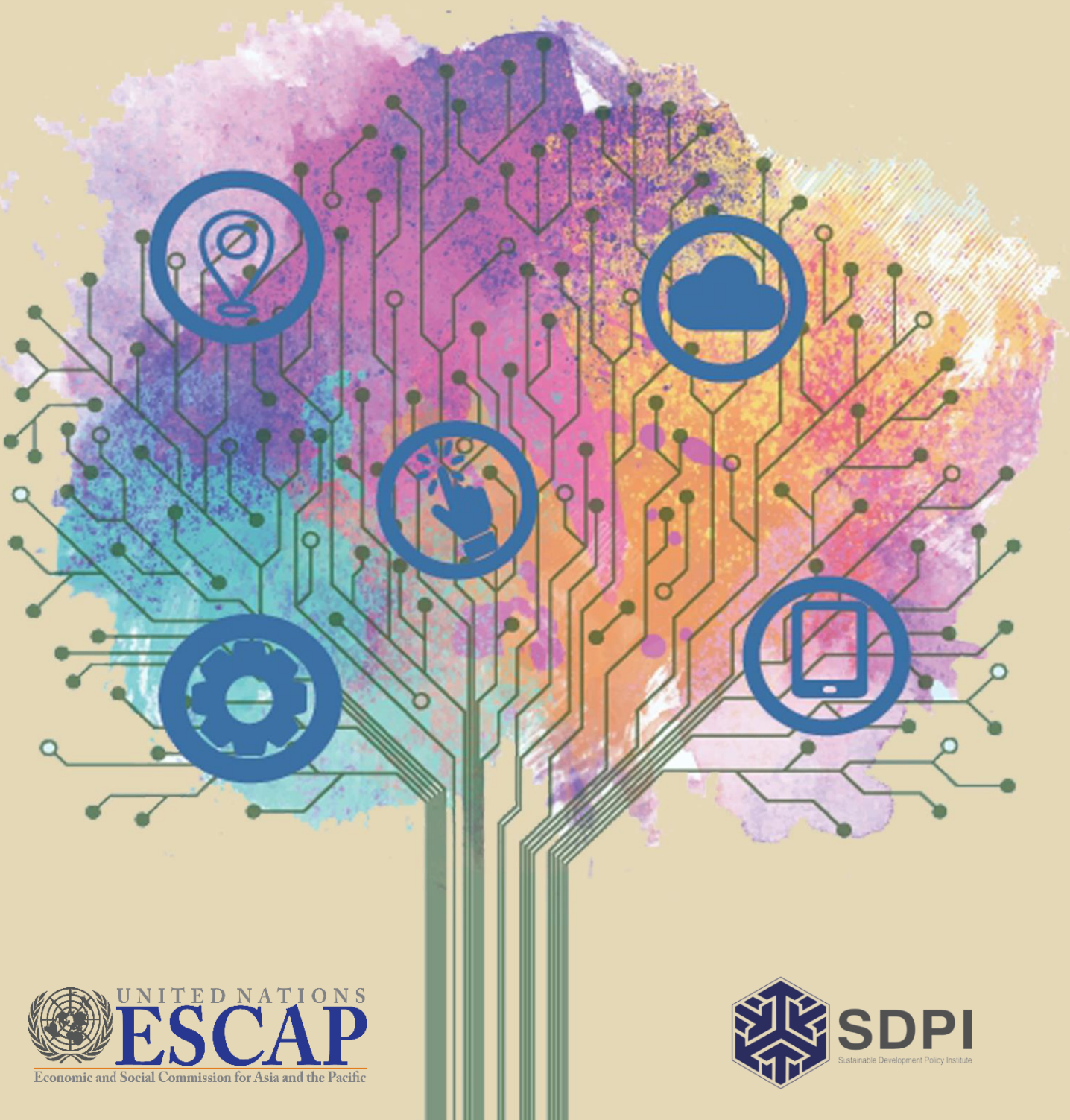
NATIONAL STUDY ON DIGITAL TRADE INTEGRATION OF PAKISTAN



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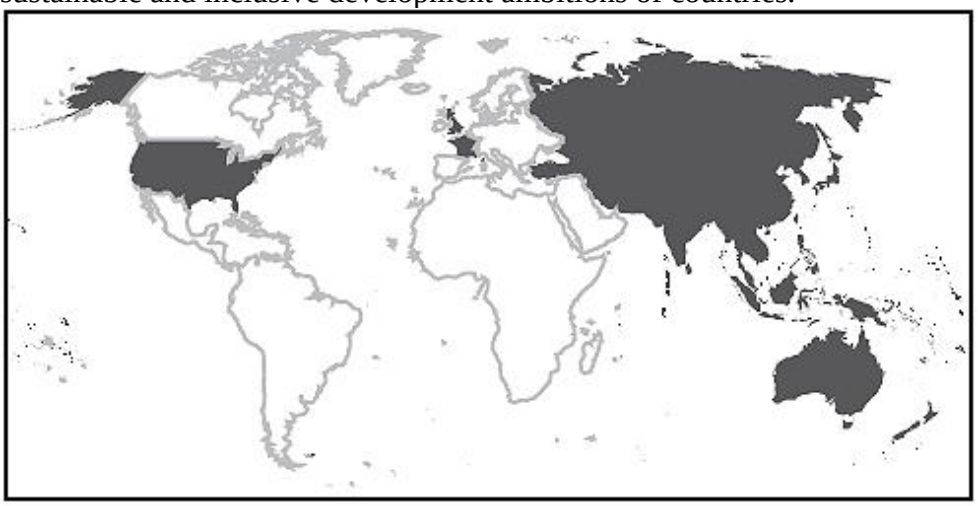

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Abstract

This report provides an overview of digital trade integration of Pakistan. It identifies constraints and bottlenecks in achieving successful and sustainable regional digital trade integration. The methodology relies on an extensive review of recent literature and policies within and outside Pakistan. In particular, the report looks at post-pandemic evidence with regard to digital trade integration. In-depth interviews were conducted with relevant public sector bodies, regulatory organizations, the private sector, citizen groups, think tanks, development partners and other related stakeholders. The report considers digital trade in goods and services involving digitally-enabled transactions involving consumers, firms and Governments. The analysis highlights the constraints that hinder trade and foreign investment in digital trade. The legislative and regulatory requirements for transfer, retention and protection of data, together with the constraints faced in the transition towards the digitization of the economy are discussed. The recommendations made in this report will help to achieve goals under recent policies announced for the uplifting of the digital sector. The report recommends a whole-of-the-government approach to ensuring federal- and provincial-level coordination as well as keeping digital trade integration inclusive.

Executive Summary

This report aims to identify constraints and bottlenecks in Pakistan for achieving successful and sustainable regional digital-trade integration. There is emerging evidence on this subject. We have relied on an extensive review of recent literature and policies within and outside of Pakistan. We have particularly looked at post-pandemic evidence on this subject. In-depth interviews were conducted with relevant public sector bodies, regulatory organizations, private sector, citizen groups, think tanks, development partners and other related stakeholders to understand their perspectives on constraints in achieving digital trade integration.

We considered in this report digital trade in goods and services, defined as any form of digitally-enabled transactions involving consumers, firms and governments. The legislative and regulatory requirements on transfer, retention, and protection of data along with the constraints being faced in the transition towards digitization of economy, barriers preventing trade and investment in digital goods and services are discussed in this report. We recommend a whole-of-the-government approach to ensure federal and provincial level coordination as well as to keep digital trade integration inclusive.

To promote digital trade integration we advocate here that the implementation of three policy frameworks formulated by MoITT may be expedited. These include, information security policy, personal data protection law, and cloud computing policy. The report suggests that Strategic Trade Policy Framework (STPF) formulated by MoC can incentivize both public and private enterprises to embrace digital transformation on a priority basis. Such policy certainty could help lure investment and improve readiness of firms to move on a higher technological and sophistication ladder.

The central bank could play a supporting role. SBP could address the funding and finance constraints faced by firms wishing to expand trade online. The central bank could further incentivize the expansion of branchless banking network (including mobile money agents) in rural areas and possibly partner with Pakistan Post. Regular and improved training of branchless banking agents also needs to be ensured by the digital financial service providers. The ability to raise capital from inside Pakistan to fund the growth of digital businesses is limited. SBP and Pakistan Banks Association could ensure dedicated model branches of banks to deal with digital and creative enterprises.

The micro and small (digital) businesses continue to face issues regarding the acceptability of collateral demanded while borrowing from banks. SECP and SBP could help fast-track loans against intellectual property rights. The federal government in the short term should support this with time-bound guarantees in Pakistani rupee.

Federal government may also like to reconsider the mandatory condition on telecommunication companies to deposit a fee for importing equipment from abroad. The overall export value allowed per consignment, without the need for cumbersome documentation, could be enhanced.

Apart from improving connectivity infrastructure and internet penetration rate, efforts are desired to improve digital literacy; confidence of online consumers; and overall financial inclusion. Pakistan's low ranking in the region in terms of cross-border paperless trade and women-related trade facilitation needs attention. The relatively high quantitative trade

restrictions, and rigid domestic data policies have also hindered Pakistan's elevation towards a higher rank.

Currently, there is no single compendium that provides national-level consolidated details of public spending on digital sectors uplift. MoITT could furnish such a knowledge resource on an annual basis which could in turn help set a baseline and prevent duplication of similar publicly funded projects in this sector. The special technology zones currently being planned in select cities could be a good template for other cities to follow as well. The location economies could bring down the overall financing envelop required by smaller businesses to embrace digital platforms. The public private partnership model could help raise more special technology zones.

The track record of state-owned enterprises (SoEs) in embracing digital trade hasn't been encouraging. SoEs should prioritize installation of enterprise resource planning systems and e-communication tools which will become stepping stone towards digital integration. To improve overall documentation and drive towards digitization, government utility providers could make it mandatory to receive only cashless payments and fees beyond a certain threshold. Similarly, attestation of documents should be done electronically.

The supportive role of federal and provincial tax authorities will be essential for trade competitiveness in digital sector. Tax harmonization across the country should be prioritized so that digital trade products and services do not face differentiated treatment in different parts of the country. The definitions of tax bases and tax rates should also be in line with the peers in the region.

Pakistan Stock Exchange could expedite its plans for starting a dedicated trading index (for digital sector). This could put a few technology companies into a pre-initial public offering (pre-IPO) phase.

Increased trade diplomacy can help improve acceptance of Pakistani goods and services abroad. Government may increase diplomatic efforts to negotiate with key trading partners, preferential visa access for Pakistani professions to travel abroad and showcase their digital goods or services. This issue can also be resolved by ensuring visa-related clauses in the future FTAs in services.

Pakistan is still not a member of the Patent Cooperation Treaty (PCT). The enforcement bodies are faced with legislative, jurisdiction, capacity and financial constraints which need to be addressed given concerns expressed by firms in the creative sectors. The enforcement drive will require support from the Ministry of Interior and provincial governments. Furthermore, this will also have to be accompanied by social messaging and behavioural change campaign.

Existing consumer protection laws do not fully cover digital sectors and their activities. The report stresses that federal and provincial governments need to bring more up-to-date consumer protection legislation or amendments to existing laws to protect consumers and enhance trust in online trade. This is particularly important now as countries adapt to COVID-19 and learn to live with its impacts.

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Abbreviations and Acronyms

ADB	Asian Development Bank
AI	artificial intelligence
APEC	Asia-Pacific Economic Cooperation
B2B	business-to-business
B2C	business-to-consumer
BISP	Benazir Income Support Programme
BOI	Board of Investment
BPO	business process outsourcing
CBPRs	Cross-Border Privacy Rules system
CCP	Competition Commission of Pakistan
CPD	Consumer Protection Department
CPEC	China-Pakistan Economic Corridor
CPFTA	China-Pakistan Free Trade Agreement
DCO	Digital Cooperation Organisation
DGTO	Directorate-General Trade Organisation
DigiSRII	Digital and Sustainable Regional Integration Index
ECAC	Electronic Certification Accreditation Council
ESCAP	(United Nations) Economic and Social Commission for Asia Pacific
ETO	electronic transaction ordinance
FATF	Financial Action Task Force
FBR	Federal Board of Revenue
FDI	foreign direct investment
FIA	Federal Investigation Agency
FinTech	financial technology
FTAs	Free Trade Agreements
FY	fiscal year
GDP	gross domestic product
GVC	global value chain
ICT	information and communication technology
IPO	Intellectual Property Organization
IPR	Intellectual Property Rights
IoT	Internet of Things
IT	information technology
ITeS	IT-enabled Services

ITA	Information Technology Agreement
KIIs	key informant interviews
KP	Kyber Pakhtunkhwa
LAC	Latin American and Caribbean
MENA	Middle East and North Africa
MoC	Ministry of Commerce
MoFA	Ministry of Foreign Affairs
MoIB	Ministry of Information and Broadcasting
MoITT	Ministry of Information Technology and Telecommunication
MoIP	Ministry of Industries and Production
MoU	Memorandum of Understanding
NAM	National Action Matrix
NADRA	National Database and Registration Authority
NITB	National Information Technology Board
NR3C	National Response Centre for Cyber Crime
NRI	Network Readiness Index
NTC	National Tariff Commission
OEC	Observatory of Economic Complexity
OECD	Organisation for Economic Cooperation and Development
PBA	Pakistan Banks Association
PBS	Pakistan Bureau of Statistics
PASHA	Pakistan Software Houses Association
PCT	Patent Cooperation Treaty
PECA	Prevention of Electronic Crimes Act
PRAL	Pakistan Revenue Automation Ltd.
PTA	Pakistan Telecommunication Authority
PSEB	Pakistan Software Exports Board
PSQCA	Pakistan Standards and Quality Control Authority
RDTII	Regional Digital Trade Integration Index
RTAs	regional trade agreements
RVC	regional value chain
SAARC	South Asia Association for Regional Cooperation
SaaS	software as a service
SAFTA	South Asian Free Trade Agreement
SBP	State Bank of Pakistan
SECP	Securities and Exchange Commission of Pakistan
SMEDA	Small and Medium Enterprise Development Authority

SMEs	small and medium-sized enterprises
STPF	Strategic Trade Policy Framework
TDAP	Trade Development Authority of Pakistan
TDRO	Trade Dispute Resolution Organization
TVETA	Technical Education and Vocational Training Authority
USF	Universal Service Fund
UNCTAD	United Nations Conference on Trade and Development
WEF	World Economic Forum
WTO	World Trade Organization

Introduction

Digitalization is rapidly changing the way trade is carried out. It has allowed firms to bring new products and services to digitally-connected customers spread across the globe. According to the United Nations Conference on Trade and Development, it is also leading to a sharp reduction in trade and information costs and, in turn, providing opportunities for smaller firms to grow and become part of value chains (UNCTAD, 2018). The COVID-19 pandemic has made countries realize that regional coordination would be an important means to support national efforts in dealing with health and economic crises (United Nations, 2020).

As part of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) project on "measuring, monitoring and improving performance in regional integration", this report looks into status of digital trade integration of Pakistan and offers policy recommendations for more effective regional integration that can contribute to competitiveness of private enterprises, overall economic growth and welfare. The report also discusses the constraints and bottlenecks in achieving successful and sustainable regional digital trade integration.

The methodology for preparing this report is a combination of comprehensive desk reviews to set the contextual background and stakeholder mapping, and key informant interviews (KIIs) of relevant stakeholders including the Ministry of Commerce, Ministry of Information Technology and Telecommunications, Pakistan Telecommunication Authority, the private sector, legal advisory entities, data protection specialists and citizen interest organizations. Focus group meetings on this subject were held twice during this study, in which key stakeholders participated; meetings. In addition, interviews were held with development partners supporting the digital trade ecosystem in Pakistan together with inputs from a workshop held to discuss the preliminary findings of this report with government bodies and the private sector.

Section 2 provides situation analysis, including a review of the overall digital trade ecosystem, relevant policies in this sector and digital provisions in Pakistan's trade agreements with other countries. Section 3 provides a comparison of Pakistan's current state of digital integration relative to the Asia-Pacific region and peer economies. Section 4 details the output from the report's survey and highlights legislation, regulatory, policy and practice bottlenecks in digital trade integration. Some specific restrictions on digital goods and services are also identified together with policy recommendations. Section 5 concludes with the hope that this report will motivate urgent reform in this area that can, in turn, can unleash Pakistan's digital trade potential.

Pakistan: Stage of digital trade

As a crucial aspect of economic development, particularly for developing economies, digital trade [2] integration is an emerging priority policy in Pakistan. in February 2020 the Government of Pakistan approved the country's first-ever e-commerce policy. The Government is targeting an increase e-commerce exports by 50 per cent in the medium term, i.e., the next five years, together with facilitating small and medium-sized enterprises (SMEs) through the e-SME initiative (Ministry of Commerce, 2019). However, there is a long way to go to accomplishing digital integration,[3] as Pakistan is among the least regionally integrated economies as estimated by the Digital and Sustainable Regional Integration Index (ESCAP, 2020). For example, there are calls within the public and private sectors for the reform of the tariff policy in order to liberalize exports and imports of IT- and ICT-related equipment and services (Ahmed 2019).

The digital landscape is evolving with advancements in the telecom sector of Pakistan – in the form of 3G/4G in 2014 – and an increase in broadband subscribers from 2per cent per cent to 30 per cent within the past five years (Ministry of Commerce, 2019). Currently, Internet penetration is 35 per cent in Pakistan with an average 17 per cent annual increase in Internet users. Mobile connections are used by 75 per cent of the total population in Pakistan (Kemp, 2020).[4] Provincial statistics show that Sindh and Khyber Pakhtunkhwa have the highest percentage (37) of households with an Internet connection, followed by Punjab (33), and Baluchistan (19) (Pakistan Bureau of Statistics, 2019).

The services sector makes a contribution of 61.5 per cent to GDP (Pakistan Bureau of Statistics, 2020) and is recording tremendous growth due to digitization, which has opened new trade opportunities. Jobs in professional services, in particular, are among the most dynamic due to digitalization. Pofeldt (2019)[5] reported Pakistan as being among the top 10 fastest-growing freelance markets and ranked in the fourth position with 47 per cent growth after the United States (78 per cent), United Kingdom (59 per cent) and Brazil (48 per cent). Several Pakistani social enterprises are also active in the digital space (Ahmed et al., 2019a).

A significant portion of Pakistani freelancers (42 per cent) are software developers, representing 10.5 per cent of global freelance software developers. This percentage is higher than most other South Asian economies.[6] Pakistan is also considered to be the fourth-largest supplier of freelancing services (Oxford Internet Institute, 2017). Similarly, information and

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[2] OECD defines digital trade as "digitally-enabled transactions of trade in goods and services that can either be digitally or physically delivered, and that involve consumers, firms, and governments". Available at https://www.oecd.org/trade/topics/digital-trade/. This study also covers restrictions on ICT goods, data flows, investment in sectors that enable the digital economy and movement of ICT professionals.

[3] Defined by Mitchell and Mishra (2020), digital trade integration is a "complex, multidimensional process that integrates regulatory structures/policy designs, digital technologies and business processes along the entire global/regional digital value chain". Available at https://www.unescap.org/sites/default/files/AWP%20191%2B.pdf.

[4] Available at https://datareportal.com/reports/digital-2020-pakistan

[5] Available at https://www.forbes.com/sites/elainepofeldt/2019/08/18/the-top-10-fastest-growing-freelance-markets-in-the-world/#6b689fde733b

[6] "Pakistani youth power growth in freelance economy: Report" Business Recorder, 13 January 2020.

communication technology (ICT) services witnessed a 10.8 per cent average annual growth from 2010 to 2019. Computer services' performance is significant as its share in total ICT services grew by an average of 17 per cent annually. In terms of trade (table 1), while more than 50 per cent of the ICT services are exported to the United States, followed by the United Kingdom, United Arab Emirates and Canada, there is still a vast scope for trade within the region.[7]

Table 1. Pakistan's trade in digital products and services, FY 2019

(Million United States dollars)[8]

Items	Imports	Exports	Trade Balance
Digital-related products	3980	27.9	-3,952.1
All products	50,134	23,818	-26,316
Digital products as a percentage of all products	**7.94 %**	**0.11%**	
Telecommunications, computer and information services	441	1,192	751
All services	10936	5,966	- 4,970
Digital services as a percentage of all services	**4.03%**	**19.97%**	

Source: International Trade Centre (ITC), 2020.

The exports of telecommunications, computer and information services have shown recent growth (table I). Data from the Pakistan Software Houses Association (PASHA) shows that around 54 per cent of the software houses' revenue is being earned from export markets (World Bank, 2020). It is expected that the COVID-19 pandemic has further extended gains for this sector in various digital market activities (figure 1).[9] Changing nature of work, preference to order consumer goods online after carefully reading online reviews, and credit availability for online orders have all contributed to this trend.[10] At the same time, the proportion of exports of digital-related services is around 20 per cent of total services exports. With new business-to-business arrangements envisaged under the China- Pakistan Economic Corridor (CPEC), this share is expected to increase in the medium term. Many activities, such as e-commerce, digital media, advertising and e-services in Pakistan's digital market will benefit from tax-free incentives granted to Special Technology Zones.[11] The size of select activities in the digital market is provided in table 2.

[7] See also Pakistan Business Council, 2020. Available at https://www.pbc.org.pk/wp-content/uploads/PBC-Report-on-Plausibility-of-Accession-to-ITA.pdf

[8] These are products related to the digital sector categorized by UN-ESCAP. Detailed list of all products in the digital trade sector is also provided in Ferrancane (2020)

[9] Raihan et al. (2020).

[10] Covid-19 boosts digitalization, 2020. https://tribune.com.pk/story/2263436/covid-19-boosts-digitalisation

[11] "Ten-year tax incentives granted to special technology zones". Available at https://www.thenews.com.pk/print/758664-ten-year-tax-incentives-granted-to-special-technology-zones. Accessed 12 January 2021.

Table 2. Digital market of Pakistan: Estimated revenue, 2019

Subsectors	US$ million
Digital advertising	28
Smart home	54
Digital media	368
E-services	500
E-commerce	3 490
Digital payments	6 170

Source: Statista Global Consumer Survey.

It is also anticipated that the forthcoming Strategic Trade Policy Framework (STPF) will incentivize geographical diversification and motivate firms to explore the potential of regional trade.[12] This will additionally require changes to the regulatory framework faced by firms in the digital sector (Malik et al., 2017), bridging capacity and human resource gaps in this sector (World Bank, 2020) and readiness of firms to move up the technological and sophistication ladder.

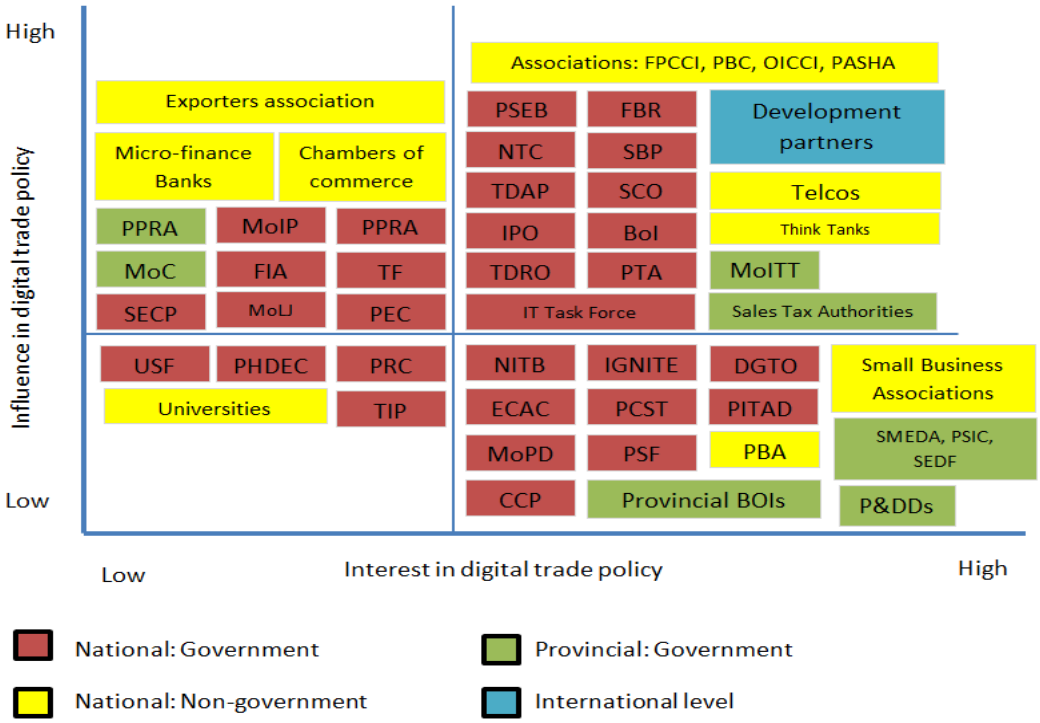
A key challenge at the government level is to coherently mobilize all the recent IT- and ICT-related initiatives at the federal and provincial levels. Some of these may require legislative changes, while others will need urgent financial, technical and human resource capacity. A list of recent IT- and ICT-related initiatives launched by the Government of Pakistan is provided in Annexes B and C.

A. Digital trade ecosystem

The digital trade ecosystem in Pakistan is comprised of a number of public and private institutions, including those outside the country's boundaries. The public sector is shared by both federal and provincial governments in addition to several autonomous regulatory bodies (Ahmed et al., 2021). The interest in, and influence of these institutions on digital trade policy varies as per responses from the authors' consultations, exhibited in the institutional framework cube (figure 1). The roles of these organizations are explained below.

[12] Although trade with China is progressing, limited progress is seen with other growing economies such as India, Bangladesh and Sri Lanka (Ahmed, 2019b; asnd Kathuria et al., 2020).

Figure 1. Institutional influence and interest in digital trade



Source: SDPI Survey.

Note: DGTO= Directorate-General of Trade Organization; NTC = National Tariff Commission; PITAD = Pakistan Institute of Trade and Development; PHDEC = Pakistan Horticulture Development and Export Company; TDAP = Trade and Development Authority of Pakistan; IPO = Intellectual Property Organization; PEC = Pakistan Expo Centres; TDRO = Trade Dispute Resolution Organization; PRC = Pakistan Reinsurance Company; NITB = National Information Technology Board; NTelC = National Telecommunication Corporation; USF = Universal Service Fund; PSEB = Pakistan Software Export Board; IGNITE = National Technology Fund; TF = Telecom Foundation; TIP = Telephone Industries of Pakistan; SCO = Special Communication Organization; ECAC = Electronic Certification Accreditation Council; BoI = Board of Investment; PTA = Pakistan Telecommunication Authority; SBP = State Bank of Pakistan; FBR = Federal Board of Revenue; PPRA = Public Procurement Regulatory Authority; SECP = Security and Exchange Commission of Pakistan; CCP = Competition Commission of Pakistan; MoIP = Ministry of Industries and Production; FIA = Federal Investigation Agency; MoPD = Ministry of Planning, Development and Special Initiatives; MoC = Ministry of Commerce; MoITT = Ministry of Information Technology and Telecommunication; MoLJ = Ministry of Law and Justice; FCPC = Federal Consumer Protection Councils; PASHA = Pakistan Software House Association; OICCI = Overseas Investors Chamber of Commerce and Industry; PBC = Pakistan Business Council; FPCCI = Federation of Pakistan Chambers of Commerce; SMEDA = Small and Medium Enterprise Development Authority; PSIC = Punjab Small Industries Corporation; and SEDF = .Sindh Enterprise Development Fund.

1. Policies by Federal Ministries

The overall responsibility of formulating a national-level trade policy lies with the Ministry of Commerce (MoC). At present, the medium-term policy, also known as the Strategic Trade Policy Framework (STPF), is under formulation. However, trade operations continue to be regulated through Export and Import Policy Orders, and the National Tariff Policy (2019-24) among other instruments. The implementation of an e-commerce policy was initiated in 2020.

There are prominent attached organizations under MoC which also play a role in setting the rules or providing facilitation for digital trade – including the office of the Director-General

Trade Organization (DGTO) – and regulate the trade organizations including those in the digital space. The MoC issues licences to trade organizations that meet the eligibility criteria. The National Tariff Commission (NTC) ensures the competitiveness of the local industry by addressing the issues and grievances related to tariff and trade measures as well as discouraging unfair trade practices like anti-dumping and subsidized imports.

The Intellectual Property Organization (IPO) ensures the enforcement of IP rights with the help of enforcement agencies such as the Federal Investigation Agency (FIA) and customs officials of the Federal Board of Revenue (FBR). It also creates awareness on IP rights in the country and advises the federal Government on IP policy. It deals with patents, layout design of integrated circuits, industrial designs, copyright, trademarks and geographical indications.
The Trade Dispute Resolution Organization (TDRO) works as a bridge between bodies responsible for standards and quality. The TDRO establishes databases on high-risk places and sectors that require dispute resolution and assists national exporters who are defrauded internationally.

Last, the Trade Development Authority of Pakistan (TDAP) works with actors in the digital sector to conduct international exhibitions, trade promotions, trade facilitation, training to national exporters, and provides market and product reports to the ministry for future policy and regulatory facilitation for this sector.

The next important player in the digital trade ecosystem is the Ministry of Information Technology and Telecom (MoITT). It hosts the Pakistan Software Export Board (PSEB) which, in turn, facilitates the IT industry in the domains of international marketing, intellectual capital and infrastructure development, and promotion of new technologies. The PSEB is actively undertaking the registration of IT and Business Process Outsourcing (BPO) entities. This registration is mandatory to benefit from existing and future fiscal and non-fiscal incentives announced by federal and provincial governments (Couto and Karina 2019; and Manzoor et al., 2017). PSEB also issues licences for special technology zones across the country. The National Information Technology Board (NITB) at the ministry provides support for execution of e-government programmes, including electronic one-window portals for the trade sector.

Where infrastructure deficits prevent the growth of digital activities – for example, in rural areas – the Universal Service Fund (USF) at the ministry delivers services like 3G and other mobile Internet services, the use of ICTs in health and education, and the provision of optic fibre connections. For the private sector, particularly startups in the digital space, the ministry provides venture capital financing through its window, IGNITE, a national technology fund. The Electronic Certification Accreditation Council (ECAC) at the ministry has enforcement powers to regulate electronic transactions in the public and private sectors. It also grants accreditation to certificate service providers and improves transactions to ensure they are more secure and acceptable globally.

Moving towards the mandate of attracting foreign and local investment in the digital sector, Boards of Investment (BOI) at the federal and provincial level assist national and international firms by providing information on potential opportunities and facilitating joint

ventures. They also develop and initiate investment proposals, promote various subsectors in the digital economy and facilitate bilateral (or regional) investment agreements across countries. For foreign investors, the federal BOI provides e-services, including work visas, security clearances and branch or liaison office opening permissions.[13] Apart from the federal BOI, other entities within the Government have also come forward with specific policy measures to promote investment in digital space (table 3).

Table 3. Investment promotion measures

Organizations	Measures
Federal Board of Revenue	Tax exemption for IT start-ups for a period of three years.[14]
	IT and ITeS export income tax is exempted until June 2024 to attract new investments in this sector.[15]
	Income tax exclusion is extended to venture capital firms/funds until June 2024.
State Bank of Pakistan	A total 35 per cent of earnings can be retained in the foreign currency for making payments abroad.[16]
	IT firms are allowed to open foreign exchange accounts in Pakistan.
	The merchant discount rate to be charged by commercial banks is now between 1.5 per cent and 2.5 per cent. Previously, the banks had discretionary power to issue the rate.[17]
	Allowed: 100 per cent foreign ownership and 100 per cent repartition of capital and dividends.
Ministry of IT and Telecom	Exemption of sales tax on IT-related services exports from federal territory.
	The cash reward of 5 per cent on IT export remittances is extended to IT firms.

Source: Board of Investment (BOI), Pakistan.

[13] Pakistan Board of Investment: https://invest.gov.pk/branch-office
[14] SBP Annual Report: https://www.sbp.org.pk/reports/annual/arFY18/Chapter-07.pdf
[15] "Cabinet Approves Digital Pakistan Policy" https://propakistani.pk/2018/05/23/cabinet-approves-digital-pakistan-policy/
[16] Pakistan Board of Investment: https://invest.gov.pk/incentives-database/1367
[17] "SBP takes measures to boost digital payments" https://www.dawn.com/news/1532384/sbp-takes-measures-to-boost-digital-payments

2. Regulatory Bodies

The Pakistan Telecommunication Authority (PTA) is mandated to issue licences to operate telecoms; develop device identification registration and identification systems; facilitate mobile device assembly in Pakistan; develop spectrum re-framing strategy; issue licences to ultra-wideband devices; ensure the security of cellular chips; develop automated digital self-care systems; and take action against any objectionable online content.

Regarding taxes and tariffs on the digital products and services, PTA and MoITT work closely with federal and provincial Revenue Boards. While the taxes on digital products (including federal excise duty and customs duty) are collected by the FBR, the sales tax on services is a provincial domain.

With regard to regulation of digital finance and online transactions, the Central Bank –the State Bank of Pakistan (SBP) – has a mandate to oversee: the country-wide payment cards system; Internet banking; non-banking electronic money; branchless banking; accessibility of international payment gateways; and facilitate cross-border payments of freelancers and exporters of software/IT. In addition, as well as non-financial sector regulation, and incorporation and renewal of firms, the Security and Exchange Commission (SECP) now provides services at the national and subnational levels through an online portal.

The Competition Commission of Pakistan (CCP) is mandated to prohibit: the emergence of dominant power in the digital sector that could lead to abuse practices; participation of firms in any kind of anti-competitive agreements; and evasion by deceptive marketing practices that could lead to transactions based on incorrect and misleading information. It also investigates mergers and acquisitions that could lead to an anti-competitive position in the digital sector.

3. Provincial Departments

Most provincial governments have incentivized firms in the digital sector through various investment policies, sub-national tax policies and select measures for promotion of small businesses and startups. These policy measures are the domain of provincial governments departments (Annex D). Perhaps the most potent tool the provinces use is to alter sales tax on services to promote competitiveness.

B. Relevant policies in digital trade

The Digital Pakistan Policy (2020) being implemented by MoITT aims at improving connectivity, digital infrastructure, e-government and digital skills. Under this policy, NITB and other partners have established Pakistan's first e-commerce export platform.[18] The Central Bank also approved the e-commerce payment gateway *PayFast*.[19] The platform accepts payments through multiple instruments including credit cards: UnionPay, MasterCard, VISA, mobile wallets, or bank account numbers. Apart from various payment

[18] The Digital Pakistan Policy: Vision and Execution. Available at https://digitalpakistan.pk/blog/the-digital-pakistan-policy-vision-and-execution/ Accessed 8 January 8 2021.
[19] SBP allows pilot operation of e-commerce payment gateway. Available at https://profit.pakistantoday.com.pk/2020/07/18/sbp-allow-pilot-operation-of-e-commerce-payment-gateway/

methods, the gateway also permits digital invoicing. To facilitate the exporters in B2C e-commerce, SBP has relaxed the requirement of export-form for exporters. Now the exporters can export the goods up to US$ 15,000 per consignment without the requirement of export-form. This will help SMEs to export smaller quantities if desired without the burden of complex documentation.[20]

A sub-part of the Digital Pakistan Policy is the E-commerce Policy 2019, which is aimed at streamlining laws and regulatory framework at the federal and provincial levels for online businesses and provision of efficient e-payments. Through the Pakistan e-SME program, the MoC with other partners will identify, train, enable and connect 50,000 e-SMEs in remote areas of Pakistan to online market places. One of the key elements in achieving this objective is capacity development services, available free of cost. A separate association of these businesses will also be registered at MoC to create a dedicated focus on the constraints and bottlenecks faced by this sector.

The provincial governments have also come forward with a framework to facilitate the digital sector. For example, this includes the Khyber Pakhtunkhwa Digital Policy 2018 and Punjab Information Technology Policy 2018. These policies aim to offer liberal provincial regulatory and tax regimes to attract investment in this sector.

Apart from the above regulatory bodies, several department-specific policy orders continue to act as regulatory measures. For example, PTA ensures the non-transfer of data to select countries that are not recognized by Pakistan. With regard to data protection law, the Electronic Data Protection and Safety Act 2005 will be followed by the Personal Data Protection Bill, which is pending approval.

With regard to data retention, the Prevention of Electronic Crimes Act (PECA) demands the service providers to hold data for a certain period, during which it can be demanded by relevant authorities. PECA has not been termed as very successful in preventing cyber-crimes; therefore, an enactment of a comprehensive protection framework is necessary. One of the key concerns is the distribution of work under this law. The FIA and PTA have been struggling due to the lack of a clear division of scope of work.

The Pakistan Telecommunication Authority (PTA) is in process of developing the regulatory framework for the Internet of Things (IoT). [21] This framework aims to facilitate the development of an IoT ecosystem that can reduce trade costs (Amin, 2020). To benefit from the IoT-enabled opportunities, PTA auctioned the available spectrum to facilitate investors and improve overall Internet penetration and use of smartphone devices (Business Recorder, 2020).

The Rolling Spectrum Strategy 2020-2023 was also launched by MoITT (2020). This will be helpful in providing future plans for spectrum allocation and forming the basis for 5G

[20] SBP relaxed the E-form requirement for SMEs exporters. Available at https://www.sbp.org.pk/press/2020/Pr-02-Dec-20.pdf

[21] Preparation of a regulatory framework for the Internet of Things (IoT) in Pakistan. Available at https://www.pta.gov.pk/assets/media/cons_paper_iot_08102020.pdf

technology in Pakistan. The auction of spectrum enhances the capability of local and international companies dealing in IT to provide Internet services to users.

In addition, SECP (2020) plays a role through its initiative, the Regulatory Sandbox, to promote finTech and InsuTech with the support of technology-driven initiatives. In the field of blockchains, SECP is formulating a law for the establishment of digital assets in Pakistan. In this domain, the laws related to blockchains and its application in the financial sector will be introduced. Currently, the legal framework does not allow cryptocurrency; however, the future of digital payments is being carefully studied.[22]

Digital financial inclusion remains a challenge. The PTA is supporting SBP's National Financial Inclusion Strategy and has issued two licences for third-party service providers. These licences aim to bring the non-banking population into the formal banking circle and expedite branchless banking. The SBP and PTA have proposed the regulatory framework for mobile banking. The SBP introduced "Regulations for mobile banking interoperability 2016, while PTA issued "Regulations for the technical implementation of mobile banking 2016."

As Pakistan's digital sector matures, it will be important to ensure that tax policy and administration will not stifle future growth. In this regard, FBR has sought comments from the private sector on the draft Pakistan Single Window Act (PSW), which will operationalize an ICT-based trade-related national Single Window to establish a single point of submission and receipt of trade data and information; standardize documents; and remove legal, regulatory and operational barriers to electronic transactions in relation to external trade.

In the short term, rolling out three policies remains a priority at the IT Ministry. First is an information security policy, second is a personal data protection law and third a cloud computing policy. The private sector has been invited to provide inputs and comments on these draft policies. The MoITT is also expected to invite inputs from industry players on 'open data' aspects in the data protection law.

C. Digital provisions in trade agreement

While the draft STPF formulated by MoC promises promotion of digital goods and services, the ministry has implemented bilateral trade agreements to promote digital trade. Pakistan is a signatory of several FTAs, one regional agreement (RTA) with all eight countries in South Asia – i.e., the South Asian Free Trade Area (SAFTA) and other bilateral agreements with China, Malaysia, Sri Lanka, Mauritius, the Islamic Republic of Iran, Turkey, Indonesia and the Republic of Korea. According to the WTO RTA database, currently Pakistan has 10 RTAs in force.[23] Of these, only two have some provisions for digital trade,[24]i.e., FTAs with China and Malaysia. In addition to these past trade agreements, Pakistan is in the process of

[22] See https://news.bitcoin.com/pakistan-cryptocurrency-regulation/
[23] WTO Pakistan profile. Available at http://rtais.wto.org/UI/PublicSearchByMemberResult.aspx?MemberCode=586&lang=1&redirect=1
[24] The details of trade agreements of Pakistan with other countries, Ministry of Commerce, Pakistan. Available at http://www.commerce.gov.pk/about-us/trade-agreements/

finalizing new trade agreements with Turkey, the Republic of Korea, Jordan and Thailand. A draft Preferential Trade Agreement has also been shared with Afghanistan.

The most recent development regarding FTAs was in April 2019 when Pakistan signed the FTA phase II with China – also called the China-Pakistan FTA (CPFTA). Regarding market access, both countries agreed to liberalize 75 per cent of the tariff lines to enhance bilateral trade within 10 years by China, and within 15 years by Pakistan, starting January 2020.[25] At the same time, China agreed to eliminate the tariffs on 313 tariff lines of Pakistan's priority exports.[26] Of these 313 tariff lines, only three are directly linked with digital trade (Ferracane, 2020), whereas some other products can be used as inputs in digital trade-related sectors (table 4).[27] Both the parties are also implementing the Memorandum of Understanding (MoU) on Electronic Data Exchange, which was signed in November 2018. Under that MoU, the customs administrations on both sides can access the data on trade for effective implementation of customs laws.[28]

Table 4. Digital trade-related products exempted under the China-Pakistan FTA

No.	HS Code	Product description
1	8419	Machinery, plant and equipment (including digital).
2	8424	Other mechanical appliance for projecting liquids or powders.
3	8471	Automatic data processing machines and units thereof.
4	8517	Telephone sets, including telephones for cellular networks.
5	8518	Microphones and stands; loudspeakers.
6	8523	Discs, tapes, solid-state non-volatile storage devices, smart cards and other media.
7	8525	Transmission apparatus for radio broadcasting or television.
8	8527	Reception apparatus for radio broadcasting, whether or not combined.
9	8528	Monitors and projectors, not incorporating television reception apparatus.
10	8531	Indicator panels incorporating liquid crystal devices.
11	8532	Electric capacitors, fixed, variable or adjustable.
12	8534	Printed circuits.
13	8536	Electrical apparatus for switching or protecting electrical circuits.
14	8544	Insulated wire, cable and other insulated electric conductors.
15	9001	Optical fibres and optical fibre bundles etc., polarising sheets.
16	9029	Revolution counters, production counters, taximeters, mileometers,

[25] Tariff elimination schedule. Available at http://www.commerce.gov.pk/wp-content/uploads/2019/05/Tariff-Elimination-Schedule-of-China-final.pdf.
[26] Top 313 tariff lines on priority for Pakistan. Available at http://www.commerce.gov.pk/wp-content/uploads/2019/05/List-of-313-Items.pdf.
[27] HS codes: 8544 (electronic conductors, electronic cable, co-axial cable and other electronic conductors), 8419 (heat exchange units, non-domestic, non-electronic) and 8421(parts for filtering' purifying machines of household type).
http://www.commerce.gov.pk/wp-content/uploads/2019/05/List-of-313-Items.pdf.
[28] Article 5: Electronic Data Exchange. Available at.
http://www.commerce.gov.pk/wp-content/uploads/2019/05/Protocol-of-CPFTAfinal-sign.pdf.

		pedometers

The specific provisions for digital trade are found in the FTAs of Pakistan with China and Malaysia (table 5). The China-Pakistan FTA, which was revised in January 2020, currently excludes trade in services. With regard to Pakistan in WTO, the country has a generally liberal schedule of specific services sector commitments. However, the country is currently not a signatory of the Information Technology Agreement (ITA).

Table 5. Digital trade-related articles in FTAs

Pakistan and Malaysia[29]	
Article 45: Information and communication technology	The Parties shall establish an electronic data interchange at priority basis for bilateral exchange of information on trade and customs matters.
	The customs authorities of the Parties will exchange information, including best practices, on the use of information and communications technology to improve customs procedures.
Article 104: Principles	The Parties recognize the importance of intellectual property in promoting economic and social development, particularly in the new digital economy, technological innovation and trade.
China-Pakistan FTA[30]	
Article 9: Administrative fees and formalities	Each Party shall make available through the Internet or computer-based telecommunications network a list of the fees and charges, and changes, to be levied by the central Governments thereof in connection with importation/exportation.

Source: Ministry of Commerce, Pakistan.

The South Asian Free Trade Agreement (SAFTA) was signed at the 12th SAARC summit in 2004 and has been enforced since 2006.[31] The South Asian countries that are part of this agreement are Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. It was agreed to reduce tariff and non-tariff barriers. Each country can identify sensitive products to protect the domestic industry. The products related to digital trade are

[29] Ministry of Commerce Pakistan-Malaysia text of the agreement, pp. 26 and 53. Available at http://www.commerce.gov.pk/wp-content/uploads/pdf/PAk-Malaysia-FTA(TXT).pdf
[30] Ministry of Commerce Pakistan-China text of the agreement, p. 5. Available at http://fta.mofcom.gov.cn/pakistan/xieyi/fta_xieyi_en.pdf
[31] SAFTA at glance. Available at http://www.doc.gov.lk/index.php?option=com_content&view=article&id=32&Itemid=157&lang=en

also included in the sensitive products list of these countries. The list of sensitive products differs across countries and for Pakistan (table 6). There are certain products related to digital trade in the sensitive list (Ferracane, 2020) and around 35 per cent of total digital products in the ESCAP list are included. The reason for including items in the sensitive list varies; however, it is mainly due to protection of the domestic industry (Ferracane, 2020).

Table 6. Digital trade-related products in the sensitive list of Pakistan under SAFTA

No.	HS Code	Product description
1	7017	Laboratory glassware.
2	8517	Telephone sets, including telephones for cellular networks.
3	8518	Microphones and stands; therefore, loudspeakers.
4	8521	Video recording or reproducing apparatus.
5	8523	Discs, tapes, solid-state non-volatile storage devices, smart cards and other media.
6	8528	Monitors and projectors, not incorporating television reception apparatus.
7	8544	Insulated wire, cable and other insulated electric conductors.

Pakistan's FTA with Sri Lanka was signed in 2002 and came into effect in 2005. A large number of goods, or 936 lists, are considered sensitive.[32] These products include items from the digital sector (table 7). The sensitive list and other products may indirectly exert a negative impact on digital trade of goods or services.

Table 7. Digital products in the sensitive list under the Pakistan-Sri Lanka FTA

No.	HS Code	Product description
1	8517	Telephone sets, including telephones for cellular networks.
2	8518	Microphones and stands; therefore, loudspeakers.
3	8521	Video recording or reproducing apparatus.
4	8523	Discs, tapes, solid-state non-volatile storage devices, smart cards and other media.
5	8528	Monitors and projectors, not incorporating television reception apparatus.
6	8544	Insulated wire, cable and other insulated electric conductors.

Pakistan has low levels of trade with its western neighbour, the Islamic Republic of Iran, due to banking restrictions on the latter. Both countries have signed a preferential trade agreement which is still limited in scope in comparison to Pakistan's other agreements. It is hoped that with time, as sanctions on the Islamic Republic of Iran are lifted, both countries will be able to negotiate better preferences. Similarly, Afghanistan and Pakistan are in the process of a PTA negotiation. It is hoped that as peace negotiations become successful in future, greater focus will be moved to finalizing and implementing these agreements.

[32] Sensitive list of Pakistan under the. FTA with SAARC. Available at http://www.doc.gov.lk/images/pdf/our_services/safta/pakistan_sensitive_lists_hs_2012.pdf

In addition, the Government of Pakistan is actively seeking to participate in the global initiatives that are helping Pakistan to integrate into global digital networks. For example, the Ministry of Foreign Affairs (MoFA) is one of the founding members of the Digital Cooperation Organisation (DCO) for promoting the global digital agenda in scientific, health, e-commerce, education, agriculture and other related sectors. MoITT is working jointly with MoC for accession to the Information Technology Agreement (MoC, 2019).

To summarize, this section has explained the overall digital trade ecosystem in the country, and its policies on, and practice of digital trade. The various policies explained here respond to the need for improvements in the connectivity infrastructure, services and platforms; digital literacy; online data and user protection; and financial inclusion.

Pakistan and the regional

To begin with, there is great emphasis across the region on improving infrastructure for digital connectivity. For example, Internet penetration in Pakistan (table 8), while still far from satisfactory, almost doubled from 17.8 per cent in 2015 to 35 per cent in 2020. This includes improvements on both fronts i.e., fixed broadband and mobile Internet connection. The COVID-19 pandemic has emphasised the fact that in several parts of the country reaching an infected population and supporting better-targeted social safety nets is a challenge as Internet penetration is low in most rural parts. The Network Readiness Index (2020) ranks Pakistan 108 out of 121 countries with regard to households that have Internet access (table 9).[33] This infrastructure deficit endorses the view that despite having relatively low mobile tariffs in Pakistan, online access to financial accounts cannot keep pace with other countries in Asia and the Pacific (table 10).[34]

A large part of the problem has to do with the desired improvements in the available telecom sector base. The pandemic has forced economies in the region to focus on both infrastructure and regulatory improvements in this sector (table 11). Most countries in South Asia have tested the 5G technology, but a formal launch is still pending for various reasons.

Table 8. Comparison of Internet penetration, 2015-2020

Country	2015 Percentage	2020 Percentage	Change
Bangladesh	31.9%	60.7%	28.8
India	27.0%	50.0%	23.0
Indonesia	42.7%	64%	17.2
Maldives	54.5%	71%	16.5
Nepal	17.6%	35%	17.4
Pakistan	17.8%	35%	17.2
Sri Lanka	12.1%	47%	34.9

Source: Kemp, 2020.

[33] Network Readiness Index. Available at https://networkreadinessindex.org/2019/wp-content/uploads/2020/03/The-Network-Readiness-Index-2019-New-version-March-2020.pdf

[34] Network Readiness Index rank the countries from top performers at the top and least performers at the bottom among all the countries in the world. So the countries that are performing well have a score near to 1, while it is the opposite for low performers.

Table 9. Network readiness

(Ranking out of 121)

Country	Fixed broadband subscription	Households with Internet access	4G mobile network coverage	Internet bandwidth
Bangladesh	94	130	99	92
Brazil	71	74	76	82
Cambodia	42	87	79	73
India	70	100	55	87
Indonesia	73	70	62	76
Nepal	NA*	112	122	108
Pakistan	99	108	92	97
Philippines	NA	86	80	101
Sri Lanka	90	103	64	93
Viet Nam	13	83	57	58
World	**40**	**71**	**59**	**74**
Asia and the Pacific	**49**	**73**	**56**	**79**

Sources: Network Readiness Index, 2020; Banga (2019)
* NA: Not available.

Table 10. Tariffs, online security and digital finance

(Ranking out of 121)

Country	Mobile tariffs	Government online services	Secure Internet servers	Online access to financial accounts
Bangladesh	50	84	100	96
Brazil	52	20	52	79
Cambodia	89	111	94	117
India	38	24	74	116
Indonesia	64	71	60	94
Nepal	92	115	90	115
Pakistan	67	80	110	102
Philippines	106	59	98	97
Sri Lanka	21	62	80	110

Viet Nam	51	77	54	66
World	**56**	**40**	**55**	**66**
Asia and the Pacific	**52**	**33**	**60**	**72**

Sources: Network Readiness Index, 2020; Banga, 2019.

Table 11. Developments in the telecommunication sector, 2020

Bangladesh	The first test of 5G technology was successful. The Government has allowed IoT for smart cities and automation of industries. In the past five years, Bangladesh witnessed consolidation in the mobile market. Fixed-line penetration decreased in the past five years as more people preferred to use mobile Internet.
Bhutan	Telecommunication sector developed the 5G spectrum plan for the country, but its launch may be delayed due to the COVID-19 pandemic. The low consumer spending on IT/ICT and computer-related services remains a concern.
India	Government policies focus on the IoT in the health, cybersecurity, transportation and construction sectors. Fixed and mobile Internet penetration has grown at a significant rate in the past five years. Video content remains the main driver of mobile Internet consumption.
Indonesia	High smartphone Internet connection penetration is expected in Indonesia in the next five years. The Government is helping telecommunication companies to launch 5G Internet. Recent investment has added US$950 million for 6,050 mobile connection towers.
Maldives	5G Internet has been successfully trialled but the licence is still pending. Amid the COVID-19 pandemic consumer spending on IT/ICT services and products is under pressure. Submarine cable connection with Sri Lanka will provide improved Internet bandwidth and low-priced Internet for consumers.
Nepal	Internet broadband speed has increased significantly in the past five years. The country expects to launch its first indigenous satellite in 2022. E-learning with free Internet for students is on the rise.
Pakistan	Set to launch 5G by 2022. The China-Pakistan fibre optics project has become operational. A contract has been finalized between Ufone and USF to give broadband converge across the Makran Coastal Highway and vicinity. Due to the COVID-19 crisis, consumer spending has decreased and it is expected that sales of mobile devices and related products will remain stagnant in the coming year.
Sri Lanka	Pre-launch testing of 5G technology has been completed and it is expected that the country will invest US$254 million in network expansion. Fixed as well as mobile Internet penetration is growing at a steady rate. The growth of telecommunication companies remains resilient despite the challenging macro-economic conditions, security challenges, elections and the COVID crisis.

Source: Rosbo, 2020.

The E-commerce Readiness Index also explains Pakistan's low level of preparedness (compared to the South Asian region) to support B2C trade through online channels (table 12). From Asia and the Pacific, the Republic of Korea and Japan are ranked fifth and eighth, respectively, out of 144 countries.[35] Pakistan ranked 114 out of 152 countries (UNCTAD, 2020). Although the country's position has improved, as it jumped six points (from 120 out of 144 to 116 out of 152) between 2017 and 2020, it still lags behind several peers in the region. By comparison with peers in Asia, it can be seen that countries like Indonesia and India have outperformed Pakistan. The performance of both those countries is significantly better in terms of the percentage of population using the Internet, e.g., the population with bank accounts and usage of secure Internet servers.

Table 12. B2C e-commerce index

Country	Year	E-commerce readiness ranking	Total number of countries	Percentage of population using the Internet	Percentage of population with bank accounts	Secure Internet servers per million people
Bangladesh	**2017**	103	144	18	31	24
	2020	115	152	13	50	39
Bhutan	**2017**	100	144	42	34	51
	2020	114	152	48	34	51
Indonesia	**2017**	101	144	25	36	42
	2020	83	152	48	49	60
India	**2017**	83	144	30	53	39
	2020	71	152	34	80	49
Nepal	**2017**	108	144	20	34	33
	2020	113	152	34	45	43
Pakistan	**2017**	120	144	16	13	29
	2020	116	152	24	21	35
Sri Lanka	**2017**	73	144	32	83	47
	2020	91	152	34	74	48

Source: UNCTAD, 2017 and 2019.

Pakistan's e-commerce policy now promises to boost the country's e-commerce exports by almost 50 per cent in the medium term (MoC, 2019). According to SBP estimates, with the

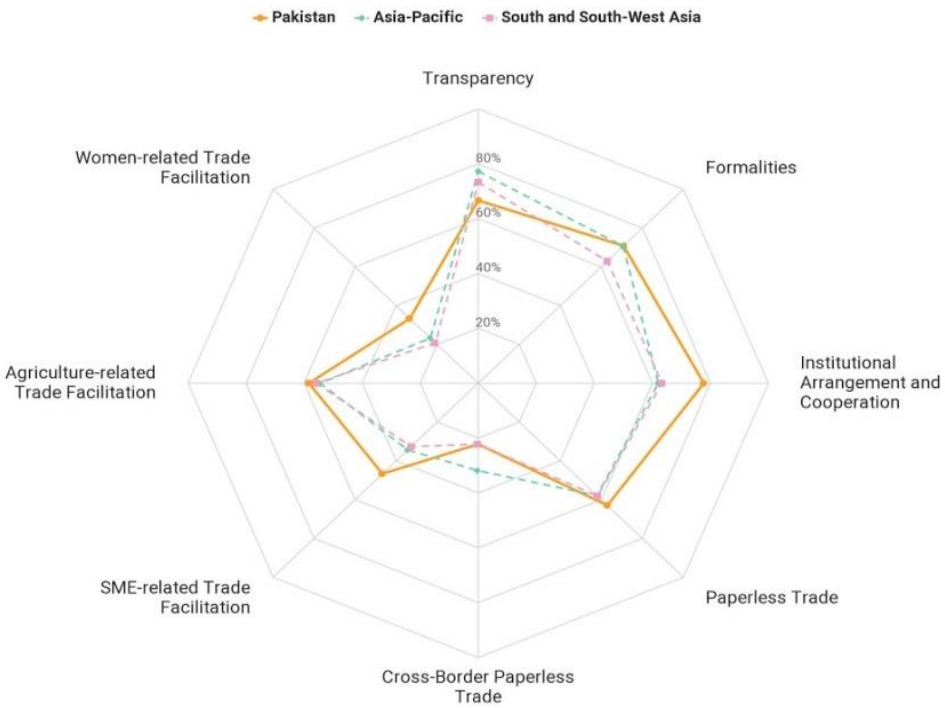
[35] UNCTAD, 2017.

effective use of digital financial services, Pakistan could boost its GDP by US$36 billion, which will help to create four million new jobs by 2025.[36]

Pakistan was ranked relatively low in the United Nations Global Survey on Digital and Sustainable Trade Facilitation (figure 2). The ranking in cross-border paperless trade and women-related trade facilitation was particularly weak. Although Pakistan is trying to adopt new ways of regulating and doing business domestically, these policies have yet to be applied for cross-border trade. SMEs are now being encouraged to adopt digital means of trade and access to finance. SMEDA has initiated orientation programmes to guide SMEs on how to trade online. Provinces have also come forward with their support programmes, such as those initiated by the Sindh Enterprise Development Fund and the Punjab Small Industries Corporation. Furthermore, the national trade facilitation strategy may be revised to speed up accession to the Framework Agreement on Facilitation of Cross-Border Paperless Trade in Asia and the Pacific.

Such initiatives will help firms to integrate with digital marketplaces such as Flipkart[37] in Asia and Jumia[38] in Africa which are rapidly gaining acceptance globally (UNCTAD, 2019). Flipkart, which has roots in South Asia, has flourished and the B2C model facilitates more than 80 million products for 160 million users (Rangaiah, 2020).

Figure 2. Digital and sustainable trade integration, 2019



Source: United Nations Global Survey on Digital and Sustainable Trade Facilitation, 2019.

[36] E-commerce policy of Pakistan by Ministry of Commerce. Available at http://www.commerce.gov.pk/wp-content/uploads/2019/11/e-Commerce_Policy_of_Pakistan_Web.pdf
[37] See https://www.flipkart.com/
[38] See https://group.jumia.com/

Although developing countries are far behind in digital development, there are some examples in the region that could help in benchmarking. For example, the Indian computer services industry has managed relatively well, given its ability to attract skilled human resource in this sector (UNCTAD, 2019). It has helped in the expansion and sustainability of the ongoing industry-wide initiatives (Javed, A., 2019; and Singh, 2018).

Economies in the region are entering into various paperless trade agreements – an initiative that is bound to help digital trade as well. For example, the Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific – signed by Azerbaijan, Bangladesh, Cambodia, China and the Islamic Republic of Iran and which entered into force in February 2021 – estimated an on-average trade cost reduction by 25 per cent based on the implementation of this framework (ESCAP, 2019).

The electronic data interchange systems are becoming important for the movement both of goods and people. However, such systems require legislative changes and infrastructure, which has been a constraint for developing countries. Pakistan has also made commitments to develop cross-border trade facilitation under various other regional arrangements, including Central Asia Regional Economic Cooperation (CAREC), the Economic Cooperation Organization (ECO), the Shanghai Cooperation Organization (SCO), and the D-8 Organization for Economic Cooperation.

An effort has been made in this report to study Pakistan's relative performance using ESCAP's 10 pillars under the Regional Digital Trade Integration Index (RDTII) 2019, which quantifies the barriers in digitally-enabled services across 22 countries. The various pillars of RDTII are presented in table 13. Overall, Pakistan ranks relatively low in comparison to the selected peer group. However, in some cases, Pakistan continues to make efforts most notably to improve the FDI regime (ranking first out of 22) and access to online content (ranking sixth). However, much more needs to be done to improve the standing with regard to high quantitative trade restrictions, strict domestic data policies, tariff rates and weak online sales.

Table 13. Regional digital trade integration country ranking, 2019

Country/ Pillar	Lao PDR	Myanmar	Philippines	Cambodia	Malaysia	Pakistan	Indonesia	Viet Nam	India
RDTII	10	16	6	15	13	17	18	21	20
Tariff and trade defence	20	17	4	22	6	21	9	10	18
Public procurement	4	6	18	9	17	13	19	10	15
Foreign direct investment	7	21	13	9	14	1	19	20	18
Intellectual property rights	8	19	9	16	11	14	20	18	17
Telecom infrastructure	21	16	8	15	20	12	11,	19	16
Cross-border data transfer	1	1	9	1	9	7	18	19	20

Domestic data policy	10	18	6	17	2	22	11	19	12
Content access	9	18	4	9	14	6	9	21	9
Quantitative trade restrictions	1	13	9	9	16	19	16	21	13
Standards on digital trade	1	1	9	14	7	21	17	17	22
Online sales	11	12	12	16	17	18	20	20	22

Source: ESCAP calculation. Data reflects regulatory environment in 2017
Note: The countries included in the RDTII are Australia; Brunei Darussalam; Cambodia; China; Germany; Hong Kong, China; India; Indonesia; Japan; Republic of Korea; Lao PDR; Malaysia; Myanmar; New Zealand; Pakistan; the Philippines; Russian Federation; Singapore; Thailand; Turkey; the United States; and Viet Nam. Data reflects regulatory environment in 2017.

Digital trade: Constraints and bottlenecks

This section draws from our interviews with both public and private sector stakeholders[39] regarding challenges to digital trade integration of Pakistan. Learning from the RDTII, this study administered a semi-structured questionnaire that also included the COVID-19 pandemic related queries. The sample questionnaire is provided in Annex E. The key responses are summarized below.

A. Challenges to growth and competitiveness

Foreign investment restrictions in digital space. The rules and regulations faced by this sector, e.g., the Foreign Exchange Regulation Act 1947, hinders foreign investment in digital space. The foreign exchange regime is conservative, which causes difficulty for a foreign firm when transferring working capital, fixed investment, and profits in and out of the country.

The repatriation of profits involves layers of checks by both the federal Government and the Central Bank which could take unexpected time. Furthermore, any entry by a foreign equity firm must be approved by the Central Bank, and security clearances are required by relevant institutions. There are also BOI compliance measures. If foreign investors want, for example, to invest in the manufacturing of ICT devices, they are required to obtain permission from BOI, which includes security clearances under the foreign exchange manual. The BOI can, in some cases, refer to the Ministry of Industry's Engineering Development Board or FBR for review (particularly when the import of inputs is involved).

Role of public investment. A potential investor regards government spending in ICT as a key indicator for gauging+ future profitability in a particular sector. However, public sector investment is fragmented. Each province also has its budget for the IT and ICT sector uplift, and provincial governments have also notified their e-commerce councils for future policy proposals. This decision-making action with regard to public investment in digital space, spread across the federal and provincial domains, makes it difficult to navigate the role of the Government in this sector's policies, regulation and operations. Currently, there is no single compendium that provides national-level consolidated details of public spending on digital sector uplift. If MoITT could furnish such a knowledge resource, it could help prevent duplication of similar publicly-funded projects in this sector (at the provincial level). The track record of state-owned enterprises (SoEs) in embracing digital trade has not been encouraging – an aspect that has come under discussion due to disruptions caused during the pandemic lockdowns. Several SoEs are now installing enterprise resource planning systems and e-communication tools, which will hopefully become stepping stones towards more comprehensive digital integration.

Data and information costs. Data gaps in the digital sector's overall ecosystem and, more specifically, production and trade rules hinder timely decisions both in the public and the

[39] Thirty-two relevant officials were interviewed. Two focus group meetings were held to validate the survey responses. This studyalso benefited from constraints provided in databases of RDTII and Digital STRI.

private sectors. There are limited data-sharing systems between the Central Bank, non-financial regulators, and federal and provincial governments. The data available with some government entities – e.g., PRAL, NADRA and Safe City authorities – are not accessible to private firms or even most public sector entities. Some types of data have overlapping ownerships across organizations. To access such data requires approval from multiple authorities, which could involve an unanticipated amount of time and cost.

As no data classification has been termed non-confidential in law, the tendency of government departments is to treat most datasets available or desired by e-businesses as confidential, which is indeed restrictive for digital trade integration. To overcome such constraints, some Pakistani businesses keep their data with companies outside Pakistan, e.g., Amazon Web Services.

Online security and data protection. The data protection law is still awaited. This step is important to strengthening the overall online protection of suppliers and consumers. The consumer protection bills also need to be strengthened from a privacy aspect.[40] It was revealed in meetings that stronger measures for protecting financial data are desired. This has also been demanded by the Financial Action Task Force (FATF).

The relevant departments such as FIA will have to implement appropriate measures. Some areas of Pakistan are unable to access to broadband services due either to security concerns or low density of users. In these areas, micro-, small- and medium-sized enterprises cannot participate in the digital trade. The telecom companies also need to protect the privacy of subscribers. There is a common complaint by subscribers that their phone numbers are made available to digital marketing firms who then keep sending unwarranted advertisements. Moreover, there is no structured mechanism or focal department to respond to queries of digital sector firms and consumers with regard to cybersecurity, privacy, data protection and other concerns – a challenge that is discussed later in this report.

During meetings with the FIA representatives, the authors were informed that several challenges exist in protecting users of digital services. In 2019, 12,000 complaints were reported to FIA for e-commerce and online banking-related crimes. Since the start of the Covid-19 pandemic, these crimes have increased. The Police Department currently cannot directly intervene in cybercrimes. Therefore, the FIA has proposed a law in Parliament to empower the police to check cybercrimes. According to the FIA, citizens also lack awareness regarding the safe use of online banking channels.

Regulating digital space. The question regarding, what and how to regulate continued to be discussed during consultations for this study. As of now, there is no single regulator of digital trade. For example, a Personal Data Protection Authority of Pakistan is planned after the Data Protection Bill comes into effect; however, this currently has no set timeline. As per the PECA rules – limited to electronic data – the FIA has been appointed by the Government as the investigative agency for investigation of offences. However, as explained above, FIA lacks the power to implement any form of punishment. In addition, PECA itself gives rights

[40] Current laws that require review include: the Islamabad Consumer Protection Act (1995); Khyber Pakhtunkhwa Consumer Protection Act (1997); Balochistan Consumer Protection Act (2003); Punjab Consumer Protection Act (2005); and Sindh Consumer Protection Act (2015).

to PTA, which acts as the authority regulating certain rights protected under it. With this lack of clarity and high levels of regulatory burden, several local firms active in digital space are not bringing money earned online back to Pakistan.

Tax policy and administration. During consultations at National Incubation Centres supported by MoITT, it was explained that the prevalent complex tax regime is a barrier to entry and growth of startups in digital space. The provinces impose a different sales tax regime on the digital sector that demands filing with multiple tax authorities, especially firms that operate businesses across more than one province (table 14). Some such taxes (or higher rates of taxes) are limited to firms dealing in digital trade and are not seen in some other services. [41] These increases transaction costs for the firms and consumers, and hurts government revenue, as varied tax regimes lead to misuse, evasion and avoidance. The revenue bodies in several cases have adopted a different definition of IT- and ICT-related services compared to those of the Central Bank or PTA. Therefore, the harmonization of the sales tax regime across the country with regulatory bodies was demanded by stakeholders.

Smart tax regimes act as an important tool to attract investment. Pakistan has practised very few double taxation treaties with other countries. In most cases, cross-border investment promotion is not included in the FTAs. Double taxation treaties help the residents of countries in the agreement to avoid double taxation on the movement of capital or business activities.

Table 14. Tax regime in digital space

Type of tax	Rate	
Operator taxes		
Corporate income tax	30%	
Alternative corporate tax	17%	
Personal income tax	up to 25%	
Social security contribution	5%	
Workers' welfare fund contribution	2%	
Withholding tax (imports of goods)	5.5%	
Customs duties on equipment	1 - 21%	
Super tax	3%	
Consumer taxes		
Federal excise duty	17%	
Sales tax (e.g., on parts/components)	17%	
Sales tax (on services)	15 per cent standard, 19.5 per cent other (for Punjab province standard rate is 17%)	
Mobile specific services		
Sales tax on mobile handsets	Pakistan Rupees 300-1,000	
Sales tax on SIM cards	PKR 250	
Customs duties on handsets	PKR 250	
Customs duties sim cards	3%	
Withholding tax on mobile services	12.5%	
Mobile handset levy	Up to PKR 5,000	
Telecom specific charges	**Capital territory**	**Provincial**
Landline	17%	19.5%
Internet/data	17%	19.5%

Equipment/supplies	17%	17%
Smart TV	16%	Punjab: 5%
		Khyber Pakhtunkhwa and Sindh: 10%
		Baluchistan: 15%

Source: Federal Board of Revenue and Global System for Mobile Communications, 2020.[42]

Challenges presented by the COVID-19 pandemic. The pandemic period has witnessed an increase in the use of digital platforms to undertake even conventional businesses. There was an urgency to have a user-friendly sales interface in most organisations. During the first wave of the pandemic, while broadband networks struggled to accommodate the higher demand, most telecom sector firms and businesses invested in digital infrastructure and proficient human resource to serve their online customers.

However, the adoption of digital technologies has been quite heterogeneous across firms in Pakistan.[43] Manufacturing firms, exporting firms and large-size firms have reported digital adoption at much higher rates in comparison to smaller and micro-sized firms or firms that are new to cross-border trade. The reason is that the former types of have the critical technical know-how to undertake digital adoption and implement appropriate technologies because they have better financial resources to invest in digital infrastructure.

Dispute resolution and feedback. As part of this study, an actual online security breach incident faced by a private concern was submitted. There is no single authority or department responsible for accepting even the most usual kind of such complaints and liaising with all other relevant security departments on an emergency basis. In essence, a one-window mechanism for grievance redressing has still not been implemented. Thus, this reduces trust in online transactions. For example, the complaint, which was submitted to the Central Bank, resulted in the following response:
"You are advised to report the matter to the relevant forum/authority, as deemed appropriate, as under:

- Register your complaint at the helpline of your Bank/MFB/telecom operator;
- Register the complaint at PTA website (through online complaint form) or at toll-free number 0800-55055 for blocking of fraudster number;
- Report all types of fraud at the National Response Center for Cyber Crime (NR3C) – FIA helpline: 9911, 051-9106384 or visit www.nr3c.gov.pk;
- Report fake Ehsaas Emergency Cash Program messages at BISP Helpline: 080026477;

[42] Available at https://www.gsma.com/asia-pacific/wp-content/uploads/2020/06/24253-Pakistan-report-updates-LR.pdf
https://download1.fbr.gov.pk/Docs/20201161311552633OCustomsTariff(Ch01-97).pdf
https://ptcl.com.pk/Home/PageDetail?ItemId=342&linkId=895&linkId=5058
[43] World Bank survey on business impacts of COVID-19. Available at http://documents1.worldbank.org/curated/en/399751602248069405/pdf/Unmasking-the-Impact-of-COVID-19-on-Businesses-Firm-Level-Evidence-from-Across-the-World.pdf

- If fraudster uses the name of Pakistan Army, report to ISPR Helpline: 125 and 1135;
- Furnish details of fake call received by you as per attached format (of State Bank of Pakistan) at CPD.Helpdesk@sbp.org.pk."

The complainants explained that even if they filed a complaint at the aforementioned multiple offices, they would not expect a settlement. The certainty of bringing a complaint to closure is minimal.

Digitalization of business and utility transactions. Another major hurdle in end-to-end digital trade is a largely cash-based economy. Around 90 per cent of retail transactions are still cash-based. End-to-end digital trade demands that the transaction takes place between two parties without the involvement of any third party. Cashless transactions in Pakistan are low in volume, which would make the whole investment in digital infrastructure by the private sector unviable and unattractive for somebody coming from outside the country. This concern particularly comes from those wishing to invest in fintech. High sunk costs discourage long-term investments. Improvements are also desired to the biometric verification services involved in the over-the-counter payments; a measure introduced in 2017.

Expanding reach of value-added digital financial services. A suggestion given during consultations was that government utility providers should make it mandatory to provide only cashless payments and fees. Similarly, attestation of documents should be done electronically. Currently, only an estimated one-third of the utility bill payments by final consumers come through digital financial systems (Sohail et al., 2019). In this regard, the Central Bank will need to continue its efforts towards expanding the branchless banking network (including mobile money agents) in rural areas and to possibly partner with Pakistan Post.

The Government's support is needed to overcome issues in some localities, including the availability of secure IT and mobile infrastructure, e.g., in areas of low population density seen in Baluchistan and western Khyber Pakhtunkhwa. Further improvements to the Financial Inclusion Insight Survey could expand the demand-side data on utility bill payments which, in turn, could help the future decision-making process to address these challenges. Regular and improved training of branchless banking agents also needs to be ensured by the digital financial service providers. The branchless banking platforms are inter-operable with other financial institutions through the 1-Link. However, as inter-operability is not mandatory, the authors of this report were informed about examples where certain financial institutions have still not enabled this process (Niazi, 2019).

Funding and finance options. The ability to raise capital domestically to fund the growth of digital businesses is limited. While local banks are only gradually developing an understanding of business models and their feasibility in this sector, potential foreign investors demand a high equity share, which makes the effort by local entrepreneurs not worthwhile. Moreover, there are procedural constraints to local firms borrowing foreign currency from a foreign lender. Large firms involved in digital trade that requires financing in foreign currency usually cannot find it in the domestic market. In formulating this report, the proposal from the private sector was that SBP and PBA should ensure dedicated model branches of banks to deal with digital and creative enterprises. The Government should expedite its plan for starting a dedicated trading index (for this sector) at the Pakistan Stock

Exchange. This could put a few technology companies into a pre-initial public offering (pre-IPO) phase.

The micro and small (digital) businesses continue to face issues regarding the acceptability of collateral demanded while borrowing from banks. In this regard, the recommendation from the workshop was that the Government should collaborate with the Central Bank in fast-tracking loans against intellectual property rights. The Government in the short term should support this approach with a time-bound guarantee. On the infrastructure side, the special technology zone set up in Islamabad could be a good template for other cities to follow. The experience of Pakistan and peer economies indicates that public-private partnership models could contribute to making such special technology zones a success.

Physical movement of professionals in the digital sector. In most of the consultations for this report, the associations of digital businesses and professionals emphasized that the Government should ramp up its efforts to negotiate with key trading partners, and provide preferential visa access for Pakistani professionals to travel abroad and showcase their digital goods or services.

For example, China and SAARC are both large markets for Pakistan; however, Pakistani entrepreneurs and professionals find it difficult to obtain long-term business visas or work permits. This issue can also be resolved by ensuring visa-related clauses in future FTAs in services.

Improving the Intellectual Property regime. Pakistan is still not a member of the Patent Cooperation Treaty (PCT). There are currently 3,000 known complaints that have not been dealt with. Also, according to the World Economic Forum (WEF) Global Information Technology Report (2016), the rate of pirated software use in Pakistan is 85 per cent. The enforcement bodies are faced with legislative, jurisdiction, capacity and financial constraints that need to be addressed, given the concerns expressed by firms in the creative sectors. The enforcement drive will require support from the Ministry of Interior and provincial governments. Furthermore, it will also have to be accompanied by a social messaging and behaviour change campaign.

B. Specific restrictions on digital activities

Consultations and analysis from RDTII indicated that there are restrictions on cross-border data transfers. Several restrictions are faced while sharing business data with firms in countries that are not recognized by Pakistan, i.e., Israel, Taiwan Province of China, Kosovo, Somaliland, Nagorno-Karabakh, Transnistria, Abkhazia, Northern Cyprus, Sahrawi Arab Democratic Republic, South Ossetia, and Armenia. The data can only be transferred to a person or an entity in India if such a transfer can be justified by the transferor. Similarly, the data in possession of banks, insurance firms and hospitals are prohibited from being transferred outside the country unless permission is given by the relevant regulator.

Second, in some cases, there are costly data retention requirements. For example, PECA imposes mandatory requirements for firms to hold electronic data for a certain period. The duration can vary and will be decided by the relevant authorities. During consultations it was found that while PECA's timeline may be one year, entities such as the National

Accountability Bureau can demand data for the previous decade. The data retention requirements began to be imposed through the Electronic Transaction Ordinance (ETO) in 2002. Through these provisions, PECA allows the Government to access the data held by individuals or firms.

Third, the practices on blocking online material appear to be arbitrary and require a dialogue with sector experts. The PTA empowers the blockage of any material on a website without providing any immediate reason to the owner. It was reported during the consultations that PTA has blocked up to 40,000 websites annually. To manage law and order during public processions it has become a usual practice to block Internet and mobile phone services leading to business losses. On most occasions, these services are shut unannounced leading to loss of income and jobs.[44] For example, in the recent past, there have been cases where mobile services were blocked in a number of cities.[45, 46]

Fourth, there continue to be some restrictions on the transfer of money online despite some recent progress. Locally, these restrictions are related to low-level ceilings allowed to be transferred during a single instance. In the case of local mobile transfers, the limit varies across banks, e.g., the National Bank of Pakistan sets the limit around 200,000 rupees.[47] However, the number of restrictions increases if money must be transferred abroad through online means. These restrictions or compliance measures also carry monetary costs that must be covered by businesses. The processing time is also not mentioned for such transactions. It is unclear if the alternatives of the Pay Pal model currently being rolled out will be able to address some of the above challenges. Upper limits also apply to foreign equity in specific sectors, which include banking, agriculture and media (including digital media).

Fifth, there are costs and time delays related to accreditation of encryption and cryptography services. The criteria for processing such accreditation can differ case-by-case, which makes the entire exercise uncertain for a business concern.

Sixth, getting the necessary approvals and certifications for manufacturing telecom equipment entails high costs that consequently deter potential investors. The Government could address such challenges as part of the Mobile Device Manufacturing Policy, which is still in the implementation phase. The Pakistan Standards and Quality Control Authority (PSQCA) is also in the process of reviewing the All-Pakistan Standards regime. The approval fee can vary for local and foreign manufacturers – an anomaly which may be addressed in the future. The overall production costs also remain high due to lack of a *de minimis* rule - no minimum value of import below which it is exempted from customs duty collected by FBR.

Apart from the above-mentioned restrictions, importers of telecommunication devices (including mobile phones) must deposit an amount equal to transaction value in a local

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[44] "China welcomes lifting of TikTok ban in Pakistan". DAWN. Accessed 11 January 2021. Available at https://www.dawn.com/news/1586258

[45] No mobile service is available in many big cities around the country. See https://archive.pakistantoday.com.pk/2018/11/01/no-mobile-phone-services-on-friday/

[46] Mobile services are blocked in a number of cities of Punjab. Available at https://nation.com.pk/15-Nov-2020/cellular-services-to-remain-suspended-in-pindi-region-today

[47] Mobile transfer limit by the National Bank of Pakistan. Available at https://www.nbp.com.pk/digital/faq.aspx

commercial bank before the opening of a letter of credit. The practice is not in line with peer economies in the region, which have liberal trade regimes for the telecom sector (e.g., India) and will continue to have a negative impact on the competitiveness of this sector. This arrangement may be revisited by the Ministry of Commerce and the Central Bank and gradually aligned with the conventional practices.

Most policies in this sector have not been formulated by using a comprehensive consumer protection focus. Existing consumer protection laws do not fully cover digital sectors/activities. The federal and provincial governments will need to create more up-to-date consumer protection legislation or make amendments to existing laws to protect consumers and enhance trust in digital trading.

Conclusion and recommendations

The COVID-19 pandemic has exacerbated the need for a review of the digital trade integration of Pakistan, as a measure that could help the country in building back better. The various factors that influence the ability of economies to effectively participate in digital trade include market-friendly regulations, enabling infrastructure and availability of relevant skills. Trade agreements and participation in regional cooperation arrangements could also support this goal.

This report highlights factors that stifle the growth of the digital sector and challenge the pursuit of Pakistan's digital trade integration. The Government has made dedicated efforts to address some of these bottlenecks. However, comparison with peer economies indicates much more needs to be done. To start with, the timely enactment of pending draft laws and expedient implementation of recently formulated policies for the digital sector could provide the basis for an improved digital trade outlook.

The prerequisites for future growth and competitiveness include: an overall drive to digitalize economy-wide business transactions; improved cross-border data transfer rules; liberalized cross-border payment mechanisms; adoption of a cashless payment system for utilities, public services and banking services; the improvement of intellectual property, tax, tariff and investment regimes for investors in digital space; essential cybersecurity measures; and raising the standards of human resources in IT and ICT.

Looking ahead, this report offers the following short-, medium- and long-term policy recommendations to support Pakistan's digital trade integration and, in turn, the overall competitiveness of its trade sector, as follows.

Recommended actions for immediate term:

- The implementation of three policy frameworks formulated by MoITT may be expedited. These include information security policy, a personal data protection law and cloud computing policy.
- A Strategic Trade Policy Framework (STPF) at MoC can incentivize both public and private enterprises to embrace digital transformation on a priority basis.[48] Such policy certainty could help achieve the readiness of firms to move up to a higher technological and sophistication level.
- SBP could further relax the requirements that need to be met by firms wishing to expand trade online. The overall export value allowed per consignment, without the need for cumbersome documentation, could be enhanced.
- The Government could also reconsider the mandatory condition on telecommunication companies to deposit a fee for importing equipment. Usually, this fee is equal to the imported value.
- The required decision-making with regard to public investment in digital space, spread across federal and provincial domains, makes it difficult to navigate the role of

[48] While trade with China is progressing, limited progress is seen with other growing economies like India, Bangladesh and Sri Lanka (Ahmed, 2019; and Kathuria et al., 2020).

government in this sector's policies, regulation and operations. Currently, there is no single compendium that provides national-level consolidated details of public spending on digital sector uplift. The MoITT could furnish such knowledge resource that could help to prevent duplication of similar publicly funded projects in this sector (at the provincial level).

- The track record of SoEs in embracing digital trade has not been encouraging. SoEs should prioritize the installation of enterprise resource planning systems and e-communication tools that will become stepping stone towards digital integration.
- Tax harmonization across federal units should be prioritized so that digital trade products and services do not face differentiated treatment in different parts of the country.
- To improve overall documentation and the drive towards digitization of government utility providers could make it mandatory to receive only cashless payments and fees beyond a certain threshold. Similarly, attestation of documents should be done electronically.
- The Central Bank could further incentivize the expansion of the branchless banking network (including mobile money agents) in rural areas and possibly partner with Pakistan Post. Further improvements to the Financial Inclusion Insight Survey could expand demand-side data on utility bill payments which, in turn, could help future decision-making processes to address these challenges. Regular and improved training of branchless banking agents also needs to be ensured by digital financial service providers.
- The ability to raise capital from inside Pakistan to fund the growth of digital businesses is limited. SBP and PBA could ensure dedicated model branches of banks to deal with digital and creative enterprises.
- The Pakistan Stock Exchange could expedite its plans for starting a dedicated trading index (for the digital sector). This could put a few technology companies into a pre-initial public offering (pre-IPO) phase.
- Micro- and small-sized (digital) businesses continue to face issues regarding the acceptability of collateral demanded when borrowing from banks. SECP and SBP could help fast-track loans against intellectual property rights. The Government in the short term should support this requirement with time-bound guarantees in Pakistani rupees.

Recommended actions for medium-to-long term:

- The special technology zones currently being planned in selected cities could be a good template for other cities to follow. The local' economies could reduce the overall financing requirements for smaller businesses wanting to embrace digital platforms. The private partnership model could help to increase the number of special technology zones.
- The Government could increase diplomatic efforts to negotiate with key trading partners, preferential visa access for Pakistani professions to travel abroad and showcase their digital goods or services. This issue can also be resolved by ensuring visa-related clauses in future FTAs in services.
- National policy reform should be as much as holistic. Apart from improving connectivity infrastructure and the Internet penetration rate, efforts are needed to improve digital literacy; confidence of online consumers and overall financial inclusion. The relatively high quantitative trade restrictions and rigid domestic data policies have also hindered Pakistan's economic performance in digital economy. Also, poor performance in the region in terms of cross-border paperless trade and

women-related trade facilitation needs attention. The national trade facilitation strategy may be revised accordingly, including to speed up accession to the Framework Agreement on Facilitation of Cross-Border Paperless Trade in Asia and the Pacific.

- Pakistan is still not a member of the Patent Cooperation Treaty (PCT). The enforcement bodies are faced with legislative, jurisdiction, capacity and financial constraints, which need to be addressed given the concerns expressed by firms in the creative industries. The enforcement drive will require support from the Ministry of Interior and provincial governments. Furthermore, this will have to be accompanied by social messaging and a behaviour change campaign.
- Existing consumer protection laws do not fully cover digital sectors/activities. The federal and provincial governments need to introduced more up-to-date consumer protection legislation or amendments to existing laws in order to protect consumers and enhance trust in digital trading.

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Annex A. List of participants

Organization	Name
Electronic Certification Accreditation Council (ECAC)	Wajahat Khan
China Pakistan Economic Corridor (CPEC) Authority	Nadia Farooq
JAZZ	Ahsen Zaidi
Competition Commission of Pakistan (CCP)	Ahmed Qadir
	Mujtaba Ahmad Lodhi
Independent Expert	Dawood Yousafzai
Member Prime Minister Taskforce on IT	Parvez Iftikhar
National Institute of Health (NIH)	Dr. Muhammad Jamil
	Dr. Muhammad Wasif
United Nations Economics and Social Commission for Asia and Pacific	Yann Duval
	Witada Anukoonwattaka
	Martina Ferracane
	Nattabhon Narongkachavana
Federal Board of Revenue (FBR)	Iqbal Said
	Afnan Khan
Public Procurement Regulatory Authority (PPRA)	Abdus Salam
	Maryam Daud
National Tariff Commission (NTC)	Khizar Hayat
	Ahmed Sheraz
	Ghulam Qadir
Pakistan Telecommunication Authority (PTA)	Dr. Shahbaz Nasir
	Waqas Hassan
Ministry of Commerce (MoC)	Aisha Moriani
Ministry of Planning, Reforms and Special Initiatives	M Ali Kemal
Ministry of IT and Telecom (MoITT)	Raza Sukhera
	Fasieh Mehta
Pakistan Electronic Media Regulatory Authority (PEMRA)	Wakeel Khan
Ministry of Industries and Production (MoI and P)	Rabia Jamil
1-Link Limited	Syed Minhal Hussain
	Muhammad Shahzeb
	Adeel Asad

Board of Investment (BOI)	Rifat Parvez
Trade Development Authority of Pakistan (TDAP)	Shumaila Shahnaz
	Muhammad Naeem Tariq
Institute of Business Administration (IBA), Karachi	Aadil Nakhoda
Economic Affairs Division (EAD), Ministry of Economic Affairs	Naeem Akram
Small and Medium Enterprise Development Authority (SMEDA)	Maryam Anas
Planning Development Department, Government of Sindh	Obaid Khan
Pakistan Software Export Board (PSEB), MoITT	Osman Nasir
Pakistan Single Window Project, Federal Board of Revenue (FBR)	Aamir Khan
Technical Education and Vocational Training Authority (TEVTA)	Aamer Aziz
Unilever Pakistan	Fawad Ahmed
Sustainable Development Policy Institute (SDPI)	Vaqar Ahmed
	Uzma Haroon
	Shafqat Aziz
	Mahnoor Arshad
	Sahar Basharat
	Rabia Tabassum
	Adnan Hassan
	Maaz Javed
	Shahid Rasul
	Wasif Naqvi
	Ayesha Ilyas
	Asif Javed
Independent	Erum Shafi
	Mehboob-ul Hassan

Annex B. Recent interventions related to it and it-enabled services at the federal level

Department/Ministry	Initiatives	Purpose
State Bank of Pakistan (SBP)	Raast: Pakistan's Instant Payment System[49]	To facilitate instant government and retail payment settlements with efficiency and effectiveness
	National Payment Systems Strategy[50]	To develop and expedite clearing, settlement and recording of monetary and other financial transactions
	Roshan Digital Accounts (RDA) for non-Resident Pakistanis[51]	To enable non-resident Pakistanis to remotely open bank account in Pakistan through online digital portals
	Security of Digital Payments[52]	SBP issued notice to replace all the ATM cards with EMV chip-and-pin payment cards to ensure the security of digital payments
	Pakistan Real Time Interbank Settlement Mechanism[53]	To diminish the gap in cheque-clearing that took two weeks in distant areas of the country
Federal Board of Revenue (FBR)	Customs-WeBOC,	To facilitate traders by making goods declaration process effective and container tracking easier. Similarly, to facilitate them by giving an option to

[49] https://www.sbp.org.pk/dfs/Raast.html
[50] https://www.sbp.org.pk/dfs/NPSS.html
[51] https://www.sbp.org.pk/psd/2020/C5.htm
[52] https://www.sbp.org.pk/psd/2019/CL1.htm
[53] https://www.dawn.com/news/1532384/sbp-takes-measures-to-boost-digital-payments

	Export/Import e-Filing, Custom Valuation Gateways[54]	file, submit, refund and track their tax return status online
	Pakistan National Single Window[55]	An Act is introduced in 2019 to standardize information and documents using single entry point to accomplish all trade related regulatory requirements
	One-Window company registration facility[56]	To register firm in simple steps and in expedient manner
	Online Tax Payment System[57]	To facilitate tax payers by reducing time to pay taxes and reconciliation of tax payments.
National Telecommunication Corporation, MoITT	National Cloud Services[58]	To deliver better and faster digitally enabled public services to the citizens
Security and Exchange Commission of Pakistan (SECP)	SECP Digital Framework[59]	To allow investor to seamlessly open an account with the broker and ensure maximum investor protection
	End-to-end Automation of Process[60]	It is intended to ensure minimum human interaction in any process of SECP to promote transparency and efficient interaction with the customers
Board of Investment (BOI)	e-Services (online incentive database,	To facilitate the investors regarding existing policies and information prevailing in any specific sector

[54] https://www.fbr.gov.pk/Events/chairman-fbr-appreciates-the-services-of-paki/152556
[55] https://download1.fbr.gov.pk/Docs/2019721571628176FirstDraftPSWAct-2ndJuly,2019(1).pdf
[56] https://www.fbr.gov.pk/pakistan-doing-business-reforms/131265
[57] https://www.thenews.com.pk/print/294937-online-payment-system-launched-for-taxpayers
[58] https://www.dawn.com/news/1403820
[59] https://www.thenews.com.pk/print/753304-secp-approves-digital-framework
[60] https://www.thenews.com.pk/print/478024-secp-pushes-digital-transformation

	grievance registration, investment and trade statistics)[61]	
Ministry of IT and Telecommunication (MoITT)	e-Office Application[62]	To ensure effectiveness and transparency in delivery of public services. Also, to develop an integrated file and record management system
National Database and Registration Authority (NADRA)	Safe City Project[63]	Centralized database of citizens and vehicles supported by security cameras to ensure security
	e-Visa Portal	Companies that want to expatriate employees can now apply for through online visa application
	Ehsaas portal[64]	For quick registration, feedback and tracking of emergency cash distribution programme
CPEC Authority, Ministry of Planning, Reforms and Special Initiatives	Cross Border Optical Fiber[65]	To ensure continuous uninterrupted connectivity through alternate pathways
Ministry of National Health Services Regulations and Coordination (MoNHSR and C)	Hospital Management Information System[66]	To track how health system responds to domestic demand to health services. It helps to collect information through services and disease surveillance
Extension and Adaptive Research, Directorate General of Agriculture, Punjab	Farmers Facilitation through Modernized Extension[67]	To provide timely and effective information to farmers to improve crop productivity
Small and Medium Enterprise	Expert Advice,	To help businesses by providing online services like one-to-one expert advice, online consultation

[61] https://invest.gov.pk/e-services
[62] https://www.dawn.com/news/1205061
[63] https://www.nadra.gov.pk/solutions/security-solutions/safe-city-solutions/
[64] https://www.pass.gov.pk/Detailf90ce1f7-083a-4d85-b3e8-60f75ba0d788
[65] https://www.dawn.com/news/1593711
[66] http://www.emro.who.int/pak/programmes/health-managment-information-system.html
[67] http://ext.agripunjab.gov.pk/extension_service

Development Authority (SMEDA)	Online Business Helpline, Virtual Helpdesk	services etc.
	SMEDA One-window (SOW)	Aims to reduce start-up costs and increase time efficiency through its business professional and technical services

Annex C. Recent interventions related to it and it-enabled services at the provincial level

Department/Ministry	Initiatives	Purpose
Punjab Land Records Authority (PLRA) and Punjab Board of Revenue	Land Records Management Information System[68]	To provide online land record service delivery
Khyber Pakhtunkhwa Information Technology Board (KPITB)	Assasay[69]	Assasay is an assets management system, specially developed for the management of fixed assets of government departments
	Process Serving Agency[70]	PSA is both mobile and web application developed for the process automation of issuing of summons and notices from different courts
	IMTEEHAN KP IT Board's Computer Basted Testing[71]	Automated recruitment process provides a tool to benchmark candidates in a uniform manner, but most importantly it is the apparatus to ensure transparency and credibility
	KP Open Wi-Fi Program[72]	Providing seamless, high-speed, open Wi-Fi Internet access to consumers (students in particular) all over the province
Government of Balochistan	IT Park[73]	To help local IT and related business flourish and boost e-commerce in the province
Government of Sindh	Digital Transformation Authority[74]	To digitize all governmental procedures in the province

[68] https://www.punjab-zameen.gov.pk/
[69] https://www.kpitb.gov.pk/projects/assasay
[70] https://www.kpitb.gov.pk/projects/process-serving-agency
[71] https://www.kpitb.gov.pk/projects/imtehaan-kp-it-boards-computer-based-testing
[72] https://www.kpitb.gov.pk/projects/kp-open-wifi-program
[73] http://balochistan.gov.pk/departments/science-and-information-technology/
[74] https://propakistani.pk/2020/08/04/sindh-to-set-up-a-digital-transformation-authority-to-digitize-govt-data/

Annex D. Provincial departments interfacing with the digital sector

Domain	Punjab	Balochistan	Khyber Pakhtunkhwa	Sindh
Production and trade	Industries, Commerce, Investment, and Skills Development Department	Industries and Commerce Department	Department of Industries, Commerce, and Technical Education	Industries and Commerce Department
IT and ICT promotion	Information Technology Department	Science and Information Technology Department	Science and Technology and Information Technology Department	Information, Science and Technology Department
E-government initiatives	Punjab Information Technology Board		KP Information Technology Board	Sindh IT Advisory Committee
Tax policy for digital services	Punjab Revenue Authority	Balochistan Revenue Authority	KP Revenue Authority	Sindh Revenue Board
Public procurement of digital goods and services	Punjab Procurement Regulatory Authority	Balochistan Public Procurement Regulatory Authority	KP Public Procurement Regulatory Authority	Sindh Public Procurement Regulatory Authority
Legal regime for digital sector	Punjab Law and PA Department	Law anbd Parliamentary Affairs Department	Law, Parliamentary Affairs and Human Rights Department	Law, Parliamentarian Affairs and Criminal Prosecution Department, Govt. of Sindh
Consumer Protection	Directorate of Consumer Protection Council, Punjab		KP Consumer Protection Council	Sindh Consumer Protection Council (Notified)

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Annex E. Survey questionnaire

Questionnaire

The Sustainable Development Policy Institute (SDPI), in collaboration with ESCAP, is conducting an online survey on 'Measuring, Monitoring and Improving Performance in Regional Integration' and to develop a national action plan. This requires us to overview the current situation and determines the constraints and bottlenecks faced by the stakeholders belonging to different sectors involved in digital trade in Pakistan. Additionally, the COVID-19 pandemic has increased the importance of digital trade and regional coordination to bolster national efforts in dealing with the health crisis. In this context, the country-specific policy recommendations have to be developed to ensure that regional integration policy of Pakistan supports crossing the milestones on SDG-3 (ensure healthy life and promote wellbeing).

The following questionnaire is an effort towards assessing the constraints and the potential in digital industry of Pakistan. The gaps raised by the respondents will help in solving the existing bottlenecks and increase the level of digital trade in Pakistan.

Section I: Details of Respondent

a) Name of respondent	
b) Age	
c) Gender (male/female/transgender)	
d) Contact number (cell number preferable)	
e) Date of survey	
f) Designation	
g) Department	

Section II: Regulations on digital trade-related sector

Q 1. Is there any legislative measure which excludes or limits foreign firms and firms in digital sectors from public procurement under any circumstances?

a. Foreign digital firms are excluded from public procurement. If yes, please specify which is the related regulation: _____
b. Firms are not excluded, but there are other limitations on foreign participation in public procurement (e.g. foreign firms are only allowed to tender under certain conditions or need to undergo a special procedure for purchasing schemes, foreign firms are discriminated regarding price preferences for local content or LCRs applied on government procurement schemes related to digital goods and services). If yes, please specify which is the related regulation: _____
c. No such measure is in place.

Q 2. Is there any requirement in the legislation to surrender the patents, source codes or trade secrets or to use certain type of encryption to win tenders in public procurement?

a. Yes, there is requirement to surrender patents, source codes or trade secrets
b. There is requirement to use specific encryption or similar issues
c. No requirement in place

If yes, please specify the related regulation: _____

Q 3. Is there a requirement to engage in joint venture to invest in sectors related to digital trade (e.g. telecom sector, computer services sector, etc.)?

a. No such requirement in place
b. Yes, there is requirement. Please specify: _____

Q 4. Are there restrictions related to the application process or enforcement of local/foreign patents?

a. Strict restrictions are imposed
b. Horizontal restrictions like high transaction cost, time delays and other kind of difficulties are present
c. No such restriction in place

If yes, please specify the related regulation: _____

Q 5. There is a requirement for the disclosure of business trade secrets such as algorithms and source codes in order to provide a digital product/service to the Pakistani market?

a. Strict requirement for such disclosure
b. Such requirements are applicable to few cases
c. No such restriction

If yes, please specify the related regulation: _____

Q 6: In telecommunication sector, following one or more restrictions are present.

a. Refusal to provide interconnection
b. High prices are charged for interconnection
c. Preferred treatment for SOE
d. Other restrictions. Specify: _____

Q 7. Is there any prohibition on transfer of data outside the country?

a. Data transfers and processing outside the country is not allowed for certain sectors.
   Please specify: _____
b. Data cannot be transferred in some specific country (ban to data transfer).
   Please specify: _____
c. Data transfers are allowed but with the permission of concerned authority.
   Please specify: _____
d. No restriction

Q 8: Licensing requirement for telecommunication companies is:

a. Very strict
b. Not strict at all
c. Any other observation: _____

Q 9. Is there a safe harbor for the firms to shield them from liability of third party content?

a. No third party shield from liability in place
b. Safe harbor is in place, but there are exceptions on the scope of the shield (e.g. only for copyright, not other illegal activity etc.)
c. Safe harbor is in place that limits the liability for intermediary

Please specify the related regulation: _____

Q 10. Is there any kind of user identity requirement or monitoring requirement?

a. No such requirement in place
b. Identity requirement is in place. Please specify: _____
c. Monitoring requirement is in place for intermediaries. Please specify: _____

Q 11. What is the situation of blocking or filtering of commercial web content?

a. No case of blocking or filtering is observed (except internationally agreed illegal content)
b. Case of blocking or filtering foreign commercial services is observed
   Please Specify: _____

Q 12. Is there any kind of discriminatory use of license scheme/application for Internet services providers and other digital services?

a. No discrimination is observed
b. If yes, Please Specify: _____

Q 13. Are there Local Content Requirements (LCR) applied on products for the commercial local market?
(LCR regards to policies imposed by governments that require firms to use domestically-manufactured goods or domestically-supplied services in order to operate in an economy)

a. At least one LCR is applied on sector related to digital trade
b. More than one LCR is applied on digital trade sector
c. No LCR is applied on any sector belong to digital trade

If yes, please specify: _____

Q 14. Is there any kind of restriction for foreign businesses to participate in the standard setting environment?

a. No such complaint is observed
b. Complaints are observed. Please specify: _____

Q 15. What kind of regulations are in place in terms of self-certification of digital products?

a. Self-certification is allowed for foreign firms
b. It is allowed for domestic/local businesses only
c. Self-certification is not allowed, but third-party certification from number of countries is accepted (Mutual Recognition Agreement, MRAs)
d. Self-certification is never allowed

Q 16. Are there measures for screening/testing of ICT products and network equipment?

c. Yes, please specify: _____
d. Yes, but third party testing is accepted. Please specify: _____
e. No such measures are in place

Q 17. Are there any digital trade product banned from local market on grounds of national security?

a. If yes, specify names of such products _____
b. No such ban exists

If yes, please specify the regulations: _____

Q 18. Are following restriction are present related to online sales and transactions?

a. Strict requirements are in place to obtain credit card (Yes / No).
   If yes, please specify: _____
b. There are restriction/limitations on e-payment and other forms of online payment services (Yes / No)
c. There is lack of legal framework for electronic transactions (Yes / No)

If any other observation, please specify: _____

Q 19. Are there any restrictions on registration of domain names?

a. Requirement to have a local domain for electronic retail. Please specify: _____
b. Requirement for local presence in order to have local domain name. Please specify: _____
c. No such restrictions are in place

Q 20. Is the legal framework for consumer protection purchasing online defined in a way that creates restrictions for companies?

a. Yes, please specify: _____
b. There is no consumer protection for online purchasing
c. There is a framework, but it does not create restrictions

Q 21. Is there any kind of restriction to online sales?

a. Strict licensing requirements are there for online sale
b. There are restriction on delivery of products
c. Any other response, please specify: _____

Q 22. What is the situation of deregulation in telecommunication market?

a. Not properly deregulated or no foreign ownership of telecommunications
b. Deregulated but access networks is owned by incumbent
c. Deregulated, and access networks are in separate legal entity from incumbent

Please specify any other observation: _____

Q 23. Is there any requirement for the firms to perform privacy impact assessment or to have a data protection officer?

a. Such requirement is there across all sectors
b. Applicable to some sector
c. No such restriction is applicable
d. Such requirement is there only for foreign firms

Please specify the related regulation: _____

Q 24. Are Mandatory encryption standards in place that is different from international standards?

a. If yes, please specify (_____)
b. No such standards in place

Section III: Indicators related to the computer services sector

Q 25. Do you encounter any restriction on taxes, including tax declaration?

a. No
b. Yes (Please specify ……)

Q 26. Is there any kind of dispute settlement mechanism to resolve disputes arising from cross-border digital trade?

a. No
b. Yes (Please specify _____)

Q 27. Telecommunications service providers to respond favourably to reasonable requests for interconnection, including from foreign firms, at any technically feasible point in the network.

a. Strongly agree
b. Agree
c. Disagree
d. Strongly disagree
e. Any other response: _____

Q 28. When interconnection (one-way or two-way) is mandated, the regulator typically requires that a dominant firm applies equivalent conditions in equivalent circumstances to other undertakings providing equivalent services.

a. Strongly agree
b. Agree
c. Disagree
d. Strongly disagree
e. Any other response: _____

Q 29. Dominant supplier in telecommunication sector makes public specified information available such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, and prices.

a. Yes
b. No

If any other observation, please specify: _____

Q 30. As a regulatory remedy, vertical separation is mandatory in telecommunication sector. (Vertical separation is an extreme measure designed to prevent market power, open the telecommunication market, and reduce price discrimination).

a. Yes
b. No

If any other observation, please specify: _____

Q 31. Non-discriminatory Internet traffic management is mandatory that entails Internet service providers or broadband service providers accord equal treatment to all Internet data that passes through their network.

a. Yes
b. No

If any other observation, please specify: _____

Q 32. Are there any dominant firms in the sector that affects the overall sector performance?

a. There is at least one dominant firm in the market
b. There is no dominant firm in the market

If any other observation, please specify: _____

Q 33. Are there any kind of restrictions in place on the use of telecommunication services i.e. restrictions on Internet access, blocking of VPN etc.

a. Yes
b. No

If any other observation, please specify: _____

Q 34. Is there any threshold above which a foreign investment project is subject to screening?

a. Yes
b. No

If any other observation, please specify: _____

Q 35. There exists a regulatory channel to redress when firm faces practices which restricts the competition in the given market.

a. Yes (Please specify the regulation: _____)
b. No

Q 36. Is there any kind of restriction affecting the use of electronic payments and credit services? (Example includes imposing ceilings on the maximum amount that can be paid for by electronic payment methods)

a. Yes (Please specify the regulation: _____)
b. No

Q 37. Is there any discrimination in tax treatment? (Private sector)

a. No such discrimination is observed
b. Such discrimination happens but not often (only one or two cases are observed)
c. Yes, there is sufficient evidence on discrimination in tax treatment.

Please specify: _____

Note

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