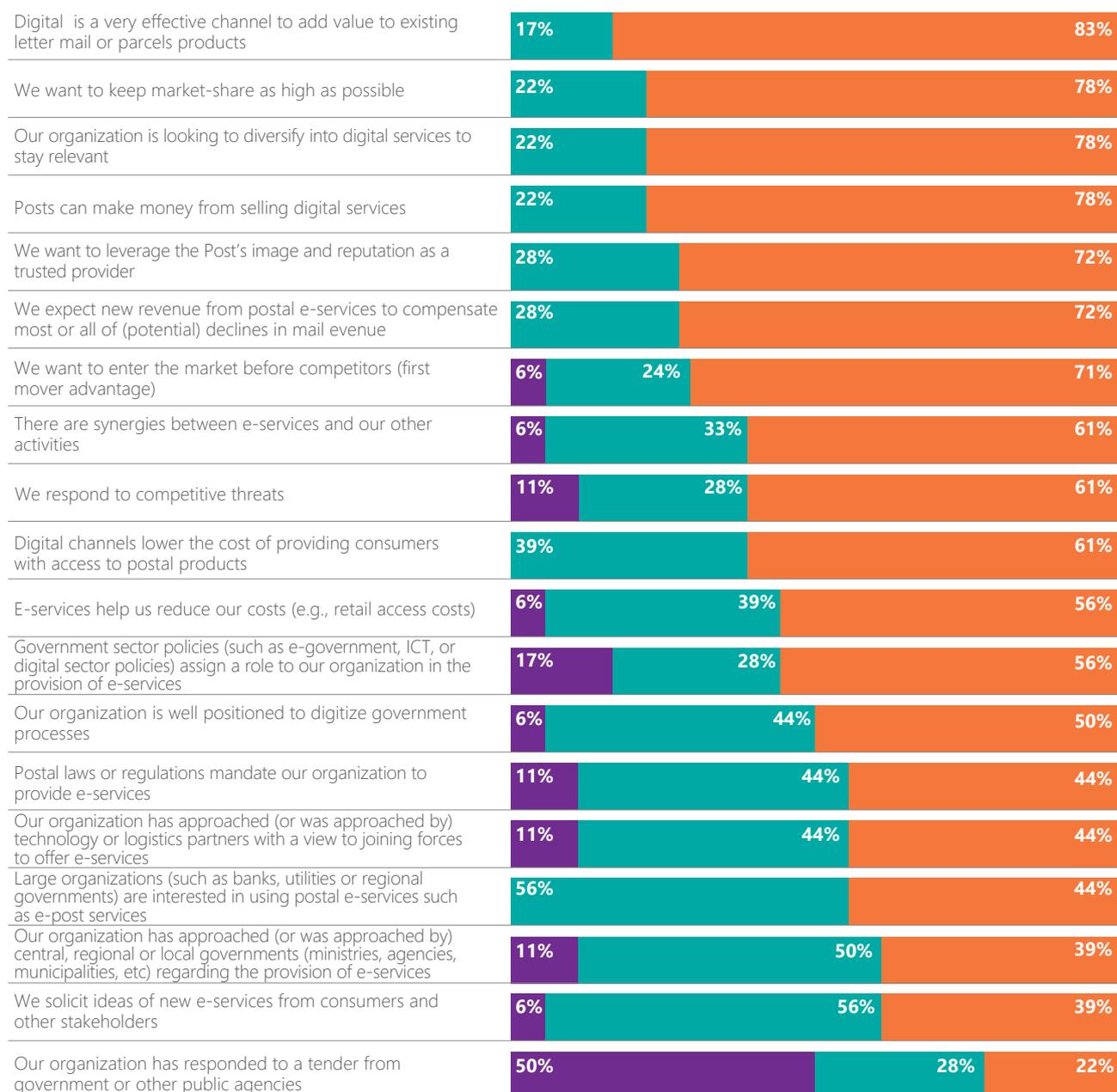
Regional analysis

Posts' prime motivation for launching digital postal services varies slightly between the UPU regions. Three out of the top five driving factors are, however, common to all six regions: the willingness to leverage the Post's trust and reputation; the wish to maximize market share; and the desire to exploit digital services to add value to the core business.

The main distinctions between the regions are as follows:

- **Africa:** Posts in the region consider digital as an "effective channel to add value to the existing letter mail or parcels products" (83% of respondents), and "Posts can make money from selling digital services", Posts use digital services to increase "market-share as high as possible", and Posts are "looking to diversify into digital services to stay relevant", (each with 78% of Posts). Africa's top five reasons for launching digital postal services are therefore very much in line with global averages.
- **Arab countries:** The region demonstrates a high level of alignment with the UPU's three strategic goals: leveraging competencies ("leverage the Post's image and reputation as trusted provider"); diversification ("our organization is looking to diversify into digital services to stay relevant" and "Posts can make money from selling digital services"), and protecting and strengthening the core business ("keep the market share as high as possible", "enter the market before competitors", and "lower the cost of providing consumers with access to postal products"), each with 93% of Posts. As in other regions, in the Arab countries, government sector policies seem to be less likely to be the main reason for launching e-services. Interestingly, the region's overall score on the Post's role in digitizing government processes is far above the regional and world averages (86% vs. 45% globally, and just 19% in Latin America and the Caribbean).
- **Asia-Pacific:** Countries in the region gave a high score to "leveraging the Post's image and reputation as trusted provider" and "looking to diversify into digital services" to remain in business, selected by 90% of Posts.
- **Europe and CIS:** Here, the top five reasons for launching digital postal services are also largely in line with the world averages. For example, "adding value to the core business" and "increasing market share" tops all other factors (with 93% apiece). However, in terms of achieving and sustaining first-mover advantage to enter the market, the region scores slightly below the world averages (53% vs. 70% worldwide); the figure for this is much higher in other regions, with the exception of the industrialized countries (where it is just 50%).
- **Industrialized countries:** 86% of Posts believe that digital postal services will enable them to exploit synergies with other businesses, and leverage the Post's trust and reputation. In contrast, only 8% of countries in the region stated that government policies play a very significant role in launching digital postal services.
- **Latin America and Caribbean:** In this part of the world, 77% of Posts see digital innovations as a means of generating extra revenue from services, while 73% look to digital services to stay relevant in the market, and leverage the Post's trust and reputation. Only 19% (vs. 45% globally, 62% in Europe and CIS, 86% in Arab countries, 50% in Africa and industrialized countries, and 40% in Asia-Pacific) are well positioned to digitize government processes. On average, the role of government policies in supporting the launching of digital postal services is viewed as insignificant, as it is in other regions.

Figure 4.9 - Reasons that lead (led) your organization to launch digital postal services: Africa



Source: UPU Digital Postal Survey 2017

very significant somewhat significant not significant

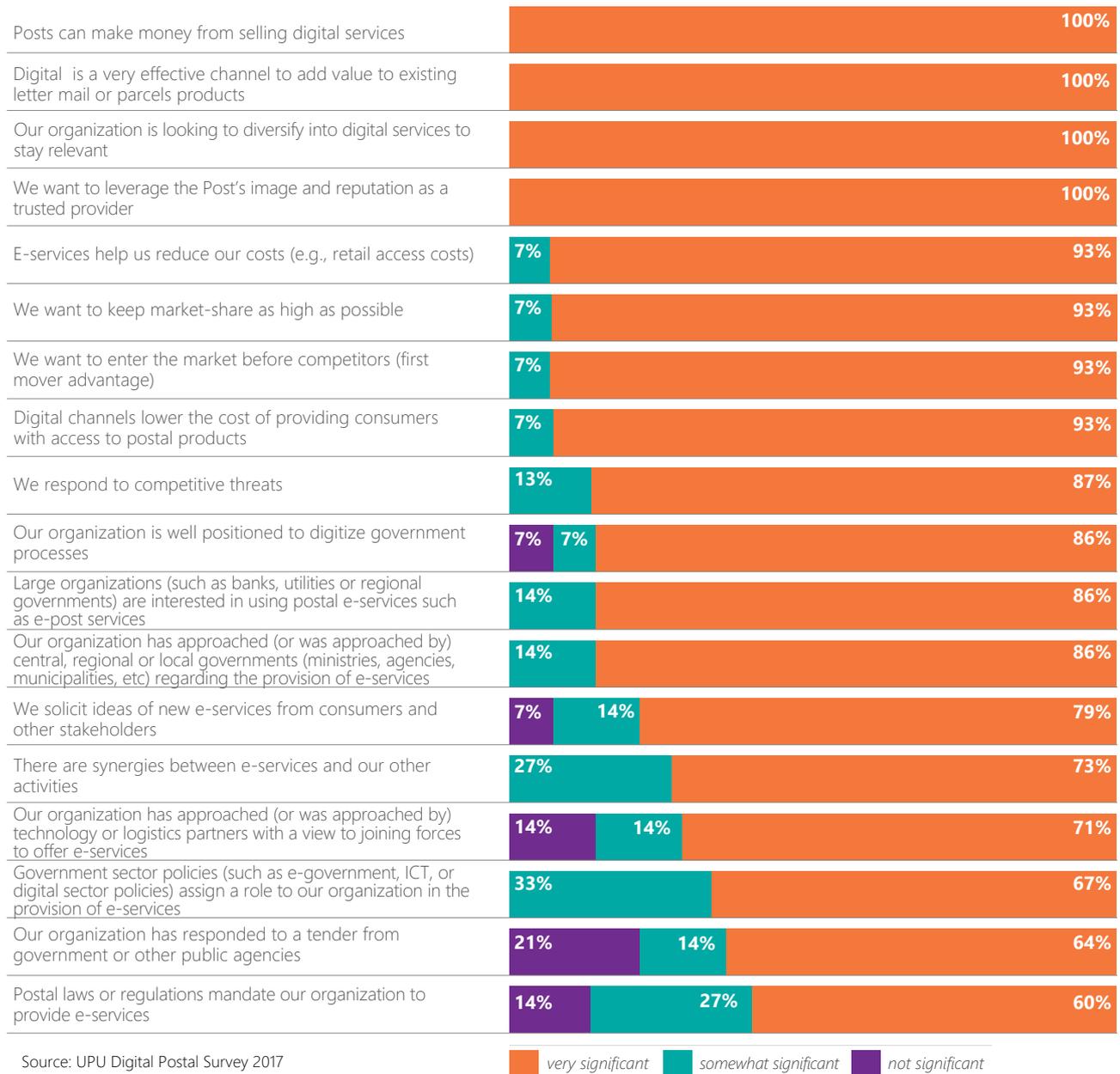
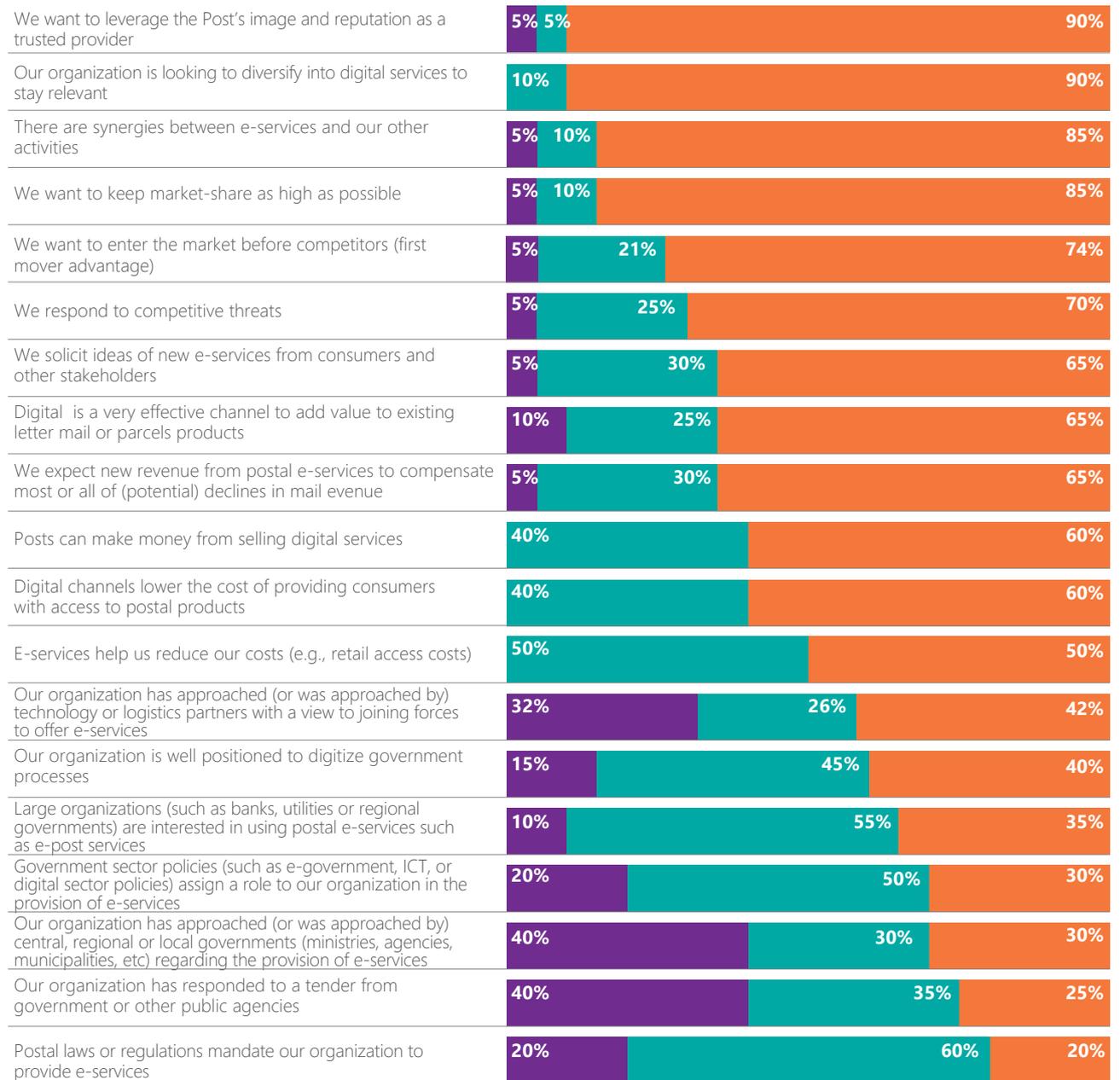
Figure 4.10 - **Reasons that lead (led) your organization to launch digital postal services: Arab countries**

Figure 4.11 - Reasons that lead (led) your organization to launch digital postal services: Asia-Pacific



Source: UPU Digital Postal Survey 2017

■ very significant
 ■ somewhat significant
 ■ not significant

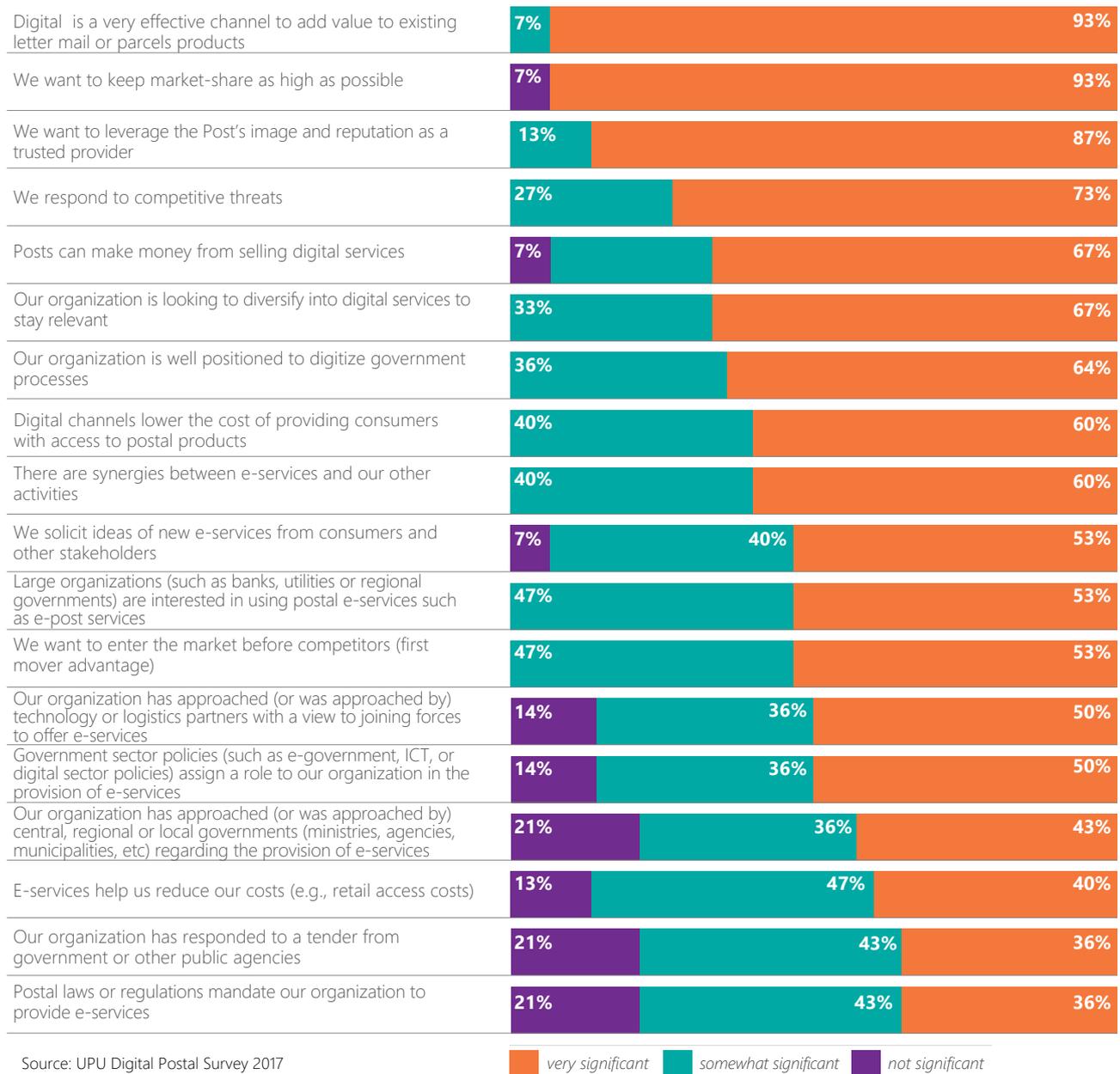
Figure 4.12 - **Reasons that lead (led) your organization to launch digital postal services: Europe and CIS**

Figure 4.13 - Reasons that lead (led) your organization to launch digital postal services: industrialized countries

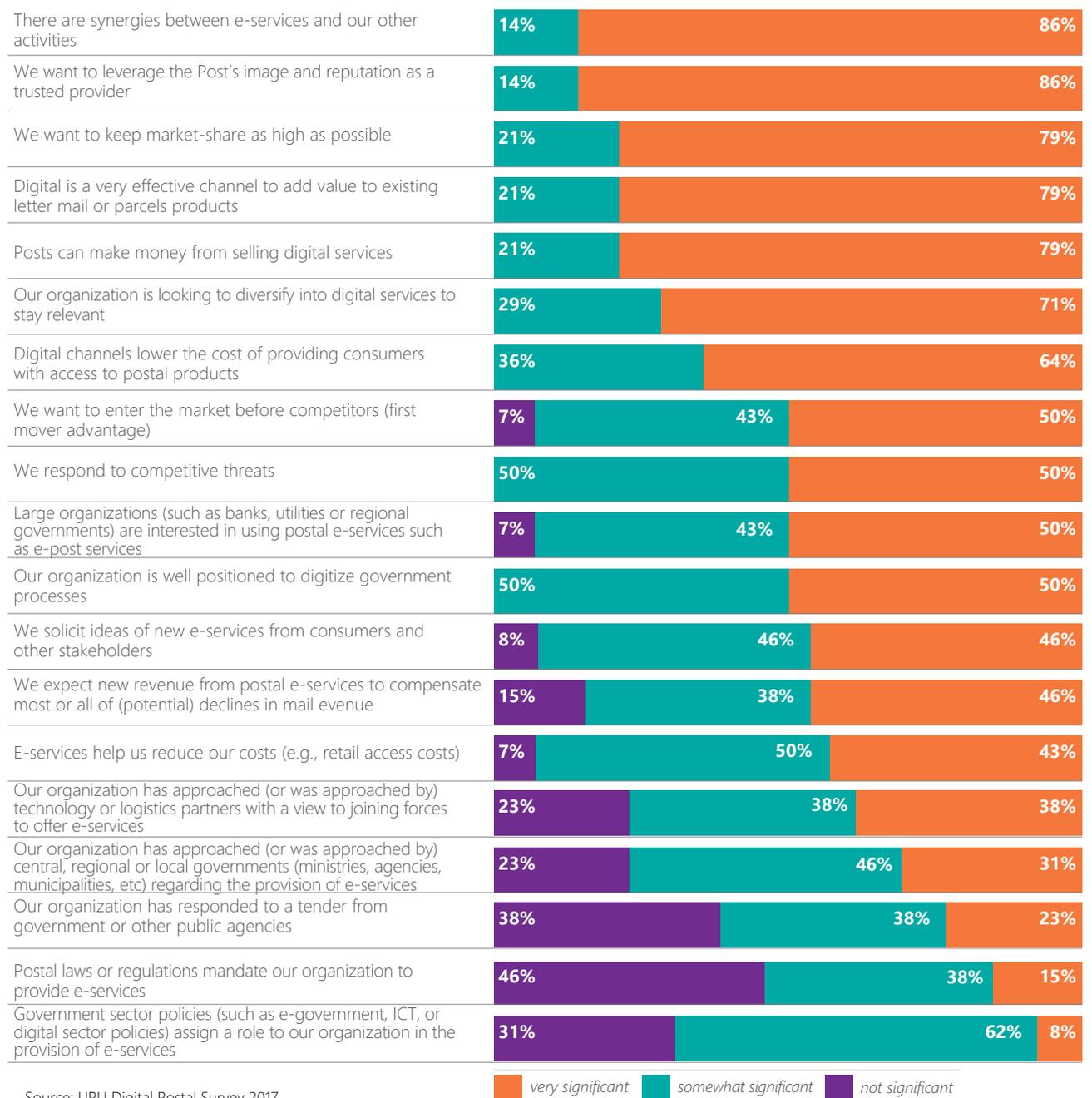
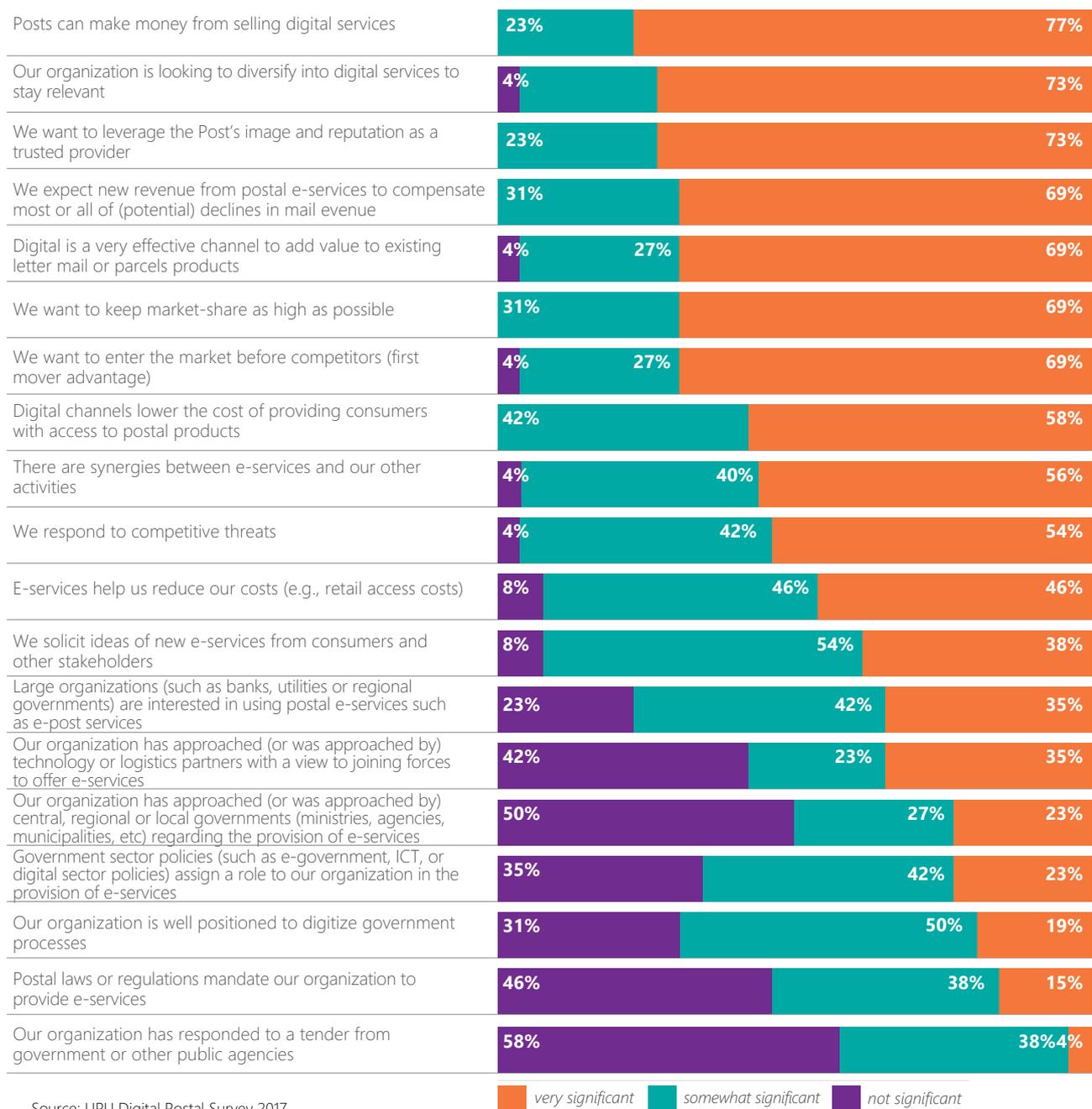


Figure 4.14 - **Reasons that lead (led) your organization to launch digital postal services: Latin America and Caribbean**

Trends in top five drivers for launching digital postal services (2015–2017)

- **Globally**, Posts' top five reasons for launching digital postal services are: leveraging the Post's image and reputation as a trusted provider (83% vs. 72% in 2015); maximizing market share (82% vs. 63% in 2015); diversifying digital service to remain relevant in the market place (80% vs. 71% in 2015); adding value to the core business (79%*); and making money from selling digital services (76%*).
- **Africa**: The top driver for launching services is adding value to the core business" (83%*), followed by increasing market share (78%*) and making money from selling digital services (also 78%, up from 65% in 2015) and using digital services to diversify. A substantial proportion of respondents (72% vs. 60% in 2015) seek to leverage the Post's trust and reputation.
- **Arab countries**: All of the region's DOs participating in the survey concurred that digital services leverage the Post's image and reputation as a trusted provider, and are looking to diversify into digital services to stay relevant. Likewise, they all agreed that the services add value to the existing core business, and that they aim to make money from selling digital services. Many said that digital services maximize market share (93% vs. 71% in 2015), with the same proportion (93%*) stating that e-services help them reduce their costs. First-mover advantage (entering the market before rivals) was likewise among the top reasons for launching digital postal services (again, 93%*).
- **Asia-Pacific**: Leveraging the Post's trust and reputation and looking to digital services to diversify are the top factors in launching e-services in the region, both cited by 90% of Posts, followed by a desire to increase market share (85%*) and exploit synergies between e-services and other activities (85% vs. 82% in 2015), and first-mover advantage (74%*).
- **Europe and CIS**: Over 90%* of the countries say they want to keep market share as high as possible and use digital channels to add value to existing letter-mail or parcels products, while 87% (vs. 81% in 2015) of Posts want to leverage the Post's image and reputation as a trusted provider, 73% (vs. 75% in 2015) wish to respond to competitive threats, and 67% each are looking to diversify into digital services to stay relevant and to make money from selling digital services.
- **Industrialized countries**: Exploiting synergies between e-services and other activities and leveraging the Post's image and reputation as a trusted provider are the driving factors behind launching e-services, each with 86% (vs. 93% in 2015), while 79% (vs. 93% in 2015) wish to keep market share as high as possible and use digital services to add value to existing letter mail or parcels products. 79%* of Posts also stated that they make money from selling digital services.
- **Latin America and Caribbean**: This region gave high importance to the potential for Posts to make money from selling digital services (77% vs. 50% in 2015), leveraging the Post's image and reputation as a trusted provider and looking to diversify into digital services to stay relevant (both 73%*. 69% (vs. 43% in 2015) of DOs want to enter the market before competitors (first mover advantage), and 69% also want to keep market share as high as possible (vs. 50% in 2015).

* New in the top five ranking, as compared to 2015.

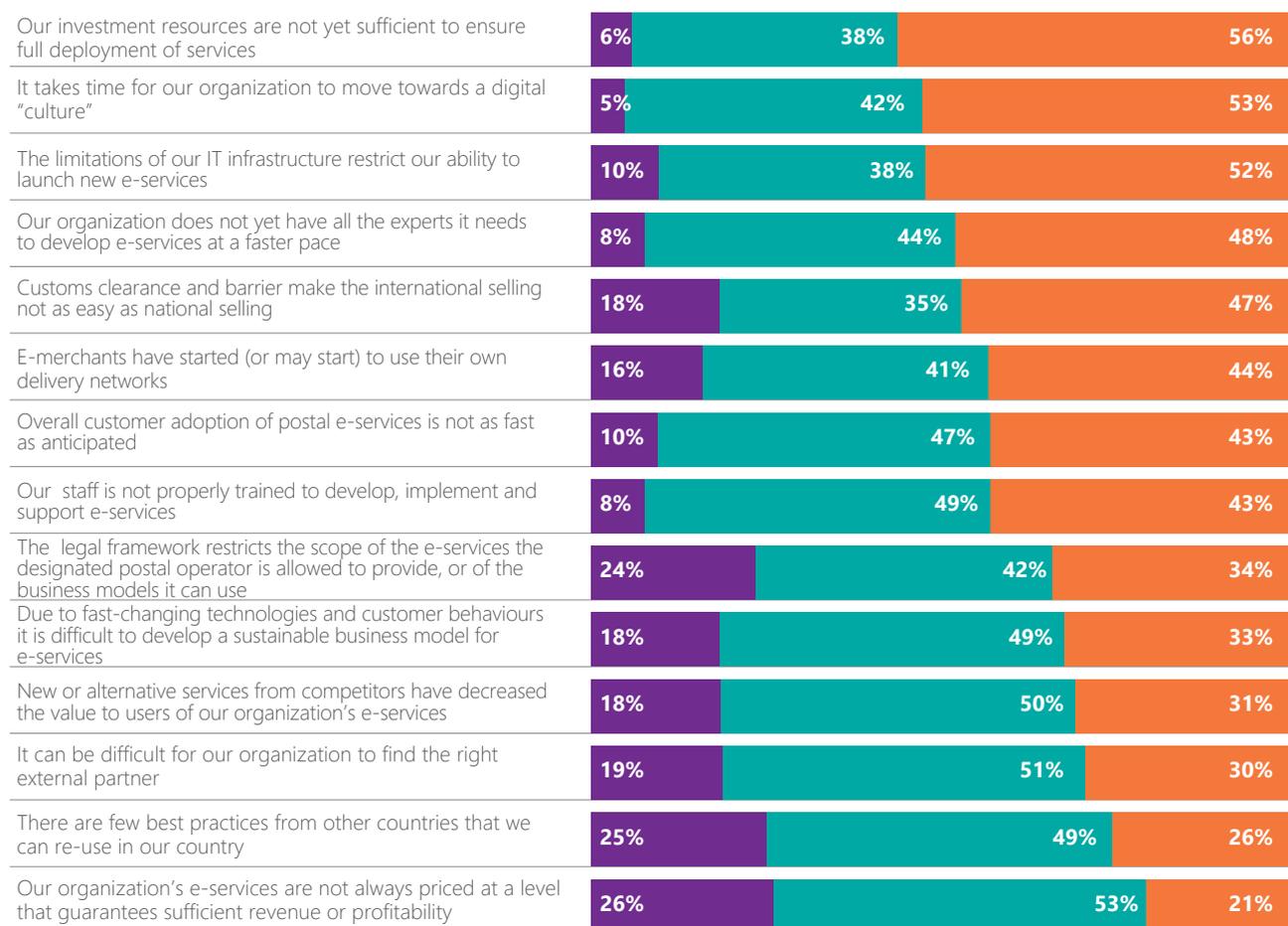
Major obstacles to the growth of digital postal services

This part covers both internal hurdles (linked to the postal organization's internal weakness) and external hurdles (associated with its environment). For each of 14 possible obstacles to e-services growth, the DOs of UPU member countries were asked to rate their significance on a 5 to 1 scale (very significant = 5 or 4; somewhat significant = 3 or 2; not significant = 1; not relevant = 0).

Global analysis

The worldwide results show that three of the top five barriers are internal. The most frequently mentioned hurdles are resource constraints (classed as very significant by 56% vs. 45% in 2015) and the time taken to instil a digital culture (53% vs. 45% in 2015). The hindrances ranked in third, fourth and fifth places are external: limitations of the Post's IT infrastructure (52%); lack of internal experts to develop e-service at a faster pace (48%); and customs clearance and barriers (47%). Rated lower by DOs were internal hurdles such lack of proper training (43%); the difficulty in developing a sustainable business model (33%); identifying other countries' best practice (26%); and insufficient profitability and revenue growth (21%). External hindrances relate to e-merchants' use of their own delivery networks (44%); customer adoption (43% vs. 29% in 2015); a restrictive legal framework (34% vs. 33% in 2015); and difficulties finding external suitable partners (30%) along with competitive threats from alternative services (31%).

Figure 4.15 - **Main obstacles to the growth of digital postal services: global**



Source: UPU Digital Postal Survey 2017

very significant somewhat significant not significant

Regional analysis

The main variations in regional perception of obstacles to the growth of digital postal services were as follows:

- The top issues frequently cited in Africa as a major hindrances to the growth of digital postal services were similar to the global averages. Resource constraints for investment were mentioned most commonly (72% vs. 60% in 2015) by the region's Posts (compared to only 23% in the industrialized countries), followed by limitations of the Post's IT infrastructure (68% vs. 55% in 2015, compared to just 33% in the industrialized countries), which was to be expected.
- In two of the six UPU regions, slow customer adoption of digital postal services is cited as a significant hurdle. The industrialized countries and Africa are all above the global average (each with 50% vs. 43% globally). Europe and the CIS, the Arab countries and Asia-Pacific also score this aspect slightly higher than the global average (with 47%, 46% and 45%, respectively), while the figure is only 27% in Latin America and the Caribbean.
- Surprisingly, a restrictive legal framework is frequently mentioned as an enormous hurdle to e-services' growth in Europe and the CIS (50%, vs. 14% in the industrialized countries) and the Arab countries (46% vs. 26% in Africa).
- Regarding the time needed to move towards a digital culture, almost all regions' responses were in line with the global averages, (ranging between 40% and 73%, vs 53% globally); surprisingly, Posts in Europe and the CIS were found to have high scores on this issue, much higher than global average at 73%, while the figure was only 31% in the Arab countries.
- Over 50% of the respondents in two regions (Africa and Latin America and Caribbean) see the lack of insufficient internal expertise as a major hurdle to their e-services' growth, compared with only 47% in Europe and the CIS, 45% in Asia-Pacific, and 38% each in the Arab countries and the industrialized countries.
- On fear of competitive threats from potential entrants, no region considers these as the main obstacle to the growth of e- services. For example, only 8% of industrialized country Posts consider this a "very significant" factor, while the figures for the Latin America and Caribbean and Asia-Pacific regions are 42% and 40%, respectively.
- Customs clearance is another frequently indicated issue as a major obstacle to services' growth in Asia-Pacific (60% vs. 47% globally), slightly above the figure for Latin America and the Caribbean (58%). Interestingly, it is nowhere near as significant in Africa (28%, vs. 43% in the industrialized countries) and the Arab countries (33%).

Figure 4.16 - **Main obstacles to the growth of digital postal services: Africa**

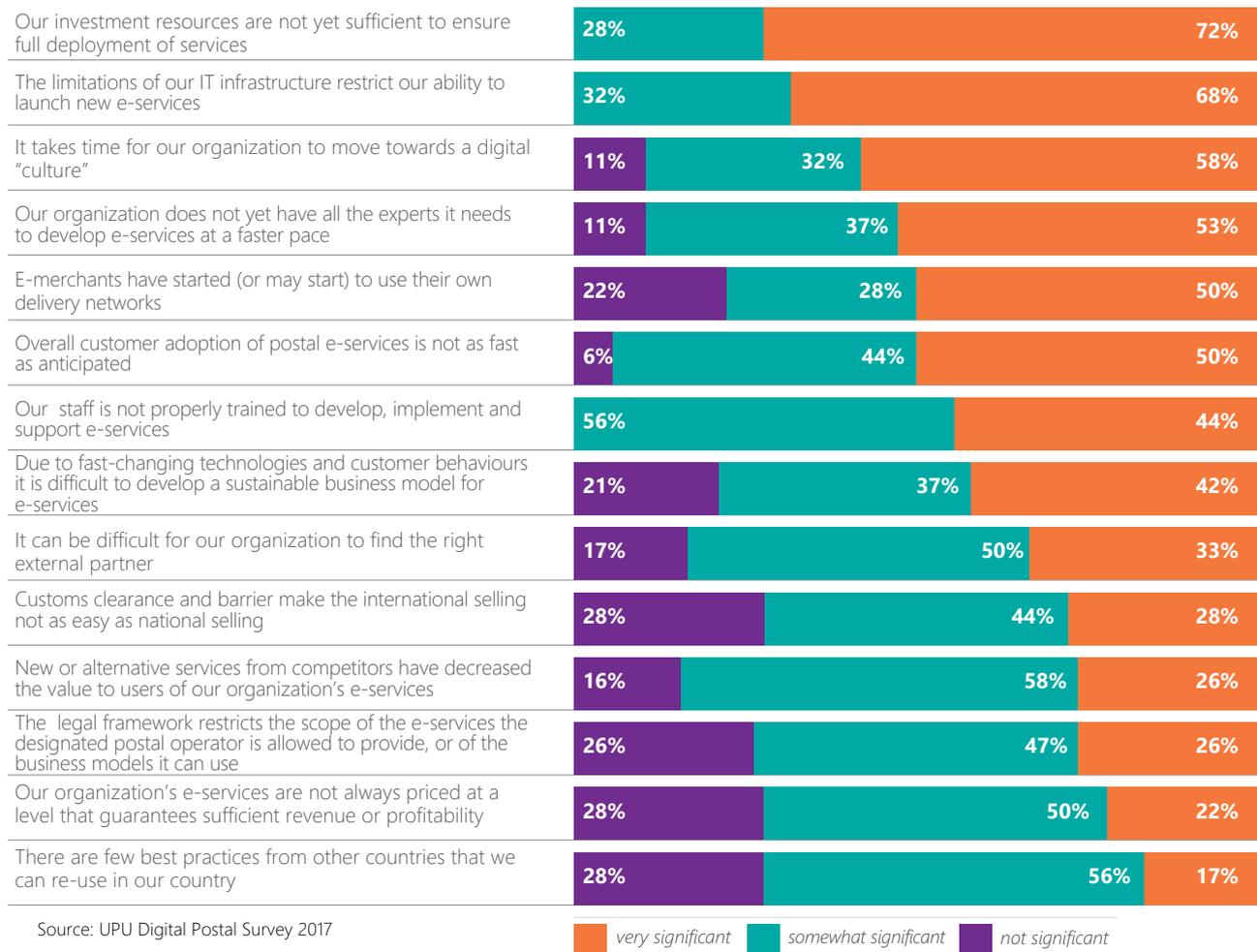
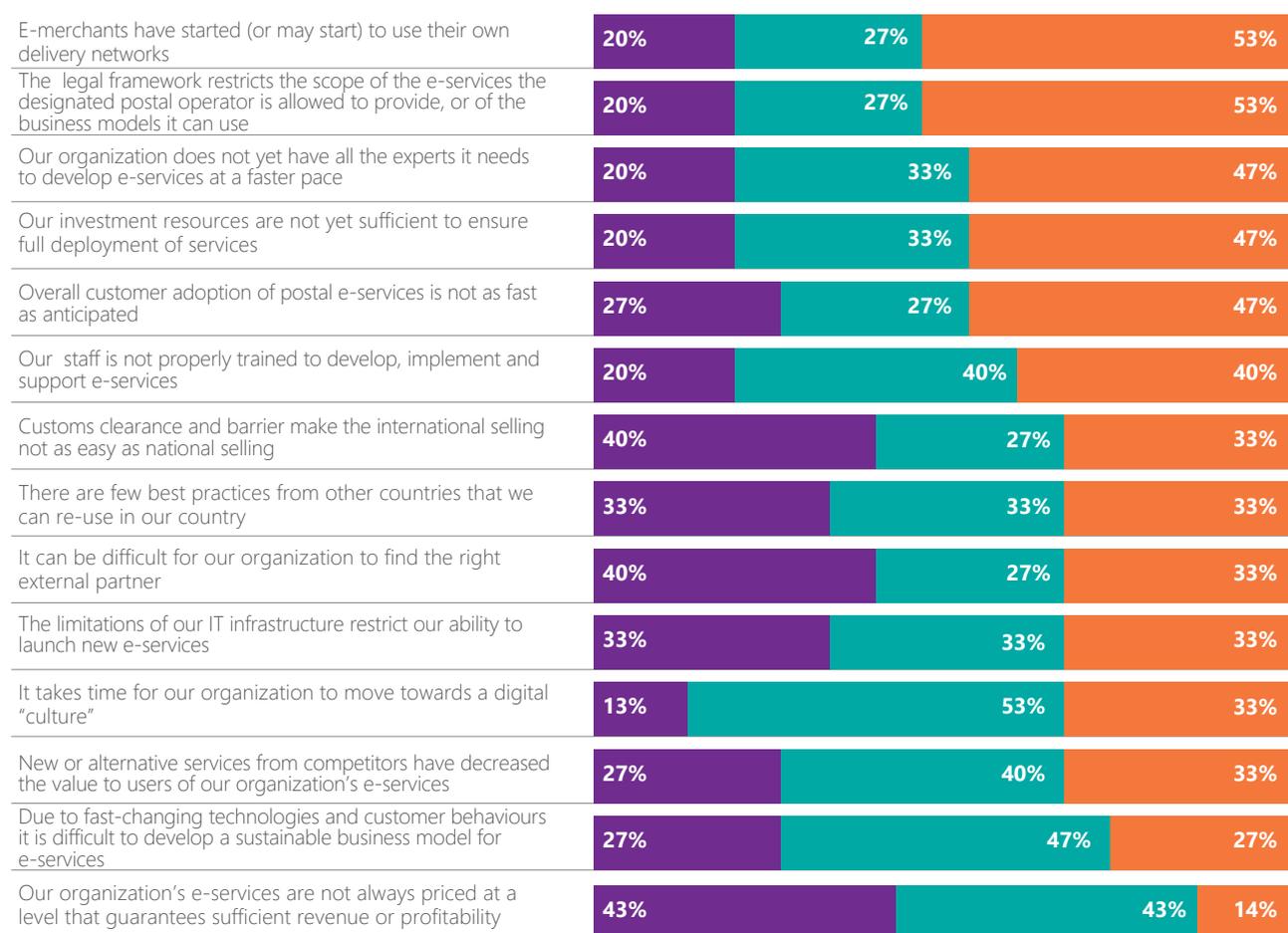


Figure 4.17 - Main obstacles to the growth of digital postal services: Arab countries



Source: UPU Digital Postal Survey 2017

very significant somewhat significant not significant

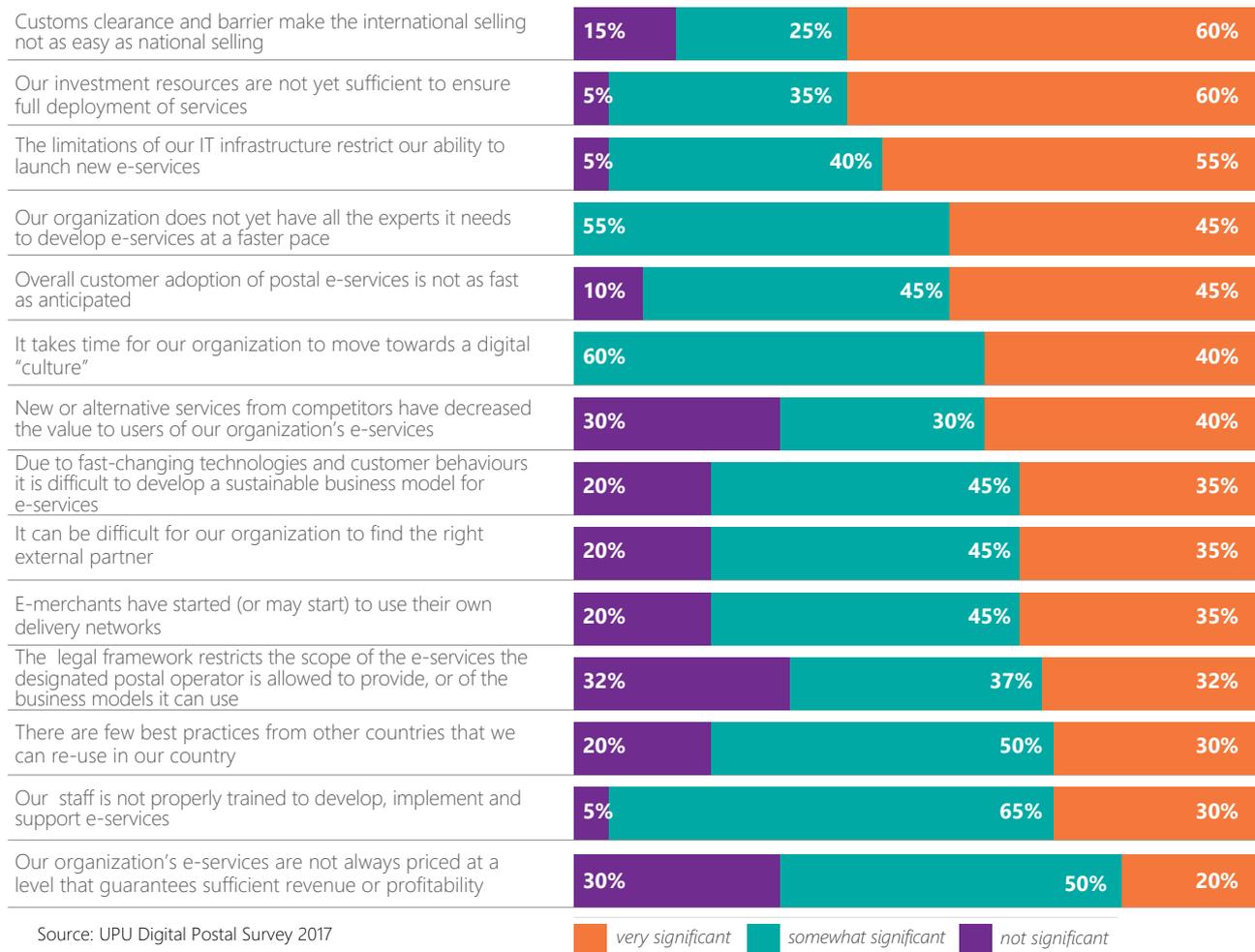
Figure 4.18 - **Main obstacles to the growth of digital postal services: Asia-Pacific**

Figure 4.19 - Main obstacles to the growth of digital postal services: Europe and CIS

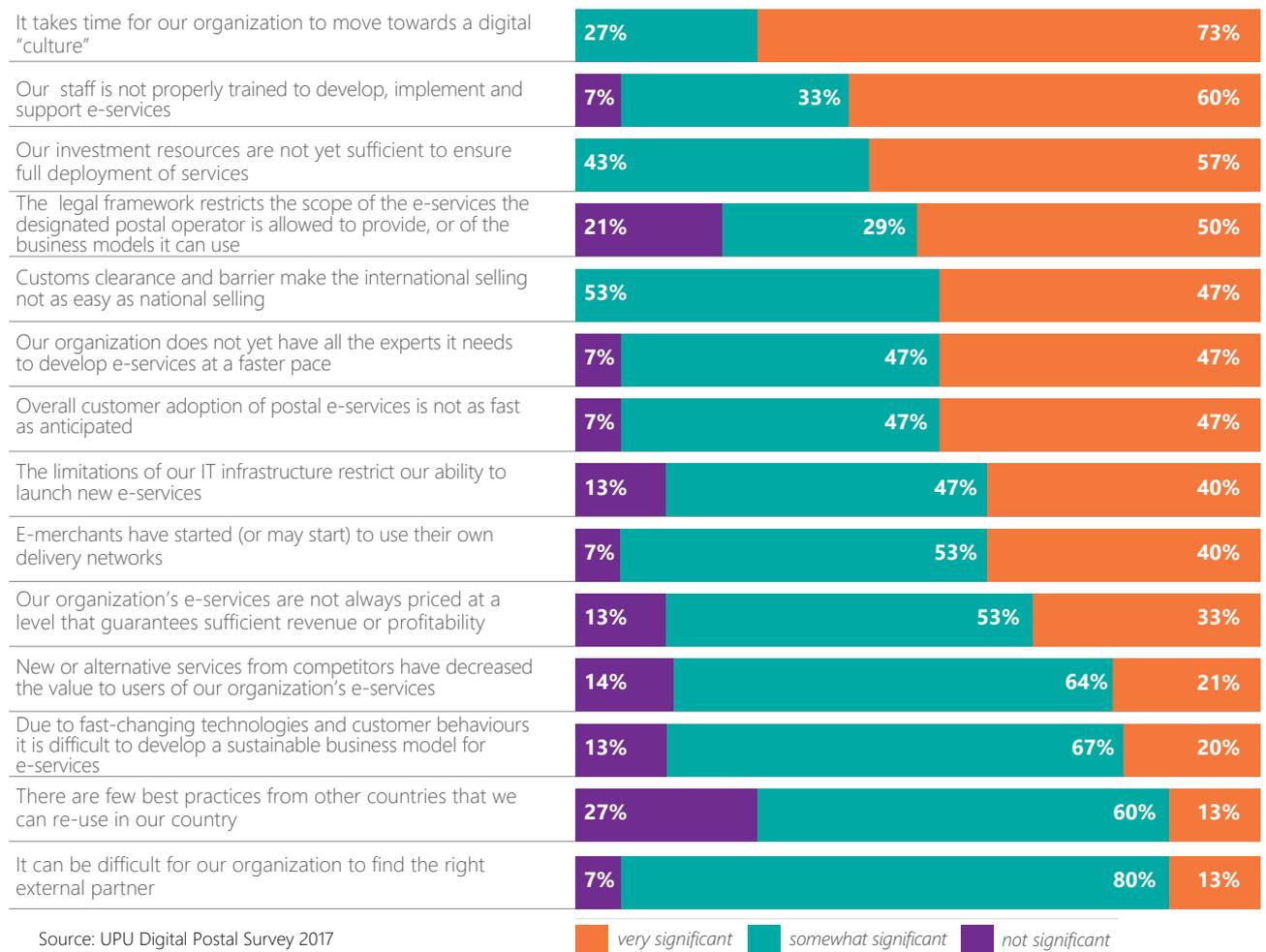


Figure 4.20 - **Main obstacles to the growth of digital postal services: industrialized countries**

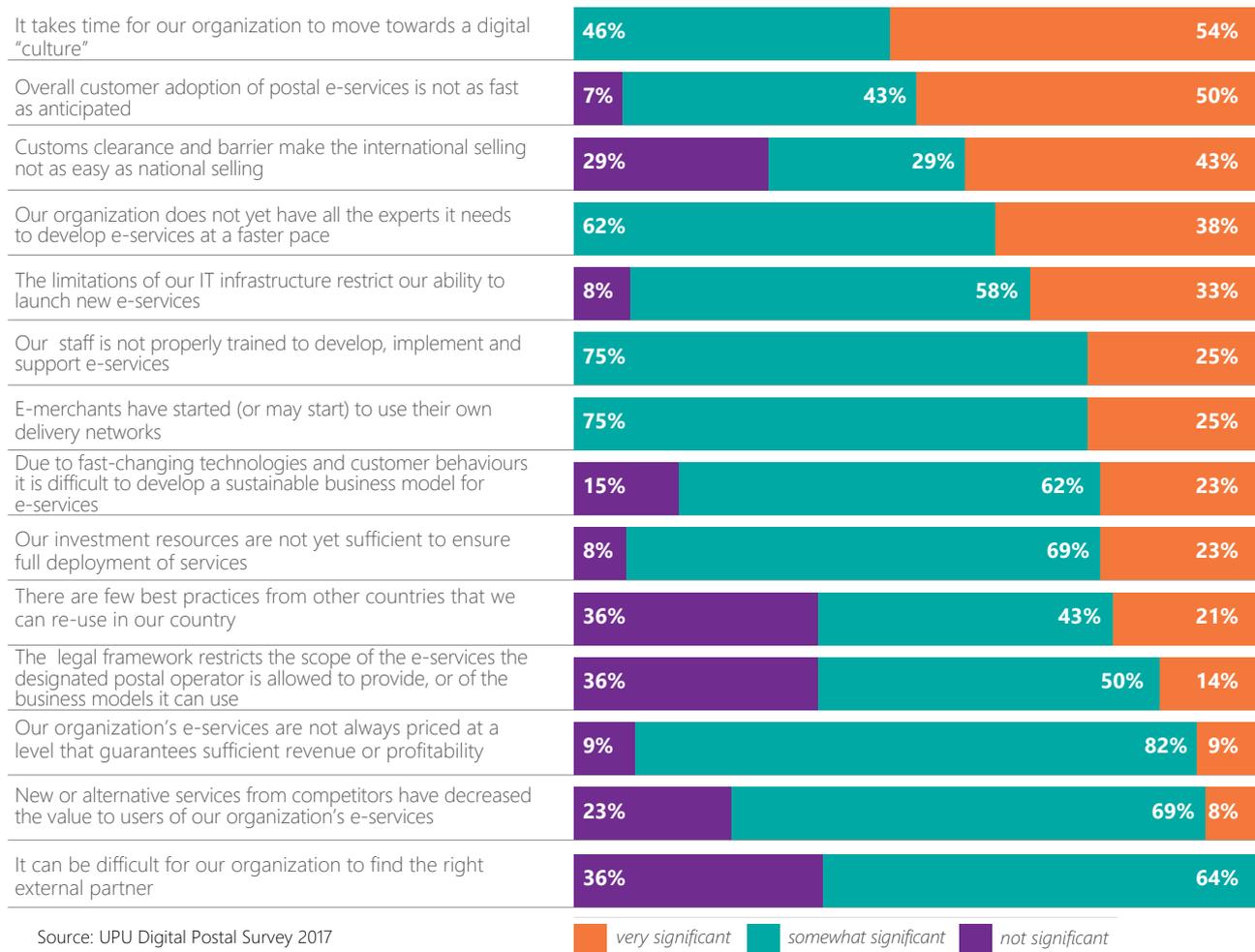
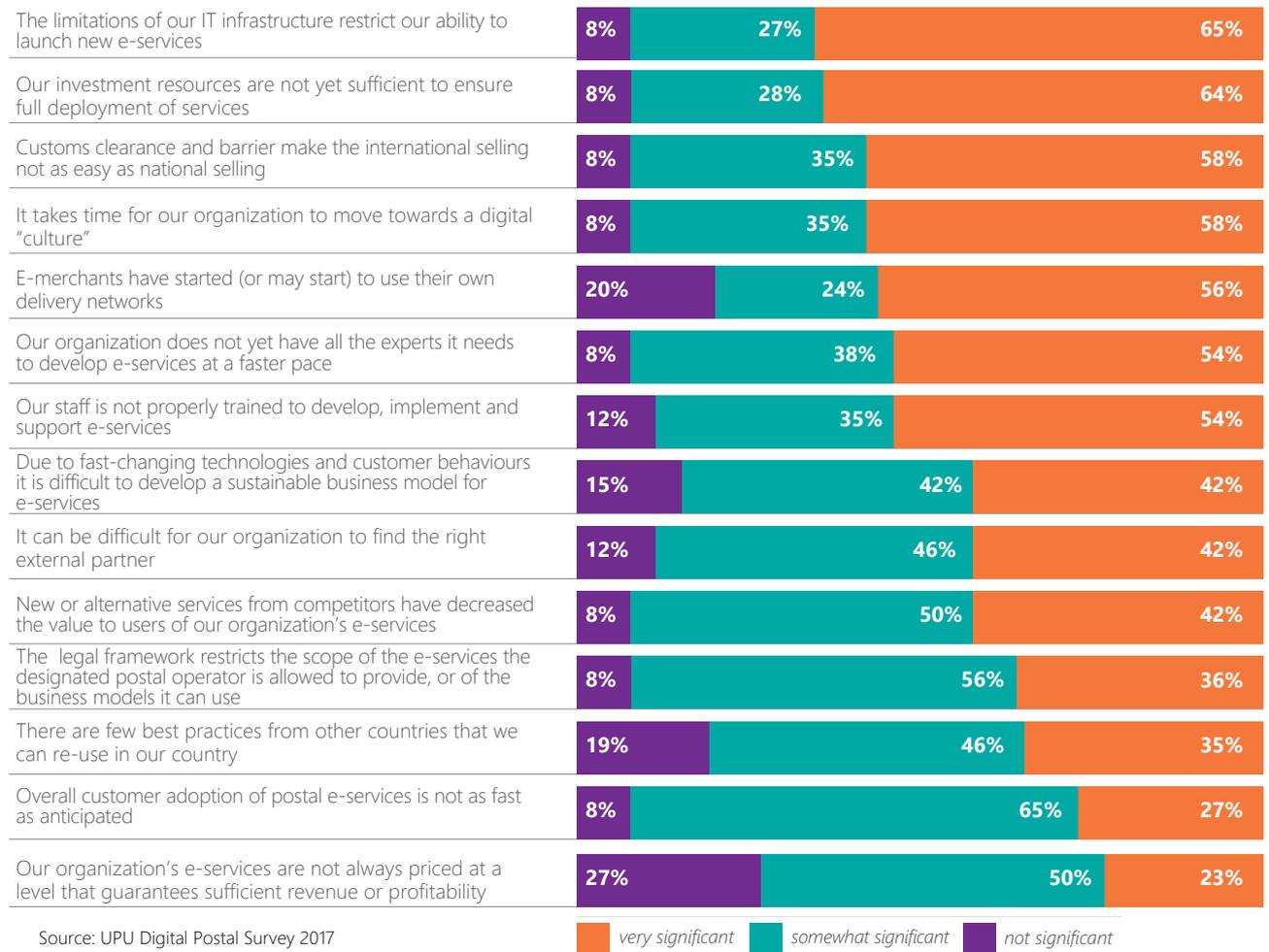


Figure 4.21 - Main obstacles to the growth of digital postal services: Latin America and Caribbean



Trends in top five obstacles to the growth of digital postal services (2015–2017)

- **Global:** For 56% of respondents (vs. 45% in 2015), resource constraints are the main obstacle to ensuring the full deployment and growth of digital postal services, followed by the transition towards a digital culture (53% vs. 45% in 2015), and the limitations of IT infrastructure (52% vs. 33% in 2015). Some 48% (vs. 38% in 2015) mention lack of sufficient internal expertise needed to develop e-services, and customs clearance is cited as a major barrier by 47% of Posts (vs. 38% in 2015). The top five obstacles to the growth of digital postal services now are the same as in 2015.
- **Africa:** Limited resources and lack of IT infrastructure are the most frequently cited obstacles to the growth of digital postal services, with 72% (vs. 60% in 2015) and 68% (vs. 55% in 2015), respectively. Meanwhile, 58% (vs. 50% in 2015) of respondents cite the problem of moving towards a digital culture; more than half (53%) say they lack the experts needed to develop e-services, and 53%* also say that overall customer adoption of digital postal services is not as fast as had been anticipated.
- **Arab countries:** Two of the top five major obstacles to e-services growth cited by more than a half of the respondents are the legal framework restricting the scope of the e-services that the DO is allowed to provide, or the business models that it can use, and e-merchants' use of their own delivery networks, each cited by 53% of Posts (vs. 43% in 2015). The other three hurdles in the top five (overall customer adoption of digital postal services not as fast as anticipated; our investment resources not yet sufficient to ensure full deployment of services; and lack of experts needed to develop e-services) scored 47% each.
- **Asia-Pacific:** 60%* of countries cite insufficient investment resources, and 60% also refer to customs clearance and barriers making international selling not as easy as national selling (vs. 46% in 2015). Other hurdles to the growth of e-services are the limitations of IT infrastructure (55%*); overall customer adoption of digital postal services not being as fast as anticipated (45%*); and insufficient experts needed to develop e-services (45%).
- **Europe and CIS:** The transition towards a digital culture is the top factor cited by respondents (73% vs. 31% in 2015). Other top issues are lack of training for employees to develop, implement and support e-services (60%*), and resource constraints to ensure full deployment of services and a restrictive legal framework, (57% and 50%, respectively); 48% of the respondents cite "customs clearance" as another major barrier to e-services and postal development.
- **Industrialized countries:** Only two of the top five obstacles – the time taken for the organization to move towards a digital culture (54% vs. 57% in 2015) and overall customer adoption of digital postal services not being as fast as anticipated (50%) – are considered major hurdles by half or more of the countries. Customs clearance and barriers meaning that the international selling is not as easy as national selling (43%), the organization not yet having all the experts it needs to develop e-services at a faster pace (38%), and the limitations of IT infrastructure restricting the organization's ability to launch new e-services (33%*) were, to a lesser extent, considered as hurdles to digital postal services' growth.
- **Latin America and Caribbean:** More than half of the countries view all the top five obstacles as major hurdles. The most frequently cited factors were lack of IT infrastructure (65%); insufficient investment resources (64%); the long path to a digital culture (58%); customs clearance (58%*); and e-merchants using their own delivery networks (56%*).

Robotics, big data, artificial intelligence, quantum technology, the Internet of Things, 3D printing, nanotechnology and autonomous vehicles and 5G connectivity are all impacting everyday lives around the world.

Chapter V:

**Digital postal services
capacity index measuring
the readiness of countries**



Methodology

The methodology that was used to develop this index is as follows: a “yes” or “O” response to any given e-service was averaged, and a standard score (z-scores) computed for each participating designated operator. In addition to “O” response values provided by each national postal service, a linear combination of the weighted values was assigned to services that are under development, and services that are provided through a mobile app, as well as services that are interoperable with one or more other designated operators.

The computation of the index can be summarized as a linear combination of:

Ranking index = the number of services under development x 0.4 + the number of services provided via a mobile app and interoperable with one or more other designated operators x 0.6. This weighted linear combination is applied to reflect the relative score difference of the designated operators whose computed averaged and standard weighted values are equivalent. Applying a weight to services that are under development, that are provided via a mobile app or that are interoperable with one or more other designated operators provides DOs with an additional score which separates them when they are otherwise tied for a place in the ranking.

The best ranking designated operator attains a normalized score of 1, while the lowest performer acquires a normalized minimum score of 0. However, in reading the scores, it is vital to consider that the scores are the reflection of a relative position in the whole range of countries covered by the analysis. All normalized scores can be understood as the distance of any given designated operator with respect to the best (score 1), the intermediate (score above 0.5) or the worst (zero score) global performer. Acknowledging that some designated operators do not provide financial services the global index might not reflect their real position in the ranking. To mitigate this fact, we provided a breakdown of three digital services (e-government and e-post, e-commerce, e-finance and support services).

Performance by region

The following tables provide details of the ranking of DOs based on their relative scores. Table 5.1 presents the regional average scores as compared to the global average. Africa and the Arab countries have average scores of 0.17 and 0.21 respectively, while Asia-Pacific and Latin America and the Caribbean each have a score of 0.20, which is below the global average. The Europe and CIS region has an average score of 0.33, slightly above the global average. The industrialized countries, the best performing region, reached an average score of 0.54, which includes the top scorer, the designated operator of Switzerland.

Table 5.1 - Global and regional average scores

Global average scorew	0.26
Africa	0.17
Arab countries	0.21
Asia-Pacific	0.20
Europe and CIS	0.33
Industrialized countries	0.54
Latin America and Caribbean	0.20

The index covers 125 designated operators, and the global average score of the index stands at 0.26. Table 5.2 shows the performance index based on e-services provided by the DOs, as well as an expert assessment of other adjustment factors. The DOs of Switzerland, Kazakhstan, Morocco and Germany are the best scorers, with those of France and Austria not far behind. With the exception of the DOs of Morocco (Arab region), Kazakhstan and Hungary (both from the Europe and CIS region), seven of the top 10 ranking DOs are from the industrialized countries. The DO of Kazakhstan and Morocco have made impressive strides in this regard, climbing the performance-ranking ladder to take the second and third positions, up from 63rd and 38th in 2015, respectively. The DOs of Switzerland and Austria retain the same respective positions as in 2015.

Only two DO from the Arab region have a score above 0.50: Morocco (0.84) and Tunisia, at 0.59. Two designated postal operators from the Latin America and Caribbean region exceed 0.50: Anguilla (0.59) and Costa Rica (0.54), as do two from Asia-Pacific: Korea (Rep.) (0.54) and Macao, China (0.51).

Where DOs achieve a score below 0.5, this tends to indicate that Posts are underperforming in attaining countries' postal development capabilities. For example, the level of performance for DOs in the industrialized countries is well above the global average and that of other regions, whereas the vast majority of designated postal operators in Latin America and the Caribbean, in the Arab countries, and in Asia-Pacific fell below 0.5. By far the worst performers are DOs in the Africa region, all of which obtained a score below 0.5.

Table 5.2 - Ranking of designated operators

Rank	Country/territory	Region	Norm
1	 Switzerland	Industrialized countries	1.00
2	 Kazakhstan	Europe and CIS	0.84
3	 Morocco	Arab countries	0.84
4	 Germany	Industrialized countries	0.81
5	 France	Industrialized countries	0.81
6	 Austria	Industrialized countries	0.78
7	 Italy	Industrialized countries	0.73
8	 Australia	Industrialized countries	0.65
9	 Portugal	Industrialized countries	0.65
10	 Hungary	Europe and CIS	0.62
11	 Netherlands	Industrialized countries	0.62
12	 Belarus	Europe and CIS	0.62
13	 United States of America	Industrialized countries	0.59
14	 Tunisia	Arab countries	0.59
15	 Slovakia	Europe and CIS	0.59
16	 Spain	Industrialized countries	0.59
17	 Canada	Industrialized countries	0.59
18	 Anguilla	Latin America and Caribbean	0.59
19	 Costa Rica	Latin America and Caribbean	0.54
20	 Korea (Rep.)	Asia-Pacific	0.54
21	 Macao, China	Asia-Pacific	0.51
22	 Russian Federation	Europe and CIS	0.51
23	 Croatia	Industrialized countries	0.49
24	 Luxembourg	Industrialized countries	0.49
25	 New Zealand	Industrialized countries	0.49
26	 Czech Republic	Europe and CIS	0.46
27	 Viet Nam	Asia-Pacific	0.46
28	 South Africa	Africa	0.46
29	 Malaysia	Asia-Pacific	0.43
30	 United Arab Emirates	Arab countries	0.43
31	 Hong Kong, China	Asia-Pacific	0.43
32	 Indonesia	Asia-Pacific	0.38
33	 Iran (Islamic Rep.)	Asia-Pacific	0.38
34	 Singapore	Asia-Pacific	0.38
35	 French Polynesia	Asia-Pacific	0.35

Rank		Country/territory	Region	Norm
36	▼	Colombia	Latin America and Caribbean	0.35
37	■	Curaçao	Latin America and Caribbean	0.35
38	▲	Algeria	Arab countries	0.35
39	▲	Botswana	Africa	0.32
40	▲	Ecuador	Latin America and Caribbean	0.32
41	■	Greece	Industrialized countries	0.32
42	■	Kenya	Africa	0.30
43	■	Senegal	Africa	0.30
44	■	India	Asia-Pacific	0.30
45	■	Ukraine	Europe and CIS	0.30
46	■	Namibia	Africa	0.27
47	■	Maldives	Asia-Pacific	0.27
48	■	Bahrain (Kingdom)	Arab countries	0.24
49	▲	Benin	Africa	0.24
50	▼	Saudi Arabia	Arab countries	0.24
51	■	Mongolia	Asia-Pacific	0.24
52	▼	China (People's Rep.)	Asia-Pacific	0.24
53	■	Jamaica	Latin America and Caribbean	0.22
54	▲	Egypt	Arab countries	0.22
55	▲	Chile	Latin America and Caribbean	0.22
56	▲	Jordan	Arab countries	0.22
57	▼	Paraguay	Latin America and Caribbean	0.22
58	▼	Bosnia and Herzegovina	Europe and CIS	0.22
59	▼	Thailand	Asia-Pacific	0.22
60	■	Moldova	Europe and CIS	0.22
61	■	Bhutan	Asia-Pacific	0.22
62	■	Cayman Islands	Latin America and Caribbean	0.22
63	■	Albania	Europe and CIS	0.22
64	▲	Tanzania (United Rep.)	Africa	0.22
65	▼	Côte d'Ivoire (Rep.)	Africa	0.19
66	▼	Uganda	Africa	0.19
67	■	Pakistan	Asia-Pacific	0.19
68	■	Azerbaijan	Europe and CIS	0.19
69	▼	Bulgaria (Rep.)	Europe and CIS	0.19
67	■	Lesotho	Africa	0.19
71	▼	Sri Lanka	Asia-Pacific	0.19

Rank	Country/territory	Region	Norm
72	 Venezuela (Bolivarian Rep.)	Latin America and Caribbean	0.16
73	 Djibouti	Arab countries	0.16
74	 Bonaire	Latin America and Caribbean	0.16
75	 Mexico	Latin America and Caribbean	0.16
76	 Bermuda	Latin America and Caribbean	0.14
77	 Burkina Faso	Africa	0.14
78	 Oman	Arab countries	0.14
79	 Lebanon	Arab countries	0.14
80	 Aruba	Latin America and Caribbean	0.14
81	 Zimbabwe	Africa	0.14
82	 North Macedonia	Europe and CIS	0.14
83	 Comoros	Arab countries	0.14
84	 Romania	Europe and CIS	0.14
85	 Saint Vincent and the Grenadines	Latin America and Caribbean	0.14
86	 Syrian Arab Rep.	Arab countries	0.14
87	 Tonga	Asia-Pacific	0.14
88	 Turkey	Europe and CIS	0.11
89	 Togo	Africa	0.11
90	 Kyrgyzstan	Europe and CIS	0.11
91	 Nicaragua	Latin America and Caribbean	0.11
92	 Mozambique	Africa	0.11
93	 Tajikistan	Europe and CIS	0.11
94	 Guinea	Africa	0.08
95	 Trinidad and Tobago	Latin America and Caribbean	0.08
96	 Ghana	Africa	0.08
97	 Malawi	Africa	0.08
98	 Liberia	Africa	0.08
99	 Saint Lucia	Latin America and Caribbean	0.08
100	 Mauritania	Arab countries	0.08
101	 Bahamas	Latin America and Caribbean	0.08
102	 Dominica	Latin America and Caribbean	0.08
103	 Guyana	Latin America and Caribbean	0.08
104	 Virgin Islands	Latin America and Caribbean	0.08
105	 Qatar	Arab countries	0.05
106	 Dem. Rep. of the Congo	Africa	0.05
107	 State of Libya	Arab countries	0.05

Rank		Country/territory	Region	Norm
108	▼	Chad	Africa	0.05
109	▼	Madagascar	Africa	0.05
110	■	Grenada	Latin America and Caribbean	0.05
111	▼	Cambodia	Asia-Pacific	0.03
112	■	Myanmar	Asia-Pacific	0.03
113	▼	Niger	Africa	0.03
114	■	Suriname	Latin America and Caribbean	0.03
115	■	Antigua	Latin America and Caribbean	0.00
116	■	Belize	Latin America and Caribbean	0.00
117	■	El Salvador	Latin America and Caribbean	0.00
118	■	Gambia	Africa	0.00
119	■	Kiribati	Asia-Pacific	0.00
120	■	Montserrat	Latin America and Caribbean	0.00
121	■	Nepal	Asia-Pacific	0.00
122	■	Peru	Latin America and Caribbean	0.00
123	▼	South Sudan	Africa	0.00
124	■	Saint Christopher and Nevis	Latin America and Caribbean	0.00
125	■	Kuwait	Arab countries	0.00

■ Same position as in 2015 ▲ Higher position ▼ Lower position ■ Not in 2015 survey

Source: UPU Digital Postal Survey 2017

Table 5.3 shows DOs' performance in providing e-post and e-government services. The results are in line with expectations, with the performance of postal operators in the industrialized countries higher than in other regions. Given increased Internet access in industrialized countries, people in advanced countries have more access to online government services as compared to people in less developed countries, where Internet connectivity is limited. For example, eight of the top ten ranking DOs are from industrialized countries, the only exceptions being those of Morocco, Kazakhstan and Malaysia, which are in the Arab, Europe and CIS and Asia-Pa-

cific regions, respectively. The ranking can be understood better by taking into consideration the fact that, in addition to the normalized score, the adjustment factor – a linear weighted average – is used to determine the DOs' relative performance and ranking. In spite of the adjustment factor applied to identify relative performance, the scores of some postal operators remain tied.

Leaders	Average performance	Followers
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Table 5.3 - **E-post and e-government Index**

Rank	E-post and e-government	Region	Norm
1	Switzerland	Industrialized countries	1.00
2	Austria	Industrialized countries	0.93
3	Morocco	Arab countries	0.93
4	France	Industrialized countries	0.86
5	Kazakhstan	Europe and CIS	0.79
6	Spain	Industrialized countries	0.79
7	Germany	Industrialized countries	0.79
8	Portugal	Industrialized countries	0.79
9	Italy	Industrialized countries	0.64
10	Australia	Industrialized countries	0.64
11	Malaysia	Asia-Pacific	0.57
12	Croatia	Industrialized countries	0.57
13	Belarus	Europe and CIS	0.57
14	Netherlands	Industrialized countries	0.57
15	Hungary	Europe and CIS	0.50
16	Canada	Industrialized countries	0.50
17	Russian Federation	Europe and CIS	0.50
18	Czech Republic	Europe and CIS	0.50
19	Anguilla	Latin America and Caribbean	0.50
20	Macao, China	Asia-Pacific	0.43
21	Costa Rica	Latin America and Caribbean	0.43
22	Tunisia	Arab countries	0.43
23	New Zealand	Industrialized countries	0.43
24	South Africa	Africa	0.43
25	United States of America	Industrialized countries	0.36
26	Luxembourg	Industrialized countries	0.36
27	Singapore	Asia-Pacific	0.36

Rank	E-post and e-government	Region	Norm
28	Hong Kong, China	Asia-Pacific	0.29
29	Slovakia	Europe and CIS	0.29
30	Ecuador	Latin America and Caribbean	0.29
31	Botswana	Africa	0.21
32	Kenya	Africa	0.21
33	Bahrain (Kingdom)	Arab countries	0.21
34	Iran (Islamic Rep.)	Asia-Pacific	0.21
35	Bosnia and Herzegovina	Europe and CIS	0.21
36	Korea (Rep.)	Asia-Pacific	0.21
37	Algeria	Arab countries	0.21
38	French Polynesia	Asia-Pacific	0.21
39	Colombia	Latin America and Caribbean	0.21
40	India	Asia-Pacific	0.21
41	United Arab Emirates	Arab countries	0.14
42	Egypt	Arab countries	0.14
43	Senegal	Africa	0.14
44	Pakistan	Asia-Pacific	0.07
45	Indonesia	Asia-Pacific	0.07
46	Viet Nam	Asia-Pacific	0.07
47	Mongolia	Asia-Pacific	0.07
48	Greece	Industrialized countries	0.07
49	Namibia	Africa	0.07
50	China (People's Rep.)	Asia-Pacific	0.07
51	Jamaica	Latin America and Caribbean	0.00
52	Qatar	Arab countries	0.00
53	Côte d'Ivoire (Rep.)	Africa	0.00
54	Azerbaijan	Europe and CIS	0.00
55	Bulgaria (Rep.)	Europe and CIS	0.00
56	Guinea	Africa	0.00
57	Benin	Africa	0.00
58	Saudi Arabia	Arab countries	0.00
59	Lesotho	Africa	0.00
60	Chad	Africa	0.00
61	Madagascar	Africa	0.00
62	Romania	Europe and CIS	0.00
63	Sri Lanka	Asia-Pacific	0.00

Rank	E-post and e-government	Region	Norm
64	Venezuela (Bolivarian Republic)	Latin America and Caribbean	0.00
65	Ukraine	Europe and CIS	0.00
66	Burkina Faso	Africa	0.00
67	Oman	Arab countries	0.00
68	Lebanon	Arab countries	0.00
69	Turkey	Europe and CIS	0.00
67	Nicaragua	Latin America and Caribbean	0.00
71	Dominica	Latin America and Caribbean	0.00
72	Curaçao	Latin America and Caribbean	0.00
73	Maldives	Asia-Pacific	0.00
74	Chile	Latin America and Caribbean	0.00
75	Jordan	Arab countries	0.00
76	Paraguay	Latin America and Caribbean	0.00
77	Thailand	Asia-Pacific	0.00
78	Moldova	Europe and CIS	0.00
79	Bhutan	Asia-Pacific	0.00
80	Cayman Islands	Latin America and Caribbean	0.00
81	Albania	Europe and CIS	0.00
82	Uganda	Africa	0.00
83	Tanzania (United Republic)	Africa	0.00
84	Djibouti	Arab countries	0.00
85	Bonaire	Latin America and Caribbean	0.00
86	Mexico	Latin America and Caribbean	0.00
87	Bermuda	Latin America and Caribbean	0.00
88	Aruba	Latin America and Caribbean	0.00
89	Zimbabwe	Africa	0.00
90	North Macedonia	Europe and CIS	0.00
91	Comoros	Africa	0.00
92	Saint Vincent and the Grenadines	Latin America and Caribbean	0.00
93	Syria	Arab countries	0.00
94	Tonga	Asia-Pacific	0.00
95	Togo	Africa	0.00
96	Kyrgyzstan	Europe and CIS	0.00
97	Mozambique	Africa	0.00
98	Tajikistan	Europe and CIS	0.00
99	Trinidad and Tobago	Latin America and Caribbean	0.00

Rank	E-post and e-government	Region	Norm
100	Ghana	Africa	0.00
101	Malawi	Africa	0.00
102	Liberia	Africa	0.00
103	Saint Lucia	Latin America and Caribbean	0.00
104	Mauritania	Arab countries	0.00
105	Bahamas	Latin America and Caribbean	0.00
106	Guyana	Latin America and Caribbean	0.00
107	Virgin Islands	Latin America and Caribbean	0.00
108	Dem. Rep. of the Congo	Africa	0.00
109	State of Libya	Arab Countries	0.00
110	Grenada	Latin America and Caribbean	0.00
111	Cambodia	Asia-Pacific	0.00
112	Myanmar	Asia-Pacific	0.00
113	Niger	Africa	0.00
114	Suriname	Latin America and Caribbean	0.00
115	Antigua	Latin America and Caribbean	0.00
116	Belize	Latin America and Caribbean	0.00
117	El Salvador	Latin America and Caribbean	0.00
118	Gambia	Africa	0.00
119	Kiribati	Asia-Pacific	0.00
120	Montserrat	Latin America and Caribbean	0.00
121	Nepal	Asia-Pacific	0.00
122	Peru	Latin America and Caribbean	0.00
123	South Sudan	Africa	0.00
124	Saint Christopher and Nevis	Latin America and Caribbean	0.00
125	Kuwait	Arab countries	0.00

Source: UPU Digital Postal Survey 2017

Table 5.4 reports DOs' relative performance in the e-commerce index ranking. The designated operators of the Netherlands and Kazakhstan are leaders in the e-commerce index, followed by those of Costa Rica, the United States, Slovakia, Morocco and Anguilla. Three of the top ten DOs are from the Europe and CIS region, with two each from the industrialized, Arab countries and Latin America and the Caribbean. DOs

from the Asia-Pacific regions made it into the top 10 ranking. In Africa, only the DO of South Africa scored more than half (with 0.71), followed by that of Tanzania (United Republic), with 0.43.

Leaders	Average performance	Followers
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Table 5.4 - E-commerce index

Rank	E-commerce	Region	Norm
1	Netherlands	Industrialized countries	1.00
2	Kazakhstan	Europe and CIS	1.00
3	Costa Rica	Latin America and Caribbean	0.86
4	United States of America	Industrialized countries	0.86
5	Slovakia	Europe and CIS	0.86
6	Morocco	Arab countries	0.86
7	Anguilla	Latin America and Caribbean	0.86
8	Tunisia	Arab countries	0.71
9	Korea (Rep.)	Asia-Pacific	0.71
10	Belarus	Europe and CIS	0.71
11	Hungary	Europe and CIS	0.71
12	Switzerland	Industrialized countries	0.71
13	Indonesia	Asia-Pacific	0.71
14	Croatia	Industrialized countries	0.71
15	Russian Federation	Europe and CIS	0.71
16	Viet Nam	Asia-Pacific	0.71
17	South Africa	Africa	0.71
18	Curaçao	Latin America and Caribbean	0.71
19	Colombia	Latin America and Caribbean	0.71
20	New Zealand	Industrialized countries	0.57
21	Germany	Industrialized countries	0.57
22	Hong Kong, China	Asia-Pacific	0.57
23	France	Industrialized countries	0.57
24	Austria	Industrialized countries	0.57
25	Canada	Industrialized countries	0.57
26	Ukraine	Europe and CIS	0.57
27	Thailand	Asia-Pacific	0.43
28	Greece	Industrialized countries	0.43
29	Maldives	Asia-Pacific	0.43

Rank	E-commerce	Region	Norm
30	Australia	Industrialized countries	0.43
31	Iran (Islamic Rep.)	Asia-Pacific	0.43
32	Macao, China	Asia-Pacific	0.43
33	Tanzania (United Republic)	Africa	0.43
34	Singapore	Asia-Pacific	0.43
35	Czech Republic	Europe and CIS	0.43
36	Malaysia	Asia-Pacific	0.29
37	United Arab Emirates	Arab countries	0.29
38	Portugal	Industrialized countries	0.29
39	Egypt	Arab countries	0.29
40	Côte d'Ivoire (Rep.)¹	Africa	0.29
41	China (People's Rep.)	Asia-Pacific	0.29
42	Saudi Arabia	Arab countries	0.29
43	Spain	Industrialized countries	0.29
44	Lebanon	Arab countries	0.29
45	Mongolia	Asia-Pacific	0.29
46	Luxembourg	Industrialized countries	0.29
47	Ecuador	Latin America and Caribbean	0.29
48	Bonaire	Latin America and Caribbean	0.29
49	India	Asia-Pacific	0.29
50	Qatar	Arab countries	0.14
51	Jamaica	Latin America and Caribbean	0.14
52	Aruba	Latin America and Caribbean	0.14
53	Guinea	Africa	0.14
54	Azerbaijan	Europe and CIS	0.14
55	Namibia	Africa	0.14
56	Turkey	Europe and CIS	0.14
57	Bhutan	Asia-Pacific	0.14
58	Botswana	Africa	0.14
59	Kenya	Africa	0.14
60	Uganda	Africa	0.14
61	French Polynesia	Asia-Pacific	0.14
62	Italy	Industrialized countries	0.14
63	Algeria	Arab countries	0.14
64	Paraguay	Latin America and Caribbean	0.14
65	Moldova	Europe and CIS	0.14

Rank	E-commerce	Region	Norm
66	Saint Vincent and the Grenadines	Latin America and Caribbean	0.14
67	Cambodia	Asia-Pacific	0.14
68	Dominica	Latin America and Caribbean	0.14
69	Mexico	Latin America and Caribbean	0.14
67	Tonga	Asia-Pacific	0.14
71	Bermuda	Latin America and Caribbean	0.00
72	Oman	Arab countries	0.00
73	Trinidad and Tobago	Latin America and Caribbean	0.00
74	Burkina Faso	Africa	0.00
75	Bosnia and Herzegovina	Europe and CIS	0.00
76	Ghana	Africa	0.00
77	Bahrain (Kingdom)	Arab countries	0.00
78	Liberia	Africa	0.00
79	Venezuela (Bolivarian Republic)	Latin America and Caribbean	0.00
80	Suriname	Latin America and Caribbean	0.00
81	Malawi	Africa	0.00
82	Cayman Islands	Latin America and Caribbean	0.00
83	Chile	Latin America and Caribbean	0.00
84	Mauritania	Arab countries	0.00
85	North Macedonia	Europe and CIS	0.00
86	Benin	Africa	0.00
87	Dem. Rep. of the Congo	Africa	0.00
88	Jordan	Arab countries	0.00
89	Kyrgyzstan	Europe and CIS	0.00
90	Pakistan	Asia-Pacific	0.00
91	Chad	Africa	0.00
92	Tajikistan	Europe and CIS	0.00
93	Djibouti	Arab countries	0.00
94	Lesotho	Africa	0.00
95	Albania	Europe and CIS	0.00
96	Bulgaria (Rep.)	Europe and CIS	0.00
97	Senegal	Africa	0.00
98	Bahamas	Latin America and Caribbean	0.00
99	Belize	Latin America and Caribbean	0.00
100	Antigua	Latin America and Caribbean	0.00
101	Comoros	Africa	0.00

Rank	E-commerce	Region	Norm
102	El Salvador	Latin America and Caribbean	0.00
103	Gambia	Africa	0.00
104	Grenada	Latin America and Caribbean	0.00
105	Guyana	Latin America and Caribbean	0.00
106	Kiribati	Asia-Pacific	0.00
107	State of Libya	Arab countries	0.00
108	Madagascar	Africa	0.00
109	Montserrat	Latin America and Caribbean	0.00
110	Mozambique	Africa	0.00
111	Myanmar	Asia-Pacific	0.00
112	Nepal	Asia-Pacific	0.00
113	Nicaragua	Latin America and Caribbean	0.00
114	Niger	Africa	0.00
115	Peru	Latin America and Caribbean	0.00
116	Romania	Europe and CIS	0.00
117	Saint Lucia	Latin America and Caribbean	0.00
118	South Sudan	Africa	0.00
119	Sri Lanka	Asia-Pacific	0.00
120	Saint Christopher and Nevis	Latin America and Caribbean	0.00
121	Kuwait	Arab countries	0.00
122	Syria	Arab countries	0.00
123	Togo	Africa	0.00
124	Virgin Islands	Latin America and Caribbean	0.00
125	Zimbabwe	Africa	0.00

Source: UPU Digital Postal Survey 2017

Table 5.5 presents the performance of designated postal operators relative to the best performer in providing e-finance services. Again, the Swiss DO maintains its leading position overall in providing digital financial and payment services, followed by that of Italy. The DOs of Kazakhstan, France and French Polynesia tied for third place. Nine DOs from the industrialized countries, four each from Africa and the Arab countries, three each from Asia-Pacific and Europe and CIS,

and one from Latin America and the Caribbean scored 0.60 or more. A common strength among top-ranked designated operators is the expansion of digital infrastructure and the ease with which postal customers can access a variety of financial services



Table 5.5 - **Digital financial and payments services index**

Rank	Digital financial and payments	Region	Norm
1	Switzerland	Industrialized countries	1.00
2	Italy	Industrialized countries	1.00
3	French Polynesia	Asia-Pacific	1.00
4	Kazakhstan	Europe and CIS	1.00
5	France	Industrialized countries	1.00
6	Tunisia	Arab countries	0.80
7	Portugal	Industrialized countries	0.80
8	Algeria	Arab countries	0.80
9	Greece	Industrialized countries	0.80
10	Viet Nam	Asia-Pacific	0.80
11	Côte d'Ivoire (Rep.)[†]	Africa	0.60
12	Belarus	Europe and CIS	0.60
13	Luxembourg	Industrialized countries	0.60
14	Korea (Rep.)	Asia-Pacific	0.60
15	Senegal	Africa	0.60
16	Morocco	Arab countries	0.60
17	Australia	Industrialized countries	0.60
18	Slovakia	Europe and CIS	0.60
19	Germany	Industrialized countries	0.60
20	South Africa	Africa	0.60
21	Belize	Latin America and Caribbean	0.60
22	Botswana	Africa	0.60
23	Egypt	Arab countries	0.60
24	Costa Rica	Latin America and Caribbean	0.40
25	Indonesia	Asia-Pacific	0.40
26	Kenya	Africa	0.40
27	Russian Federation	Europe and CIS	0.40
28	Hong Kong, China	Industrialized countries	0.40
29	Croatia	Industrialized countries	0.40
30	Iran (Islamic Rep.)[†]	Asia-Pacific	0.40

Rank	Digital financial and payments	Region	Norm
31	Uganda	Africa	0.40
32	Djibouti	Arab countries	0.40
33	Austria	Industrialized countries	0.40
34	Canada	Industrialized countries	0.40
35	Chile	Latin America and Caribbean	0.40
36	Lesotho	Africa	0.40
37	Malaysia	Asia-Pacific	0.20
38	Qatar	Arab countries	0.20
39	United Arab Emirates	Arab countries	0.20
40	Benin	Africa	0.20
41	Curaçao	Latin America and Caribbean	0.20
42	Jamaica	Latin America and Caribbean	0.20
43	Ghana	Africa	0.20
44	Dem. Rep. of the Congo	Africa	0.20
45	Ecuador	Latin America and Caribbean	0.20
46	Bulgaria (Rep.)	Europe and CIS	0.20
47	Spain	Industrialized countries	0.20
48	Jordan	Arab countries	0.20
49	Kyrgyzstan	Europe and CIS	0.20
50	Paraguay	Latin America and Caribbean	0.20
51	Moldova	Europe and CIS	0.20
52	Anguilla	Latin America and Caribbean	0.20
53	Lebanon	Arab countries	0.20
54	Trinidad and Tobago	Latin America and Caribbean	0.20
55	Namibia	Africa	0.20
56	China (People's Rep.)	Asia-Pacific	0.20
57	Albania	Europe and CIS	0.20
58	Azerbaijan	Europe and CIS	0.20
59	Bahamas	Latin America and Caribbean	0.20
60	Malawi	Africa	0.20
61	Maldives	Asia-Pacific	0.20
62	Mauritania	Arab countries	0.20
63	Pakistan	Asia-Pacific	0.20
64	Singapore	Asia-Pacific	0.20
65	Saint Vincent and the Grenadines	Latin America and Caribbean	0.20
66	Tanzania (United Republic)	Africa	0.20

Rank	Digital financial and payments	Region	Norm
67	Chad	Africa	0.20
68	Tajikistan	Europe and CIS	0.20
69	Ukraine	Europe and CIS	0.20
67	Bermuda	Latin America and Caribbean	0.00
71	Colombia	Latin America and Caribbean	0.00
72	Saudi Arabia	Arab countries	0.00
73	Burkina Faso	Africa	0.00
74	Czech Republic	Europe and CIS	0.00
75	Guinea	Africa	0.00
76	Thailand	Asia-Pacific	0.00
77	Bosnia and Herzegovina	Europe and CIS	0.00
78	Liberia	Africa	0.00
79	Oman	Arab countries	0.00
80	Bonaire	Latin America and Caribbean	0.00
81	Aruba	Latin America and Caribbean	0.00
82	Bahrain (Kingdom)	Arab countries	0.00
83	Bhutan	Asia-Pacific	0.00
84	Cambodia	Asia-Pacific	0.00
85	Antigua	Latin America and Caribbean	0.00
86	Cayman Islands	Latin America and Caribbean	0.00
87	Macao, China	Arab countries	0.00
88	Dominica	Latin America and Caribbean	0.00
89	Comoros	Africa	0.00
90	El Salvador	Latin America and Caribbean	0.00
91	Gambia	Africa	0.00
92	Grenada	Latin America and Caribbean	0.00
93	Guyana	Latin America and Caribbean	0.00
94	Hungary	Europe and CIS	0.00
95	India	Asia-Pacific	0.00
96	Kiribati	Asia-Pacific	0.00
97	State of Libya	Arab countries	0.00
98	Madagascar	Africa	0.00
99	Mexico	Latin America and Caribbean	0.00
100	Mongolia	Asia-Pacific	0.00
101	Montserrat	Latin America and Caribbean	0.00
102	Mozambique	Africa	0.00

Rank	Digital financial and payments	Region	Norm
103	Myanmar	Asia-Pacific	0.00
104	Nepal	Asia-Pacific	0.00
105	Netherlands	Industrialized countries	0.00
106	New Zealand	Industrialized countries	0.00
107	Nicaragua	Latin America and Caribbean	0.00
108	Niger	Africa	0.00
109	Peru	Latin America and Caribbean	0.00
110	North Macedonia	Europe and CIS	0.00
111	Romania	Europe and CIS	0.00
112	Saint Lucia	Latin America and Caribbean	0.00
113	South Sudan	Africa	0.00
114	Sri Lanka	Asia-Pacific	0.00
115	Saint Christopher and Nevis	Latin America and Caribbean	0.00
116	Kuwait	Arab countries	0.00
117	Suriname	Latin America and Caribbean	0.00
118	Syria	Arab countries	0.00
119	Togo	Africa	0.00
120	Tonga	Asia-Pacific	0.00
121	Turkey	Europe and CIS	0.00
122	United States of America	Industrialized countries	0.00
123	Venezuela (Bolivarian Republic)	Latin America and Caribbean	0.00
124	Virgin Islands	Latin America and Caribbean	0.00
125	Zimbabwe	Africa	0.00

Source: UPU Digital Postal Survey 2017

Correlation with external indexes impacting digital postal services

This section benchmarks designated operators' performance on the postal electronic services (PES) index and other external indices and analyses the alignment pattern of the scores. The indices were also compared in order to understand the level of non-correlation.

It is important to explain the colours used in the index tables below. **Green** indicates that the DO performs above the benchmark index; the **light green** shows that, on average, the DO's performance is in line with the benchmark index; and **blue** denotes that, on average, the DO performs below the benchmark index.

Global PES index and E-Government Development Index

As a composite indicator, the UN's E-Government Development Index (EGDI) is used to measure the willingness and capacity of national administrations to use information and communication technologies to provide a growing number of online public services.

Overall, most of the designated operators underperformed in their benchmark index. The low performance is not related to a particular region or economic group. Although most DOs failed to exploit the full capacity of the country, the six best performers are taking advantage of the digital potential of their countries: one DO in the Latin America and Caribbean region (Anguilla), three in Asia-Pacific (Hong Kong, Macao and French Polynesia), two in the industrialized countries (Switzerland and Austria), and one in Europe and CIS (Kazakhstan) beat the benchmark score.

The designated postal operator of Anguilla has made impressive strides towards achieving the digital potential of the territory with a huge change (\blacktriangle : 0.42), followed by Macao and Hong Kong with 0.35 and 0.21, respectively. On average, the performance of the DOs of France, Spain and Germany are about the same in the PES Index as in the EGDI. Table 5.6 presents the top six performing DOs (\blacktriangle : 0.10 to 0.42) on the PES index as compared to their EGDI score, and five DOs whose value is more or less comparable (\blacktriangle : -0.09 to 0.03) with the benchmark indicator.

* \blacktriangle is the difference between the two indices.

Table 5.6 - Overperforming DOs in terms of UN Public Administration Network (UNPAN) EGDI score

E-post and e-government	Norm	UNPAN e-government (EGDI)	\blacktriangle
Anguilla	0.50	0.08	0.42
Morocco	0.93	0.52	0.41
Macao, China	0.43	0.08	0.35
Hong Kong, China	0.29	0.08	0.21
Switzerland	1.00	0.85	0.15
French Polynesia	0.21	0.08	0.13
Austria	0.93	0.83	0.10
Kazakhstan	0.79	0.76	0.03
Portugal	0.79	0.80	-0.02
France	0.86	0.88	-0.02
Spain	0.79	0.84	-0.06
Germany	0.79	0.88	-0.09

Overperforming	Somewhat overperforming	Fulfilling potential
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Table 5.7 shows underperforming DOs (\blacktriangle : -0.71 to -0.13) on the PES index as compared to the benchmark EGDI. The DOs of Greece, Korea (Rep.), the United Arab Emirates, Mongolia, China (People's Rep.), Bahrain (Kingdom), Singapore, Viet Nam and the United States of America are underperforming by more than (\blacktriangle) -0.50. The DOs of these countries are not exploiting the online government services capacity of their countries. This also means that citizens need the infrastructure and the skills to take advantage of the electronic services on offer.

Table 5.7 - Underperforming DOs in terms of EGDI score

E-post and e-government	Norm	UNPAN e-government (EGDI)	\blacktriangle
Greece	0.07	0.78	-0.71
Korea (Rep.)	0.21	0.90	-0.69
United Arab Emirates	0.14	0.83	-0.69
Mongolia	0.07	0.68	-0.61
China (People's Rep.)	0.07	0.68	-0.61
Bahrain (Kingdom)	0.21	0.81	-0.60
Singapore	0.36	0.88	-0.52
Viet Nam	0.07	0.59	-0.52
United States of America	0.36	0.88	-0.52
Luxembourg	0.36	0.83	-0.48
Colombia	0.21	0.69	-0.47
Indonesia	0.07	0.53	-0.45
New Zealand	0.43	0.88	-0.45
Slovakia	0.29	0.72	-0.43
Iran (Islamic Rep.) ^f	0.21	0.61	-0.39
Namibia	0.07	0.46	-0.38

India	0.21	0.57	-0.35
Egypt	0.14	0.49	-0.35
Ecuador	0.29	0.61	-0.33
Canada	0.50	0.83	-0.33
Bosnia and Herzegovina	0.21	0.53	-0.32
Netherlands	0.57	0.88	-0.30
Russian Federation	0.50	0.80	-0.30
Pakistan	0.07	0.36	-0.29
Costa Rica	0.43	0.70	-0.27
Australia	0.64	0.91	-0.26
Kenya	0.21	0.45	-0.24
South Africa	0.43	0.66	-0.23
Hungary	0.50	0.73	-0.23
Botswana	0.21	0.43	-0.21
Algeria	0.21	0.42	-0.21
Czech Republic	0.50	0.71	-0.21
Senegal	0.14	0.35	-0.21
Tunisia	0.43	0.63	-0.20
Ukraine	0.00	0.19	-0.19
Belarus	0.57	0.76	-0.19
Italy	0.64	0.82	-0.18
Malaysia	0.57	0.72	-0.15
Croatia	0.57	0.70	-0.13

Underperforming

Somewhat underperforming

PES index and UNCTAD E-Commerce Index

The United Nations Conference on Trade and Development's E-Commerce Index allows countries to compare their e-commerce readiness with that of others and also indicates their relative strengths and weaknesses with regard to different elements of the e-commerce process (for example, Internet access, e-commerce sites, payment and delivery). The table below shows strong performance on the E-Commerce Index (▲ greater than 0.34) by the DOs of Anguilla, Slovakia, Curaçao, Morocco, Indonesia, Hong Kong, Ukraine and Kazakhstan. These DOs are taking advantage of the e-commerce full potential of their countries and territories.

On average, the DOs of the Netherlands, Belarus, the Russian Federation, Egypt and the United States of America scored about the same as their benchmark indicators (▲: -0.01 to 0.04). Table 5.8 shows the spread of DOs from highly overperforming to fulfilling the potential (▲: greater than 0.30, 0.16 to 0.24, and -0.08 to 0.07).

Table 5.8 - Overperforming DOs on UNCTAD e-Commerce Index

E-commerce	Norm	UNCTAD e-commerce	▲
Anguilla	0.86	0.21	0.65
Slovakia	0.86	0.22	0.64
Curaçao	0.71	0.21	0.50
Morocco	0.86	0.43	0.43
Indonesia	0.71	0.36	0.35
Hong Kong, China	0.57	0.22	0.35
Ukraine	0.57	0.22	0.35
Kazakhstan	1.00	0.66	0.34
Tunisia	0.71	0.47	0.24
Costa Rica	0.86	0.62	0.24
Viet Nam	0.71	0.50	0.21
Macao, China	0.43	0.22	0.21
Maldives	0.43	0.22	0.21
South Africa	0.71	0.54	0.17
Colombia	0.71	0.55	0.16
Tanzania (United Republic)	0.43	0.27	0.16
Bonaire	0.29	0.21	0.07
Guinea	0.14	0.07	0.07
Netherlands	1.00	0.96	0.04
Belarus	0.71	0.71	0.00
Russian Federation	0.71	0.71	0.00
Egypt	0.29	0.29	0.00
United States of America	0.86	0.87	-0.01
Côte d'Ivoire (Rep.) ¹	0.29	0.35	-0.06
Aruba	0.14	0.21	-0.07
Dominica	0.14	0.21	-0.07
Saint Vincent and the Grenadines	0.14	0.21	-0.07
Hungary	0.71	0.79	-0.08
French Polynesia	0.14	0.22	-0.08
Tonga	0.14	0.22	-0.08
Algeria	0.14	0.22	-0.08

Overperforming

Somewhat overperforming

Fulfilling potential

Overall, the performance of DOs against the E-Commerce Index is insufficient. Twenty-five DOs underperformed in their benchmark index (▲: -0.30 to -0.68). The challenge is not limited to a specific region or economic category: some of the worst scorers are those DOs that traditionally show a strong performance in postal development indicators.

For example, the DOs of Luxembourg, Italy, the United Arab Emirates, and Spain (with ▲ more than -0.51) underperformed compared to other DOs around the world. These DOs are not taking advantage of the e-commerce capacity of their countries. Table 5.9 shows the DOs that underperformed in their benchmark index (▲: -0.68 to -0.12).

Table 5.9 - Underperforming DOs in terms of EGDl score

E-commerce	Norm	UNCTAD e-commerce	▲
Luxembourg	0.29	0.97	-0.68
Italy	0.14	0.74	-0.60
United Arab Emirates	0.29	0.87	-0.58
Spain	0.29	0.80	-0.51
Jamaica	0.14	0.65	-0.51
Australia	0.43	0.92	-0.49
Malaysia	0.29	0.77	-0.48
Qatar	0.14	0.62	-0.48
Turkey	0.14	0.62	-0.48
Singapore	0.43	0.90	-0.47
Moldova	0.14	0.59	-0.45
Azerbaijan	0.14	0.58	-0.44
Czech Republic	0.43	0.84	-0.41
Saudi Arabia	0.29	0.69	-0.40
Portugal	0.29	0.68	-0.39
Greece	0.43	0.80	-0.37
Germany	0.57	0.94	-0.36
New Zealand	0.57	0.93	-0.36
Mongolia	0.29	0.64	-0.35
Canada	0.57	0.92	-0.35
Lebanon	0.29	0.63	-0.34
Austria	0.57	0.91	-0.34
France	0.57	0.90	-0.33
China (People's Rep.)	0.29	0.60	-0.31
Kenya	0.14	0.45	-0.31
Botswana	0.14	0.43	-0.29
Uganda	0.14	0.43	-0.29
Mexico	0.14	0.42	-0.28
Namibia	0.14	0.42	-0.28
Paraguay	0.14	0.41	-0.27
Iran (Islamic Rep.) ¹⁹	0.43	0.69	-0.26

Thailand	0.43	0.68	-0.25
Switzerland	0.71	0.96	-0.25
Korea (Rep.)	0.71	0.96	-0.24
Bhutan	0.14	0.36	-0.22
India	0.29	0.44	-0.15
Cambodia	0.14	0.29	-0.15
Ecuador	0.29	0.41	-0.12

Underperforming

Somewhat underperforming

PES index and EIU Financial Inclusion Index

The Economist Intelligence Unit (EIU) Global Microscope 2018¹⁹ provides an enabling environment for financial inclusion across multi-dimensional facets, and ranks countries according to their overall performance on financial inclusion. As table 5.10 shows, more DOs have a higher value for the online financial inclusion component than for the other two indices (e-government and e-commerce).

The top six performers are the DOs of Kazakhstan, the Netherlands, Anguilla, Costa Rica, the United States of America and Tunisia (▲: 0.30 to 0.50). These DOs are taking advantage of the digital financial capacities of their countries and territories. On average, the DOs of Austria, Canada, France, Germany, New Zealand, Ukraine, Indonesia, Hong Kong and Lebanon scored about the same in the PES index as in the EIU Financial Inclusion Index. A common strength among top performers in the Financial Inclusion Index is the expansion of financial infrastructure and the ease with which Posts' customers can access a range of financial products and services.

¹⁹ [responsiblefinanceforum.org/wp-content/uploads/2018/11/EIU_Microscope_2018_PROOF_10.pdf](https://www.responsiblefinanceforum.org/wp-content/uploads/2018/11/EIU_Microscope_2018_PROOF_10.pdf)

Table 5.10 - Overperforming DOs on EIU Financial Inclusion Index

Digital financial & payments	Norm	EIU microscope 2018 Financial inclusion index	▲
Kazakhstan	1.00	0.51	0.49
Netherlands	1.00	0.51	0.49
Anguilla	0.86	0.51	0.35
Costa Rica	0.86	0.51	0.35
United States of America	0.86	0.51	0.35
Tunisia	0.71	0.40	0.31
Viet Nam	0.71	0.44	0.27
Slovakia	0.86	0.62	0.24
Belarus	0.71	0.51	0.20
Croatia	0.71	0.51	0.20
Curaçao	0.71	0.51	0.20
Hungary	0.71	0.51	0.20
Korea (Rep.)	0.71	0.51	0.20
Russian Federation	0.71	0.51	0.20
South Africa	0.71	0.51	0.20
Switzerland	0.71	0.51	0.20
Morocco	0.60	0.51	0.09
Austria	0.57	0.51	0.06
Canada	0.57	0.51	0.06
France	0.57	0.51	0.06
Germany	0.57	0.51	0.06
New Zealand	0.57	0.51	0.06
Ukraine	0.57	0.51	0.06
Indonesia	0.71	0.69	0.02
Hong Kong, China	0.57	0.61	-0.04
Lebanon	0.29	0.33	-0.04
Australia	0.43	0.51	-0.08
Macao, China	0.43	0.51	-0.08
Czech Republic	0.43	0.51	-0.08
Greece	0.43	0.51	-0.08
Iran (Islamic Rep.) ^f	0.43	0.51	-0.08
Maldives	0.43	0.51	-0.08
Singapore	0.43	0.51	-0.08

Overperforming	Somewhat overperforming	Fulfilling potential
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The DO of Mexico underperformed by more than half (-0.56), followed by Paraguay (-0.46), India (-0.43), Jamaica and Kenya (each -0.40) on the EIU Financial Inclusion Index. These DOs are not exploiting the digital potential of their countries. A common weakness among top underperformers on the Financial Inclusion Index is a lack of digital infrastructure that enables postal customers to access a range of digital financial products and services. Table 5.11 shows the DOs that underperformed in achieving the digital potential of financial inclusion of the country or territory.

Table 5.11 - Underperforming DOs on EIU Financial Inclusion Index 2018

Digital financial & payments	Norm	EIU microscope 2018 Financial inclusion index	▲
Mexico	0.14	0.70	-0.56
Paraguay	0.14	0.60	-0.46
India	0.29	0.72	-0.43
Jamaica	0.14	0.54	-0.40
Kenya	0.14	0.54	-0.40
Algeria	0.14	0.51	-0.37
Aruba	0.14	0.51	-0.37
Azerbaijan	0.14	0.51	-0.37
Bhutan	0.14	0.51	-0.37
Botswana	0.14	0.51	-0.37
Dominica	0.14	0.51	-0.37
French Polynesia	0.14	0.51	-0.37
Guinea	0.14	0.51	-0.37
Italy	0.14	0.51	-0.37
Namibia	0.14	0.51	-0.37
Qatar	0.14	0.51	-0.37
Moldova	0.14	0.51	-0.37
Saint Vincent and the Grenadines	0.14	0.51	-0.37
Tonga	0.14	0.51	-0.37
Uganda	0.14	0.51	-0.37
Morocco	0.14	0.50	-0.36
Turkey	0.14	0.48	-0.34
China (People's Rep.)	0.29	0.61	-0.32
Ecuador	0.29	0.56	-0.27
Cambodia	0.14	0.39	-0.25
Bonaire	0.29	0.51	-0.22
Côte d'Ivoire (Rep.) ^f	0.29	0.51	-0.22
Luxembourg	0.29	0.51	-0.22
Malaysia	0.29	0.51	-0.22
Mongolia	0.29	0.51	-0.22
Portugal	0.29	0.51	-0.22
Saudi Arabia	0.29	0.51	-0.22
Spain	0.29	0.51	-0.22
United Arab Emirates	0.29	0.51	-0.22
Tanzania (United Republic)	0.43	0.60	-0.17
Egypt	0.29	0.45	-0.16
Thailand	0.43	0.59	-0.16
Colombia	0.71	0.81	-0.10
Portugal	0.29	0.51	-0.22

Underperforming	Somewhat underperforming
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Chapter VI:

The role of the post in the digital economy



Introduction

In the 2017 UPU questionnaire on digital postal services, 62% of designated operators indicated that government sector policies – such as those on e-government, information and communications technology (ICT), and digital sector policies – assign a role to the Post in the provision of e-services. This message was reinforced by ministries during the recent Ministerial Strategy Conference in Addis Ababa, which confirmed that Posts are increasingly viewed as a key contributor to the 2030 Agenda for Sustainable Development, supporting businesses and citizens in the areas of digitalization, connectivity, financial inclusion and the resilience of national infrastructure.

In the preceding chapters we have looked at the opportunities for Posts to be part of the digital revolution. But what are the policy barriers that need to be overcome to enable Posts to play a role in this revolution? In this chapter we look at some of the issues facing postal policy makers and regulators, and the impact digital policy will have on the postal sector. We will consider digital policies at a global, regional and national level, and consider how postal policy needs to be aligned to digital policies to realize better overall benefits for society as a whole.

In the previous chapters, much of the focus has been on demonstrating how national postal operators are providing digital services. But are such examples demonstrations of Posts helping to bridge the digital divide, or merely taking advantage of ICT to enhance their products and services? We would argue that many of the digital examples are good business practice that Posts need to adopt in order to maintain and/or develop their market.

Leveraging Technology and Trade for Economic Development

Technological progress and trade are inextricably linked. Global trade has accelerated the spread of innovation and technology, and technological advances – particularly in the areas of information and communication, transport, and electronic commerce and payment – have spurred international trade.

Technology continues to reshape international trade today, affecting not only what goods and services are traded but also the way in which they are traded. Electronic commerce and paperless trade are just two examples of how technology is changing the way in which trade has traditionally been conducted.

United Nations Economic and Social Council for Asia and the Pacific (ESCAP)

ESCAP's **“technological progress and trade are inextricably linked”** applies just as much to national postal operators as it does to any other business. Lack of technological progress and innovation in national operators is one of the main reasons the viability of some of them is under threat. Indeed, technology threatens the very notion of universal service and pushes Posts into areas where they must compete with other operators. In this chapter we look at the impact digital policy will have on the postal sector and national operators. We consider how postal sector policy and national postal strategy must reflect digital policy, and review what stands in the way of Posts becoming digital businesses.

Digital policy

The digital revolution started in the 1980s with the advent of the mobile phone, the Internet and the personal computer, among other things. The first mobile phones and portable computers will be remembered with amusement as their weight and dimensions meant they were mobile and portable for short distances only. In 2016 at the World Economic Forum, the term the “Fourth Industrial Revolution” was used for the first time to describe how technologies are now becoming embedded within societies. Robotics, big data, artificial intelligence, quantum technology, the Internet of Things, 3D printing, nanotechnology and autonomous vehicles and 5G connectivity are all impacting everyday lives around the world. This new revolution has also changed the way national governments, regional blocs and bodies and international agencies refer to changes in technology. Where previously there were ICT policies and strategies, now there are digital policies and strategies. The emphasis of those policies has changed from physical implementation of ICT to delivering solutions that will enhance the economy and the lives of citizens.

Challenges of the digital economy

Policy

The digital revolution started in the 1980s with the advent of the mobile phone, the Internet and the personal computer, among other things. The first mobile phones and portable computers are remembered with amusement, as their weight and dimensions meant they were mobile and portable for short distances only. In 2016 at the World Economic Forum, the term "Fourth Industrial Revolution" was used for the first time to describe how technologies are now becoming embedded within societies. This new revolution has also changed the way national governments, regional blocs and bodies, and international agencies refer to changes in technology. Where previously there were ICT policies and strategies, there are now digital policies and strategies. The emphasis of those policies has changed from physical implementation of ICT infrastructure to the delivery of digital services that will enhance the economy and the lives of citizens.

Regulatory

The regulators participating in the 2018 Global Symposium for Regulators organized by the International Telecommunication Union (ITU) recognized that flexible and innovative policy and regulatory approaches could support and incentivize digital transformation. By implementing best practices in this regard, regulators will be able to respond to the changing landscape and address the ongoing need for secure and reliable ICT infrastructure and affordable access to, and delivery of, digital services – while at the same time protecting consumers and maintaining trust in ICT.

The postal sector

In the days of postal monopolies, the postal sector was easy to define: it was the national postal operator. That is no longer the case as monopolies disappear by design or default, and competition appears from all directions.

What is the postal sector?

The UPU has always had clear rules about letters and parcels in the international context, along with general guidelines on universal service, and this forms a basis for the postal sector. Operators undertaking the conveyance of letter mail under 2 kg and parcels under 20 kg make up the postal sector. In some countries, the weight limits are slightly different, but all UPU members agree on these limits for international mail. The regulation of the postal and courier and express operators is at the discretion of the regulator.

What is the Post?

Designated operators are responsible for providing the universal service. In the course of fulfilling that universal service obligation (USO), they have developed other products and services to complement the postal business. Many use their postal networks to provide agency services for government and the private sector. Many have banks, in some cases the most important bank in the country, providing a wide range of financial services. Others have developed strong logistics capabilities and are moving into e-commerce. In addition to the postal USO, the Post can provide a wide range of services, subject to authorization from the relevant regulatory agencies.

Postal sector policy

The most important aspect of postal sector policy is the definition of the postal sector. This is not quite as easy as it might appear because different definitions exist at national level. However, we will take as a starting point the products and services national governments must provide under the universal service obligation. Traditionally, designated operators focused only on letters and parcels, with the latter determined according to what was a reasonable weight for one person to carry. This is only a small part of what has become the wider logistics market.

However, when we talk about postal sector policy, we focus on the Post and the courier and express areas of the logistics market. This is because the courier and express segment operates within the universal service area and therefore affects the ability of DOs to provide extensive universal services.

Furthermore, the debate on the correct definition of the postal market from a regulatory point of view, in the light of current and expected market trends, must also be stimulated at an international level.

On the one hand, market evidence shows that, following the decline of letter-mail volumes, we will increasingly see new digital communication models among citizens, businesses and public administrations, substituting traditional postal services. On the other hand, the development of e-commerce will result in a strong increase in the e-commerce packets segment.

In particular, the same “universal” delivery networks that have so far been used for letter mail will also be able to deliver e-commerce packets owing to their small size. Similarly, digital communications could be facilitated by leveraging universal post office networks as a point of contact between postal operators/companies and citizens, thus promoting social inclusion.

In this new context, the use of postal service assets for new services generated by digital development requires a redefinition of the relevant market, where “universal service” encompasses not only traditional letter mail, but also digital communications and e-commerce packets.

Postal sector policy tends to focus on the following areas:

Laws and regulations	Universal service	Regulation
Creating laws and regulations to promote postal development	Defining the scope of universal service for the postal sector	Establishing the role and function of a sector-wide regulator
Market liberalization	Role of national operator	Role of other operators
Providing customers with choice through market liberalization	Defining the role of the national operator in all activities	Defining the role of other operators in providing postal services
Licensing	Employee welfare	Customer interests
Implementing a licensing regime for all postal sector operators	Ensuring all postal employees have appropriate terms and conditions	Ensuring customer interests are the primary focus
Quality and security	Innovation	E-commerce
Putting in place appropriate quality and security systems/measures	Promoting postal sector innovation through various means	Considering the postal requirements to promote e-commerce

From the above table, it is difficult to associate postal sector policy with digital policies, other than in the area of e-commerce and innovation. The main focus of a postal sector policy is the core postal sector, and not activities that might be undertaken by the national operator, such as financial, retail and government services. These are actually other sectors, particularly the financial sector, which is controlled by the central bank and has its own regulatory authority. Government services are rarely regulated by an independent authority.

That is not to say that digital services cannot be part of the postal sector policy. But they are likely to be a driver for transformation of the “role of the national operator”, where the government requires the national operator to perform certain activities on its behalf.

Many of the areas shown above have a direct link to digital policies. Innovation is a clear example: adopting ICT practices can lead to innovative solutions provided by Posts, for example, e-government, e-finance or e-commerce.

Implications for the universal service

Perhaps the most important aspect of what defines the postal sector is the universal service obligation.

Mail volumes are falling rapidly, and Posts are suffering from increased unit cost of delivery. This is leading many to question whether the universal postal service definition is fit for purpose, and it has already been redefined in some cases. In New Zealand, universal delivery has been reduced from daily to alternate days.

In other countries, there is a wider debate on whether the universal service should be extended to other services. As the importance of letters declines, that of mobile services, broadband, access to government services and access to information increases. At the same time, the postal network is often the largest physical network in a country, albeit with limitations in many parts of the world. Those limitations include lack of electricity, lack of ICT connectivity, dated structures and staff qualified only in postal matters. Nevertheless, with sufficient investment the postal network could be used to deliver financial, social and digital inclusion.

Restructuring and reform

Are restructuring and reform prerequisites for DOs to be prepared for the digital economy? In the last 25 years, DOs have faced more restructuring and reform than at any time over the past century. Postal concessions, management contracts, corporatizations, privatizations and mergers have featured in postal sector development. All aim to make national Posts more commercial and prepared for life in a competitive world. As the model below shows, the move from government department to private company entails changes to legislation, regulation, employment and ownership.

Government Department	Statutory Corporation	State-Owned Enterprise	Private Company
Public Law	Public Law	Private Law	Private Law
Internal Regulation		Independent Regulation	
Civil Service		Labour Law	
Public Owner			Private Owner

As postal markets liberalize, it follows that there is less reason for national operators to remain as government departments. During the past 20 years, there has been a steady privatization of Posts. As Posts enter ever more competitive markets, they must adopt commercial practices to ensure they can better compete.

The model suggests that commercial practices are a prime driver for postal reform – this is true, but the need for investment is also a very important factor. This is particularly true of Posts that need to transform to enter the digital world. Investment for systems, automation, software, hardware, digital innovation, diversification and acquisitions is difficult for government departments, which are often budget-driven.

Recent UPU research shows that 73% of designated operators have increased investment in digital services, with 67% claiming that the revenue of the organization attributable to digital services has increased since 2014.²⁰

Governments do not need to privatize their designated operator to achieve commercial success, but they do need to provide funds for development. La Poste in France has been a state-owned enterprise since 2010, but despite being state-owned, it has made many acquisitions during the past eight years to develop its international business. La Poste generates 25% of its revenues overseas, the majority through GeoPost, which is the international courier and express arm of the business.

20 UPU questionnaire on digital postal services for 2017.

Policy direction

There is no one particular policy to follow, because designated operators are all in very different situations

internally and externally. Internally, they have different corporate structures, different products and services and different cultures. Externally, they face different political constraints, different economic situations and different geographical conditions.

Digital readiness of Posts – Categories

With respect to their digital readiness, Posts can be placed in different categories, as shown below.

Group A	Group B	Group C	Group D
Non-digital	Limited digital	Fully digital	The visionaries
No funds for ICT development	Some funds for ICT development	Funds for ICT development	No funds for development
Weak brand and trust	Reasonable brand and trust	Strong brand and trust	Political and regulatory controls
Untrained staff	Competent, trained staff	Professional, trained staff	Commercial, financial and management restrictions
No culture	Moderate culture	Strong culture	Poor product/service offering
Sparse postal network (one post office serves 50,000 people or more)	Postal network: one post office serves 10,000–50,000 people	Dense postal network (one post office serves 10,000 people or fewer)	Competent management, trained staff
Political and regulatory controls	Political and regulatory interference	Political and regulatory freedom	Reasonable culture
Commercial, financial and management restrictions	Some commercial, financial and management freedom	Commercial, financial and management freedom	Some innovation
No innovation	Some innovation	Very innovative	Some strong core services
Poor product/service offering	Good product/service offering	Relevant product/service offering	Strong brand and trust
Weak core services	Some strong core services	Strong core services	Dense postal network (one post office serves 10,000 people or less)

Digital readiness of Posts – Policy objectives

For each of the four groups, the policy objectives from both a digital perspective and a postal perspective will be different, as shown below.

Group A	Group B	Group C	Group D
Non-digital	Limited digital	Fully digital	The visionaries
<p>Group A is typified by Posts that have very sparse networks, very low mail volumes, low customer focus and limited public trust. They rely on P.O. boxes for delivery; these P.O. boxes are used by businesses and groups and a small proportion of individuals, but the reality is that most people do not use the Post.</p> <p>Governments must therefore be very careful about seeing digital as a means of reviving the fortunes of the Post.</p> <p><i>Examples: Cambodia, Malawi, Mali</i></p>	<p>Group B is typified by Posts that have post offices in most locations, reasonable mail volumes and good customer focus. They enjoy good public trust and undertake home delivery. The Post is seen as old-fashioned but reliable and therefore has good potential to provide other government and social services. Group B Posts often have a high degree of political input into their management.</p> <p>Group B Posts have good potential to provide digital services but require policy intervention to define their role.</p> <p><i>Examples: China (People's Rep.), Mauritius, Thailand</i></p>	<p>Group C is typified by Posts that have very dense networks, very high mail volumes and excellent customer focus. They enjoy absolute public trust and undertake home delivery. The Post is seen as old-fashioned and reliable, but innovative and exciting at the same time. Group C Posts have a strong degree of political autonomy and set their own strategy.</p> <p>Group C Posts have excellent potential to provide digital services but will do so as part of their strategy. Governments and Posts might partner for some digital services.</p> <p><i>Examples: Australia, France, Switzerland</i></p>	<p>Group D comprises the Posts that cross the boundaries of the other groups, and therefore each Post displays different characteristics. Some have very high mail volumes, others very low volumes; some have strong brand and trust, others less so. Typically, they will have a dense postal network, and that is their core strength. They will often have close ties to government, being a government department or corporation.</p> <p>Group D Posts do have potential to offer digital services on behalf of government, but there may be other factors that prevent them from being used for such purposes.</p> <p><i>Examples: India, Kazakhstan, United States of America</i></p>

Policies for the Post

There is a temptation for governments to view the needs of digital, social and financial inclusion as the perfect way to reinvent the Post. In some of the groups, these needs do present an opportunity to reinvent the postal network, but in others this may not be the case. Below we consider the policy direction that might be taken for each of the four groups.

Group A	Group B	Group C	Group D
Non-digital	Limited digital	Fully digital	The visionaries
<p>Governments should take a holistic view of the needs of society and then define the best ways to meet those needs. In group A countries, the needs of society are focused primarily on health and education, and then on social, financial, government and digital inclusion. Physical or postal inclusion is the least important and yet, ironically, may be the only one that has a universal service obligation.</p> <p>From a policy point of view, it might be tempting to think social, financial, government and digital inclusion is a great opportunity to revive the fortunes of the Post, but in reality this is probably not a good idea.</p> <p>A more prudent policy would be to consider how best to provide social, financial, government and digital inclusion, and then add physical to that solution. In some countries, the use of health centres may be the best way to achieve the holistic policy objective, and in others it may be through schools. Or it may be to establish multi-functional centres that can deliver social, financial, government, digital and physical inclusion.</p> <p>Such a policy would result in some Posts no longer existing as we know them. But in their place would be new, more extensive networks delivering a wide range of valued services, of which postal services would be one.</p>	<p>There is a good case for policy intervention for group B countries. In the best-case scenarios, group B Posts have good networks and reasonable reputations. There is also a reasonable chance they are still in some way government-owned and are therefore seen as a trusted agent of government.</p> <p>The extent of digital services that group B Posts can provide will depend on their current product offering. Those with financial services are better positioned to provide digital financial services, while those that do not will face strong competition from the mobile sector.</p> <p>It is still prudent for governments to follow the holistic policy approach, but it is more likely that group B Posts will maintain the postal brand and add the digital services to their current range of products and services. Nevertheless, this should not stop the government from embarking on a partnership approach to ensure that each sector pays its way in achieving inclusion in rural communities.</p>	<p>Policy intervention is not required for group C countries. In these countries, Posts have developed strategies that are fully compatible with a move towards digital business. As discussed, in some cases, Posts will provide wider digital services, and in other cases they will not. Many Posts have strategies showing that they are digitally empowered physical businesses (e.g. the UPS-style model).</p> <p>Group C Posts and governments may partner where each party sees a benefit, but there is no specific policy for such interventions.</p>	<p>The visionaries have the greatest need for policy intervention. Many group D countries have huge potential to deliver a much wider range of services than are currently offered. The United States Postal Service (USPS), India Post, Pos Indonesia, Iran Post and Viet Nam Post all have dense postal networks with huge potential to provide a wide range of government, social and financial services.</p> <p>Only policy intervention will enable such Posts to develop beyond their current remit. In some examples, the mailing industry and the Post are an “integrated value chain with a shared purpose to exceed the expectations of today’s consumers”.²¹ Under domestic legislation, USPS is limited in its ability to offer “non-postal” services. In the case of India, Indonesia and Viet Nam, the Posts all have the potential to contribute to digital inclusion through their postal networks.</p> <p>Group D also includes countries that have less potential; in these cases, the advice given for groups A and B should be followed. A holistic approach needs to be taken, considering the needs of society as a whole. Whether that results in digital and other services being delivered through the Post or in postal services being delivered through other means is not important, as long as society as a whole benefits.</p>

The digital impact on postal networks

What will be the impact on postal networks of the digital revolution? At the ITU Global Symposium for Regulators in 2018, there was a similar discussion about the impact of the digital revolution on ICT, resulting in best-practice guidelines.

The outcome of this symposium is important because many of the regulators that were in attendance are also responsible for regulating the postal sector. These regulators are taking increasing interest in the postal sector and applying the principles of telecoms and ICT to Posts. Many are also starting to

look at how they can deliver cross-sectoral services to rural and underserved areas.

The following excerpt from those guidelines is particularly pertinent to the postal network: promote uptake and effective use of digital services across the country, particularly in rural and remote areas, through incentives that are attractive to both the public and private sectors.

Posts can thus become part of the solution, as a key partner, a customer or a supplier. Below we consider different scenarios for each group.

Group A	Group B	Group C	Group D
Non-digital	Limited digital	Fully digital	The visionaries
<p>If the regulator is serious about developing rural and remote access to digital services, it will require a network that is significantly denser than the existing postal network. In this scenario, Posts can become a customer of that network by using it as a postal agent on a commission basis.</p> <p>Non-digital Posts can offer their existing network as a means of providing digital services but should consider relinquishing ownership of that network to absolve themselves of the fixed cost of the network.</p> <p>Non-digital Posts should not attempt to be a junior or key partner.</p>	<p>These Posts are in a position to play a stronger role and may participate as a junior partner in the provision of digital services. Their role in providing digital services is likely to be as the physical partner providing access points through post office outlets. They should not attempt to take on the whole service delivery without key partners capable of delivering digital solutions.</p> <p>Digitally weak Posts could also consider relinquishing ownership of their network and becoming a customer of the digital service provider in rural areas.</p> <p>These Posts should not attempt to be a key partner in delivering digital services.</p>	<p>Fully digital Posts can perform any role they want. They can be a junior partner, a key partner, a customer or a supplier, or have no such relationship at all. Since most fully digital Posts are in strong and wealthy economies, it all depends on the strategy of the Post. Some, such as Swiss Post, are likely to perform all the roles for different services, while others such as Royal Mail perform none.</p> <p>These Posts define their own role according to their strategy.</p>	<p>The visionaries have a strong card to play with their dense post office network – a major asset in the eyes of regulators. The visionaries can therefore play a vital role in delivering digital services to rural communities. However, their role is purely physical, and they should act as a junior or key partner alongside digital service providers. From a wider policy perspective, this is an opportunity for government to rebrand Posts in partnership with the private sector.</p> <p>The visionaries should not attempt to take on the full role of digital service provision.</p>

Promotion of the uptake and use of digital services in rural and remote areas offers opportunities for all four groups in different ways. For groups A and B (non-digital and limited digital), it offers the chance for the universal service to be extended and the cost of its provision reduced.

For group C (fully digital), it offers a business opportunity and a way of strengthening trust among the general public. For group D (the visionaries), it offers a way to expand the scope of the postal network and reduce the cost of universal service provision.

Digital communications could be facilitated by leveraging universal post office networks as a point of contact between postal operators/companies and citizens, thus promoting social inclusion.

Chapter VII:

**Digital postal services
and the digital divide**



The digital divide

The digital divide refers to the different levels of access to digital technologies, meaning to what extent people can actually access and exploit the opportunities provided by the digital revolution. Digital inclusion is increasingly important to enable everyone to access digital services, products and networks. It can have marked economic, social and health benefits. The Post has a number of significant assets that offer the potential of delivering digital inclusion services to successfully meet local needs.

In spite of improved access to the Internet and mobile phones, the gaps in access to information and communication technology remain. The 2018 UN E-Government Survey concludes that digital divides are rampant in aspects such as access, affordability, age, bandwidth, content, disability, education, gender, migration, location, mobile, speed, and useful usage. The study also shows that lower-income households, those with less education, persons with disability, minorities, and rural residents generally lag behind in broadband adoption and computer usage.

Infrastructure divides

The absence of high-speed broadband bandwidth is a major contributor to infrastructure divides. World Bank statistics show that the problem remains widespread in developing countries, where only 12 out of 100 people were Internet users in 2016, as compared to 42 out of 100 in middle-income countries.²²

As part of efforts to promote and provide widespread inclusive digital infrastructure, delivering the information society through connectivity, communication and government services to the under-served, 50 UPU Quality of Service Fund projects are currently being implemented in Africa and beyond. For example, in Lebanon, LibanPost made the Post as one-stop shop for government services throughout the country, receiving over a million unique visitors in 2014.

Case: Bosnia

In Bosnia, the Post has helped to connect the administrative sector and provide information, content and services of the public administration in a single location. The expected volume of users is about 90,000 individuals and 60,000 businesses.

A gender divide

There is still a considerable gender gap with regard to technology usage throughout the developing world. Strict societal norms or culture can be a source of gender divide, according to ITU reports, which also suggest that a woman in a developing country is 21% less likely to own a mobile phone. In 2017, over 50% of men were online, compared to 45% of women.²³

Postal services, as promoters of sustainable and inclusive economic growth for all, can bridge gender divides by providing business opportunities for women as well as for the most vulnerable segments of society.

Case: Saudi Arabia

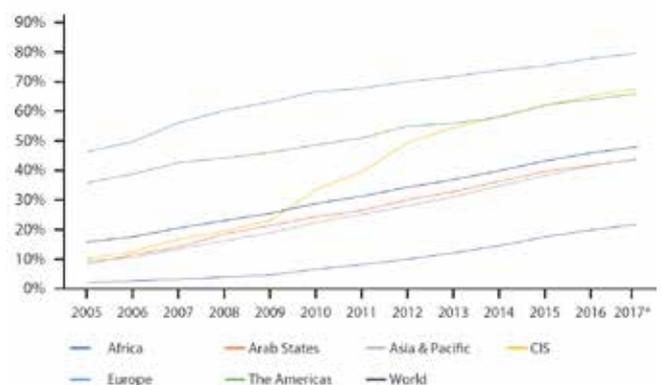
Saudi Post launched the Souq El Qaria portal for all productive families and craftsmen/women across Saudi Arabia, enabling them to sell and promote their products and crafts online 24/7 (no fees for this category).

Web accessibility

Websites play a critical role in providing information and services to citizens. Web accessibility allows citizens to use a government's online services, helping to close the digital divide. There is an increasing trend towards individuals using the Internet for communication with public authorities. In 2017, for example, nearly 50% of individuals in Europe used the Internet to interact with the government.²⁴

Despite the gaps, universal access to the Internet has been increasing over the past decade. The figure below shows that the percentage of individuals using the Internet – a proxy for web accessibility – is growing in all regions.

Figure 7.1 - Individuals using the Internet



Source: ITU Statistics²⁵

²³ www.itu.int/net/pressoffice/press_releases/2013/08.aspx#.W9Clg3lIKHt

²⁴ data.europa.eu/euodp/data/dataset/mxkqQDbOvbFrEYxG3XwA

²⁵ publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2018-Survey/E-Government%20Survey%202018_Chapter%202.pdf

Digital literacy

Digital literacy is broadly defined as skills that expand digital inclusion, so the need to increase digital literacy levels is key to improving social inclusion. As part of a policy aimed at building digital inclusion in Singapore, a government initiative is closing the digital divide for senior citizens by addressing digital literacy.²⁶

Digital postal services support for integrated policymaking

Enablers for the implementation of digital policymaking

E-government for inclusion

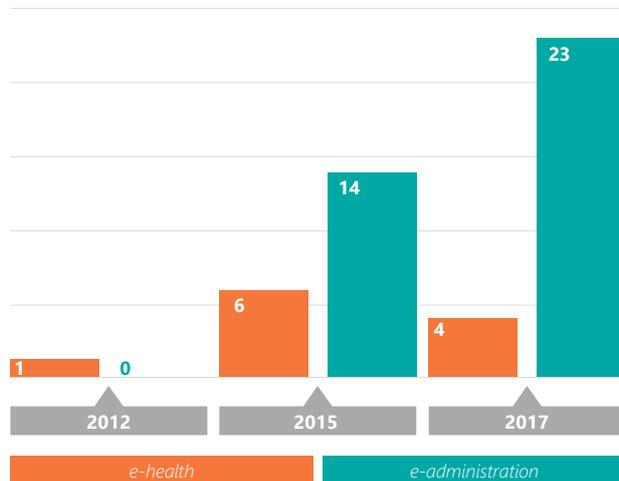
The Sustainable Development Goals aim to build resilient and sustainable communities, which includes addressing the needs of the poor and vulnerable groups in societies. The 2018 UN E-Government Survey⁷ reveals growing global efforts to address the persistent and growing digital divides and bridge access to the Internet. E-government is a powerful instrument for enabling integrated policies and public services by stimulating accountability and transparent institutions.²⁷

In 2016, the UN E-Government Survey found that, because of the progress of e-government services, digital services now exist in all countries: since 2014 all 193 UN member countries have delivered some form of online services, up from only 175 countries in 2013.²⁸

E-government seeks to bring people online and provide them with access to digital government information and public services, which stimulates greater social inclusion. The postal service, through its vast retail network, help citizens receive government services more easily, and facilitates online government transactions by offering digital and in-person services. Global efforts to bridge access to the Internet are improving. An ITU study found that nearly half of the world’s population accessed the Internet in 2017, up from 18% in 2015. However, regional disparities remain. About 80% of Europe’s population accessed the Internet in 2017, compared to only 22% of the population of Africa. In line with general growth in postal e-service delivery, e-government services have improved over time.²⁹

UPU statistics show significant growth in postal e-service delivery in the areas of e-health and e-administration between 2012, 2015 and 2017 (see figure below). Posts can also serve as a multi-channel services platform to help all levels of government address accessibility to citizens, and reduce communication gaps.

Figure 7.2 - Postal e-service delivery 2012-2017



Source: UPU Digital Postal Survey 2017

E-commerce for inclusion

E-commerce can become a powerful driver of economic growth, inclusive trade and job creation across the developing world. While some developing countries have made significant inroads into e-commerce, the vast majority are still lagging behind. E-commerce offers a tremendous opportunity for postal services, and it is their main growth driver.

The proportion of the world population with access to the Internet has grown from 1% in 1995, to nearly 50% in 2017.³⁰ During the same period, e-commerce also grew rapidly. UNCTAD estimates that worldwide e-commerce grew from 16 trillion USD in 2013 to 22 trillion in 2015. The figure for 2017 was 23.3 trillion. By 2018, the African e-commerce market is forecast to climb to 50 billion USD, from just 8 billion in 2013. The trend is set to continue in the coming years.³¹

E-commerce supports productive activities, job creation, entrepreneurship, creativity and innovation, and Posts play a prominent role in it. The shift towards e-commerce has revolutionized the way the postal industry operates and how operators interact with their customers. With their massive network and infrastructure, Posts have a role not only in leading e-commerce, but also in promoting sustainable development.

26 perspectives.eiu.com/technology-innovation/future-broad-band-south-east-asia

27 publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2018

28 publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2016

29 www.itu.int/net/pressoffice/press_releases/2015/17.aspx#.W9AdOXllkHv

30 www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2017.pdf

31 www.intracen.org/uploadedFiles/intracenorg/Content/Publications/International%20E-Commerce%20in%20Africa_Low-res.pdf

The UPU's Easy Export Programme, the purpose of which is to simplify export processes for micro, small and medium enterprises through the postal network, facilitates trade. It is adapted from Exporta Fácil, a postal export project implemented in Brazil and other Latin American countries. The programme provides member countries and their designated operators wishing to adopt a similar solution with the information they need to assess the viability of the project according to their national context. The manual complements the project implementation guide and serves as a roadmap for planning the various stages involved in establishing a postal export service for small enterprises.

In addition, the Universal Postal Union is proud to be an active partner of the eTrade for all initiative.³² Through the eTrade for all platform, the UPU and the other partners involved have pulled their synergies together to accomplish a great deal of work, while avoiding duplications of effort.

The UPU has mainly been involved in assessment work aimed at underlining the critical role of postal networks in driving eTrade for all implementation in the countries concerned.

As the United Nations agency in charge of postal services, two key eTrade for all policy areas in particular are of great relevance to the UPU: trade logistics and payment solutions. The two are the very DNA of Posts, and critical components in the e-commerce and e-trade value chain. In each of the assessments undertaken so far, the importance of the postal sector as a delivery infrastructure for e-trade and e-commerce has been underscored. The UPU has also identified gaps and challenges that need to be addressed in order to position the Post as a contributor to e-commerce readiness in the selected countries.

E-finance for inclusion

Financial inclusion is positioned as enabler of sustainable development highlighted in several of the SDGs. Post are a key player in financial inclusion and disaster risk management, postal financial institutions have twice as many as female customers as other financial institutions in developing countries.³³

More than 1.5 billion people worldwide are already using the financial services provided by Posts. Through their financial inclusion efforts, Posts help to promote accessible financial services for all, and specifically for women, marginalized segments of society, and vulnerable communities. They strive to address the constraints that prevent people from participating in the financial sector.³⁴

In 2016, the World Bank estimated that around two billion people worldwide do not use formal financial services and more than 50% of adults in the poorest households are unbanked. A World Bank initiative aims to provide all adults with access to a bank account by 2020. The organization says that having bank account is the basis on which an inclusive financial services offering is grounded. As bank account holders, vulnerable people are more likely to access financial services such as credit, and to launch or expand businesses.³⁵

Evidence shows that digital inclusion can foster inclusive economic growth and the achievement of wider development goals. According to McKinsey Global Institute, e-finance alone could benefit billions of people by stimulating inclusive growth that adds 3.7 trillion USD to the GDP of emerging economies by 2025. A study in Kenya reveals the long-term impact on mobile money services: M-Pesa has lifted as many as 194,000 households (approximately 2% of the Kenyan population) out of poverty, and has effectively improved the economic lives of the vulnerable, including poor women and other members of female-headed households.³⁶

Postal networks have a central role in fostering financial inclusion. As of 2016, 91% per cent of Posts worldwide (183 out of 201) provided financial services either directly or in partnership with other financial institutions, according to the UPU database (Global Panorama on Postal Financial Inclusion). Posts are also relatively more successful than other financial institutions in banking segments of the population that have been traditionally excluded, such as women and other vulnerable groups. Posts in 87 countries hold some two billion current or savings accounts on behalf of around one billion customers.

To remain relevant and dominant as a provider of sustainable inclusive financial products, the Post needs to improve in terms of digitization. A good example is the Postal Corporation of Kenya, which had a 27% market share for domestic money transfers in 2006. The market entry of various mobile network operators since 2008, including M-Pesa, has been an outstanding success story. In order to keep ahead of competitors, postal operators have to fully digitize and offer financial services, or risk being marginalized as financial service providers.

Posts need to digitize both operations and products to improve the quality of customer experiences and efficiency and reduce costs. Firstly, at the operational level, Posts need to digitize their front and back offices, connect their post offices to an online network, and ensure that all processes are automated. Secondly, at the product level, passbooks and paper-based money orders need to be replaced by digital options that are available through multiple delivery channels, in addition to physical post offices.

32 etradeforall.org

33 www.upu.int/uploads/tx_sbdownloader/globalPanoramaOnPostalFinancialInclusion2016En.pdf

34 www.upu.int/uploads/tx_sbdownloader/globalPanoramaOnPostalFinancialInclusion2016En.pdf

35 www.worldbank.org/en/topic/financialinclusion/brief/achieving-universal-financial-access-by-2020

36 www.mckinsey.com/~/media/McKinsey/Featured%20Insights/Employment%20and%20Growth/How%20digital%20finance%20could%20boost%20growth%20in%20emerging%20economies/MGI-Digital-Finance-For-All-Executive-summary-September-2016.ashx

Key success factors for postal digital inclusion

The network

A wide and well-connected network is crucial when providing digital services, as it addresses one of the three main challenges: accessibility (the other two challenges being affordability and eligibility). Indeed, according to ITU, only 15% of households in LDCs have Internet access at home. In these countries, many Internet users are accessing the Internet from work, schools and universities or from other shared public connections outside the home.³⁷ This is where the postal network can play an important role, with its presence in rural areas promoting the integration of individuals into e-government, e-commerce or e-finance.

Capillarity

Be it for holding one of the largest physical networks in the world with over 650,000 post office branches, or handling about half of the world's e-commerce-related parcels, postal sector enterprises remain potentially relevant for facilitating physical access to billions of customers exchanging money through their mobile phones or delivering what is ordered online.

Connectivity

In order to fully reap the benefits of a vast network, post offices – including agents – need to be interconnected through an electronic network. Maintaining such an electronic network is particularly challenging in rural areas, where electricity and Internet connectivity is not always available.

Flexibility of the network

The Post is a convenient service provider for customers, as it has a large network, including a presence in rural areas. In order to be more attractive to customers, though, postal operators need to adapt to their customers' needs.

To address that flexibility requirement using technology, most Posts make their services available through kiosks, mobile channels, or the Internet, in addition to their physical branches. This type of approach has become a necessity as more and more customers look for convenience and require access to their digital postal services everywhere, all the time.

Staff

The postal sector is one of world's largest employers. The UPU's statistical database³⁸ for 2016 shows that the number of postal sector staff worldwide is estimated at 5.32 million. Staff are unarguably the most valuable asset for the success of an organization. According to the UPU's Global Panorama on Postal Financial Inclusion, the skills of postal staff have a tremendous positive impact on the global success of postal financial inclusion. Research shows that having a skilled labour force also contributes greatly not only to the provision of financial services but also to general socio-economic development in developing countries.

In order to improve postal employees' soft and technical abilities on how to handle new technology and the digital transformation of postal services, with the support of the UPU, Posts set national training policies in some countries. India Post³⁹, for example, has designed training programmes both within and outside the country, and a number of training courses have been conducted. According to India Post, one of the many goals was to achieve 100% computer literacy. Similarly, Morocco Post established a postal university⁴⁰ in 2007 to offer its staff training in management, banking and new technologies. In addition, the Moroccan DO tapped external skills by engaging senior managers from the banking sector to fill certain internal skill gaps.

Postal service employees need to be literate in digital services in order to exchange real-time data and information with post offices across their networks. For effective and efficient delivery of postal services, the productivity and efficiency of postal service staff is of the utmost importance. This points to the fact that employees with relevant computer literacy in postal services improve the capacity of the Post to offer digital services.

Legal and regulatory framework

Another important success factor for Posts is the legal and regulatory framework, which determines whether the Post can offer e-government, e-commerce or e-finance services and, if so, what type of products and how (e.g. through partnerships).

37 www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2017.pdf

38 pls.upu.int/pls/ap/ssp_report.main?p_choice=AGGREG&p_language=AN
39 www.indiapost.gov.in/VAS/DOP_PDFFiles/AnnualReport2014-2015English.pdf

40 www.upu.int/uploads/tx_sbdownloader/caseStudyMoroccoEn.pdf

Amidst the technology swirl of the last decade, new technologies, new players and new business models are rapidly coming of age. Proactive measures and exchanges with all players in the value chain in the sector (start-ups, competition hubs, manufacturers and operators, as well as users) are key in boosting the emerging digital ecosystem. ICT policy and regulatory frameworks need to be up to date, flexible, incentive-based and market-driven to support digital transformation across sectors and across geographical regions. Next-generation collaborative ICT regulatory measures and tools are the new frontier for regulators and policy makers as they work towards maximizing the opportunity afforded by digital transformation.⁴¹

Financial capacity

If a postal operator is profitable, it has the necessary resources to invest in the modernization of its post offices and the improvement of its network (size, density and connectivity). Furthermore, it can attract skilled employees and is in a better position to retain them, as it has the means of offering good working conditions. In the long run, the reinvestment of profits can increase quality of service, which helps meet customer expectations. In 2017, 15% of postal operators claimed that the revenue derived from e-services/digital services was between 5 and 10%, while another 14% claimed that it amounted to 25% or more.

Political commitment and public trust in the Post

The 2030 Agenda encourages all UN member states to “develop as soon as practicable ambitious national responses to the overall implementation of this Agenda”. The Agenda notes that it is up to each government to “decide how [the] aspirational and global targets [of the SDGs] should be incorporated into national planning processes, policies and strategies”. It states that national responses towards implementation can “build on existing planning instruments, such as national development and sustainable development strategies”. National plans and strategies set the overall direction and priorities and form the first opportunity to express SDG efforts in a coherent way at the national level.

In the previous sections, we focused on the capacity of the postal network to help governments to implement policies. Posts nowadays are double-bottom-line institutions, meaning that they have to reach parallel objectives of being profitable while achieving a social impact. Posts cannot meet these objectives without the support of public authorities.

There is nothing new about governments leveraging their postal network to provide government services to large portions of their populations. More recently, various governments have implemented public policies to foster e-government and e-commerce programmes through their postal network.

National policy alignment

It is recommended that governments exploit the potential of ICTs through coherent public-sector-wide policies closely aligned with the broader national policies aimed at delivering the SDGs. Being successful requires a whole-of-government approach across ministries and agencies and between levels, as well as partnerships with non-government actors. That approach must be supported by a high-level political will, an example of which is an effective cross-government institution with clearly earmarked financial resources and decision-making powers. Maximizing the potential of ICTs also demands appropriate infrastructure for interoperability and digital transactions across the public sector, dependent on common standards, data sharing and highly skilled staff, as well as sound organizational capacity.

⁴¹ www.itu.int/net4/ITU-D/CDS/GSR/2018/documents/Guidelines/GSR-18_BPG_Final-E.PDF

Chapter VIII:
**Conclusions and
recommendations**

Conclusion

The Istanbul World Postal Strategy, adopted by the UPU member countries in 2016, outlined three broad goals for the continued development of the international postal network. One of the goals was to ensure sustainable and modern products, recognizing that Posts that have diversified their activities and invested in the postal network's three dimensions – physical, financial and digital– have fared better than other Posts. The UPU is promoting this approach and helping member countries to take advantage of opportunities that result from the diversification of products and services.

Posts have a long history, and the Post is often the oldest nationwide establishment in existence. At the same time, the world is becoming digital, business is becoming digital, and the impact on traditional postal services is clear. Digital business means paperless trade, which in turn means that the core function of the Post might change. Digital strategies do the postal sector no favours: on the contrary, they call for a reduction in paper trade and better and cheaper delivery for e-commerce items. Posts are becoming digital to offer customers better products and services in order to compete with digitally savvy new entrants.

Digitalization is the cause of large-scale transformations across multiple dimensions of business for the Posts: it opens up new opportunities for value creation, but is also a source of risks. The economic and societal implications of digitalization raise questions from policymakers about the wider impact of the digital transformation and its implications in term of inclusiveness for society. This report has considered issues facing Posts in the light of the widespread deployment and use of fast-evolving technologies.

In a broader context, achieving the sustainable development goals by 2030 will require a paradigm shift in the way societies participate in e-commerce, e-government, e-finance, etc. It will require rethinking the role of Posts and the way they serve civil society, the private sector and governments. ICTs, together with the extensive postal physical network, have the potential to ensure that no one is left behind in sustainable development. The 2030 Agenda specifically recognizes the vital role of these two components as a catalyst for realizing its vision, and states that “the spread of information and communications technology and global interconnectedness have great potential to accelerate human progress, bridge the digital divide, develop knowledge societies such as scientific and technological innovation among different sectors”.

This report shows that Posts are using digital postal services as a tool for leveraging trust and competencies, diversifying, and protecting their core business. For the first time, Posts are identifying digital postal services as having a positive impact on their revenue of the overall organization. This turning point could trigger a new wave of increasing investment in digitalization of the postal sector.

Much progress has been made in the area of strategy and capability development, with a significant number of Posts reporting that they have increased the funds devoted to digital services and have developed a dedicated digital market strategy. However, this report shows the extent to which Posts are not considered in all cases in regional and national digital strategies, indicating that the potential is far from being fully tapped across the network.

There has been strong development of e-post and e-government services in countries where the environment is favourable. Posts are well positioned to digitalize government processes, which meets the growing interest of policymakers in using e-government to reduce the costs of providing services to citizens. Efforts in these areas should be complemented with continuous improvement in legal frameworks at national and international levels; however, many of these legal instruments are slow in being “brought to the market”. Governments around the world will need to rethink their governance models to meet the core principles of the 2030 Agenda and respond to people's demands for more responsive and inclusive services. While e-government was about bringing services online, the future will be about the power of digital government in leveraging societal innovation and resilience and transforming governance to achieve the Sustainable Development Goals. It is important to recognize the capabilities of the Post to foster trust in online transactions, partnering with governments to reduce corruption and expand government services to underserved communities.

E-commerce services are at the forefront of Posts' product innovation plans; the top five e-services that are “under development” support e-commerce (online postal shopping portal/shopping mall; online customs declarations; integration of postal web services with e-merchants' sites; online philatelic and postal products shop; and online management of document/merchandise delivery), but many Posts do not yet have those basic building blocks. Partnerships are seen as a key enabler in bringing capability to Posts and ensuring the timely deployment of services, sharing of risk and reduction of financial burdens in the rapidly evolving information society. These efforts should include building partnerships with startups and understanding the digital ecosystems to be able to create new services but also make the new services accessible for different stakeholders.

The UPU technology radar in this report provides a tool for identifying trends that should be further researched or monitored in digital postal services development.

The first area is “big data, data analytics and cloud computing technologies”, which continues to be seen as a strategic field for Posts as they increasingly move into digital services. Data privacy is especially relevant with the growth of cross-border data flows in physical, digital and financial dimensions. The Post can leverage its ubiquity and tradition as a universal service provider at the national level to ensure this trust in online transactions is non-discriminatory and universally available to all citizens and businesses. Greater research is needed to identify the role Posts can play at the national and international levels, working in conjunction with the UPU to enhance the opportunities that big data can provide to policymakers and postal sector participants.

The second area concerns “mobile” as a key driver for digital postal services. With more and more e-commerce transactions being generated from mobile devices, Posts are rapidly adapting services to meet customer expectations. This requires a specific strategy for the development of services, especially in regions where mobile phones are the main drivers for financial and commercial transactions.

The third area to examine is the increasing importance of “cyberattacks, cybersecurity standards and technologies” within the postal and logistics sector. Trust in digital postal services is totally dependent on the security and privacy policy: the most important factor is building trust among users. The UPU has established the .POST Internet domain to facilitate the protection of Posts and increase trust and confidence in digital postal services.

From a policy perspective, it is important to stress that digital transformation of the Posts will not only depend on technologies, but also require a comprehensive approach from governments and regulators. Traditional forms of regulation may not apply; a paradigm shift in strategic thinking, legislation and regulation is therefore needed.

Digital policies can be seen as an opportunity for Posts. Indeed, they offer opportunities to enhance existing products and services, or to provide new products and services that were not previously possible. They provide the impetus for Posts to change and compete with the private sector in meeting the needs of customers. They demand that Posts move away from the comfort zone of their status quo and adopt a new business model.

In delivering a sound future for the postal sector in a digital world, it is essential that governments develop appropriate postal sector policies that are aligned with digital and other policies. Governments need to take a holistic approach to policy development to ensure that all rural needs can be met through one portal. The Post in each country must make its case as to whether it can serve as that portal itself, or as a partner to a better-placed service provider. Without concrete measures, the digital divide in terms of e-commerce, e-finance or e-government will widen, with profound implications in terms of inequality, and the principle of leaving no one behind will be challenged in the digital economy unless the needs of both developing and least developed countries and all segments of the population are considered. To have a significant social impact in using new technologies, governments should consider using the existing national physical network to ensure inclusion throughout countries.

This raises a key question for future regulation: with market boundaries evolving so fast, can we still talk about the dominance of traditional incumbents in postal markets? In fact, it is evident that the pressure on postal service profitability is now exerted by forces formerly outside the sphere of the postal market, as it was traditionally viewed by regulators.

The IB also works closely with governments and the international community via platforms such as the UN World Summit on the Information Society (WSIS) to position the postal sector and its digital postal services as an important public network for digital inclusion, serving citizens and businesses in the digital economy and helping governments achieve the UN Sustainable Development Goals (SDGs).

Annex 1

Definition of postal electronic services

Table options	Definitions
Service under development	Process of developing a new service for the market including pilot testing. This type of development is considered the preliminary step in service development and involves a number of steps that must be completed before the product can be launched commercially.
User	Any individual, company or organization that accesses and uses a postal electronic service, including but not limited to as senders or recipients.

Service	Definitions
E-post and e-government services	
Postal electronic mailbox	Enables the sending of electronic messages by an authenticated mailer, delivery to the authenticated addressee and access, management and storage of electronic messages and information for the authenticated addressee. Defined in article 37 of the UPU Convention and article 37.006 of the Convention Regulations.
Online direct mail	Delivery of advertising and/or other promotional communications by the Post via electronic means.
Postal registered electronic mail	Provides secure and trusted exchange of electronic messages, enabling the sending of electronic messages by an authenticated mailer for delivery to an authenticated addressee or addressees with proof of sending and proof of delivery. Defined in article 37 of the Convention and article 37.005 of the Convention Regulations.
E-cards	Provides the ability to buy a postcard online, which is then delivered to recipients by physical or electronic means.
Online bureaufax	Permits the transmission of texts and illustrations true to the original by fax, as defined in article 37-002 of the Convention Regulations.
E-invoicing	A service supporting the delivery of electronic invoices, e.g. from banks, utilities or government agencies, into customers' postal electronic mailboxes.
Hybrid mail	Enables the sender to post an original message in either physical or electronic form, which is then electronically processed and converted into a physical or electronic message for delivery to the addressee. Defined in article 37-001 of the Convention Regulations. Also includes services such as "transactional printing" offered to large enterprises.
Reverse hybrid mail	Enables customers to send an original physical message, which is converted to electronic form for delivery to the addressee. Defined in article 37-001 of the Convention Regulations.
Online facilitation of hybrid mail	Allows small mailers to access, through the Post's website, one-stop-shop services relating to the design, preparation, printing and sending of their direct mail campaigns, or transactional mailings.
Electronic postal certification mark	Provides a chain of evidence, stored by a designated operator as a trusted third party, to prove the existence of an electronic event, for a certain content, at a certain date and time, and involving one or more identified parties. Defined in article 37-004 of the Convention Regulations. UPU functional specification standard S43 supports this service.
Digital signature	A digital analogue of a physical, written signature based on an algorithm whereby the identity of the signer and the integrity of the data can be verified. The Post legally identifies a customer and provides him/her with the ability to digitally sign an electronic document or a message. The digital signature uses cryptography to guarantee the identity of the sender (authentication) and ensure that the message was not altered in transit (integrity), and prevents the sender from denying having sent the message (non-repudiation).
Digital identity services	The Post issues a digital identity legally identifying its customers. The digital identity can be secured with a simple electronic authentication using a password, or with more secure authentication technologies based on cryptography and public key infrastructure.

Service	Definitions
Credentiaing services	The ability for a customer to use a digital name and password on another system and receive third-party validation of their digital identity. For example, a customer with a digital identity issued by the Post logs into their banking system to transact business. The bank electronically requests validation of the digital identity from the issuing Post, which issues the bank with a token representing the validation of that digital identity.
Digital archive	The Post converts physical documents and data and stores them in legally compliant, legally verifiable electronic archives (e-archives), using industry standards (e.g. OAIS ISO 14721:2003). The management of a digital archive entails the development, structuring, setting up and operation of a complete digital archiving process on the basis of recognized industry standards.
E-health	Enables customers (patients and caregivers) to access and manage personal medical information (certification, fees, account management).
E-administration: online ordering (counter or Internet) applications/registrations	Customers can apply for/order/register official documents over the counter or through the Internet (e.g. passport, driving licence, university registration), for delivery or provision by the Post.
E-commerce	
Online philatelic and postal products shop	Customers can purchase philatelic and postal products through the postal website and have them delivered to a physical address.
Online postal shopping portal (or shopping mall)	Postal website or web portal showcasing goods from a variety of merchants. Merchants' websites are often integrated with the Post's website.
Online customs declaration	Customers can provide the necessary information (CN 22, CN 23, CP 72) through the postal website to the relevant authority before importing or exporting an item.
Integration of postal web services with merchants' sites	Provides e-merchants with software tools (such as APIs – application programming interfaces) to allow for the integration of the Post's online shipping and tracking capabilities with their e-commerce applications.
Performance reports and analytics	The Post provides e-merchants with customized performance reports (e.g., on returns, delays, delivery times) to help them manage costs, operations and customer experience.
Virtual international address	The Post provides an international physical address in another country to allow customers to easily purchase goods from that country's e-merchants, and have them forwarded through the post.
Calculation of estimated total landed costs	As part of the online purchasing process, provides online shoppers with detailed information on all the costs associated with the delivery of documents/merchandise.
Online management of documents/merchandise delivery options	Enables customers to notify the Post electronically (e.g. via apps, web, etc.) where document/merchandise items should be delivered (e.g. parcel lockers, home, local retailer, etc.).
Digital financial and payment solutions	
Online account management	Enables customers to electronically manage their financial postal account and carry out related account operations.
Electronic remittances	A service allowing the sending of money cash-to-cash or account-to-account to a recipient through an electronic network.
Online bill payment	A service allowing bill payments via the Post's website, entailing development of a specialized online payment system.
Payment solutions	A service providing an online service (shops) for accepting electronic payments by a variety of methods through a single payment gateway.
Escrow services for e-commerce	A service providing a secure payment solution that collects, holds and disburses funds linked to the customer's payment of goods purchased online through to the delivery of their parcel.

Support services

Public Internet access point in post offices	Customers can access Internet services in post offices.
Online information on services and tariffs	Customers can access information about the different services and products, as well as the corresponding tariffs, on the Post's website, app, etc.
Online lookup (postcodes, addresses, post offices)	Enables customers to search for a post office or postcode, or to validate an address online by entering information such as the street, the city or postcode, or the entire address.
Online contact and customer service	Allows customers to contact the Post electronically for a service or information, via a website, app, social media, e-mail or telephone.
Track and trace	Enables customers to electronically track and trace a postal item.
Electronic notification	The Post notifies a sender/recipient electronically (e.g. by SMS, e-mail or social media) that documents/merchandise items have been delivered or need to be collected at a specific address (parcel locker, home, local retailer, etc.).
Online change of address	Enables customers to change their mailing address electronically, including through an Internet portal or app.
Holding of mail delivery online	Enables customers to request, by e-mail or online application, the suspension of mail deliveries to their address and the holding of their mail for a period of time.
Online address cleansing services	Enables small business mailers to electronically validate their list of addresses by uploading them to the Post's website.
Electronic postal invoicing	A service whereby customers receive an electronic invoice for their use of the Post's services and products.
Digital postage	Enables customers to electronically order, pay and download postage for documents or merchandise through the Post's website, smartphone application or SMS. Postage can be printed physically (e.g. shipping labels), or provided by a number code or key.
Digital personalized postage	Enables customers to electronically order, pay and download personalized or customized postage for documents or merchandise through the Post's website, a smartphone application or a partner's website. The user uploads a photograph or selects one from a bank of images proposed by the Post.
Pick-up service	Enables customers to order a pick-up service by Post's website, smartphone application or SMS.

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