



Enhancing the Competitiveness of Pakistan's Computer Services Exports



JUNE 2022

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Acknowledgements

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The Pakistan Business Council: An Overview

The Pakistan Business Council (PBC) is a business policy advocacy platform, established in 2005 by Pakistan's largest private-sector businesses and conglomerates, including multinationals. Currently, PBC's membership stands at 96 and covers nearly all sectors of the formal economy.

The PBC is a not-for-profit entity, registered under Section 42 of the Companies Ordinance 1984. It is a pan-industry advocacy group. It is not a trade body that advocates for any specific business sector. Rather, its key advocacy thrust is on easing barriers to allow Pakistani businesses to compete in regional and global arenas. The PBC conducts research and holds conferences and seminars to facilitate the flow of relevant information to all stakeholders in order to help create an informed view on the major issues faced by Pakistan.

The PBC works closely with relevant government departments, ministries, regulators and institutions, as well as other stakeholders including professional bodies, to develop consensus on major issues which impact the conduct of business in and from Pakistan. The PBC has submitted key position papers and recommendations to the government on legislation and other government policies affecting businesses. It also serves on various taskforces and committees of the Government of Pakistan as well as those of the State Bank, the SECP and other regulators with the objective to provide policy assistance on new initiatives and reforms.

The PBC's Founding Objectives

The major objectives of the PBC as stated in its founding documents are:

- To provide for the formation and exchange of views on any question connected with the conduct of business in and from Pakistan.
- To conduct, organize, set up, administer and manage campaigns, surveys, focus groups, workshops, seminars and fieldwork for carrying out research and raising awareness in regard to matters affecting businesses in Pakistan.
- To acquire, collect, compile, analyze, publish and provide statistics, data analysis and other information relating to businesses of any kind, nature or description and on opportunities for such businesses within and outside Pakistan.
- To promote and facilitate the integration of businesses in Pakistan into the World economy and to encourage in the development and growth of Pakistani multinationals.
- To interact with governments in the economic development of Pakistan and to facilitate, foster and further the economic, social and human resource development of Pakistan.

The PBC's Member Companies



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Acronyms

AR	Augmented Reality
AI	Artificial Intelligence
ASEAN	Association of Southeast Asian Nations
BPM6	Balance of Payments and International Investment Position Manual
BIT	Bilateral Investment Treaty
СРС	Central Product Classification
DTAA	Double Taxation Avoidance Agreement
DTI Philippines	Department of Trade and Industry-Philippines
EBOPS	Extended Balance of Payments Services Classification
FDI	Foreign Direct Investment
FTZ	Free Trade Zone
GATZ	General Agreement on Trade in Services
GCI	Global Cybersecurity Index
GDP	Gross Domestic Product
GCI	Global Competitiveness Index
GEI	Global Entrepreneurship Index
GII	Global Innovation Index
ІСТ	Information & Communications Technologies
IDC	International Data Cooperation
IDI	ICT Development Index
п	Information Technology
ΙΤΑ	Information Technology Agreement
ΙΤυ	Information Technology University
ΜΟΙΤΤ	Ministry of Information Technology & Telecommunication
MSITS-2010	Manual on Statistics of International Trade in Services
NTBs	Non-Tariff Barriers
OECD	Organization for Economic Co-operation and Development
PEZA	Philippines Economic Zone Authority
PKR	Pakistani Rupee
PSEB	Pakistan Software Export Board

RC	Revealed Competitiveness
RCA	Relative Comparative Advantage
RCEP	Regional Comprehensive Economic Partnership
R&D	Research and Development
RTA	Relative Trade Advantage
RXA	Relative Export Advantage
SATIS	SAARC Agreement on Trade in Services
SBP	State Bank of Pakistan
SECP	Security and Exchange Commission of Pakistan
STI	Science, Technology and Innovation
STPI	Software Technology Parks of India
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TISA	Trade in Services Agreement
TRIPS	Trade-Related Aspects of Intellectual Property Rights
UAE	United Arab Emirates
UNCTAD	United Nations Conference on Trade and Development
USD	United States Dollar
VR	Virtual Reality
WEF	World Economic Forum
WTO	World Trade Organization

Executive Summary

The Services Sector 🛛 💻

- The services sector has been growing rapidly over the last 40 years. Value added services contributed 65.0% to the world's GDP and 50.6% of total employment in 2019 (The World Bank, 2021).
- As of 2020, developed countries dominate the global services trade where their share in world services exports was 71.8%. However, developing countries have also been witnessing growth in their services exports. From 2011 to 2020, developing countries have had an annual growth of 1.3% in exports of services.
- Due to the COVID-19 pandemic, the world's services demand shifted from Classification 4, Travel (which mainly involves tourism) to services that involve online communication or those that can be performed while working from home such as Classification 9, Telecommunications, computer, and information services which have witnessed a 4.1% growth between 2019 and 2020.
- Pakistan was ranked as the 69th exporter and 63rd importer for services in the world in 2020.
- Pakistan's services exports in FY21 were about \$5.9 billion and imports were about \$7.8 billion (State Bank of Pakistan, 2021).
- In Pakistan, the value-added services sector contributed 53.8% to the GDP in 2020 and the services sector provided 38% of employment in 2019 (The World Bank, 2021).



Top 5 Services Exports and Imports for Pakistan in 2020 and 2021

Classification 9, Telecommunications, computer, and information services

- Globally, Classification 9, Telecommunications, computer and information services have witnessed the highest CAGR of 9.9% during 2016-2020. This classification constituted 14.3% of the total services exports in 2020.
- Pakistan ranked 45th amongst exporters of Classification 9, Telecommunications, computer and information services in 2020.
- Pakistan's Classification 9, Telecommunications, computer and information services exports had a CAGR of 22.5%, while imports had a CAGR of 9.4% between 2017& 2020. In FY21, Pakistan had a surplus of 1,564.2 million in the Classification 9, Telecommunications, computer and information services.
- Classification 9, Telecommunications, computer and information services exports made up about 32.0% of Pakistan's total services exports in 2020.

This report is the third in the Pakistan Business Council's (PBC) series on the services sector. This report will primarily focus on Pakistan's IT sector and its services exports under Classification 9.2, Computer services.

Classification 9.2, Computer services (IT Services)

 Globally, Classification 9.2, Computer services constituted about 78.9% of Classification 9, Telecommunications, computer, and information services exports from 2016-2020.

Pakistan's Classification 9.2, Computer Services Trade



Exports' Amount

Exports amounted to \$1,666.3 million in FY 21. Exports made about 78.6% and imports made 82.6% of the total trade under Classification 9, Telecommunications, computer and information services in FY21.



Growth in Exports

Pakistan ranked 7th amongst the countries that witnessed the highest growth of 36.0% in Classification 9.2, Computer services exports between 2019 & 2020. Exports grew by 50.3% between FY20 & FY21.

Rank



World: 31st in Exports and 40th in Imports amongst reporting economies in 2020.Developing Countries: Pakistan's Classification 9.2, Computer services exports rank 14th amongst the reporting developing countries.

South Asia: Pakistan's Classification 9.2, exports rank 2nd in South Asia, India being 1st.

Pakistan's IT Sector Highlights

300,000 IT Professionals in 2021

25,000 IT Graduates each year

71.4 million

FDI in 2021, with a 60.1% growth over FY20

Ranked 4th Most Popular Country for freelancing

in 2019 and 8th fastest growth in freelancing during 2019-20

Over 10,000 tech companies

actively registered with PSEB

IT sector has 12th Highest Average Salary

in Pakistan as in 2021

FDI into the IT sector

- FDI into the IT sector amounted to \$71.4 million out of which \$55.2 million (77.3%) went to IT services.
- During FY17 to FY21 of the total FDI only 1.2% went to the Information Technology sector.

Exports

• A 1.0% increase in the value of the USD against the PKR led to a 1.0% increase in exports in the FY13 to FY21 period.

Imports

 A 1.0% increase in the value of the USD against the PKR led to a 0.7% increase in imports in the FY13 to 21 period.

Pakistan's Top 10 Trading Partners 🛑

	Export Destinations		Export	Import Partners	
Rank	Country	Exports FY21 \$ Million	Country	Imports FY21 \$ Million	
1	U.S.A.	1,027.8	Singapore	84.0	
2	U.A.E.	118.0	U.K.	68.9	
3	U.K.	100.6	U.A.E.	48.8	
4	Singapore	51.5	U.S.A.	48.2	
5	Canada	39.8	Ireland	43.9	
6	Ireland	37.3	China	17.5	
7	Malaysia	35.5	Qatar	16.1	
8	Germany	31.4	Netherlands	15.0	
9	Norway	30.2	Hong Kong	12.1	
10	Sweden	22.8	Switzerland	9.3	

Pakistan's Top 10 Trading Partners in Classification 9.2, Computer Services Trade

Source: State Bank of Pakistan (2022)

Pakistan's Competitiveness

Pakistan's competitiveness in the world can be seen through Market Share in global exports for Classification 9.2, Computer Services Exports, Change in Market Share, and Relative Comparative Advantage (RCA) indexes of Balassa 1965 and Greenway & Milner 1993. It is better to compare competitiveness of a country like Pakistan with countries that have similarities. The top 15 developing countries in Classification 9.2, Computer services were analyzed to calculate comparative indexes like Relative Export Advantage (RXA), Relative Trade Advantage (RTA) and Revealed Competitiveness (RC).

Pakistan's Competitiveness Indicators

Market Share		Percentage	Balassa	Greenway &	RXA	RTA	RC
2019	2020	Change in Market Share	1965 RCA	Milner 1993 RCA	IIAA		
0.2	0.2	26.6	2.1	5.0	0.3	0.7	0.7

Pakistan has a low market share of 0.2% even though all the indexes show that Pakistan has a Revealed Comparative Advantage in Classification 9.2, Computer Services, not only in the world but also amongst developing countries.

Major Incentives Given to Pakistan's IT sector

Pakistan needs to improve the incentives it provides to the IT industry. To determine where Pakistan lacks in its incentives, a two-step process has been followed:

First, available incentives have been divided into categories based on the policy framework of the Information for Development Program/The World Bank Report (2008). The incentives mentioned in this report are focused on IT services but where equipment or other facilities are connected to services, the entire IT sector incentives are reviewed.

Second, the incentives under each category are compared with 4 other developing countries that are among the top10 developing countries in Classification 9.2, Computer services exports in 2020. These 4 countries are India, China, U.A.E. and the Philippines, taken for comparison due to their comparability with Pakistan.

The areas of concern have been highlighted. The available policies are as follows:

Fiscal Policies

Direct Tax concessions and waivers:

- Tax holiday for IT startups with no minimum tax or withholding tax for 3 years.
- Accelerated depreciation at 30% on computer equipment.
- 100% Income Tax Credit and on Withholding tax for IT services exporters.

Cause of concern:

Shift from Tax Exemption Regime to Tax Credit Regime has added time and costs to registered IT firms. It was announced that Tax Exemption will be restored but has not been implemented.

Indirect Tax concessions and waivers:

- Concessionary sales tax of 5% in KPK and 6% in Balochistan on IT services exports/domestic sales compared to the standard 15% sales tax on exports of services.
- Exemptions on sales tax on IT services exports/ domestic supply available in Islamabad and other Federal Territories, Sindh and Punjab.

Cause of concern:

- There is disparity amongst provinces when it comes to sales tax imposed on services exports. Some territories have exempted exports from tax while others have concessions.
- 5% sales tax on imports of computers, laptops and accessories has been levied in 2021 along with 3% additional duty and 17% ad valorem duty on CBUs.

Subsidies, grants, incentives and other financial support:

- Working capital financing given for SMEs (Small: Rs. 25 million, Medium: Rs.50 million).
- Provision of low rent space in Software Technology Parks (STPs)
- Provision of Bank loans to IT Industry at 5% rates under consideration under the export finance scheme.
- Funds set up to provide 5% cash back rewards to IT companies against their exports, this is to be implemented soon.

Cause of concern:

Countries like India, China, and the Philippines offer a larger number of incentives for the IT sector in terms of Power & telecom tariff/ Inputs subsidies. In India, states like Chandigarh offer 50% reimbursement on purchase of technology. China offers credit on VAT paid on inputs. Philippines has zero-rating VAT on land-based telecommunications, electrical power, water bills, and leases on buildings.

A little more is desired when it comes to power and telecom subsidies, where the benefit is at present available only in Sindh. However, the differences in benefits offered across states is evident in India also.

Recently, the advance tax on telecom services has been increased from 10% to 15% under the Finance (supplementary) Act, 2022. Increase in tax to 15% on telecom services affects the affordability of internet and data services, it might also affect the Classification 9.2, Computer services exports adversely.

Telecommunication services involving charges payable on the international leased lines or bandwidth services used by software exporting firms registered with the PSEB¹ in Sindh has been withdrawn in Sindh and appliable to be charged at the standard rate. This has led to rise in costs.

Innovation Policies

Research and Development Support (R&D Support):

- Direct funding provided through National ICT R&D Fund (Ignite), which has been operational since 2006. Ignite has funded several research projects through innovation grants with revenue generated of about Rs. 346.1 million as of 2021.
- 100% deduction is allowed for research and development expenditure incurred in Pakistan (applicable till 2021).

Intellectual Property Rights Protection (IPR):

Amendments made in 5 ordinances including Patents, Copyright, Registered Designs Acts, according to TRIPS (agreement of the WTO).

Providing incubation facilities and services:

Start-up incubation program as per the Digital Pakistan Policy 2018 has set up 5 regional NICs through the Ignite National Technology Fund.

Human Capital Policies

Formulating educational policies & curriculum with a focus on IT sector requirements:

- Technology incorporated into Early Childhood Care and Education in the Single National Curriculum.
- Private and foreign sector involvement is high in the field of IT due to high employer demand.

Cause of concern:

Pakistan is still in need of talent to excel in the IT field. There are diploma programmes offered by local and foreign institutions in Pakistan, but there is little awareness about them. Pakistan needs to incorporate more emphasis on IT education at a school level like China has compulsory IT education in secondary school. Philippines has System Programming skills and computer skill development included in the curricula. Similarly, U.A.E. has IT education integrated from grade 6 onwards.

Supporting training & capacity building initiatives:

Collaborations with private sector for trainings & development of IT sector such as the Saylani Mass
 IT Training Program and the E-Rozgaar Program.

Facilitating employment creation and attracting talent:

- To attract Pakistanis living abroad to contribute to Pakistan's sectors, especially the IT sector, Pakistan has established scholar programs, developed national databases of diaspora (experts in their fields) living abroad and eased process of returning Pakistanis aiming for experts to serve in Pakistan on a short-term basis as HEC's fellows programme. Pakistan also offers Dual Citizenship to attract local talent residing abroad.
- Amongst the countries compared, Pakistan has many favorable policies for freelancers with are:
 - Freelancers allowed to open a special dollar account.
 - Inward remittance limit for freelancers enhanced to \$25,000/individual/month.
 - 35% of export earnings received through home remittance channel can be used to make payments abroad.
 - Drafted the National Freelancing Policy 2021.
 - Exemption/ concession from sales tax and Income Tax Credit is available to freelancers exporting IT services.

Cause of concern:

- Pakistan has not focused on creating employment and attracting foreign talent as other countries like U.A.E., Philippines and China have.
- Pakistan also has a complicated visa procedure that discourages foreign talent.
- The U.A.E. has introduced special visas to attract qualified labor, including freelancer's visa. This can lead to an increase in future brain drain from countries like Pakistan.

Investment Policies

Simplified institutional and implementation framework:

- The IT sector has been given attention in policies, such as the Digitization Policy 2018, a target for increasing competitiveness in the Policy Vision 2025, Cloud First Policy and the Personal Data Protection Bill 2021
- Overseas Pakistanis Foundation (OPF) has established Investment Facilitation Centre (IFC) for Pakistanis living abroad for investment in sectors including IT.

Cause of concern:

- The IT sector is not been declared as a priority sector, whereas the Telecom sector has been given more importance.
- Pakistan Single Window for exports was launched in 2022, however there still isn't a particular window for the IT sector or services.

Facilitating cross-border investments & trade in products and services:

- Double taxation Agreements (DTAs) with about 65 countries that benefits IT services trade as well.
- Up to 100 percent foreign ownership of IT firms permitted and 100% repatriation of dividend and investment allowed to foreign IT investors.

Cause of concern:

- Pakistan's low FDI inflow is of a concern as it makes up only 0.82% of the GDP, which is low even when compared to the average of lower income countries, where it is 2.7%.
- Pakistan has 32 BITs in force, out of which 23 are in the process of being terminated due to cases lodged by foreign investors.
- Even though Pakistan has signed Trade Agreements in services, they are limited to 3 and not utilized properly, where non-tariff barriers like restrictions on foreign entry, restrictions to movement of people, barriers to competition, regulatory transparency, and other discriminatory measures were not eased.

Enabling development of e-Commerce/e-Government:

Pakistan has the legislations for recognizing legal validity of digital signatures & transactions and the Prevention of Electronic Crimes Act, 2016.

Cause of concern:

There is little awareness about acts such as the Prevention of Electronic Crimes Act, 2016.

Venture capital (VC)/private equity market development:

• Funding for startups through Ignite, HEC, Tech Destination Pakistan and others. The Government has plans to set up a Venture Capital fund for the IT sector.

Cause of concern:

There is not a single government venture capital fund dedicated to the IT sector, however there has been funding for startups through Ignite, HEC and other organizations.

Facilitating development of enabling infrastructure, leveraging spill over benefits:

- Under Public-Private Partnership Act 2017 has been implemented. Total 118 financially closed projects have been established since 1990 which is the development of infrastructure and telecommunications.
- De-regulation policy for the Telecommunication sector in 2003 led the way for foreign investment.
- About 17 IT parks have been set up.

Cause of concern:

The current IT parks do not offer as many facilities as the IT parks in other countries and an Economic Zone is still not set up for the IT sector.

Pakistan's Indicators of Performance

Pakistan has improved its index for the ease of doing business in 2020 from 136 in 2019 to 108. Pakistan is lagging behind the selected competitor developing countries in Competitiveness, Cybersecurity and Innovation indexes. Pakistan also lags behind in ICT, Skills and R&D ranking.

Countries	GCI (Global Competitive Index) 2019 0-100	GCI (Global Cybersecurity Index) 2020 0-100	GII (Global Innovation Index) 2020 0-100
U.A.E.	75.0	98.1	25.3
India	61.4	97.5	35.6
China	73.9	93.5	53.3
Philippines	61.9	77.0	35.2
Pakistan	51.4	64.9	22.3

Indexes for Global Competitiveness, Cybersecurity and Innovation

ICT, Skills, and R&D Ranking of Selected Countries 2020

Countries	ICT Ranking	Skills Ranking	R&D Ranking
Singapore	4	9	18
U.A.E.	34	57	38
Malaysia	29	65	33
India	93	108	4
China	99	96	1
Philippines	76	88	46
Pakistan	145	146	60

Industry Insights

Industry insights were collected through qualitative interviews of 20 respondents of the IT services industry that represent different sub-sectors. The responses were analyzed through using Porter's Diamond Model.

Firm Strategy, Structure and Rivalry

The IT services industry is fragmented and consists of the following segments categorized from the smallest to the largest in number:

- 1. Large companies
- 2. Mid-level Organizations
- 3. Small companies
- 4. Freelancers

Major competitors for the private firms are:

Export Market		Domestic Market
International	Domestic	
India, Eastern and Northern Europe, Philippines, Caribbean, etc.	Mid-level Organizations face competition from startups Small organizations face competition from freelancers	Government International software developers like U.S. and Turkey

Factor Conditions

The following factors are required by the IT services industry and their features are as follows:

Human Resources	Equipment	Capital/ Finances	Internet	Infrastructure
- Shortage of talented HR	- Taxation on imports of hardware, computers, laptops	 Financial shortages in acquiring large contracts 	- Good quality and affordable	- Hybrid working structure
-Increasing salaries -Lack of work place ethics	and other equipment - Depreciation is making purchase of software expensive	- Difficulty obtaining collateral free loans	- Occasional disruptions	 High rents in cities Increasing electricity costs



Demand Conditions

Domestic Market	International Market
 Lack of incentives (regulatory and taxation) Unfair competition with the government Lack of awareness of domestic firms with regards to the IT services Depreciating PKR makes the international market more attractive and reduces profit margins of domestic IT services providers 	 Major exports of Pakistan are to the U.S.A. being 61% of the IT services market in FY21 Concentration of IT services exports are of mainstream IT services

Related and Supporting Industries

Hardware and equipment: Local vendors in the IT industry that import hardware and equipment.

Legal/ Tax consultation: Large companies have a legal/tax department, other companies hire tax consultant companies to handle legal and tax related matters. Software house trade associations like P@sha also support Small- Medium sized companies in filing taxes or adapting to any regime/ policy change.

Internet Service Providers (ISP): Competition exists between ISPs and satisfactory services are provided.

Government

Incentives such as tax holiday for IT startups, working capital financing, etc. have provided tremendous support to the IT services industry. However, there are some concerns with the role of government in the IT services industry:

- Inconsistent Policies
- Lack of consultation of Major Stakeholders
- Discouraging policies
- Role as a competitor rather than as a catalyst
- Lack of support from government authorities/ institutions

Chance

Covid-19 has acted as a catalyst for the IT services industry, leading to growth in exports, industry, revenues, employment and improvement in the country's image. However, growth in exports of the IT services industry had started increasing from FY18-19, this indicates that the surge in IT services is not only chance related but due to the gradual global shift towards technology.

SWOT Analysis 📃

Strengths	Weaknesses
 Resilient Mindset Good quality IT services at competitive prices Comparatively lesser infrastructural investment is required Good quality and affordable internet infrastructure Frequent travel and transportation are not required Remote and hybrid working 	 Trend of IT services in Pakistan started late Difficult to work in the domestic market Limited number of large organizations Lack of proper facilities in technology parks Lack of branding and business promotion Industry-Academia gap Lack of exportable quality original software in Pakistan Lack of ethics among the young workforce
Opportunities	Threats
 Young and enthusiastic population Good English Skills Relatively lower cost of doing business Financing for Global Operations has been improving Pakistan's Time Zone IT services global demand is increasing High paying emerging technology services Depreciating Pakistani Currency Pakistan's image in the international market is improving Pakistan can increase exports in Europe and other similar regions Outsourcing software Local manufacture of computer, laptops, hardware, and other equipment 	 Courts not equipped to handle IT related cases in Pakistan Pakistan's Image in fragile Inconsistency of policies Policies that discourage growth of IT companies Brain Drain Rising costs Disruptions in internet connectivity Difficulty obtaining finances Lack of PR abroad Lack of accurate statistics on the IT industry which hinders policy making and planning Difficulty in expanding business abroad

Recommendations

Factor related Recommendations

- Bridge the Industry-Academia gap.
- The Banking Sector needs to be educated regarding lending to the IT services industry.
- Government Backed Venture Capital Funds are required.

- Local manufacture of hardware, computer, laptops and accessories are required.
- Encourage more women into the workforce.
- Provide Subsidized Electricity, similar to what is provided to the export sectors.

Policy/Legislative related Recommendations

- Laws need to be devised for the IT services industry.
- Specialized courts should be designated for handling cases related to IT services Industry.
- More inclusive representation in federal institutions and consultative forums.
- Consistency of policies and their proper implementation.
- Policies targeted at attracting talent from abroad.
- Rationalization of Taxation.

Recommendations for the Structure of the IT industry

- Encouragement for the formation of large companies.
- Accurate statistics on the IT services industry for policy making.

Demand Related Recommendations

 Government needs to act as a catalyst rather than a competitor in the Domestic IT services market.

Trade Related Recommendations

- Setting up a Special Economic Zone (SEZ).
- FTAs should be signed to facilitate freedom of movement.
- Need to focus on exporting High-end services.
- Improve Pakistan's Image and PR abroad.



CHAPTER 1

INTRODUCTION

information

1.1 The Services Sector —

The world economy has undergone significant changes over the years. The rise of the services sector in the past 40 years is one of these changes. Value added services contributed 65.0% to the world's GDP and 50.6% of total employment in 2019 (The World Bank, 2021).

As the services sector grows globally, the trade in services has also been gaining importance. Trade in services is defined as the sale and delivery of a service between a producer and a consumer based in different countries. The OECD describes trade in services as "the exchange of ideas, know-how and technology".

As of 2020, developed countries dominate the global services trade where their share in world services exports was 71.8%. However, developing countries have also been witnessing growth in their services exports. From 2011 to 2020, developing countries have had an annual growth of 1.3% in exports of services.

Services trade is classified under the Balance of Payments and International Investment Position Manual (BPM6) and Extended Balance of Payments Services Classification (EBOPS 2010) which is aligned with the classification of the Manual on Statistics of International Trade in Services (MSITS-2010) of the United Nations.

Table 1-1 lists the categories of services trade.

BPM6 Code/EBOPS 2010 Classification	Categories	
SOX	Memo Item: Commercial services	
1	Manufacturing services on physical inputs owned by others	
2	Maintenance and repair services, n.i.e.	
3	Transport	
4	Travel	
5	Construction	
6	Insurance and pension services	
7	Financial services	
8	Charges for the use of intellectual property, n.i.e.	
9	Telecommunications, computer, and information services	
10	Other business services	
11	Personal, cultural, and recreational services	
	Non-commercial services	
12	Government goods and services	

Table 1-1: Categories of Services Trade

Figure 1-1 shows the top 5 services in 2020 in terms of revenue.

Due to the COVID-19 pandemic, the world's services demand shifted from Classification 4, Travel (which mainly involves tourism) to services that involve online communication or those that can be performed while working from home. Classification 9, Telecommunications, computer, and information services have performed well during the pandemic. Classification 9, Telecommunications, computer, and information services have munications, computer, and information services have performed well during the pandemic. Classification 9, Telecommunications, computer, and information services have witnessed a growth in exports of 4.1% during 2019 and 2020, while Classification 10, Other business services and Classification 3, Transport witnessed a decline in their export revenues from 2019 to 2020 as shown in Figure 1-2.





Source: UNCTAD (2021a)

Figure 1-2: Percentage Change in the Top 5 Services Categories from 2019 to 2020



Source: Author's Calculations based on UNCTAD (2021a) data

1.2 Classification 9, Telecommunications, computer, and information services

Exports under Classification 9, Telecommunications, computer, and information services have been witnessing high growth with a Compound Annual Growth Rate (CAGR) of 9.9% between 2016-2020.

Compound Annual Growth Rate (CAGR)

The CAGR is the rate of growth of a value over a period of time. Basically, it represents the rate at which the value has grown over a time period if it had grown at the same rate every year. The formula is as follows:

$$CAGR = \left[\left(\frac{V \text{final}}{V \text{begin}} \right)^{1/n} - 1 \right] \times 100$$

Where "V final" is the final value, "V begin" is the beginning value and "n" is the number of leaps.

Rank	BPM6 Code	Categories	CAGR % (2016-2020)
1	9	Telecommunications, computer, and information services	9.9
2	7	Financial services	4.5
3	11	Personal, cultural, and recreational services	4.2
4	10	Other business services	4.1
5	1	Manufacturing services on physical inputs owned by others	3.3

Table 1-2: World's highest growing services exports categories between 2016-2020

Source: Author's Calculations based on UNCTAD (2021a)

Classification 9, Telecommunications, computer, and information services share in total services has been continuously increasing. In 2020, this classification constituted 14% of total services exports. The share of Classification 9, Telecommunications, computer, and information services has been increasing over the years, especially since the COVID-19 pandemic due to which the share increased from 11.0% to 14.3%.





Source: UNCTAD (2021a)

The IMF has recommended classification categories under the BPM6/ EBOPS 2010 classification, but countries can deviate from this classification due to practical reasons such as not having the requisite source data or national relevance. The BPM6 classification divides Classification 9, Telecommunications, computer, and information services into three main sub-categories: 9.1, Telecommunication services, 9.2, Computer services, and 9.3, Information services as shown in Figure 1-4. Deviation is witnessed within this classification also. For example, India adds more detailed data using a national classification for software, and other IT -enabled services (IMF, 2014). In Pakistan, the State Bank of Pakistan deviates from the sub-categories defined under the Category Classification 9.2, Computer services, which is further discussed in Chapter 2.

From 2016-2020, Classification 9.2, Computer services constituted about 78.9% of Classification 9, Telecommunications, computer, and information services exports. In 2020, Classification 9.1, Telecommunications services and Classification 9.3, Information services witnessed a fall in their exports over 2019, but Classification 9.2, Computer services exports increased in 2020. Exports under sub-category Classification 9.2, Computer services is growing and contributing to a rise in exports under Classification 9, Telecommunications, computer, and information services.

Figure 1-4: BPM6/EBOPS-MSITS 2010 Classification 9, Telecommunications, computer, and information services

- 9 Telecommunications, computer, and information services
 - 9.1 Telecommunications services
 - **9.2 Computer services**
 - 9.2.1 Computer software of which 9.2.1 a Software originals
 - 9.2.2 Other computer services
 - **9.3 Information services**
 - 9.3.1 News agency services
 - 9.3.2 Other information services



Figure 1-5: World Exports under Classification 9, Telecommunications, computer, and information services

Source: UNCTAD (2021a)

During 2020, Classification 9.2, Computer services experienced an 8% growth in exports. Exports under Classification 9.2, Computer services are the fastest growing classification over the past 10 years driven by increased digitalization and a shift towards remote working. Figure 1-6 shows the top 10 countries that experienced the highest increases in Classification 9.2, Computer services exports in 2020 over 2019. Pakistan ranks 7th in this list.





Source: WTO (2021)

1.3 Global Statistics on ICT (Information and Communication Technologies)

The BPM6 trade category, Classification 9, Telecommunications, computer, and information services are commonly known as "ICT services." On the other hand, "ICT-enabled services" including human resource management, payroll, accounting, architectural design, research, editing, education, and so on come under Classification 10, Other Business Services.

This study's focus is on the sub-classification of Classification 9, Telecommunications, computer, and information services, i.e., Classification 9.2, Computer services. Focusing on Computer services, it is important to first understand the global technology industry and the global spend on ICT products and services.

The Global Technology industry is estimated to have reached a revenue of \$ 5.0 trillion in 2021. Further estimates signal at a CAGR of about 5.0% through to 2024. The technology sector has become a significant part of economic activity, not only in the U.S. but for many other countries.



Figure 1-7: Division of Global the Spending on ICT in 2020

Source: Author's Calculations on the data from International Data Cooperation (IDC) (2020)

Traditional ICT spending on hardware, software, services, telecom, etc., continues to dominate the market and this trend is expected to continue over the next decade. In the next 5-15 years, New Technologies which include robotics, Augmented Reality (AR)/ Virtual Reality (VR) and Artificial Intelligence (AI) are predicted to expand and represent about 25% of ICT spending. These new technologies are also incorporated in new services such as cloud computing etc., but at present they are not classified under BPM6. Adding these new services is being considered by the Current Account Task Team (CATT) which is one of the Task Teams (TTs) established by the IMF's Committee on Balance of Payments Statistics (BOPCOM) to contribute to the revision process of the BPM6 between March 2020 to March 2022. The balance of payments classification has been advised to be revised by adding digital services such as tele-health, tele-education, and cloud computing as these will have to be incorporated (Liberatore et al, 2022).


Figure 1-8: Key Categories of the Global Market for the Technology Industry

Source: International Data Corporation (2020)

Covid-19 impacted spending on hardware the most, while Software continues to contribute immensely to productivity and determines most of the economic benefits from ICT spending. Recent investments in mobile and cloud hardware have led to the creation of new platforms that will allow for the swift development of new applications and software tools.

The importance of the IT industry is expected to grow with time. As the world recovers from COVID-19, digital operations have become more important than ever. Due to current circumstances and the increasing requirements for a digital society, the technology industry has transformed rapidly. Keeping the importance of this industry in mind, both globally and within Pakistan, this report attempts to analyze how Pakistan can expand its trade in the IT sector services, which are under Classification 9.2, Computer services under the BPM6 Classification.

This report is the third in the Pakistan Business Council's (PBC) series on the services sector. The first report on the services sector centered on introducing services exports, titled "Global Trade in Services and Pakistan". This report will primarily focus on Pakistan's IT sector and its exports under Classification 9.2, Computer services. The report will be followed by further reports on the other services sectors.

PAKISTAN'S IT SERVICES (CLASSIFICATION 9.2, COMPUTER **SERVICES) TRADE**

CHAPTER 2



ICT is the fastest growing sector in Pakistan. To fully understand the importance of this sector, it is first important to get an overview of Pakistan's services trade landscape. Pakistan is ranked as the 69th exporter and 63rd importer for services in the world in 2020 (UNCTAD, 2021a). In Pakistan, the value-added services sector contributed about 53.8% to the GDP in 2020 and the services sector employs about 38% of employment in 2019 (The World Bank, 2021).

2.1 Landscape of Pakistan's Services Trade

Pakistan's services exports as in FY21 were about \$5.9 billion and imports of services about \$7.8 billion (State Bank of Pakistan, 2022). Classification 9, Telecommunications, computer, and information services were the largest services exports in FY 2020 and FY 2021. Among the top 5 services imports of Pakistan, Classification 9, Telecommunications, computer and information services ranked 4th.

lassification 9, Telecommunications, computer and information services made up about 32.0% of Pakistan's total services exports in 2020. This share increased from 22.0% in 2019.



Figure 2-1: Top 5 Services Exports and Imports for Pakistan in 2020 and 2021

Source: State Bank of Pakistan (2022)

BPM6/ Ebops	BPM6/ EBOPS Categories 2010 Codes		FY18	FY19	FY20	FY21	CAGR (FY17-FY21)
2010 Codes			\$ Million				
9	Telecommunications, Computer, and information services	939.5	1,066.0	1,191.9	1,440.0	2,114.0	22.5
10	Other business services	1,269.0	1,349.6	1,567.8	1,328.0	1,414.8	2.8
12	Government goods and services n.i.e.	1,782.4	1,262.0	1,253.0	1,075.9	1,018.0	-13.1
3	Transport	924.4	944.0	865.3	741.1	543.9	-12.4
4	Travel	322.0	369.5	423.1	489.9	500.2	11.6

Table 2-1: Pakistan's Top 5 Services Exports and their CAGR from FY17 to FY21

Sources: State Bank of Pakistan and Author's Calculations based on State Bank of Pakistan (2022)

Amongst Pakistan's Top 5 Services Exports, Classification 9, Telecommunications, computer, and information services had the highest CAGR of 22.5 while imports in this category have been growing at a comparatively slower CAGR of 9.4%.

BPM6/ Ebops	Categories	FY17	FY18	FY19	FY20	FY21	CAGR (FY17-FY21)
2010 Codes		\$ Million					%
3	Transport	3,808.1	3,956.0	3,639.2	3,036.0	2,928.9	-6.4
10	Other business services	2,115.6	2,910.9	2,491.0	2,560.0	2368.0	2.9
4	Travel	2,000.1	2,288.9	1,709.0	1,228.9	824.0	-19.9
9	Telecommunications, Computer, and information services	384.1	478.9	441.0	384.9	549.9	9.4
8	Charges for the use of intellectual property n.i.e.	217.9	228.7	170.9	180.8	254.1	3.9

Table 2-2: Pakistan's Top 5 Services Imports and their CAGR from FY17 to FY21

Sources: State Bank of Pakistan and Author's Calculations based on State Bank of Pakistan (2022)

Amongst Pakistan's services trade categories, only 4 have shown surplus balances in recent years (2020 and 2021), these are Classification 9, Telecommunications, computer, and information services, Classification 12, Government goods and services, n.i.e., Classification 5, Construction and Classification 11, Personal, cultural, and recreational services. Classification 9, Telecommunications, computer, and information services had the highest surplus balance in both 2020 and 2021.

	BPM6/		FY19	FY20	FY21	
капк	2010 Codes	Categories		\$ Million		
	S	Services	-4,969.6	-3,316.0	-1,957.4	
1	9	Telecommunications, computer, and information services	750.8	1,055.1	1,564.2	
2	12	Government goods and services n.i.e.	781.0	600.9	651.0	
3	5	Construction	-741.0	88.9	113.9	
4	11	Personal, cultural, and recreational services	8.6	6.8	10.7	
5	2	Maintenance and repair services n.i.e.	-145.5	-57.8	-44.9	
6	7	Financial services	-280.2	-333.0	-157.0	
7	6	Insurance and Pension services	-190.9	-234.1	-192.1	
8	8	Charges for the use of intellectual property n.i.e.	-169.7	-176.7	-241.2	
9	4	Travel	-1,285.9	-739.1	-323.8	
10	10	Other business services	-923.2	-1,232.0	-953.2	
11	3	Transport	-2,773.8	-2,295.0	-2,385.1	

Table 2-3: Pakistan's Services Balance of Trade

Source: State Bank of Pakistan (2022)

2.2 Classification 9.1 Telecommunications, computer and information services

Globally, exports under Classification 9, Telecommunications, computer, and information services have been growing. The same is seen for Pakistan's Classification 9, Telecommunications, computer, and information exports. Figure 2-2 shows that exports under Classification 9, Telecommunications, computer, and information services have been increasing continuously.



Figure 2-2: Trend of Pakistan's Classification S, Services Exports vs. Classification 9, Telecommunications, computer, and information services exports

FY06

FY07

FY08

FY09

Services

FY10

FY11

FY12

FY13

FY14

FY15

FY16

Telecommunications, computer, and information services

FY17

FY18

FY19

FY20

FY21

1,000

When exploring the sub-categories' exports of Classification 9, Telecommunications, computer, and information services of Pakistan, Classification 9.2, Computer services has the highest exports, followed by 9.1, Telecommunication services, with Classification 9.3, Information services coming in third. The Classification 9.2, Computer services has been witnessing the highest growth, especially after COVID-19.

Classification 9.2, Computer services exports have been growing the fastest with a CAGR of 23.3% between FY06 & FY21, followed by Classification 9.3, Information services.

Table 2-4: Classification 9, Telecommunications, computer, and information services sub-categories and their CAGR from FY06 to FY21

9. Telecommunications, computers, and information services sub-categories	CAGR % (FY06-FY21) Exports	CAGR % (FY06-FY21) Imports
9.1 Telecommunications services	5.6	-0.3
9.2 Computer services	23.3	17.6
9.3 Information services	15.7	8.8

Source: Author's Calculations based on State Bank of Pakistan (2022)



Figure 2-3: Shares of Sub-categories in the Exports and Imports of Classification 9, Telecommunications, Computer and Information Services in 2021

Source: State Bank of Pakistan (2022)



Figure 2-4: Pakistan's Exports under the sub-categories of Classification 9, Telecommunications, computer, and information services

Source: State Bank of Pakistan (2022)

2.3 Classification 9.2, Computer services Trade

As mentioned under "1.2, Classification 9, Telecommunications, computer and information services, the IMF recommends classification of services trade data, however, countries are allowed to deviate for practical reasons. Figure 2-5 shows the classification 9.2, Computer services that is reported by the State Bank of Pakistan.

Figure 2-5: Categories for Classification 9.2, Computer services reported under Extended Balance of Payments Services Classification (EBOPS 2010), as reported by the State Bank of Pakistan

9.2 Computer services

9.2.1 Hardware consultancy services

- 9.2.2 Software consultancy services
- 9.2.3 Maintenance & repairs of computer
- 9.2.4 Export / Import of Computer Software
- 9.2.5 Other Computer services

The IMF recommends Classification 9.2.1 to be "Computer software of which 9.2.1 a Software originals" and Classification 9.2.2 to be "Other computer services", however, the State Bank of Pakistan has classified Classification 9.2.1 to be "Hardware consultancy services" and Classification 9.2.2 to be "Software consultancy services". The State Bank of Pakistan has 5 sub-categories under the Classification 9.2, Computer services. Classification 9.2.1, Hardware consultancy services², Classification 9.2.2, Software consultancy services³, and Classification 9.2.3, Maintenance & repairs of computer were included under "Classification 9.2.2, Other computer services" in the IMF classification.

All other components of IMF's BPM6 recommended Classification 9.2.2, Other computer services are included in the SBP's category of Classification 9.2.5, Other Computer Services. Hardware and software installation, including installation of mainframes and central computing units that were included into Classification 9.2.2, Other Computer Services by the IMF are included into respective categories of Classification 9.2.1, Hardware consultancy services and Classification 9.2.2, Software consultancy services. Figure 2-6 shows the SBP classification of Classification 9.2.5, Other computer services based on EBOPS 2010 Classification.

Figure 2-6: Services included under the Classification 9.2.5, Other computer services by the State Bank of Pakistan

1. Data recovery services, and provision of advice and assistance on matters related to the management of computer resources.

2. Analysis, design and programming of systems ready to use (including web page development and design) and technical consultancy related to software.

3. Systems maintenance and other support services, such as training provided as part of consultancy.

4. Data-processing and hosting services, such as data entry, tabulation, and processing on a timesharing basis.

5. Web page hosting services (that is, provision of server space on the Internet for hosting of clients' web pages).

6. Provision of applications, hosting clients' applications, and computer facilities management.

² Classification 9.2.1, Hardware consultancy services include Hardware installation services including installation of mainframes and central computing units.

³ Classification 9.2.2, Software consultancy services include Software installation services.

2.3.1 Classification 9.2, Computer Services Exports

Figure 2-7: Facts about Pakistan's Classification 9.2, Computer Services Exports



Sources: Author's calculations on Percentage of GDP and Per Capita Exports based on UNCTAD (2021a) and the World Bank (2021)

Figure 2-8 shows the exports for the sub-categories of Classification 9.2, Computer services. Most exports under Classification 9.2, Computer services are for 9.2.5, Other computer services which contributed 42% of the total export revenue under Classification 9.2, Computer services. Classification 9.2.2, Software consultancy contributed another 33.9%. Classification 9.2.5, Other computer services contributed 34.0% of the total exports of Pakistan's exports under 9.2, Computer services. The classification of 9.2.5, Other computer services is shown in Figure 2-6.

Pakistan's exports under Classification 9.2, Computer services are concentrated in Classification 9.2.2, Software consultancy services, Classification 9.2.4, Export/ Import of Computer Software, and Classification 9.2.5, Other computer services. The contribution of other two categories' exports, Classification 9.2.1, Hardware consultancy services and Classification 9.2.3, Maintenance & repairs of computer were lower than 1 million US\$ in FY 2021.



Figure 2-8: Shares of the sub-categories of Classification 9.2, Computer Services Exports of Pakistan in FY21

Source: State Bank of Pakistan (2022)

From FY2017 to FY2021, the share of Classification 9.2.5, Other computer services has been increasing. After the COVID-19 pandemic, this sub-category has increased significantly from \$896.0 million in FY19 to \$1,666.3 million in FY21. Table 2-5 shows that the category Classification 9.2.5, has had a CAGR of 73.6% between FY17 and FY21. Classification 9.2.2, Software consultancy services, which is also a major contributor to Classification 9.2, Computer services exports, had a CAGR of 25.0%.



Figure 2-9: Classification 9.2, Computer services sub-categories from FY17 to FY21

Source: State Bank of Pakistan (2022)

Categories		FY18	FY19	FY20	FY21	CAGR
outogonos	\$ Million					%
9.2 Computer services	572.2	729.9	896.0	1,108.7	1,666.3	30.6
9.2.1 Hardware consultancy services	3.4	4.2	2.3	2.0	0.6	-36.7
9.2.2 Software consultancy services	227.3	287.7	354.4	409.0	554.2	25.0
9.2.3 Maintenance & repairs of computer	0.7	1.8	6.0	1.5	0.7	-2.4
9.2.4 Export / Import of Computer Software	264.4	322.0	285.2	318.9	417.4	12.1
9.2.5 Other Computer services	76.4	114.3	248.0	377.3	693.5	73.6

Table 2-5: Pakistan's Exports in Classification 9.2, Computer services from FY17 to FY21

Source: State Bank of Pakistan (2022)

Classification 9.2, Computer services has had a surplus since 2006 (from where the data is reported by the State Bank of Pakistan). The surplus of \$1,212.0 million in FY21 is the highest in history for this category. Classification 9.2.5, Other computer services contributed the most to the surplus balance in Classification 9.2, Computer services, followed by Classification 9.2.2, Software consultancy services in 2021.

Aside from the IT companies based in Pakistan, the credit also goes to the flourishing and booming freelancer's community and the digital gig economy⁴. According to Payoneer 2020 report, Pakistan ranks 8th in terms of the fastest growing freelancing countries with a revenue growth of 69% between 2019 and 2020.

2.3.2 Classification 9.2, Computer Services Imports

Classification 9.2, Computer services imports were lower, (\$454.3 million in FY21) compared to imports in other sub-categories of services imports. The imports in Classification 9.2, have had a CAGR of 14.7% from FY17 to FY21. Most of the imports under this classification are under the sub-category Classification 9.2.4, Export / Import of Computer Software of \$215.3 million in FY21, followed by Classification 9.2.2, Software consultancy services of \$169.1 million. These imports are lower when compared to exports in the same category.

⁴ Digital gig economy is an economy based on temporary, flexible, or freelance jobs, where the clients are mostly connected with through a platform being online.

Categories		FY18	FY19	FY20 ^r	FY21	CAGR
		\$ Million				
9.2 Computer services	262.7	329.5	319.9	322.2	454.3	14.7
9.2.1 Hardware consultancy services	0.5	1.3	0.2	0.0	0.1	-33.74
9.2.2 Software consultancy services	193.3	99.7	108.7	105.3	169.1	-3.30
9.2.3 Maintenance & repairs of computer	9.6	3.7	1.4	0.7	2.8	-26.21
9.2.4 Export / Import of Computer Software	49.2	209.2	180.9	163.7	215.3	44.6
9.2.5 Other Computer services	10.1	15.6	28.7	52.5	66.9	60.6

Table 2-6: Computer Services Imports by Sub-Category from FY17 to FY21

R: Revised, P: Provisional. Source: State Bank of Pakistan (2022)

Most imports under Classification 9.2, Computer services are for computer software contributing 84.6% (Classification 9.2.4, Export / Import of Computer Software contributing 47.4% and Classification 9.2.2, Software consultancy services contributing 37.2%). These can be seen as favorable imports as they are mostly related to the latest technologies and services that comprise of domestic consumption of software applications supported by direct imports and local development. Most of the imports of software brands are imports from the U.S.A., U.K., Germany, Spain, and China (PSEB, 2019).





Source: State Bank of Pakistan (2022)

2.3.3 Classification 9.2, Computer Services Trade

Pakistan's imports in Classification 9.2, Computer services were about 49.3%³ lower than exports in this sub-category on the average between FY17 & FY21, which explains the surplus during this period. This sub-category has always had a surplus since records have been available (from FY06 onwards). The CAGR from FY17 to FY21 was about 40.7% in the Classification 9.2, Computer services, where Classification 9.2.2, Software consultancy services had a CAGR of 83.5% and Classification 9.2.5, Other Computer services of 75.3%. Classification 9.2.5, Other Computer services has had the largest surplus out of all the sub-categories in Classification 9.2, Computer services of \$626.3 million, further proving its worth in the importance of Classification 9.2, Computer services.

Patagorias		FY18	FY19	FY20	FY21	CAGR
oategonos	\$ Million					%
9.2 Computer services	309.49	400.4	576.1	786.5	1,212.0	40.7
9.2.1 Hardware consultancy services	2.92	2.9	2.1	1.9	0.5	-37.3
9.2.2 Software consultancy services	33.94	188.0	245.7	303.7	385.1	83.5
9.2.3 Maintenance & repairs of computer	-8.87	-2.0	4.6	0.8	-2.2	-29.6
9.2.4 Export / Import of Computer Software	215.20	112.7	104.4	155.3	202.1	-1.6
9.2.5 Other Computer services	66.30	98.7	219.3	324.8	626.5	75.3

Table 2-7: The Balance of Trade for Classification 9.2, Computer services from FY17 to FY21

Source: State Bank of Pakistan (2022)

2.3.4 Export & Reporting data codes in Pakistan for Computer Services

The State Bank of Pakistan requires all banks to report IT and ITes exports under the classification codes mentioned in FE-Circular No.8 dated 19th April 2003 and FE circular No.11 of 2006. The State Bank of Pakistan has shared an observation that some banks quote IT remittances under non-IT remittances and has firmly advised banks to quote exports under the IT & ITes specified codes.

The codes for Computer services are mentioned in Table 2-8.

Companies are required to deposit their remittance in lieu of IT services on "Export Proceeds Realization Certificates (EPRC) along with Form R".

⁵ Obtained by the formula: [(Exports- Imports) / (Exports + Imports)] x 100

SBP Code	Category	Description
9181	Hardware Consultancy Services	Receipts on account of computer hardware consultancy services provided to non-residents.
9182	Software Consultancy Services	Receipts on account of data base services provided to non-residents such as development, storage, and on-line time series. Also included are the data processing services provided to non-residents.
9183	Maintenance and Repair of Computers	Receipts on account of maintenance and repairs of computers and peripheral equipment abroad to non-residents.
9184	Export of Computer Software	Receipts on account of computer software including design, development, and programming of customized system.
9185	Other Computer Services	Receipts on account of other computer services not specified elsewhere.
9186	Freelance of computer and information services	Remittances received by resident individuals/households from reputed overseas IT firms and online platforms on account of free-lance of computer and information systems services.

Table 2-8: Export and Reporting Data Codes in Pakistan for Computer services

Source: State Bank of Pakistan (2022)

2.4 Overview of Pakistan's IT Sector

Pakistan's IT industry in the recent past has exhibited a consistent growth pattern year on year. Figure 2-11 shows some facts about Pakistan's IT sector.

Figure 2-11: Facts about Pakistan's IT Sector

300,000 IT Professionals in 2021	25,000 IT Graduates each year
71.4 million FDI, with 60.1% growth over FY20	Ranked 4th Most Popular Country for freelancing Global Gig Economy Index 2019
Pakistan ranked 8th for the fastest growing freelancing countries with a revenue growth of 69% between 2019-20	Freelancers earned \$150 million in Exports Revenue in FY2019-20
Over 10,000 tech companies actively registered with PSEB	Exports to over 120 Countries
50% of Revenue by the IT industry goes to Payroll	1 billion USD job creation and salaries with no additional pressure on public services

Globally, the knowledge-based economy (IT industry, research and development, etc.) employs highly-skilled knowledge workers and who are also the highest earners in their own economies. Even in Pakistan, the knowledge economy had some of the highest salaries in 2021. If we look sector wise, the IT sector ranks 12th in average monthly salaries in 2021, which is more than sectors like engineering, architecture, education, etc. The IT industry in Pakistan offers an average annual increment rate of 5%, while the Banking sector offers 2%, Energy offers 4%, and Construction 3%.

Rank	Sector	Avg. Salaries Monthly in PKR
1	Executive and Management	146,575
2	Health and Medical	116,700
3	Business Planning	110,000
4	Legal	98,450
5	Airlines / Aviation / Aerospace / Defense	94,100
6	Media / Broadcasting / Arts / Entertainment	88,700
7	Accounting and Finance	85,544
8	Pharmaceutical and Biotechnology	84,950
9	Human Resources	84,300
10	Banking	84,200
11	Construction / Building / Installation	83,867
12	Information Technology	82,160
13	Engineering	76,000
14	Sales Retail and Wholesale	71,467
15	Bilingual (Translator	66,650
16	Architecture	66,400
17	Advertising / Graphic Design / Events	64,225
18	Teaching / Education	60,550
19	Food / Hospitality / Tourism / Catering	59,350
20	Customer Service and Call Center	55,400

Table 2-9: Average Monthly Salaries for different sectors in Pakistan as of 2021

Source: Salary Explorer (2021)

The IT industry is not only the driver for Pakistan's services exports but is also an important provider for livelihood and improving the standard of living for high-skilled workers in Pakistan.

2.5 FDI into the IT sector

Pakistan's IT industry in the recent past has exhibited a consistent growth pattern year on year. Figure 2-11 shows some facts about Pakistan's IT sector.

2.5.1 IT sector's FDI Trend

Foreign Direct Investment (FDI) has been given tremendous importance in facilitating the development of a country. This mechanism has been proven to transfer better capital, practices, and technology around the world. In a sector like IT, FDI has been of even more importance due to its capability to transfer knowledge, technology, and skills.

In terms of attracting FDI, Pakistan still lags behind many countries. In FY21, Pakistan had a total FDI inflow of 3.0 billion, while India had total FDI of 59.6 billion (SBP, 2021; DPIIT, 2021). The IT sector in Pakistan had an inflow of 71.4 million in FY21, where most of the FDI inflow is into the IT services sector.

Figure 2-12 shows a comparison of FDI inflows into Pakistan compared to High-, Upper middle-, Lower middle-, and Low- income countries and Southern Asia. Pakistan's FDI inflow as a percentage of GDP is 0.8% which is low even when compared with countries in the Lower Middle-Income group (2.0%) that Pakistan belongs to.





Source: UNCTAD (2021a)

Foreign Direct Investment in Pakistan's IT sector has surged by 157.8% from FY19 to FY21 as shown in Figure 2-13.

^e The UNCTAD reports data for Southern Asia and includes Iran in Southern Asia.





IT services has attracted the highest FDI inflow amongst the IT sector over the period the data is available. IT services include hardware & software consultancy, maintenance and repair of computers and other computer services. The high FDI inflow in IT services can explain the rise in exports under Classification 9.2.5, Other Computer Services. As discussed in Section 2.3-Classification 9.2, Computer services trade, Classification 9.2.5, Other Computer Services made-up 41.6% of Classification 9.2, Computer Services in FY21 and witnessed a CAGR of 73.6% between FY17 and FY21.



Figure 2-14: Break-up of FDI Inflow into the IT sector from FY17 to FY21

Table 2-10 shows the CAGR of the FDI inflow, outflow and net FDI into the IT sector and its sub-categories over the last 5 years. FDI inflow into the IT sector has had a CAGR of 14.4% between FY17 and FY21. Most of the CAGR is present in Hardware Development at 41.5%, however FDI inflow into Hardware Development has been only \$0.4 million in FY21. The highest attractor of FDI inflows amongst Information Technology (IT), IT services grew at 12.5% annually from FY17 to FY21.

Source: State Bank of Pakistan (2022)

Source: State Bank of Pakistan (2022)

Table 2-10:	CAGR of F	DI Inflow from	FY17 to FY21
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Categories	Inflow of FDI into the IT Sector CAGR (%)	Outflow of FDI into the IT Sector CAGR (%)	Net FDI into the IT Sector CAGR (%)
Information Technology (IT)	14.4	83.0	12.2
Software Development	22.3	-63.5	24.4
Hardware Development	41.5	85.7	9.5
IT Services	12.5	187.9	9.3

Source: Author's Calculations based on the data from State Bank of Pakistan (2021)

Outflows appear to have a higher CAGR than inflows, but the inflows of FDI into the IT sector were about 86.4% more than outflows on average between FY17 & FY21. Overall, the net FDI has shown growth of 12.2%, where the highest growth was under Software Development of 24.4% between FY17 and FY21



Source: State Bank of Pakistan (2022)

There has been a push for FDI inflows into the IT sector and with the Digital Policy of Pakistan 2018 and other Government initiatives discussed in Chapter 6- Incentives Given to the IT sector in Pakistan, the inflow of FDI into this sector has witnessed a 14.4% CAGR from FY17 to FY21. However, the share of the IT sector in overall FDI inflows into the country is noticeably low at 1.4%.

2.5.2 Effect of FDI on Classification 9.2, Computer Services Trade

In literature, FDI inflows are associated with economic growth and development as it is shown to bring in new technologies, create jobs, and have other beneficial collateral effects on the real economy (Anderson and Gonzalez, 2013). This is the advantage of FDI inflows into the economy, the Net FDI does not project these effects directly. Therefore, for analysis of the effect of FDI on Classification 9.2, Computer services, FDI inflows have been taken into account.

Analyzing the relationship between the FDI inflow into the IT Sector and Classification 9.2, Computer services exports from FY13 to FY21 through regression, it has been found that 1.0% rise in the FDI Inflow into the IT Sector will lead to a rise of about 1.0%⁷ in Classification 9.2, Computer Services Exports, which is statistically significant (probability of it occurring in reality is high). In other words, a rise in FDI inflow into the IT Sector would generate an almost equal rise in Classification 9.2, Computer services exports. These results can explain about 50.3%⁸ of the actual data as shown in Figure 2-16.

Figure 2-16: Positive Relationship between FDI Inflow into the IT Sector and Computer Services Exports from FY13 to FY21



Source: Author's calculations based on data from the State Bank of Pakistan (2022)

In theory, investment whether foreign or local/ private leads to a rise in both imports and exports. Classification 9.2, Computer services imports also increase when FDI rises but by 0.7%⁹ (statistically significant) which is less compared to the increase in exports due to FDI. However, since most imports into this category can facilitate in bringing new technology into the country, this amount of increase is favorable. This relationship can explain about 55.3%¹⁰ of the actual data.

⁷ The relationship in percentages is obtained by running a logistic regression of the same data.

⁸ This value has been obtained through the R square of the model.

[°] The relationship in percentages is obtained by running a logistic regression of the same data.

¹⁰ This value has been obtained through the R square of the model.

Figure 2-17: Positive Relationship between Inflow of FDI into the IT sector and Computer Services Imports from FY13 to FY21



Source: Author's calculations based on data from the State Bank of Pakistan (2022)

DESTINATION PROFILES OF PAKISTAN'S IT EXPORTS AND IMPORTS

CHAPTER 3



3.1 Classification 9.2, Computer Services Exports by Country

The State Bank of Pakistan publishes country-wise data on exports and imports for the main categories of Services Trade. The country-wise export and import data is not available for the sub-categories such as Classification 9.2, Computer services.

Since data is not available, an assumption has been made to estimate exports under Classification 9.2, Computer services exports by country. It is assumed that exports under Classification 9.2 Computer services exports to major destinations is in the same proportion as those for Classification 9, Telecommunications, computer and information services.

Table 3-1, lists exports of Classification 9, Telecommunications, computer and information services to major export markets as the proportion of these exports to the world.

The following formula has been used to estimate the country-wise exports for Classification 9.2, Computer services.

Classification 9.2, Computer Services Exports by Country:



X= Exports,
s = sub-category (Classification 9.2, computer services),
t = total, m = main-category (Classification 9,
Telecommunications, computer, and information services),
c = country-wise.

Table 3 1: Pakistan's Top 10 Export Destinations Classification 9, Telecommunications, computer, and information services from FY17 to FY 21

Rank	Country	FY17	FY18	FY19	FY20	FY21	CAGR	World Import in \$Million
Kank				Exports in S		%	2020	
1	U.S.A.	537	566.1	667.2	847.8	1307.3	24.9	38,594.0
2	U.A.E.	84.1	91.4	96.8	124.9	150.0	15.6	7,924.0
3	U.K.	75.6	78.7	80.3	108.9	127.9	14.1	13,104.0
4	Singapore	29.5	38.3	35.1	49.6	65.5	22.1	17,442.0
5	Canada	16.2	20.1	31	39.9	50.6	33.0	6,808.0
6	Ireland	9.7	23.2	24.9	26.7	47.4	48.7	6,220.0
7	Malaysia	32.1	35.7	33	30.2	45.1	8.9	3,996.0
8	Germany	13.2	16.4	23	28.5	39.9	31.9	42,390.0
9	Norway	4.8	11.7	14.7	16.3	38.4	68.2	5,455.0
10	Sweden	4.0	6.0	7.0	8.1	29.1	64.2	10,803.0

Sources: State Bank of Pakistan (2022) and the UNCTAD (2021a) for World Imports

Rank	Country	FY17	FY18	FY19	FY20	FY21	CAGR	World Import in \$Million
Kuiik				Exports in S	Million		%	2020
1	U.S.A.	327.0	387.6	501.6	652.8	1,027.8	33.1	30,929.0
2	U.A.E.	51.2	62.6	72.8	96.2	118.0	23.2	5,963.0
3	U.K.	46.0	53.9	60.4	83.8	100.6	21.6	5,660.3
4	Singapore	18.0	26.2	26.4	38.2	51.5	30.1	14,763.0
5	Canada	9.9	13.8	23.3	30.7	39.8	41.7	3,605.7
6	Ireland	5.9	15.9	18.7	20.6	37.3	58.5	5,931.0
7	Malaysia	19.5	24.4	24.8	23.3	35.5	16.1	2,254.0
8	Germany	8.0	11.2	17.3	21.9	31.4	40.6	35,488.0
9	Norway	2.9	8.0	11.1	12.6	30.2	79.3	4,809.0
10	Sweden	2.4	4.1	5.3	6.3	22.8	75.1	8,001.0

Table 3 2: Pakistan's Top 10 Classification 9.2, Computer Services Export Destinations from FY17 to FY21

Source: Author's Estimation based on State Bank of Pakistan (2022) for country-wise exports and the UNCTAD (2021a) for World Imports

The U.S.A. is Pakistan's biggest market for Classification 9.2, Computer services as it is for other goods and services. Compared to many other global regions, the U.S. spends about 50% of its spending in the technology market on software and technology services. The U.S.A. has a huge market and about 67% of its technology spending takes place outside of its borders (MOITT, 2021).

Table 3-3 shows the Top global importers of Classification 9.2, Computer services in 2020.

For Pakistan, Germany ranks as its 7th destination for this sub-category but worldwide, Germany is the top importer of Classification 9.2, Computer services. Western Europe which comprises of Germany, France, Austria, Luxembourg, and Switzerland is an important spender on IT technology, where 1 out of every 5 dollars spent worldwide on technology is from this region. France which ranks 4th amongst importers in the world, is also not one of Pakistan's top markets, where Pakistan exported only \$4.8 million under Classification 9, Telecommunications, computer, and information services in FY21 and \$3.3 million in FY20. Through estimation, it can be seen that Pakistan's Classification 9.2, Computer services exports to France accounted for about \$3.8 million in FY21 and \$2.8 million in FY20, while France had an import demand of \$17.2 billion in 2020.

Rank Country		FY17	FY18	FY19	FY20	FY21	CAGR		
Runk	ountry	Exports in \$ Million							
1	Germany	27,475.5	31,461.6	34,534.7	36,250.8	35,488.2	6.6		
2	U.S.A.	31,532.0	34,694.0	34,056.0	35,203.0	30,929.0	-0.5		
3	Japan	11,632.1	11,738.5	14,684.0	18,320.3	18,808.4	12.8		
4	France	11,731.0	14,475.7	16,290.1	16,463.0	17,154.8	10.0		
5	Singapore	10,736.9	13,082.0	12,481.5	14,219.0	14,762.8	8.3		
6	India	3,349.1	4,768.4	5,585.9	7,870.9	9,089.1	28.4		
7	Belgium	5,254.5	6,233.6	7,207.4	7,143.4	8,563.9	13.0		
8	Netherlands	5 11,144.2	12,316.9	13,173.9	14,242.2	8,265.8	-7.2		
9	Sweden	4,774.5	5,757.3	6,451.3	7,212.7	8,000.7	13.8		
10	Austria	3,448.0	3,972.0	5,603.6	6,125.8	6,478.0	17.1		

Table 3 3: Top Global Importers of Classification 9.2, Computer services in 2020

Source: UNCTAD (2021a)

When it comes to services trade, Non-Tariff Barriers (NTBs)are more effective than Tariff ones. In order to assess the degree of restrictiveness, OECD's STRI index is used which is based on the 4 modes of supply of trade in services. The GATS (General Agreement on Trade in Services) is a treaty of the WTO which specifies 4 modes of supply, these are Mode 1: Cross Border Supply, Mode 2: Consumption Abroad, Mode 3: Commercial Presence and Mode 4: Presence of Natural Persons. The main indicators for the STRI index have been specified in Figure 3-1.

Figure 3-1: Main Indicators for the STRI index by the OECD

Restrictions on Foreign Entry

- Foreign equity restrictions
- Legal requirements
- Restrictions on cross-border mergers and take overs.
- Limit to managers/ board of directors being a foreign national
- Restrictions on cross-border transfer of data.

Restrictions to Movement of People

- Quotas.
- Labor market tests.
- Limitations on the duration of stay.
- Licenses required for practice.
- Laws for recognizing foreign qualifications.

Other Discriminatory Measures

- Less favorable taxes and subsidies to foreign suppliers of services.
- Public procurement, such as favoring local suppliers of services and discouraging foreign services suppliers.
- Laws, regulations and related standards that are different from the international standards/requirements.

Barriers to Competition

- Fee-setting: mandatory minimum or maximum fees.
- Restrictions on advertising.
- Minimum capital requirements.

Regulatory Transparency

- Multiple entry visa for business visitors.
- Range of visa processing time.
- Documents required for a visa.
- Costs and procedures to obtain a visa.

What is important to understand is that the nature of Classification 9.2, Computer services is such that it can be easily traded over the internet. However, cross-border trade still needs to take place in cases where visits to the customer are required. This involves business travel for technical support and sometimes longer stays.

The barriers to trade are overall low for all countries in Classification 9.2, Computer services, with the highest STRI index being 0.4. For the STRI index to indicate significant barriers to trade, it needs to exceed 0.5 and thus the barriers under this category are not that significant. Amongst the high importing countries of Classification 9.2, Computer services, India has the highest STRI index of 0.3.

Figure 3-2: STRI for Computer Services for the Top Importers



Source: OECD (2021)

Figure 3-3: STRI Main Indicators for Computer Services for the Top Importers



India and Sweden have most of their restrictions in the form of regulatory transparency policy that includes restrictions on cross-border transfer of data and legal requirements which is the most common non-tariff barrier.

Restrictions on the movement of people account for one-third of the total STRI scores in computer services. The skilled labor intensity of the sector together with the complementarity between cross-border trade and movement of natural persons explains why restrictions on movement of people feature prominently in the STRI for computer services. In fact, all countries in the database limit market access for natural persons providing services on a temporary basis as intra-corporate transferees, contractual services suppliers or independent services suppliers.

3.2 Classification 9.2, Computer Services Imports by Country

As mentioned under the Classification 9.2, Computer services exports, the country wise trade is not reported for the sub-categories of exports and imports. A similar formula to the country-wise exports has been used to estimate the country-wise imports based on an assumption that the country-wise imports of Classification 9.2, Computer services are of the same proportion as the proportion of these imports to the world.

Classification 9.2, Computer Services Imports by Country:



M= Imports, s = sub-category (Classification 9.2, computer services), t = total, m = main-category (Classification 9, Telecommunications, computer, and information services), c = country-wise.

Table 3-4 shows Pakistan's import partners for Classification 9, Telecommunications, Computer, and Information services.

Table 3-5 shows the Classification 9.2, Computer services imports calculated by the formula discussed above. Most of Pakistan's imports are from the U.K, followed by the U.A.E. Most CAGR in imports is from Qatar and Sweden, while 50.9% CAGR is from India. As discussed in the section, "2.3.2, Classification 9.2, Computer services imports, majority of Pakistan's imports are in the Classification 9.2, Computer services is under Classification 9.2.4, Export / Import of Computer Software and Classification 9.2.2, Software consultancy services. The U.K. is a major provider in these categories.

Table 3-4: Pakistan's Import Partners in Classification 9, Telecommunications, Computer and Information services from FY17 to FY21

Rank	Country	Imports in \$ Million							
Runk		FY17	FY18	FY19	FY20	FY21	%		
1	Singapore	32.2	37.8	49.1	45.6	101.6	33.3		
2	U.K.	53.3	54.6	70.0	70.7	83.4	11.9		
3	U.A.E.	58.3	72.0	63.8	48.3	59.1	0.3		
4	U.S.A.	55.5	89.2	38.6	40.2	58.4	1.3		
5	Ireland	22.4	35.0	37.6	28.3	53.1	24.2		
6	China	8.8	12.8	16.1	7.1	21.2	24.4		
7	Qatar	14.5	15.6	21.0	15.9	19.5	7.7		
8	Netherlands	10.1	24.6	16.4	15.1	18.2	15.8		
9	Hong Kong	8.0	12.9	18.6	8.9	14.6	16.3		
10	Switzerland	8.9	12.8	10.2	11.1	11.2	6.0		

Source: State Bank of Pakistan (2022)

Rank	Country	FY17	FY18	FY19	FY20	FY21	CAGR
Kank	ountry						%
1	Singapore	22.0	26.0	35.6	38.2	84.0	39.7
2	U.K.	36.4	37.6	50.8	59.2	68.9	17.3
3	U.A.E.	39.9	49.5	46.2	40.4	48.8	5.2
4	U.S.A.	38.0	61.4	28.0	33.6	48.2	6.2
5	Ireland	15.3	24.1	27.2	23.7	43.9	30.2
6	China	3.5	6.3	7.4	2.9	17.5	49.3
7	Qatar	9.9	10.7	15.2	13.3	16.1	12.9
8	Netherlands	6.9	16.9	11.9	12.6	15.0	21.4
9	Hong Kong	5.5	8.9	13.5	7.5	12.1	21.9
10	Switzerland	6.1	8.8	7.4	9.3	9.3	11.1

Table 3-5: Pakistan's Import Partners in Classification 9.2, Computer services from FY17 to FY21

Source: Author's calculations based on data from the State Bank of Pakistan (2022)

PAKISTAN'S Competitiveness in Computer services TRADE

CHAPTER 4



4.1 Competitiveness in the World

Pakistan ranked 45th amongst exporters of Classification 9, Telecommunications, computer and information services in 2020. However, many of the countries that have top exports in 2020 in this category, have not reported exports under Classification 9.2, Computer services.

Rank	Country	2016	2017	2018	2019	2020					
Kulik	oounti y	\$ Million									
1	Ireland	65,082.6	77,650.9	110,402.7	131,465.5	151,294.2					
2	India	53,800.4	54,382.2	58,194.7	64,933.3	68,248.2					
3	China	26,531.2	27,767.4	47,067.9	53,784.9	59,034.0					
4	U.S.A.	43,122.0	47,657.0	49,245.0	54,766.0	56,682.0					
5	Germany	25,592.7	29,360.4	32,802.2	32,265.5	34,598.3					
6	U.K.	27,539.9	30,446.2	34,444.2	27,291.0	27,898.7					
7	France	18,167.6	18,622.8	22,089.8	20,203.2	19,184.3					
8	Netherlands	22,838.4	25,339.3	26,798.3	28,625.7	18,740.0					
9	Singapore	12,140.7	13,380.1	16,495.4	15,495.9	15,338.9					
10	Sweden	14,061.5	14,331.3	14,445.1	14,634.3	15,272.2					
45	Pakistan	873.0	1,009.0	1,127.0	1,292.0	1,715.0					

Table 4-1: Top 10 Reporting Exporters of Classification 9, Telecommunication	s, computer,
and information services in 2020	

Source: UNCTAD (2021a)

Since, many countries have not reported computer services exports in 2020, amongst the reporting economies, Pakistan's exports in Classification 9.2, Computer services ranked 31st in the world, while its imports in the same classification ranked 40th. Pakistan's exports have a high CAGR of 26.1% between 2016 & 2020, which shows that the country's exports are growing at a healthy rate.

Rank	Countries	2016	2017	2018	2019	2020	CAGR	
nuin	Countrios	\$ Million						
1	Ireland	64,250.2	76,309.9	108,689.4	129,346.3	151,462.5	23.9	
2	India	51,159.2	51,797.3	55,471.9	61,784.7	65,256.9	6.3	
3	U.S.A.	24,243.0	28,838.0	30,724.0	36,312.0	42,136.0	14.8	
4	Germany	20,896.1	23,236.4	26,292.8	26,346.8	27,987.5	7.6	
5	U.K.	13,565.4	16,348.0	18,775.7	14,774.5	14,529.5	1.7	
6	France	11,456.4	12,780.1	14,267.1	13,864.7	13,486.2	4.2	
7	Singapore	10,187.8	11,598.8	14,433.6	13,247.4	13,345.0	7.0	
8	Sweden	12,237.3	12,196.8	12,340.4	12,586.1	12,705.2	0.9	
9	Finland	7,605.5	7,663.8	8,197.0	12,534.8	12,438.2	13.1	
10	Netherlands	14,173.7	14,670.0	15,206.0	16,142.0	11,157.1	-5.8	
31	Pakistan	530.0	655.0	822.0	984.0	1,342.0	26.1	

 Table 4-2: Top 10 Reporting Exporters of Classification 9.2, Computer services in 2020 and Pakistan's Rank

Source: UNCTAD (2021a)

Compared to Pakistan's imports in Classification 9.2, Computer services, its exports in this classification are on average (between 2016 and 2020) 45.7% more. The CAGR of Pakistan's imports is low at 12.9% compared to India's of 28.4%. Pakistan's exports are growing at a faster rate than its imports and this partly explains the increase in the growth in surplus in Classification 9.2, Computer services trade for Pakistan.

Germany, France, and Singapore are examples of countries that are net importers of Classification 9.2, Computer services. India, Pakistan, and the U.S.A. are amongst the countries that are net exporters of this category.

Rank	Country	FY17	FY18	FY19	FY20	FY21	CAGR
nuin	ountry		•		'		%
1	Germany	27,475.5	31,461.6	34,534.7	36,250.8	35,488.2	6.6
2	U.S.A.	31,532.0	34,694.0	34,056.0	35,203.0	30,929.0	-0.5
3	Japan	11,632.1	11,738.5	14,684.0	18,320.3	18,808.4	12.8
4	France	11,731.0	14,475.7	16,290.1	16,463.0	17,154.8	10.0
5	Singapore	10,736.9	13,082.0	12,481.5	14,219.0	14,762.8	8.3
6	India	3,349.1	4,768.4	5,585.9	7,870.9	9,089.1	28.4
7	Belgium	5,254.5	6,233.6	7,207.4	7,143.4	8,563.9	13.0
8	Netherlands	11,144.2	12,316.9	13,173.9	14,242.2	8,265.8	-7.2
9	Sweden	4,774.5	5,757.3	6,451.3	7,212.7	8,000.7	13.8
10	Austria	3,448.0	3,972.0	5,603.6	6,125.8	6,478.0	17.1
40	Pakistan	231.0	303.0	298.0	332.0	375.0	12.9

 Table 4-3: Top Reporting Importers of Classification 9.2, Computer services in 2020 and Pakistan's Rank

Source: UNCTAD (2021a)

4.2 Pakistan's competitiveness amongst Developing Countries

This section compares Pakistan's competitiveness amongst top 15 ranking developing countries in the exports of Classification 9.2, Computer services. It would be more realistic for Pakistan to first compete with developing countries and then move towards competing with the developed ones.

Pakistan's Classification 9.2, Computer services exports rank 14th amongst the reporting developing countries in 2020. India ranks 2nd in the world but amongst developing countries, it ranks 1st.

This section determines Pakistan's competitiveness amongst the top developing countries using different measures for assessing competitiveness. First, Competitiveness measures are defined in "4.2.1 Defining Competitiveness" and then it is calculated and analyzed in "4.2.2 Pakistan's Competitiveness in Classification 9.2, Computer services". Table 4-4 contains the top 15 ranking developing countries that are used in this analysis.

Rank amongst	World	Countries	2016	2017	2018	2019	2020	CAGR		
Developing Countries	Rank	oountries		\$ Million						
1	2	India	51,159.2	51,797.3	55,471.9	61,784.7	65,256.9	6.3		
2	7	Singapore	10,187.8	11,598.8	14,433.6	13,247.4	13,345.0	7.0		
3	15	U.A.E.	4,547.3	4,729.7	4,901.3	5,037.4	5,963.2	7.0		
4	16	Romania	2,476.9	3,117.8	4,035.6	4,606.0	5,257.2	20.7		
5	17	Philippines	5,179.4	5,188.4	5,274.9	5,545.9	5,187.5	0.0		
6	18	Russian Federation	2,663.7	3,416.9	4,060.8	4,488.3	5,093.6	17.6		
7	19	Ukraine	1,975.0	2,485.0	3204.0	4,173.0	5,026.0	26.3		
8	23	Hungary	1,753.3	2,093.0	2,443.1	2,461.1	2,530.8	9.6		
9	24	Belarus	958.9	1,206.7	1,589.4	2,125.2	2,524.6	27.4		
10	26	Malaysia	1,586.4	1,968.6	1,951.8	2,108.3	2,101.5	7.3		
11	27	Brazil	1,316.4	1,725.6	1,971.5	1,994.1	2,072.0	12.0		
12	29	Argentina	1,458.7	2,020.3	2,059.7	1,813.8	1,670.4	3.4		
13	30	Serbia	666.7	879.9	1,222.4	1,458.8	1,554.4	23.6		
14	31	Pakistan	530.0	655.0	822.0	984.0	1,342.0	26.1		
15	32	Bulgaria	732.6	735.8	1,002.0	1,268.5	1,301.6	15.5		

Table 4-4: The Top 15 Reporting Developing Countries¹¹

Source: UNCTAD (2021a) and Author's own calculations on UNCTAD (2021a)

Table 4-4, however, shows exports of developing countries that have reported their export values. China, that is considered a major player in the technology market globally, has not reported exports values of its sub-categories in Classification 9, Telecommunications, computer, and information services. China's IT industry is booming and the country was ranked 3rd in 2019 for Classification 9.2, Computer services. There are data availability issues in 2020, where some economies had not reported data for exports under sub-categories of services. Even though China has not reported its Classification 9.2, Computer services exports, China cannot be ignored from the analysis. Using the average values for exports and imports from 2005 to 2019, the average proportion that each sub-category contributes for Classification 9, Telecommunications, computer and information services is calculated. Using this assumption, the values of China's exports for Classification 9.2, Computer services exports for 2020 have been estimated.

China	2016	2017	2018	2019	2020	CAGR
Unina		%				
Exports	24,829.1	25,986.0	44,960.0	51,387.5	54,385.1*	21.7
Imports	11,396.4	17,374.0	22,198.0	25,078.9	28,568.5*	25.8

Table 4-5: China's Exports and Imports in Classification 9.2, Computer services from 2016 to 2020

Source: UNCTAD (2021a) for 2016-2019 and Author's Calculations based on the data from UNCTAD (2021a) for 2020. * Indicates that these values have been generated by the author.

4.2.1 Defining Competitiveness

The term "competitiveness" has been widely used as something that is naturally understood, however, it remains vague conceptually and can be interpreted differently. Some economists believe that competitiveness is limited at a firm level while others consider competitiveness at a national level. On an international level, competitiveness refers to the ability of a country to sell goods/ services in the global markets (OECD, 2005).

There are several measures for measuring a country's trade competitiveness in services. This study concentrates on the following measures of trade competitiveness for services: Market Share, change in the Market Share, Revealed Comparative Advantage Indices (Balassa, 1965 and Greenaway and Milner, 1993), and Vollrath's Indices for Competitiveness. The competitiveness of Pakistan's trade in services is compared with the top services exporting countries in the developing countries.

Market Share (% share in World Services Exports):

Market Share is a measure of the share a country's exports have in world exports. It is calculated as:

Market Share =
$$\left(\frac{X_{ij}}{X_{wj}}\right) \times 100$$

Where X represents exports, i represents country, j represents the commodity and w represents the world.

Change in Market Share:

When exploring the question of how much of an economy's exports constitute the world's exports, an idea is provided of the country's competitiveness. Change in the market share provides an idea of how the competitiveness of a country's exports changes over time.

Change in Market Share =
$$\left\{ \frac{(X_{ijt}/X_{wit}) - (X_{ijt-1}/X_{wit-1})}{(X_{ijt-1}/X_{wit-1})} \right\} \times 100$$

Where X represents exports, i represents country, j represents the commodity, w represents the world, and t is the period.

Revealed Comparative Advantage (RCA) – Balassa 1965:

Based on the Ricardian Comparative Advantage concept, the revealed comparative advantage (RCA) shows the comparative advantage or disadvantage that a country/region might have in the export of a commodity. A common and widely used version has been proposed by Balassa (1965). The formula for RCA is as follows:

$$RCA = \frac{\frac{X_{ij}}{X_j}}{\frac{X_{iw}}{X_w}}$$

Where X stands for exports, M for imports, i for the commodity, and j for the country. An RCA exceeding 1 show that the country has a competitive advantage in the trade of the commodity.

Revealed Comparative Advantage (RCA)- Greenaway and Milner, 1993:

The popular Revealed Comparative Advantage by Balassa (1965) has been widely used to assess the competitiveness of a country's exports with the rest of the world or a set of countries. Even though this measure has been effective in providing an insight into the competitiveness of the exports of a country, it has a tendency to be biased towards ignoring the impact of imports on a country's competitiveness, especially when a country's size and openness is also considered as important factors (Greenaway and Milner, 1993). In lieu of this, Greenaway and Milner's RCAs are also calculated for an efficient analysis. This ratio is a reference to only the country's own performance in trade. It is calculated as follows:



Where X stands for exports, M for imports, i for the commodity, and j for the country. An RCA exceeding 1 show that the country has a competitive advantage in the trade of the commodity.

Vollrath's Indices for Competitiveness:

There are three alternative approaches for measuring a country's Revealed Comparative Advantage proposed by Vollrath (1991). These are the Logarithm of the Relative Export Advantage (RXA), Relative Trade Advantage (RTA), and Revealed Competitiveness (RC). These indices are interpreted as follows: positive values show a revealed comparative advantage and negative values show a revealed comparative disadvantage.

Revealed Comparative Advantage and other similar indices are used commonly in literature, however, there are some limitations to these indices. These indices might not represent the real trade patterns as they may be obstructed by interventions by governments. An interpretation of the RCA indices thus might be considered as "misrepresentation of the original comparative advantage" (Ukulu and Seymen, 2004). Vollrath (1991) suggests that amongst the three indices, RC is the most preferred as it embodies the demand and supply balance in the index. Furthermore, Vollrath (1991) acknowledges that the RXA decreases the misrepresentation effects discussed and is generally used. What is to be kept in mind is that due to conceptual differences, Balassa and Vollrath indices are not exactly comparable but these have been calculated in this study to attain a deeper insight into Pakistan's competitiveness compared to the top developing countries.

Relative Export Advantage (RXA):

This index is a logarithm of the Relative Export Advantage and is calculated as follows:

$$RCA = In (RXA) = \frac{\frac{X_{ij}}{X_{it}}}{\frac{X_{nj}}{X_{nj}}}$$

Where X stands for exports, i for the country, j for the commodity, n for a set of countries, and t for a set of commodities.

Relative Trade Advantage (RTA):

This index accounts for exports as well as imports to attain the Relative Trade Advantage (RTA). The formula is as follows:

RTA = RXA - RMA =
$$\begin{pmatrix} \frac{X_{ij}}{X_{it}} \\ \frac{X_{nj}}{X_{nj}} \end{pmatrix} - \begin{pmatrix} \frac{M_{ij}}{M_{it}} \\ \frac{M_{nj}}{M_{nj}} \end{pmatrix}$$

Where X stands for exports, i for the country, j for the commodity, n for a set of countries, and t for a set of commodities.

Revealed Competitiveness (RC):

This index is obtained by subtracting the logarithm of relative import advantage from the logarithm of the relative export advantage.

RC = In (RXA) - In (RMA)
4.2.2 Pakistan's Competitiveness in Classification 9.2, Computer services

Table 4-6 shows the competitiveness of Pakistan amongst the top 15 ranked developing countries.

World	o	Market Share		Percentage Ba Change in 1	Balassa Greenway 1965 & Milner	Greenway & Milner	DVA		20
Rank	Countries	2019	2020	Market Share	RCA	1993 RCA	KXA	KIA	KC
2	India	11.2	11.0	-2.0	2.7	5.4	0.6	0.9	0.8
3	China	9.3	9.2	-1.8	1.6	2.6	0.1	0.1	0.1
7	Singapore	2.4	2.3	-6.5	0.6	0.8	-0.9	-0.8	-1.1
15	United Arab Emirates	0.9	1.0	9.9	0.8	3.6	-0.6	0.2	0.3
16	Romania	0.8	0.9	5.9	1.6	1.4	0.1	-0.9	-0.6
17	Philippines	1.0	0.9	-13.2	1.4	4.4	-0.1	0.4	0.5
18	Russian Federation	0.8	0.9	5.3	0.9	1.5	-0.5	-0.4	-0.5
19	Ukraine	0.8	0.8	11.8	2.7	5.6	0.6	1.0	0.8
23	Hungary	0.4	0.4	-4.6	1.0	1.2	-0.5	-0.7	-0.8
24	Belarus	0.4	0.4	10.3	2.4	4.8	0.4	0.7	0.6
26	Malaysia	0.4	0.4	-7.5	0.8	1.4	-0.6	-0.4	-0.6
27	Brazil	0.4	0.3	-3.6	0.6	0.7	-0.9	-1.0	-1.3
29	Argentina	0.3	0.3	-14.5	1.5	1.6	-0.012	-0.6	-0.5
30	Serbia	0.3	0.3	-1.1	1.6	2.6	0.013	0.0	0.0
31	Pakistan	0.2	0.2	26.6	2.1	5.0	0.3	0.7	0.7
32	Bulgaria	0.2	0.2	-4.8	1.3	2.5	-0.1	-0.014	-0.015

Table 4-6: Measuring Competitiveness of Pakistan's Classification 9.2, Computer services with Top 15 Ranked Developing Countries

Source: Author's Calculations based on data from the UNCTAD (2021a)

¹⁵ The value is 0.004

¹² The value is -0.03

¹³ The value is 0.03

¹⁴ The value is 0.003

Variables	Description	Countries
Largest Market Share (2020)	Top 3 countries given in order of rank	India, China, and Singapore
Highest Increase in Market Share (2019-2020)	Top 3 countries given in order of rank	Pakistan, Ukraine, and Belarus
RCA Balassa (1965)	All countries with RCA in no particular order	India, China, Romania, Philippines, Ukraine, Belarus, Argentina, Serbia, Pakistan , and Bulgaria
Greenway & Milner (1993)	All countries with RCA greater than 1 in no particular order	India, China, U.A.E., Romania, Philippines, Russian Federation, Ukraine, Hungary, Belarus, Malaysia, Argentina, Serbia, Pakistan , and Bulgaria
RXA	All countries with RXA in no particular order	India, China, Romania, Ukraine, Belarus, Serbia, and Pakistan
RTA	All countries with RTA in no particular order	India, China, U.A.E., Philippines, Ukraine, Belarus, Serbia, and Pakistan
RC	All countries with RC in no particular order	India, China, U.A.E., Philippines, Ukraine, Belarus, Serbia, and Pakistan

Table 4-7: Summary of the Results of Competitiveness Analysis given in Table 4-6

Source: Author's calculations based on UNCTAD (2021a)

Pakistan has had a persistent low market share in Classification 9.2, Computer services compared to other developing countries. However, between 2019 and 2020, Pakistan's market share in Classification 9.2, Computer services has had the highest increase of 26.6%. All indices of competitiveness calculated for Pakistan's Classification 9.2; Computer services show that Pakistan has comparative advantage in this sub-category's exports. For Pakistan, the RC (Revealed Competitiveness) Index is also positive and indicates that the demand and supply for Pakistan's trade in this category are favorable.

INCENTIVES GIVEN TO THE IT SECTOR IN PAKISTAN & COMPARISON WITH OTHER COUNTRIES

CHAPTER 5



Pakistan's IT industry is booming and bringing in higher export revenues. However, compared to other countries, even developing countries, Pakistan's incentives to the IT industry are still behind most countries, be it developing or even in Asia. This section explores the business environment for the IT industry in Pakistan and the incentives offered by the government of Pakistan compared to other countries.

5.1 The Ease of Doing Business Index & Pakistan

The Ease of Doing Business Index measures the extent to which it is easier to do business in 12 areas¹⁶ of business activity across 190 countries. Since 2018, Pakistan has improved in the Ease of Doing Business Index by 39 index points as shown in Figure 5-1.



Source: World Bank (2021)

Several Studies have concluded that a high rating on the Ease of Doing Business and Inflow of FDI are positively related (The World Bank, 2021).

Compared to Asian developing countries like China (Rank 31) and India (Rank 63), Pakistan is way behind with FDI inflow of 2.1 billion in 2020, while China had an inflow of 149.3 billion and India of 64.1 billion.

Figure 5-2 shows FDI inflows into selected major exporting developing countries for Classification 9.2, Computer services in 2020.

This section will explore the incentives available in these selected countries and Pakistan. These countries have been selected due to their comparability with Pakistan as they are among the top 10 developing countries in Classification 9.2, Computer services exports in 2020 and are located in the same region (Asia). U.A.E., which is classified under Western Asia by the UNCTAD (2021), has also been taken into consideration due its ties with Pakistan and the relatability of its IT industry with that of Pakistan. The objective to include U.A.E. in this analysis is also to explore the reasons why many Pakistani IT firms have reportedly relocated to the U.A.E.

Figure 5-2: Total FDI Inflows in 2020



Source: UNCTAD (2021)

5.2 Incentives & policies for promoting computer services exports – Regional competitors & Pakistan

This section takes an in-depth look into the incentives/policies that the major developing countries leading in Classification 9.2, Computer services exports have provided to facilitate their IT industry. Pakistan's policies for facilitation of the IT industry are compared with those of India, China, U.A.E., and the Philippines. The computer services exports trends for these countries are shown from 2005 to 2020 in Figure 5-3. India has led in the Classification 9.2, Computer services exports since 2005. In the same classification China has recently had significant growth and is gradually catching up with India.



Figure 5-3: Computer Services Exports Trend from 2005 to 2020 for Selected Major Developing Countries

Source: UNCTAD (2021); U.A. E's Computer services exports extrapolated from 2005 to 2013 by the author

The policies aimed at the IT industry are different as compared to other industries as shown in Table 5-1.

Categories	Industrial Era Mindset – Other Companies	Knowledge Economy Mindset – IT Companies
Regulations	Physical in NatureEasy to Regulate	Virtual in Nature Difficult to Regulate Need to incentivize
Value Added Capital	 Machinery Raw materials like leather for making handbags, etc. 	 Human capital Equipment like laptops, computer systems, etc. Software
Business Withdrawal	Country-specific Infrastructure intensive Fixed once deployed	Global in nature • Easy to move out
Access to Market	Movement of physical goods and containers	Movement of people / IP visas
Political Stability	Transactional Contracts Instability has lesser impact 	Long-term Relationships with clients Political stability matters significantly
Business Disruption	 Low impact of temporary disruption Account freeze, shops sealed is routine by enforcement agencies 	Temporary disruption results in permanent business loss • Websites/networks shutdown etc.
Demands	Electricity & Infrastructure	Improved country perception & foreign policy

Table 5-1: Differences be	etween Industrial an	nd Knowledge	Economy Companies
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Source: Saeed et al (2021); Industrial insights from qualitative interviews

A policy framework is taken from the Information for Development Program/The World Bank Report (2008) identifying the indicators needed for analyzing policies that support the IT sector. The incentives mentioned in this report are focused on IT services but where equipment or other facilities are connected to services, the entire IT sector incentives are reviewed. The frame work is present in Table 5-2.

Table 5-2: Policies	Comparison	Framewor	k
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Туре	Description			
	Fiscal Policies			
Direct Tax concessions and waivers	Income tax holidays, concessional tax rates, simplified return filing provisions, special tax exemption			
Indirect Tax concessions and waivers	Customs duty exemption on exports and imports, service tax concessions, sales tax waivers			
Subsidies, grants, incentives and other financial support	Capital subsidy, subsidies on land, power & telecom tariff, interest expenses			
	Innovation Policies			
Research and Development Support (R&D Support)	Direct funding through strategic R&D grants & patent incentives, development of test bed facilities, tax break on R&D expenses			
Intellectual Property Rights Protection (IPR)	Legislation and implementation mechanisms for protecting copyrights and trademarks			
Providing incubation facilities and services	Support schemes for start-ups and SMEs offering plug & play facilities and other incubation services.			
	Human Capital Policies			
Formulating educational policies & curriculum with a focus on IT sector requirements	Making changes in curriculum based on IT sector requirements, allowing private investment in education with requisite quality checks			
Supporting training & capacity building initiatives	Government sponsored/supported programs for developing and enhancing skill sets of IT work force			
Facilitating employment creation and attracting talent	Subsidies linked to job creation, policies to attract foreign experts, relaxed visa regulations and labor market policies			
	Investment Climate Policies			
Simplified institutional and implementation framework	Declaring IT as a "priority sector" resulting in preferential treatment and efficient policy implementation mechanisms, single window clearance facilities, investment facilitation services			
Facilitating cross-border investments & trade in products and services	Favorable export import policies, free trade agreements, Double Taxation Avoidance Agreements, permitting foreign direct investments (FDI) with profit repatriation			
Enabling development of e-Commerce/e-Government	Legislations for recognizing legal validity of digital signatures & transactions, responsibility of service providers, incorporating cybercrime into existing penal provisions			
Venture capital (VC)/private equity market development	Government sponsored VC funds, transparent & well-regulated financial services sector with special fiscal concessions/benefits for attracting global VC/private equity investors			
Facilitating development of enabling infrastructure, leveraging spill over benefits	Allowing competitive development of physical (roads, airports, urban infrastructure) and telecommunications infrastructure, flexible land use policies. Special Economic Zones (SEZs)			

Source: Information for Development Program/The World Bank (2008)

5.2.1 Fiscal Policies

Under Fiscal Policies we analyze the direct and indirect tax concessions and waivers, and subsidies, grants and other supports offered across the countries. The areas of major concern for Pakistan have been highlighted in red.

5.2.1.1 Direct Tax Concessions and Waivers

Although Pakistan offers many direct Tax Concessions and Waivers to the IT sector, the recent change in policy is of concern as shown in Table 5-3.

Pakistan's tax regime which has recently shifted from Tax exemption to Tax Credit had caused many IT firms to consider locating abroad, especially to the U.A.E. which has limited taxes and a simplified tax system. Many Pakistani IT firms are already located in the U.A.E. due to this convenience. The Tax exemption was simple, the new tax credit regime has added the involvement of legal services and negotiations in the process which has made it complicated to avail the Credit. In addition to this, 1% Withholding tax has been levied on profits which can be exempted. The 1% Withholding tax is exempted if the following conditions are met under section 65F:

- 1. Returns have been filed
- 2. Tax required to be deducted or collected and paid
- 3. Withholding tax statements for immediately preceding last year have been filed
- 4. Sales tax returns for the tax periods corresponding to the relevant tax year have been filed.

The tax credit had added cost to the IT services industry, this led to some companies operating informally in the country. The Prime Minister announced on February, 2022 that the Tax credit regime will be abolished and the tax exemption will be implemented by April 2022 through amending the Income Tax Ordinance 2001. However, no such notification has been issued and it has not been implemented.

Table 5-3: Direct Tax Concessions and Waivers offered by Pakistan to the IT sector compared to other countries

Туре	India	China	U.A.E.	Philippines	Pakistan
Income Tax Holidays	Income Tax Holiday: Profits from Exports of start-ups given 5 (100% tax exemption) +5 years (50% tax concession)	Income Tax Holiday: Start-ups given 2 +3 years (3rd year given 50% tax concession) tax holiday.	100% Corporate Tax Exemption: Corporate Tax exemptions for up to 50 years No personal Income taxes	Income Tax Holiday: 4 years for non-Pioneer Projects 6 years for Pioneer Projects Offered by PEZA ¹⁷	Start-up Tax Holiday: Tax holiday for IT startups with no minimum tax and withholding tax for 3 years
Concessional Tax Rates	Depreciation: 40% rate of depreciation on computer and software	 Reduced Income Tax: 10% for key software enterprises identified by the State 15% on technology companies vs. the typical 25% 		Reduced Tax after Income Tax Holiday: 5% Special Tax on Gross Income after expiry of Income Tax Holiday offered by PEZA	Depreciation: Accelerated depreciation of 30% on computer equipment
Simplified Return Filling Provisions			Simple and Quick Tax System: Ranked Best in having a quick and simplified tax system		
Special Tax Concessions	 IT Parks Concessions: SEZ policy grants: 100% Tax break for 5 years 50% tax exemptions for the next 5 years Up to 50% of the profits ploughed back 	Income Tax Exemption: Key encouraged software companies given 5-year tax exemption	Withholding Tax: There is no withholding tax in the U.A.E.	For Companies Registered with PEZA: Exemption from all National and Local Taxes offered	Tax Regime Change: Shift from Tax Exemption Regime to Tax Credit Regime has added time and costs to registered IT firms

Source: PWC (2021a), China Internet Information Center (2021), Government of Philippines (2021) and MOITT (2021)

5.2.1.2 Indirect Tax concessions and waivers

Pakistan can learn from the other countries in the comparison, where tax exemptions are offered throughout the country. Not only tax exemptions, China, U.A.E., and the Philippines have zero-rated exports, which means that there is no sales tax on any transaction, production and sale of all the items and material used as shown in Table 5-4. Customs duty exemptions exist in all the compared countries for services countries including Pakistan where Sales Tax was not imposed on the imports of computers. However, in the Finance Bill, 2021 the exemption of Sales Tax on computers, laptops and accessories imports has been withdrawn and a 5% sales tax has been

imposed however, supply of locally manufactured personal computers, laptops and notebooks would continue to enjoy the said exemption (PWC, 2022). The IT services industry requires high quality equipment (hardware, software, etc.) in order to provide quality services and these are not manufactured in Pakistan. This is expected to negatively impact the IT services industry in Pakistan (Amin, 2021). Pakistan should consider the impacts of its policies and learn from the models of other countries. Pakistan can also take the model of Services Exports from India Scheme (SEIS) into consideration as duty credit scrips are issued which are transferrable and can be sold.

Туре	India	China	U.A.E.	Philippines	Pakistan
Customs duty exemption on exports and imports	 Duty Free Imports: All imports of Hardware and Software by the (STPI)¹⁸ units are duty free The duty credit scrips issued under SEIS Scheme can be used for payment of various taxes levied on goods and services valid till 2020 	Customs Duty, Tariffs and Import VAT Exemption: • Software companies' imports of new equipment and any raw materials is exempt • Equipment imported by software enterprises for self-use and supporting technology (including software)	Dubai's Free Zones: 100% import and export tax exemptions on goods brought into the zone	 Tax and Duty-Free Imports: Equipment and parts imported by the IT industry Importation of goods consumed in course of services Wharfage dues on the import shipment of equipment are exempted offered by PEZA 	
Service/ Sales tax concessions		Concessionary VAT on IT services: Lower rate of 6% VAT on IT services (domestic sales) compared to the standard 13%			Concessionary Sales Tax on IT services exports: • <u>KPK:</u> 5% reduced GST on IT services compared to the standard 15% • <u>Balochistan:</u> 6% on IT services compared to the standard 15%
Sales/ Service tax waivers	The Export of Services Rule, 2005: All exports of services are exempted from Sales Tax	Customs Duty and Import VAT Exemption: Zero-rated exports of certain technology transfers and software services	Zero Rated Exports: Zero Rating VAT on exports of services outside of the GCC	Zero Rated Exports: Zero-rated export sales of services for enterprises	Sales Tax Exemptions for Exports of IT services: Exemptions present in Islamabad and other Federal Territories, Sindh and Puniab

Table 5-4: Indirect Tax Concessions and Waivers offered by Pakistan to the IT sector compared to other countries

Sources: STPI (2021), Sharma (2016), Batra (2016), PWC (2021b), HKTDC (2021), and MOITT (2021); PWC (2022); Ahmed (2022)

One major concern for Pakistan is that sales tax on services is administered and levied provincially. This is not seen in the other countries in comparison, especially India where State governments have differed on regulations.

Table 5-5 contains sales tax on IT exports across Pakistan's territories as of 2021.

TerritorySales Tax on IT services exportsSindhExemptedPunjabExemptedBalochistan6%KPK5%Islamabad TerritoryExempted

Table 5-5: Sales Tax on IT Services Exports across Territories

Source: PSEB (2021); Punjab Revenue Authority (PRA) (2020); For Sindh: Sindh Revenue Board (SBR) (2020); Khyber Pakhtunkhwa Revenue Authority (KPRA) (2020); Baluchistan Revenue Authority (BRA) (2019); Federal Board of Revenue (FBR) (2020)

Figure 5-4 shows the distribution of companies across Pakistan registered with the Security and Exchange Commission of Pakistan (SECP), 30% of the total companies present in Pakistan are sole proprietors and thus are not included. Majority (48.5%) of the IT companies are present in Punjab, followed by Sindh (24.1%) and then Islamabad (22.8%). These provinces have exempted sales tax on IT services. 3.1% and 0.6% of IT companies are located in KPK and Baluchistan, respectively. Both these regions have sales tax on IT services, which might explain the lack of companies registered here.



Figure 5-4:Regional distribution of IT companies across Pakistan

5.2.1.3 Subsidies, grants, incentives and other financial support

As shown in Table 6-8, Pakistan has stepped up and is set to provide incentives from 2021 to the sector such as the 5% Cash Back following models like India (Zaidi, 2021).

"5% cash reward shall be awarded on the net export remittances of PSEB registered IT/ITeS companies and PSEB registered call centres subject to a verifiable criterion to be agreed between the State Bank, FBR, Ministry of IT & Telecom, and Pakistan Software Houses Association (PASHA)."

- Page 19, Digital Pakistan Policy. MOITT (2018)

In August 2021, the government announced to set up a fund of Rs.10 billion for providing cash rewards to IT companies against their exports (The Express Tribune, 2021). The cash back rewards have however, yet to be implemented.

PSEB has announced a cash incentive bonus of Rs. 4 billion based on IT/ITeS export remittances from 1st July to 30th June 2021. The cash reward was announced in January 2022 (Ahmed, 2021; Tech Destination Pakistan, 2022).

A little more is desired when it comes to power and telecom subsidies, where the benefit is at present available only in Sindh. However, the differences in benefits offered across states is evident in India also. Recently, there has been an increase in advance tax on telecom services from 10% to 15% in the Finance Bill 2022. The Advance tax was expected to be reduced to 8% for future years. Increase in tax to 15% on telecom services affects the affordability of internet and data services, it will also affect the Classification 9.2, Computer services exports adversely.

Туре	India	China	U.A.E.	Philippines	Pakistan
Capital subsidy	 Reimbursement of 50% of the Total Patent Cost: Attorneys' Fees, Patent Office filing fees, Examination Fees, Additional cost for entering National Phase up to grant/issue is subsidized 15% subsidy granted to hardware for information technology State wise capital subsidies like Madya Pradesh of 25% for new units 				Financing for Working Capital: Working capital financing for SMEs (Small: Rs. 25 million, Medium: Rs.50 million.)
Subsidies on land	Rebate: Rebate on cost of land by State Governments in Selected States, such as 100% exemption of land premium for establishing service enterprises	Technology Campaign: Direct resources and support to many new and emerging fields in IT and to aid startups in these fields through cheap loans, land, office space, and seed capital		VAT zero-rating of local purchases of goods and services: Zero-rating is including the lease on building, subject to compliance with Bureau of Internal Revenues and PEZA requirements	Low Rent Space: Provision of low rent space in Software Technology Parks (STPs)
Power & telecom tariff/ Inputs Subsidies	Concessions in Some States: Taxes paid on inputs will be allowed refund 25% concession in power tariffs in selected states like Telangana, 50% reimbursement on purchase of technology in the city of Chandīgarh	VAT Credit: Credit offered on the VAT paid on inputs		VAT zero-rating: Land-based telecommunications, electrical power, water bills, and leases on buildings, subject to compliance with Bureau of Internal Revenues and PEZA requirements	Sales Tax Exemption Withdrawn: Telecommunication services involving charges payable on the international leased lines or bandwidth services used by the software exporting firms registered with the PSEB ¹⁹ in Sindh has been withdrawn Increase in advance tax to 15% on Telecom services
Interest expenses	 Interest Subsidies in Selected States: Examples 5% interest charged to loans for new firms in Madhya Pradesh Up to 70% incentive for up to 11 years in Chandigarh 				Low Interest Rates on Bank Loans: Provision of Bank loans to IT Industry at 5% rates under consideration under exports finance scheme.
Rewards/ Cash Back	SEIS Scheme till 2020: 5% Cash Back on the exports of services (IT services included)				PSEB's Financial Incentive Scheme: Cash incentive bonus of Rs. 4 billion for PSEB registered companies Funds set up to Award Cash Back: 5% of cash rewards to IT companies against their exports (announced)

 Table 5-6: Subsidies, grants, incentives and other financial support offered by Pakistan to the IT sector compared to other countries

Source: India Fillings (2021), Pradesh (2000), Borst (2018), and MOITT (2021)

5.2.2 Innovation Policies

The Innovation policies of Pakistan compared to other selected countries have been looked into on the basis of policies in Research and Development support, Intellectual Property Rights Protection, and Incubation facilities and services.

5.2.2.1 Research and Development Support (R&D Support)

Since the U.A.E. does not tax corporate income and thus, the deductions on R&D expenses are not applicable. Tax deductions of expense lowers the person's or organization's taxable income. Pakistan is stepping up facilitating R&D initiatives through tax deductions and the funding of several R&D expenditures through Ignite as shown in Table 5-7.

Table 5- 7: Research and Development Support Policies offered by Pakistan to the IT sector compared to other countries

Туре	India	China	U.A.E.	Philippines	Pakistan
Direct funding through strategic R&D grants & patent incentives	R&D companies at the State Level: Software tools, space, and patent cost reimbursement is provided at state level for high-end R&D companies	State Technology Fund: The fund supports the research and development of basic, strategic, forward-looking and substantial key software technology	ICT Fund for Research and Development Projects: Since 2011, this fund is used to boost research and development in the sector	R&D Grants for Start-ups: R&D grants and start-up funds made by several government agencies like (DOST-PCIEERD) ²⁰ a Startup Grant	National ICT R&D Fund (Ignite): Operational since 2006, has funded several Research projects through innovation grants with revenue generated of about Rs. 346.1 million as of 2021
Tax break on R&D expenses	Deduction on Capital Expenditure: IT sector given 100% deduction on capital expenditure with respect to scientific research	VAT Refund: Any amount exceeding 3% of VAT paid on the sale of software products which is used for R&D will be refunded 150% tax deduction for eligible R&D expenditure		Deduction on R&D Expenditure: 100% Deduction R&D expenditure or can be deferred and allowed as a deduction distributed over a period of no less than 60 months	Deduction on R&D Expenditure: 100% deduction is allowed for research and development expenditure incurred in Pakistan. Applicable till 2021

Sources: Information for Development Program/The World Bank (2008), Borst (2018), Singh (2020), Business Mirror (2021), Ignite (2022) and FBR (2021)

5.2.2.2 Intellectual Property Rights Protection (IPR)

Trade-Related Aspects of Intellectual Property Rights (TRIPS) is an agreement of the WTO signed by 158 countries. All the signatory countries have made amendments in their intellectual property laws according to TRIPS as indicated in Table 5-8. In addition to this, Pakistan also grants SME access to credit using movable assets as collateral: stocks, receivables, patents, trademarks, and copyrights (MOITT, 2021).

²⁰ DOST-PCIEERD stands for Philippine Council for Industry, Energy and Emerging Technology Research and Development of the Department of Science and Technology

Туре	India	China	U.A.E.	Philippines	Pakistan
Legislation and implementation mechanisms for protecting products copyrights and trademarks	Amended Indian Copyright Act Amendments made according (TRIPS) in the World Trade Organization (WTO)	Revised Laws according to TRIPS: (i) Patent Law and Copyright (ii) Trademark Laws	Compliance with TRIPS: Federal Law No. 17 of 2002 repealed the Patent Law No. 44 of 1992 to bring UAE legislation into line with Trade Related Intellectual Property Rights (the TRIPS)	Amendments according to TRIPS: Amendments were made in the Philippines Intellectual Property Code and introduced an anti-evergreening clause as of April 2008	Amendments made according to TRIPS: Amendments made in 5 ordinances including Patents, Copyright, Registered Designs Acts.

Table 5-8: Intellectual Property Rights Protection in Pakistan Compared to Other Selected Countries

Sources: Information for Development Program/The World Bank (2008), Malik and Malik (2019), and Amador (2007)

5.2.2.3 Providing incubation facilities and services

Pakistan stepped in late in providing incubation facilities and services to the IT sector in 2018, while China and India have been offering these services since the 80's and 90's. The Digital Pakistan Policy 2018 is a good step by the government and is facilitating initiatives such as the National Incubation Center as per details presented in Table 5-9.

Туре	India	China	U.A.E.	Philippines	Pakistan
Support schemes for start-ups and SMEs offering plug & play facilities and other incubation services	Incubation centers Government run incubation centers under STPI offering Plug-n-Play facilities for start-ups enable short gestation period since 1991 NSIC Infrastructure Scheme - IT Incubator	Incubation Facilities in almost all IT parks Local/ Provincial Government facilitated and affiliated institutions supported incubation facilities focused under the Torch Programme initiated in 1988	Government Accelerators Launched Examples • Ghadan 21 formulated to launch incubators like Hub71 for the information technology sector • Dubai Future Accelerators launched in 2016	 Government Agencies Launch Incubation Centers: Implemented 4 strategies to promote technology entrepreneurship to launch incubators The Commission on Higher Education has granted various universities financial assistance for the establishment of incubation centers 	National Incubation Center (NIC) Start-up incubation program as per the Digital Pakistan Policy 2018 has set up 5 regional NICs through the Ignite National Technology Fund Techdestination Pakistan About \$77 million raised in venture financing in 2020 funded by the PSEB, MoITT and GoP

Table 5-9: Incubation Facilities and Services in Pakistan Compared to Other Selected Countries

Sources: Government of India (2021), NIC (2021), UAE Government Portal (2021), and Esponilla et al (2019)

5.2.3 Human Capital Policies

The human capital policies with respect to the IT sector have been compared for Pakistan and the selected countries: India, China, U.A.E., and the Philippines.

The areas of concern for Pakistan have been highlighted in red.

5.2.3.1 Formulating educational policies & curriculum with a focus on IT sector requirements

Pakistan is still in need of talent to excel in the IT field. There are diploma programmes offered by local and foreign institutions in Pakistan, but there is little awareness about them. Pakistan needs to incorporate more emphasis on IT education at a school level like other countries analyzed have done as presented in Table 5-10.

Table 5-10: IT related Education policies & Curriculum of Pakistan Compared to Other Related Countries

Туре	India	China	U.A.E.	Philippines	Pakistan
Making changes in curriculum based on IT sector requirements	Compulsory English at Primary Level and IT education in High School • Compulsory English from primary level in many states • IT education introduced at High School level with free software to develop computer skills in Karela, soon to be followed by other states	IT Education Compulsory IT education compulsory in junior and senior secondary school (Grades 7 to 12) including computer skills development such as programming etc.	 IT Education in the School Curriculum Computer Education is present at a school level from kindergarten onwards IT education is integrated from grade 6 onwards 	IT education in Secondary Level • Computer Education is present at a school level • System Programming skills and computer skill development included in the curricula	Single National Curriculum Technology incorporated into Early Childhood Care and Education
Allowing private investment in education with requisite quality checks	Private Sector Participation Private sector involved in Primary, Secondary and Tertiary levels	 China's 5 Year Plan 2017 Private Education sector is to be one of the biggest winners focusing on IT education Foreign entrants allowed into higher education on case-by-case basis such as Indian NIIT setting up training centers 	Foreign and Private Sector Involvement Foreign players and Private sector's active involvement in the Education sector	Private Sector Involvement Private sector involvement in all levels of education	Foreign and Private Sector Involvement Private and foreign sector involvement is high in the field of IT due to high employer demand

Sources: Information for Development Program/The World Bank (2008), UAE Ministry of Education (2015), and Woodman, D and Wyn, J. (2015)

5.2.3.2 Supporting training & capacity building initiatives

Similar to other countries, Pakistan has stepped up training programmes for the IT sector as shown in Table 5-11.

Туре	India	China	U.A.E.	Philippines	Pakistan
Government sponsored/suppo rted programs for developing and enhancing skill sets of IT work force	 Programmes and Schemes for IT training The National Skill Development Programme has launched several programs that include IT focused training IT focused training centers supported by various state governments National Skill Certification & Monetary Reward (STAR scheme) 	Beijing R&D institutes R&D institutes based in Beijing are encouraged to run schools/ training institutes jointly with colleges, universities, and scientific research institutes qualified for training post-graduates	Government Training Programmes Online, instructor-led, virtual and self-paced programs for training in information technology made available in the form of TRA Virtual Academy, One Million Arab Coders, EDAAD and Betha Scholarships	 ICT Scholarships and Trainings e-Filipino offering skills and training in ICT ICT scholarship and training Programme provide training in industry-specified areas of specialization in ICT 	Collaborations with private sector for trainings & development of IT sector <u>Examples</u> • Saylani Mass IT Training Program • E-Rozgaar Program: The launch of the E-rozgaar program by the government led to the enhancement of skills and professional capabilities.

Table 5-11: Iranning and capacity dunning initiatives by Pakistan compared to other selected coun	Table 5-11:	Training and	Capacity Buildir	ig Initiatives b	y Pakistan C	ompared to	Other Selected (Countries
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Sources: Government of India (2021), UAE Government Portal (2021), Saylani (2021), and Ma (2019)

Pakistan has recently collaborated with organizations like Saylani to facilitate a Mass IT Training Program. The E-rozgaar programme has been credited by Payoneer (2021) for facilitating the growth in freelancer's revenue. In the beginning of 2020, revenue growth was low due to low demand, however due to COVID-19 the demand soared and revenue growth increased in the second quarter as shown in Figure 5-5. The launch of the E-rozgaar program by the government led to the enhancement of skills and professional capabilities. This led to producing thousands of freelancers that are able to earn export revenues for Pakistan.





Source: Payoneer (2020)

5.2.3.3 Facilitating employment creation and attracting talent

In order to upgrade skills of the workforce in the IT sector, Pakistan needs to attract foreign talent as well as foreign investment. China and U.A.E. have made efforts to bring in foreign talent to generate export revenues and train local talent as shown in Table 5-12. Not only Pakistan lacks these policies but also has a complicated visa procedure that discourages foreign talent. The U.A.E. on the other hand, has introduced special visas to attract qualified labor, including freelancer's visa. This can lead to an increase in future brain drain from countries like Pakistan.

Туре	India	China	U.A.E.	Philippines	Pakistan
Subsidies linked to job creation			Part of the Government Training Programme to Provide Employment Provide financial and technical support to Employers to train new recruits	 Deduction of Training Expenses Deduction for labor expense up to 50% Deduction of training expense up to 150% 	
Policies to attract foreign/ talent		 Foreign 1000 Talents Plan Long term / Short term part to attract foreign experts in many fields including IT "Green Card" system has also been introduced as a part of this programme 	Support in Recruitment and Housing Assistance with labor recruitment, and additional support services, such as sponsorship and housing in Free Trade Zones. Dual Citizenship for foreign talent		
Policies to attract own country's experts/talent residing abroad	Several Policies to Attract Indian Diaspora Pravasi Bharitya Bhartiya Samman, Know India, Tracing the Roots, Mini Pravasi Bharitya Divas, Overseas Indian Youth Club (OYIC), etc.	Innovative 1000 Talents Plan Long term / Short term part of the 'Thousand Talents Programme to attract Chinese origin experts in many fields including IT	Return2Home Job opportunities for expatriate Emiratis returning home are provided by the government	 Programmes and Policies Balik Scientist Program to attract overseas Filipino experts in the fields of ICT, cyber security etc. on a long- and short-term basis Dual Citizenship to attract local talent residing abroad 	 Programmes and Policies Pakistan has established scholar programs, developed national databases of dispora (experts in their fields) living abroad and eased process of returning Pakistanis aiming for experts to serve in Pakistan on a short-term basis as HEC's fellows programme Dual Citizenship to attract local talent residing abroad

Table 5-12: Facilitation of Employment Creation and Attracting Talent in Pakistan Compared to Other Selected Countries

Table 5-12: Facilitation of Employment Creation and Attracting Talent in Pakistan Compared to Other Selected Countries

Туре	India	China	U.A.E.	Philippines	Pakistan
Relaxed visa regulations*	Simplified visa regulations • only 6 documents required • Processed Quickly Online within 15 days	Simplified visa regulations Special Talent Visa (S visa) for highly talented individuals	 Simplified visa regulations Online Visa Application portal. Simplified visa regulations with 7 documents required Flexibility on the number of visas Immigration services on site on Free Trade Zones Residency Visas valid for 3 years Launched green and golden visa for highly-skilled individuals, and freelancer's visa 		Complicated visa procedures 11 documents required Procedure is complicated as producing the documents is too much work Processed Quickly Online within 48 hours No special visas for IT talent experts
Facilitating Freelancers	Same Benefits as Other Exporters Exemption from sales tax and availing input tax credit is available to freelancers exporting IT services			Government Support and Training Filipino freelancers are supported by government initiatives such as the DigitalJobsPH	 Several Policies Engaging Freelancers Freelancers allowed to open a special dollar account Inward remittance limit for freelancers enhanced to \$25,000/ individual/month 35% of export earnings received through home remittance channel can be used to make payments abroad Drafted the National Freelancing Policy 2021 Exemption/ concession from sales tax and Income Tax Credit is available to freelancers exporting IT services

Sources: Government of India (2021), MOITT (2021), UAE Government Portal (2021), NADRA (2021), Dirani et al (2019), and China Travel Guide (2021)

As discussed in the sub-section 5.2.3.2, Pakistan's freelancers have contributed greatly to an increase in exports. The government, realizing their importance, has introduced a number of incentives including drafting the National Freelancing Policy 2021 which will be launched soon. Other countries have not targeted freelancers specifically, except for Philippines that has government platforms for support and thus, Philippines has the fastest growing revenue by freelancers in 2019-20 as shown in Table 5-13. In reality, the gig or the freelance economy is booming and will continue to boom despite incentives, however, this facilitation by Pakistan is still appreciated. There are discussions in India regarding policies for the facilitation of freelancers (Kaur, 2020). Like India, the general benefits enjoyed by other exporters are enjoyed by freelancers in Pakistan as well, e.g., 1% withholding tax is exempted for Pakistani freelancers given that they register with the PSEB as per the new policy in 2022. Many freelancers in Pakistan are reluctant to register due to lack of trust in government functionaries (Ali, 2022a).

Rank	Country	Year on year Revenue Growth (2019-2020)
1	Philippines	208%
2	India	160%
3	Japan	87%
4	Australia	86%
5	Hong Kong	79%
6	Mexico	72%
7	Canada	71%
8	Pakistan	69%
9	Argentina	66%
10	Spain	66%

Table 5-13: Year on year Freelancing Revenue Growth of Top 10 Fastest Growing Freelancing Countries in 2020

Source: Payoneer (2020)

5.2.4 Investment Policies

Investment policies such as institutional and implementation framework, cross-border trade facilitation, enabling development of e-commerce, and venture capital/private equity market development have been explored in this section. Areas of concern for Pakistan have been highlighted in red.

5.2.4.1 Simplified institutional and implementation framework

Pakistan has recently realized the importance of the IT sector and devised the Digital Pakistan Policy 2018 and gave the IT sector preference in the Pakistan Vision 2025, but still has to work on providing facilities for this sector as shown in Table 5-14.

Table 5-14: Institutional and Implementation Framework in Pakistan compared to Other Selected Countries

Туре	India	China	U.A.E.	Philippines	Pakistan
Declaring IT as a "priority sector" resulting in preferential treatment and efficient policy implementation mechanisms	IT Declared as priority in some states • High Industrial Priority in Chandigarh • Some estates declare IT services as essential	Made in China 2025 IT Sector declared as the priority sector	Priority Sector The IT sector declared as one of the Priority Sectors by the Ministry of Cabinet Affairs	Priority Sector in many Policies Declared Priority Sector in policies like the Comprehensive Industrial Policy and Make it Happen in the Philippines investment promotion campaign	Focus on the Telecom Sector Telecom Sector given the status of Industry in 2021, but not the IT sector
Policies Framework for promoting the IT sector	 Start-up India Make-in-India Digital India, Skill India National Policy on Software Products 2019 	 Internet+, Made in China 2025 China Standards 2035 	 "Projects of the 50" launched Programmes such as Invest.ae, Tech Drive, etc. National Innovation Strategy in Vision 2021 STI²² policy 2015 	 Make it Happen in the Philippines Investment Programme Comprehensive Industrial Policy includes the IT sector National Cyber Security Plan 2022 	 Digital Pakistan Policy 2018 Target of Increasing the competitiveness of the Services Sector, with a focus on the ICT services in the Policy Vision 2025 Cloud First Policy and the Personal Data Protection Bill 2021
Single window clearance facilities	Central Government Schemes STPI for single window services for software exporters	 Single Window Systems Operational Single Window since 2017 Shanghai Free Trade Zone (FTZ) has a "single window" access system 		Philippine Government National Single Window Single entry point to fulfill all import, export and transit-related regulatory requirements	Single Window Launch for all Exports Launch of Pakistan Single Window by 2022 No particular window for the IT sector or services
Investment Facilitation services	Investment Platforms Platforms such as Invest India Platform, FDI India, and India Investment Grid, etc.	Investment Laws New Foreign Investment Law aimed to provide clarity on FDI policies and investment protection	System that facilitates Investment Free Trade Zones for technology, the UAE ministry of Economy facilitates foreign investment through quick and simple procedures	Investment Legislatures Bayanihan 2 act made to make investments in ICT easier such as one can book an appoint with the BOI through Facebook	Investment Facilitation Centre Overseas Pakistanis Foundation (OPF) has established Investment Facilitation Centre (IFC) for Pakistani diaspora for investment in sectors including IT

Sources: DTI Philippines (2020), ITC (2021), Ministry of Cabinet Affairs, UAE (2015), Hanif (2021), World Customs Organization (2019) and Borst (2018); Ali (2022b)

5.2.4.2 Facilitating cross-border investments trade in products and services

Although FDI in Pakistan in the IT sector is growing, overall FDI is negligible compared to other countries as shown in Figures 2-12 and 5-6. Pakistan's total FDI makes about 0.82% of its GDP while India's is about 2.39.





Source: UNCTAD (2021)

Pakistan was advised against signing the Information Technology Agreement (ITA) to protect the manufacturing industry and because the IT services were doing well without it. However, Pakistan still needs to sign and effectively utilize Free-Trade Agreements that facilitate the 4 modes of supply of services, especially IT services. China's FTAs are examples of the focus services require in trade.

As indicated in Table 5-15, Pakistan offers the same facilities for FDI as the other countries do but still lags behind in attracting FDI. It means that a secure investment environment is needed to improve these inflows.

Table 5-15: Facilitation of Cross-Border Investments Trade in Products and Services in Pakistan Compared to Other Countries

Туре	India	China	U.A.E.	Philippines	Pakistan
Bilateral Investment Agreements (BITs)	 Several BITs Terminated 7 BITs are in force 4 signed but not enforced 66 BITs terminated due to many cases lodged by foreign investors 	BITs in force • 106 BITs in force • 19 signed but not in force	BITs in force53 BITs in force51 signed but not in force	 BITs in force 31 BITs in force 6 signed but not in force 	Many BITs to be Terminated 32 BITs are in force 16 signed but not enforced 23 will be terminated since 10 cases had been lodged by foreign investors
Free trade agreements (FTAs)	Agreement in Information Technology ITA WTO Agreement Agreements in services Asia-Pacific Trade Agreement, IBSA ²³ , IMCECA ²⁴ , India Singapore CECA, JICEPA ²⁵ , and IKCEPA ²⁶	Agreement in Information Technology ITA WTO Agreement Agreements in services RCEP ²⁷ , China-ASEAN ²⁸ , FTAs with 13 countries	Agreement in Information Technology ITA WTO Agreement Agreements in services GCC-EFTA ²⁹ and GSFTA ³⁰	Agreement in Information Technology ITA WTO Agreement Agreements in services PJEPA, Philippines-EFTA Agreement RCEP agreement	Agreement in Information Technology ITA WTO Agreement has NOT BEEN signed Agreements in services SATIS ³¹ , TISA ³² , Pakistan-China FTA
Double Taxation Avoidance Agreements (DTAA)	DTAAs with 85 countries	DTAAs with around 65 countries	DTAAs with 128, where about 90 already in force	DTAAs with about 43 countries	DTAAs with about 65 countries
Permitting foreign direct investments (FDI) with profit repatriation	FDI allowed and Repatriation • 100% FDI permitted in India's STPIs Capital invested Royalty, Dividend etc., can be freely repatriated after payment of Income Taxes	100% FDI allowed Allowed into IT companies and IT Parks	Foreign Direct Ownership The requirement of 51 percent local sponsorship has been removed	Foreign ownership was permitted up to 100% Includes in the IT sector	Ownership and Repatriation • 100% repatriation of dividend and investment allowed to foreign IT investors • Up to 100 percent foreign ownership of IT firms

Sources: Ministry of Commerce, China (2021), Bhutta (2021), and UNCTAD (2021)

- ²³ IBSA stands for India-Brazil-South Africa Trilateral Free Trade Agreement
- ²⁴ IMCECA: India-Malaysia Comprehensive Economic Partnership Agreement
- ²⁵ JICEPA: Japan India Comprehensive Economic Partnership Agreement
- ²⁶ IKCEPA: India-Korea Comprehensive Economic Partnership Agreement
- ²⁷ RCEP stands for Regional Comprehensive Economic Partnership
- ²⁸ ASEAN stands for Association of Southeast Asian Nations
- ²⁹ GCC-EFTA: Gulf Cooperation Council- European Free Trade Agreement
- ³⁰ GSFTA: Gulf Cooperation Council Singapore Free Trade Agreement
- ³¹ SATIS stands for SAARC Agreement on Trade in Services
- ³² TISA stands for Trade in Services Agreement

5.2.4.3 Enabling development of e-Commerce/e-Government

As shown in Table 5-16, Pakistan has all the laws and legislation required in place, but what happens on the ground is what matters. The implementation of these laws still require work and effort as many are unaware on how to utilize these laws such as the cybercrime law in their favor.

Table 5-16: Development of E-Commerce/e-Government in Pakistan and Other Selected Countries

Туре	India	China	U.A.E.	Philippines	Pakistan
Legislations for recognizing legal validity of digital signatures & transactions	Information Technology Act, 2000 Recognition for electronic records and digital signatures	Electronic signature law Law passed in 2005	Concerning Electronic Transactions & Commerce Electronic signatures are recognized in the UAE	Electronic Commerce Act of 2000 Electronic signatures are legally recognized in the Philippines	Pakistan's Electronic Transaction Ordinance, 2002 Recognition and facilitation of documents, records, information, communications and transactions in electronic form
Incorporating cybercrime into existing penal provisions	Information Technology Act, 2000 Cybercrimes defined and penalties stated under this act.	Articles 285, 286, and 287 Laws on Cybercrimes and their punishments passed in 1997	The UAE Cyber Crimes Law, 2012 Cybercrimes and penalties clearly defined	Cybercrime Prevention Act of 2012 Clearly defines penal substantive rules, procedural rules and also rules on international cooperation	Prevention of Electronic Crimes Act, 2016 Cybercrimes and punishments are defined. However, an information campaign needs to be carried out

Sources: Pawar and Kolekar (2015), Government of India (2021), FIA (2016), and CyberCrimeData (2021)

5.2.4.4 Venture capital (VC)/private equity Market Development

Venture Capital is invested in a project in which there is an element of risk, it is typically for a new or expanding business. As shown in Table 5-17, Pakistan is yet to launch a Venture Capital Fund for IT companies, while other countries have already done so. There has been funding to startups in forms such as Innovator Seed Fund (ISF) implemented by the HEC and startup funding by Ignite. However, a proper setup in the form of VC funds is still required. Pakistan does, however, offer incentives such as tax holiday for Venture Capital to attract more VC investments.

Туре	India	China	U.A.E.	Philippines	Pakistan
Government sponsored VC funds	Presence of established global VC funds Venture Capital by SIDBI Venture Capital Ltd.	Government supported existing VC funds at provincial and IT park level	Continuous launch of Government Supported VC funds such as the Future District Fund to support technology companies	Global VC funds present and pouring in due to the Innovative Startup Act	Funding for startups through Ignite, HEC, Tech Destination Pakistan and others. The Government has plans to set up a Venture Capital fund for the IT sector
Special fiscal concessions/bene fits for attracting global VC/private equity investors	Tax Exemption on Mutual Funds Tax Exemption on Mutual Funds for firms registered with the SEBI ³³	Income Offset: 70% Income can be offset against taxable income	Formation of VC funds through DIFC and the ADGM Schemes such as a tax-free VC fund, various licenses, removal of internal audits, no need to maintain minimum amount		VC Tax Holiday For venture capital funds till 2024.

Table 5-17: Development of Venture Capital/ Private Equity Market in Pakistan and Other Selected Countries

Sources: Information for Development Program/The World Bank (2008), Rizwan (2021), MOITT (2021), Nexea (2021), and Sharma (2021)

5.2.4.5 Facilitating development of enabling infrastructure, leveraging spill over benefits

Pakistan like India, China and the Philippines, has taken up the Public Private Partnership model for the development of physical infrastructure and has completed about 118 projects. On the other hand, India has completed 1,128 projects and China 1,934. All countries have a competitive telecommunications Infrastructure as shown in Table 5-18. Pakistan is yet to develop a Special Economic Zone for the IT sector, which is much needed for the IT industry to keep growing (Saeed et al, 2021). Recently a new technology park has been inaugurated in January 2022, "Amazon Software Technology Park". This increases the number of technology parks to about 17 in Pakistan. The current IT parks set up for the IT sector offer low rent and state of the art infrastructure but lack other benefits such as duty-free imports and other facilities that other countries' Technology parks offer.

Table 5-18: Development of Enabling Infrastructure in Pakistan Compared to Other Selected Countries

Туре	India	China	U.A.E.	Philippines	Pakistan
Allowing competitive development of physical (roads, airports, urban infrastructure) and telecommunication s infrastructure	Public Private Partnership (PPP) for physical infrastructure development 1,128 projects since 1990	PPP for physical infrastructure development 1,934 projects since 1990	PPP for physical infrastructure development Started in 2017, 4 projects underway	PPP for physical infrastructure development 170 financially closed projects since 1990	PPP for physical infrastructure development Public-Private Partnership Act 2017. 118 financially closed projects since 1990
Competitive Telecommunicatio ns Infrastructure	National Telecom Policy, 1999 opened up telecommunication market to private players	Competitive Telecom market with dominance of state-owned enterprises	Telecommunications and Digital Government Regulatory Authority (TDRA) formed in 2003 has led to the formation of a competitive telecommunications market	DOTC in 1987 enacted the policy that ensured fair competition in the telecommunications sector	Deregulation Policy for the Telecommunication Sector in 2003 led the way for foreign investment
Special Economic Zones (SEZs)/ IT Parks	15 SEZs for the IT sector	More than 115 Science Parks	More than 15 Free Trade Zones (FTZs)	About 262 IT Parks/ Centres	About 17 IT parks but not a Special Economic Zone

Sources: UAE Government Portal (2021), KPMG (2017), MOITT (2021), and STPI (2021)

5.3 Pakistan's Indicators of Performance in IT sector compared to Selected Developing Countries

Figure 5-7 shows how much Classification 9.2, Computer services exports contribute to the GDP of the selected countries. Pakistan's Computer services exports contribute about 0.5% to GDP. China's Classification 9.2, Computer services exports are 40 times that of Pakistan, i.e., \$54,385 million compared to 1,342 million of Pakistan's. Despite these exports being much higher than Pakistan's, China's concentration is on the manufacturing sector and thus Classification 9.2, Computer services exports only contribute 0.4% to the GDP. Yet, India's Computer services exports contribute about 2.5% to its GDP, which shows India's concentration in services.

Figure 5-7: Classification 9.2, Computer Services Exports as a Percentage of GDP



Source: Author's Calculations on UNCTAD (2021a) and World Bank (2021)

As seen in the previous section, 5.2, Incentives, Pakistan has gradually started to introduce fiscal incentives, but is lacking in human capital and investment policies. Since Pakistan has recently (last 5 years) started to concentrate polices towards the IT sector, Pakistan's ICT indicators lag behind other countries. The sub-sections 5.3.1 and 5.3.2 explore Pakistan's standing in investment, innovation and human capital.

5.3.1 Competitiveness, Cybersecurity and Innovation

Pakistan still hasn't created an environment to increase investment and attract talent to work and stay in Pakistan. Aside from this, Pakistan does have laws for cybercrime but still lacks behind in cyber security. As shown in Figure 5-8 and Table 5-19, Pakistan lags behind all selected countries in competitiveness, cybersecurity and innovation. U.A.E. too has scored low in Innovation, which is 25.3 but Pakistan has an even lower score of 22.3. India, China, and the U.A.E. have scored high on cybersecurity, which is in the 90's while Pakistan has a low score of 64.9. All three countries have been investing heavily in Cybersecurity. Pakistan's detailed rating on Cybersecurity is presented in Figure 5-8.



Figure 5-8: Indexes for Global Competitiveness, Cybersecurity and Innovation

Source: WIPO (2021), ITU (2021a), and WEF (2019)

Table 5-19: Indexes for Global Competitiveness, Cybersecurity and Innovation

Countries	GCI (Global Competitive Index) 2019 0-100	GCI (Global Cybersecurity Index) 2020 0-100	GII (Global Innovation Index) 2020 0-100
U.A.E.	75.0	98.1	25.3
India	61.4	97.5	35.6
China	73.9	93.5	53.3
Philippines	61.9	77.0	35.2
Pakistan	51.4	64.9	22.3



Figure 5 8: Indexes for Global Competitiveness, Cybersecurity and Innovation

Source: ITU (2021)

Compared to other indicators of cybersecurity, Pakistan has scored well in legal measures and capacity development (covers raising awareness amongst SMEs).

5.3.2 Human Capital

As seen in the sub-section 5.2.3, Human Capital Policies, Pakistan has just stepped-up developing human capital in the IT sector and has introduced IT training programs but lags in human capital development policies as implemented by the other countries compared. As seen in Figure 5-10, Pakistan lags behind in ICT, Skills and R&D ranking compared to other countries. Relatively, Pakistan is doing better in R&D compared to its ICT and Skills rankings.

Figure 5-10: ICT, Skills, and R&D Ranking of Selected Countries 2020



Figure 5-11 shows that Pakistan is behind the U.A.E., and China on all the 4 indicators on Education and Skills. Among its 4 indicators, Pakistan is doing relatively better in the Business relevance of Tertiary Education and lags behind other countries. Surprisingly, Pakistan is doing better than India in all these 4 indicators. It indicates that compared to India, Pakistan does have an education system that is relevant for the sector. It is, however, apparent that China's investment in human capital has led to high skill rankings in IT.





Source: WEF (2020)34

When comparing wages across countries, Pakistan had the second lowest salaries for the IT sector in 2021 amongst the countries compared. Theoretically, the average salary of a worker in a country is an attractive factor for FDI inflows. India had an FDI inflow of \$26.1 billion into the computer software and hardware sector in FY20-21, while Pakistan had 71.4 million in FY20-21 (DPIIT, 2021 SBP, 2021). This suggests that there are also other factors that affect FDI inflows. By 2030, there is expected to be a shortage of 85 million workers in the IT sector.

Table 5-20: Average Monthly Salaries in Selected Major Exporting Developing Countries of Classification 9.2, Computer Services

	India	China	U.A.E.	Philippines	Pakistan
IT Industry Professions	Average Monthly Salaries in USD				
Computer Technician	322.27	3,504.98	3,974.74	673.46	352.93
Database Administrator	394.48	4,615.94	5,335.95	824.00	455.70
Developer / Programmer	413.20	4,475.11	5,227.05	873.52	440.43
Information Technology Manager	699.37	19,872.00	9,229.01	1,370.69	745.79
Network Engineer	365.06	4,068.28	4,709.79	736.85	417.53
Average Industry Salaries	438.88	7,307.26	5,695.31	895.70	482.48

Source: Converted from local currency from Salary Explorer (2021) by the Author in the prevailing exchange rate as of October, 2021

³⁴ Data for the Philippines is not available



CHAPTER 6







This chapter reflects on the ground reality of the IT services industry which was obtained through qualitative interviews of 20 respondents from the IT industry. Interviewees represented different sub-sectors of the IT services industry, these included Animation, Fintech, Software development, Data Driven Services, Data Analytics, Consultancy, Web and Game development, BPO (Business Process Outsourcing), Application services, and Cloud transformation.

A set of questions were asked mainly addressing the potential of the industry, possible opportunities and impediments to the industry's growth, and the challenges faced by the industry along with their probable solutions. The responses from the interviews were analyzed loosely based on the Porter's Diamond Model shown in Table 6-1. The Porter's Diamond Model factors have been applied in context to the IT services industry and thus, the descriptors may vary.

Chance	Firm Strategy, Structure and Rivalry	Factor Conditions	Demand Conditions	Related and Supporting Industries	Government
 Random events Natural disasters Scientific break-throughs Terrorist attacks 	 Company strategies Structure of the organization Managerial system Intense competition between local and rivals 	 Natural resources Human resources Capital resources Infrastructure Scientific knowledge Technological innovation 	 Size of the domestic market Sophisticated and demanding domestic customers Customer needs that anticipate those elsewhere 	 Presence of competitive related and supporting industries Domestic suppliers that are strong global players themselves 	 Government policies Industry regulation Government role as a catalyst and a challenger

Table 6-1: Porter's Diamond Model Factors

Source: Bruin (2018)

6.1 Firm Strategy, Structure and Rivalry

Pakistan ranked 45th amongst exporters of Classification 9, Telecommunications, computer and information services in 2020. However, many of the countries that have top exports in 2020 in this category, have not reported exports under Classification 9.2, Computer services.

6.2.1 Structure of the IT Services Industry

The IT services industry is fragmented and divided into different segments. The segments have been summarized in Table 6-2.

Table 6-2: Segments of the IT services Industry

S.no	Segment	Characteristics
1	Freelancers	Largest segment, where they earn about \$2000 to \$5000 per month
2	Small Companies	Have about 25 employees, where they earn about \$100,000 to 250,000 per month
3	Mid-level Organizations	25 to 300/500 employees, where the revenue is about \$1 to 2 million per month
4	Large Companies	Smallest segment, where they have about 500 plus employees and revenues are above \$5 million per month

Back offices: Majority of the Large Companies are back offices for international companies that are doing development work in Pakistan.

<u>Start-ups</u> in Pakistan are increasing, where since 2015 there have been more than 250 startups in Pakistan. According to Invest2Innovate, a Pakistani consultancy firm, Startups in Pakistan have raised about \$136 million in 2021 (Chughtai and Ali, 2022).

Domestic Market: Most of the private firms that cater to the domestic market are:

- Large companies
- Companies with original software

Obtaining business:

- Business is normally obtained through referrals from past work, contracts provided by the front office, bids, and contacts present in the destination market. SMEs are usually unable to participate in bids.
- Freelancers are able to attain work through freelancing portals like Upwork.
- Other ways to obtain business is through online conferences, exhibitions, etc.
- Business is also generated through proactive lead generation, where people residing abroad are hired through platforms like LinkedIn to develop business abroad. This strategy depends on affordability.

6.2.2 Rivalry

Rivalry is defined as the competition on the demand side, where firms compete to get business.

6.2.2.1 Private firms that export:

Domestic:

Large Firms: No competition Mid-Level Organizations: Startups Startups and Small firms: Freelancers

6.2.2.2 Private firms that cater to the domestic market:

- Biggest competitor is the government
- For original software, competition is with software providers from abroad like the U.S., Turkey, etc.

6.3 Factor Conditions -

The following factors are required by the IT services industry:

1. Human Resources

Human Resource is a major factor in the IT services industry. Concerns related to human resources are as follows:

- There is currently a shortage of human resources, primarily due to a surge in demand and general shortage of talent.
- Universities are not producing graduates that can be directly employed.
- Companies have to train their new recruits for a period of 6 to 12 months before they can become productive workers.
- Startups have started hiring talent at salaries which at times are 3 to 4 times salaries prevailing in established firms.
- Turnover is high in the IT services industry as employees keep switching jobs.
 Lack of ethics amongst the young employees, where they quit without serving a notice period.

Some companies like 10 Pearls have set up universities to train students before/ after they graduate. Many companies have plans to set up their own training centers.

2. Equipment

To provide good quality services and high-end services good/high quality hardware, software, and other equipment is required, all of which has to be imported. However, there are custom duties on the hardware that the Government keeps revising upwards, sales tax of 5% tax and 3% additional duty on laptops, computers and other accessories, and 17% ad valorem duty on CBUs. This raises the costs of the equipment available in the market.

To obtain lucrative contracts, original software is needed, which is either provided by the client, the front office or purchased. Using pirated software will reduce the credibility of the firm. The purchase is usually done online.

Depreciating PKR leads to increase in the prices of hardware, software, and other equipment. Large companies are able to afford these inputs due to high revenue generation, however, it reduces the profit margins of SMEs.

3. Capital/ Finances

- There is no government sponsored Venture Capital Fund in Pakistan, particularly for the IT sector.
- The IT services firms face shortage of finances when bidding / obtaining larger contracts.
- Banks do not offer collateral free loans because of their lack of understanding of IT services.

4. Internet

Good quality broadband connection is available at affordable prices in major cities. Occasional disruptions occur during heavy rains, religious processions, and events like a cut in the underground Submarine Cable which slowed down internet services in February 2022.

5. Infrastructure

- Remote/ hybrid working has led to minimal requirement for transport.
- Rents in major cities like Karachi, Lahore, Islamabad, etc. are too high.
- Electricity prices are rising adding to costs
- Loadshedding of electricity leads to reliance on generators, which adds to costs.

6.4 Demand Conditions —

6.4.1 Domestic Market

Majority of the companies in the IT services sector in Pakistan are focused on exports and not on domestic sales. Small scale companies do not cater to the domestic market, while the large companies are able to do so.

Companies that were focused on attaining revenue from the domestic market, grew slowly before increasing the proportion of foreign sales in their revenue compared to domestic sales. Aside for high demand for IT services exports, there are other factors that discourage private sector companies from tapping into the domestic market:

- Lack of incentives (regulatory and taxation) for IT services sales in the domestic market compared to the exports.
- The private sector companies have to compete for large contracts (worth in billions) against government entities, where the government does not have to comply with all of the PPRA regulations.
- Lack of awareness of domestic firms with regards to the IT services, especially of original software.³⁵

³⁵ As per UNCTAD, software is a part of services categorized under 9.2.1 a Software originals, however as per the industry, software is regarded as a product.

- The Pakistani Rupee has been depreciating against major currencies, especially the U.S. Dollar. This depreciation in currency, leads to equipment becoming expensive as it has to be imported, however, the price charged to the domestic market is in PKR.
- The volatile trend of the U.S.D. to PKR rate reduces the profit margins of the domestic IT services providers, as they can't transfer the rise in U.S.D. to PKR to their domestic service charges suddenly.

Figure 6-1: USD to PKR exchange rate from January FY21 to April FY22



Source: State Bank of Pakistan (2022)

To prove that the rise in the USD-PKR rate leads to higher exports, its effects have been analyzed through simple regression. In case of Classification 9.2, Computer services exports, if the value of the Dollar rises against the Pakistani Rupee by 1.0% then the Classification 9.2, Computer services exports rise by 2.8%³⁶, which is statistically significant (probability of it occurring in reality is high). Since most of the actual values are near the predicted line, it means that about 91.9%³⁷ of the actual data can be explained by the obtained relationship as shown in Figure 6-3. This is understandable as when the value of the US Dollar increases, it would lead to higher revenues when converted into Rupees.

Figure 6 2: Positive Relationship between the Exchange Rate (USD to PKR) and Computer Services Exports (2005 to 2020)



Source: Author's calculations based on data from World Bank (2021) for the Exchange Rate and UNCTAD (2021a) for Computer Exports

³⁶ The relationship in percentages is obtained by running a logistic regression of the same data.

³⁷ This value has been obtained through the R square of the model.

6.4.2 International Markets

Pakistan's biggest export destination is the U.S.A., where 61.7% of the market belongs to the U.S.A. Pakistan couldn't explore European markets, despite there being demand because of the restrictions in the European market to have cyber security laws equivalent to that of GDPR. The government of Pakistan working with the MOITT has passed the Cloud First Policy and the Personal Data Protection Bill 2021 in February 2022 (Ali, 2022b). This has opened some doors into increasing exports in Europe.



Figure 6-3: Pakistan's Classification 9.2, Computer Services Export Destinations in FY21

Pakistan has a lot of talent in mainstream services but lacks talent in high-end services that are high paying. Figure 6-4 shows Pakistan's IT services Exports, where most of the exports are concentrated on Business Process Outsourcing services. Pakistan lags behind in services like software development, data science, machine learning, data analytics, Artificial Intelligence (AI), Block chain and Internet of Things (IoT) that are high paying. Pakistan's export growth can multiply by improving skills and focusing on these high-end services.

Source: Author's Estimation based on State Bank of Pakistan (2022) for country-wise exports
Figure 6-4: Pakistan's IT Services Exports



6.5 Related and Supporting Industries —

Hardware and equipment: There are some local vendors in the IT industry that import hardware and equipment. These are trusted vendors from whom majority of the industry purchases hardware and equipment.

Legal/ Tax consultation: Large companies have a legal/tax department, other companies hire tax consultant companies to handle legal and tax related matters. Software house trade associations like P@sha also support Small- Medium sized companies in filing taxes or adapting to any regime/ policy change.

Internet Service Providers (ISP): The Broadband in Pakistan has a wide list of providers such as PTCL, Cybernet, Nayatel. There is prompt support provided by the call centers and customer support departments of the major broadband services providers.

6.6 Government —

Incentives such as tax holiday for IT startups, working capital financing, etc., mentioned in Chapter 5- Incentives Given to the IT Sector in Pakistan compared to other countries, have provided tremendous support to the IT services industry. Government policies targeted at facilitating the IT sector during Covid-19 by declaring IT services as "Essential Services", provided the IT services sector the boost it needed. However, there are a few concerns regarding the government's role in Pakistan.

6.6.1 Inconsistent Policies

Policies keep on changing and revising such as Tax Credit, levy of tax on computer, laptops and other accessories, sales tax revisions, etc.

Similarly, announcements are made regarding revision in policies but not implemented by the government institutions. The Prime Minister announces a scheme but the responsible institutions do not execute or are unaware of it.

6.6.2 Lack of consultations with Major Stakeholders

Policies are usually implemented with consultation or dialogue with the major stakeholders of the industry. Many of the Federal institutions and consultative forums however, lack inclusivity such as representation from SMEs, women entrepreneurs, etc.

6.6.3 Discouraging policies

The sudden change from the Tax Exemption to Tax Credit, led to sudden harassment by the FBR. Large companies were able to handle this through hiring tax consultants and lawyers, however, other companies chose to not report/ register, relocated abroad or paid the 1% withholding tax.

Similarly, registration of freelancers has led to many freelancers to locate to other countries or they are reluctant to register due to the fear of harassment from the tax collecting authorities.

6.6.4 Government is a competitor rather than a catalyst

In most countries of the world, the government is the largest buyer of goods and services like the U.S.A. However, in Pakistan, the government is a competitor in the domestic market.

Government organizations rather than outsourcing, develop their own services and software, e.g. Nadra made Nadra Technologies, FBR made PRAL, and PIDB made their own IT department. Similarly, the government prefers to buy from abroad, as an example PIA has brought software from Turkey.

6.6.5 Lack of support from government authorities/institutions

Operational challenges are posed by government institutions. During Covid-19, when call centers were operated from home, Pakistan Telecommunication Authority (PTA) refused to whitelist the IPs of the employees that were working from home. This posed operational challenges.

Similarly, the rules of Procurement Authorities like that of Punjab, do not allow for private sector companies to receive preference when bidding for contracts.

6.7 Chance —

The Covid-19 pandemic has acted as a catalyst that caused the demand for IT services to surge worldwide. As shown in Table 6-2, it is during the last 3 years (FY18-19 to FY20-21) that the growth of exports for IT services have increased at an average growth rate of 44.8% compared to the previous 3 years from FY15-16 to FY17-18 that had a growth rate of -0.1%. In FY20-FY21, Classification 9.2, Computer services had the highest growth rate of about 54.1%. This surge in demand and government incentives has led to the set-up of several startups in the IT services industry.

Figure 6-5: Growth Rate of Classification 9.2, Computer Services from FY10-FY21



Source: State Bank of Pakistan (2022)

Covid-19's impact on the IT services was seen both in demand and supply sides.

<u>On the demand side</u>: There was the IT enablement of services through customer contacts. This created a huge demand for IT and IT enabled services.

<u>On the supply side</u>: A lot of companies had suffered from lock downs and shut downs around the world.

- Pakistan was unique in the sense that Pakistan was spared from the deep impact of COVID-19. At that point, the government played a key role when they allowed the industry to operate under the "Essential Services" Act. This allowed the entire industry to work with certain SOPs.
- Startup landscape in Pakistan saw an increase in investment by about 5-fold which is increase from \$65 million in 2020 to \$350 million in 2021 (Chughtai and Ali, 2022).
- Companies in Pakistan that serve as a back office for international companies, saw a sudden surge in demand because the supply from countries like the Philippines, Caribbean was decreasing.
- The excess demand for IT services caused desperate clients to outsource to Pakistan and this improved Pakistan's perception related to IT services

Even though, Covid-19 acted as a catalyst, the growth in IT services exports had been improving since FY17-FY18. Before FY17-18, there was very little demand and the industry felt this lack of demand on their revenues, profits and business expansion plans. The growth rate of IT services exports had been high at 43.9% in FY18-19, indicating that the surge in IT services is not only

SWOT ANALYSIS

CHAPTER 7

0

From the qualitative interviews conducted of IT services sector participants, the following SWOT analysis was generated.

7.1 Strengths —

- Resilient mindset is found in the general population in Pakistan. If there are hurdles, like electricity, heavy rains, etc. the business community devises ways to overcome them, such as using generators, booking hotel rooms to conduct business during heavy rains, etc.
- Good quality IT services at comparatively prices. Pakistan is able to provide good quality IT services at competitive prices in the international market.
- IT services industry does not require a lot of investment on the infrastructure. The IT services industry's major inputs are human resources, and equipment (which includes computers, laptops and other accessories). Other inputs like Internet connectivity, etc. is the general requirement for a country and thus, compared to other sectors, investment required is less than the benefit generated.
- Internet infrastructure is of good quality and affordable. In the major cities, there is broadband available in several packages and good internet connectivity at cheap prices is facilitating exports.
- Frequent travel and transportation are not required. IT services can be easily provided from a distance. Travel might be required to attain business, but the work can easily be executed without frequent travels, especially after COVID-19 where work from home has become common.
- Remote and hybrid working has brought in a lot of women and freelancers in IT services, that has contributed to increasing export revenues.

7.2 Weaknesses -

- Trend of IT services in Pakistan started late. Pakistan's IT services industry is relatively new compared to other countries. Similarly, the IT education system in Pakistan is new which dates back to 30 years. While IT education in India started in the 60's.
- It is difficult to work in the domestic market. Due to the several challenges in the domestic market, many private sector firms find it difficult to obtain local business and thus, are not able to make a portfolio that is attractive to foreign customers.
- There are limited large organizations in the Pakistani IT services industry. Smaller companies lack processes, skills and capability to handle big projects. There are lack of mergers in Pakistan, mostly due to the general mindset. Large companies are needed to obtain big projects and bring in higher export revenues.

- Technology parks in Pakistan do not have the facilities that are required. They lack proper infrastructure and the rent is difference is not that significant. These parks also do not have facilities like subsidized electricity, inputs, etc. as countries like India, China, U.A.E. and Philippines offer in their technology parks/ Special Economic Zones.
- Lack of branding and business promotion. Most of the company heads in the IT services industry are software engineers that have little knowledge about business promotion. Many companies have limited budget dedicated to promotion and branding.
- Industry-Academia gap where Pakistan's curriculum is outdated and not updated as per the requirements of the dynamic IT services industry. There is a human resource shortage in high paying services like Block Chain, IoT, Data Science, etc., where there are limited institutions in Pakistan catering to developing these skills.
- Lack of exportable quality original software in Pakistan. Most of the companies in Pakistan that are providing software services are usually on original software of a foreign company. The companies/ individuals that have made original software cannot just directly export it without creating a domestic base first, which is difficult in the present composition of the domestic market.
- Lack of ethics among the young workforce. Most of the employers in the IT services industry have faced fresh graduates not showing up for an interview without informing beforehand. It is mostly observed that young professionals do not serve the notice period required before switching jobs.

7.3 Opportunities –

- Young and enthusiastic population that can easily be trained and educated into learning new IT skills. Pakistani youth is talented and capable enough to earn international scholarships and are one of the key inputs into the IT services business.
- Good English skills where Pakistan's Schools in the cities (especially) are generating these skills.
 Pakistani accent is considered to be better than other countries in the international market, including that of India's.
- The cost of doing business in Pakistan is relatively cheaper compared to other countries like India, China, and Philippines, which gives Pakistan an advantage in outsourcing and makes Pakistan attractive for international companies to set up their back offices. The depreciating value of the PKR has led to lower international IT services prices.
- Financing for Global Operations has been improving. 35% of export earning can be retained in Special Exporters Foreign Currency Accounts. It has become easier to set up Dollar accounts in Pakistan and dollars earned can be kept in these accounts.

- Pakistan's Time Zone gives Pakistan a competitive edge over other countries located in region with similar time zones, like Northern America, the Caribbean, and others. This time zone allows Pakistani businesses to cater to domestic markets in the morning and international at night. Thus, this time zone difference is cost effective and revenue generating.
- The IT services global demand is increasing. Globally, the demand for IT services has exceeded its supply. When there is a shortage of supply, prices shoot up. In other words, the revenues in this industry are rising.
- Emerging technology services like Block Chain, IoT, Data Science, etc. are high paying and high revenue generating. The demand for these services is also increasing in the international market.
- Depreciating Pakistani Currency, especially, in terms of USD is leading to Pakistani work rates/ project prices to be competitive in the international market. This also leads to higher revenue of the firms.
- Pakistan's image in the IT services international market is improving. Especially after Covid-19, Pakistan has gained a reputation in the international market for being a reliable provider of IT services.
- Pakistan can explore to expand its IT services sales in Europe. Pakistan has been U.S. centered with 61.7% exports being to the U.S. Pakistan has been unable to exploit the European markets due to the requirement of having cyber security laws equivalent to that of GDPR. Government of Pakistan passed the Cloud First Policy and the Personal Data Protection Bill 2021 in February 2022. This has opened some doors into increasing exports in Europe.
- Outsourcing Software, where orders are taken from abroad and the software is developed in Pakistan. Policies targeted towards software development in Pakistan are required.
- Local manufacture of good quality computers, laptops, hardware, and other equipment. If Pakistan manufactures this equipment at par with international standards, it will aid both the manufacturing and the services industry.

7.4 Threats —

- Courts in Pakistan are not equipped to handle IT related cases. Internationally, there are specialized courts assigned to handle cases in a particular field like Banking courts, Green Courts (Environmental law). In Pakistan, there are no specific courts/ judges designated to handle Cyber Crime. Cyber Crime Laws are present but the legal system is not equipped to handles related cases.
- Pakistan's Image is fragile. Political uncertainty, economic instability, and other crises in Pakistan when highlighted can damage the country's image. Most of the International companies, when looking for service providers or for the location of back offices rely on news and country image.
- Inconsistency of policies. There are sudden changes in policies as the political regime in Pakistan changes, e.g., the change in tax regime from exemption to credit, imposition of sales tax on imported laptops and computers, etc. This restricts businesses abilities to plan ahead.
- Policies that discourage growth of IT companies. Tax Credit scheme led to harassment by the FBR and a rise the compliance cost for most companies. Registering freelancers, on paper is a good step, but to avoid constant harassment by the FBR, many may have not registered.
- Brain Drain. Due to instable, inconsistent policies, and other issues, many Pakistan firms have set up offices in the U.A.E. and other locations abroad. Due to high international demand, a lot the talent in the IT services sector has located abroad as well.
- Rise in Costs due to depreciating Pakistani currency, rise in taxation, and shortage of human resources. Continuous rise in costs will lead to a decrease in the IT services companies' profit margins.
- Disruptions in internet connectivity that occur mostly during protests, heavy rains, religious processions lead to many IT services firms losing their reputation or business because for call centers, there is a need for continuous operations.
- Difficulty obtaining finances. The Banking system is gradually recognizing the IT services industry; however, many banking institutions are focused on the goods sector rather than the services sector.
- Pakistan's laws have not been devised for the knowledge economy. Pakistan's laws are focused on the agricultural/manufacturing sector. Labor laws such as compulsory EOBI, working hours of 9 to 5, need not apply to the knowledge economy, where health insurance is provided and working hours should be flexible.

- Lack of PR of Pakistan abroad. Pakistan has not invested in Free Trade Agreements that focus on the movement of people. Easy movement of people is necessary to obtain projects/ business. Pakistan doesn't have a strong lobbying in its major markets like the U.S.A. in order to boost its business.
- Lack of Accurate statistics on the IT services industry, which hinders policy making and long-term planning for the industry.
- Difficulty in expanding business abroad, due to restrictions by the SBP such as for investment abroad, the amount should not exceed 80% of the entity's equity, etc.

CHAPTER 8

RECOMMENDATIONS

8.1 Factor related Recommendations

8.1.1 Bridge the Industry-Academia gap.

The curriculum needs to be upgraded and reviewed on a more regular basis. Coding needs to be part of the curriculum from grade 1. Currently, some companies have set up in-house facilities to build skills in graduates. Other companies are offering courses in universities that will teach students hands-on skills. More initiatives like these are required.

8.1.2 The Banking Sector needs to be educated regarding the IT services industry.

The banking sector is unaware of the projects and returns of the IT services sector. The SBP needs to devise criteria for banks for evaluating IT services projects and schemes where collateral free loans can be offered.

8.1.3 Government Backed Venture Capital Funds are required.

The IT services industry requires capital and venture capital are funds for startups, early-stage, and emerging companies that have been deemed to have high growth potential or which have demonstrated high growth.

There are currently Hybrid Venture Capital (HGVC) Funds but not a government backed venture capital fund (GVC) where the government provides capital for VC funds and manages them or influences their management. This is needed in case of market failures, funding gaps evolve, and viable enterprises are not able to obtain capita.

8.1.4 Local manufacture of hardware, computer, laptops and accessories needs to be promoted.

Pakistan needs to invest in manufacturing good quality hardware, computers, laptops and accessories that are up to international standards. This will not only boost the manufacturing industry of Pakistan but will provide a boost to the IT services industry, especially to the private sector catering to domestic business.

8.1.5 Encourage more women into the workforce.

Women make about 48% of the population in Pakistan (average from 1960 to 2020) as per the World Bank (2022) and they need to be encouraged to join the workforce, especially the IT services sector. Currently, the shortage of labor can be managed by encouraging more women into the work place which involves implementing family friendly and gender friendly policies in the work place.

The industry voices the opinion that women employees are competent and efficient and that more of them should be encouraged to work in the IT services sector.

8.1.6 Provide Subsidized Electricity.

Rising electricity costs are reducing the profit margins of many IT services providers. Subsidies in electricity for the IT services industry or cheap electricity in Technology Parks or the Special Economic Zone (SEZ), when built, are needed.

Pakistan has potential to switch to Solar power, where Pakistan's sunny climate is perfect for generating power from the sun. Incentives for the IT services industry such as 50% subsidy for solar power. Most of the IT services companies will benefit from this incentive and it would reduce the load on non-renewable resources.

8.2 Policy/Legislative related Recommendations

8.2.1 Laws need to be devised for the IT services industry.

There is a need for laws to cater for the dynamics of the IT services sector. For example, there should be laws where legal action can be taken against an employee that does not serve or complete his/her notice period. Cybercrime laws and IP laws need to be constantly improved and updated for Pakistani IT services companies to cater to markets like Europe.

8.2.2 Specialized courts should be designated for handling cases related to cases relating to IT services Industry.

Pakistan needs specialized courts set up with judges that specializes in the field of Cyber Crime, Labour disputes in the knowledge economy, etc. Unless judges are trained and acquainted with the dynamics and complexities of the IT services sector, they will not be able to implement the laws.

Not only are these courts needed for the firms but they are needed to improve the country perception of Pakistan. Having specialized courts will lessen the non-tariff barriers that exist in markets like Europe.

8.2.3 More inclusive representation in federal institutions and consultative forums.

The Public sector needs strong leadership and needs to include all sections of the population to implement conductive policies. Consultative forums like the ECC (Economic Coordination Council) require inclusive representation which includes SMEs and women entrepreneurs.

8.2.4 Consistency of policies and their proper implementation.

Policies should not be devised without consultation with the major stakeholders for whom the policy is aimed. Policies like Tax Credit should have been implemented with consultation of the major stakeholders of the IT services industry.

There is a disconnect between the policies announced and those which are implemented. Policies are announced in the media but the institutions responsible for carrying out the policies are mostly unaware of the policy change.

8.2.5 Policies targeted at attracting talent from abroad.

Pakistan needs to follow policy initiatives of countries like China. China introduced the Foreign 1000 talents Plan to attract foreign experts in many fields including IT, where the aim was to train the population in educational institutions. U.A.E. has launched special visas "Green" and "Golden" to attract foreign talent, while Pakistan's visa procedures are still complicated.

Pakistan needs to devise policies to encourage foreign talent to train and teach at its educational institutions especially for emerging technologies.

8.2.6 Rationalization of Taxation.

There is disparity in taxation across territories, due to provincial governments having the authority to levy and collect Sales tax on services in Pakistan as shown in Table 8-1. This leads to confusion, uncertainty and possible double taxation across territories. Uniform taxation on services like that of goods is required.

Territories	Domestic Sales Tax	Sales Tax on Exports
Federal Islamabad Territory	5% ³⁸	Exempted
КРК	5%	Exempted
Sindh	13%	6%
Punjab	5%	5%
Balochistan	6%	Exempted

Table 8-1: Sales Tax on IT Services on Domestic Sales and Exports

Source: PSEB (2021); Punjab Revenue Authority (PRA) (2020); For Sindh: Sindh Revenue Board (SBR) (2020); Khyber Pakhtunkhwa Revenue Authority (KPRA) (2020); Baluchistan Revenue Authority (BRA) (2019); Federal Board of Revenue (FBR) (2020) In line with the regime applicable for resident service providers, a reduced tax/WHT rate of 3% is also applicable for certain services rendered by a permanent establishment of non-resident person, which includes:

- Software development services
- IT services and IT enabled services

In order to cater to more foreign clients, outward FDI is required, but there are restrictions from the SBP such as investment abroad of the applicant should not exceed 80% of its equity, 30% capital gains tax, etc. Policies should be catered towards business expansion abroad as well, which will lead to more outsourcing work for Pakistan.

8.3 **Recommendations for the Structure of the IT industry**

8.3.1 Encouraging of formation of large companies.

Large firms are able to obtain big contracts, this will increase Pakistan's exports exponentially. To encourage this, the following measures are recommended:

- Building a Special Technology Zone (SEZ) for the IT services sector, these should be able to house more than 500 employees of a company.
- Encouragement of mergers and acquisitions to allow businesses to grow.
- Training and improving IT education to encourage more people to enter the workforce.
 Encouraging more women in the workforce.

8.3.2 Accurate statistics on the IT services industry.

IT services sector lacks accurate statistics. There needs to be an in-depth survey done on the IT services industry, where the exact number of firms, employees, graduates, revenues, services provided etc. should be reported, instead of estimates. These are required for strategy and policy planning.

8.4 Demand Related Recommendations

8.4.1 Government needs to act as a catalyst rather than a competitor in the Domestic IT services market.

Government institutions need to buy IT services and software from the private sector. Currently, the government either imports or caters to its own demand. The private sector needs to develop scale in the domestic market in order to increase its exports.

To encourage the private sector, there should be a quota defined for government projects & contracts. There should also be a quota defined for SMEs, women entrepreneurs, disabilities, minorities, etc. in order to encourage inclusivity. Presently, SMEs need support to grow in the domestic market, where they lack the means to submit bid money and meet the requirements to obtain projects/ contracts from the government.

8.5 Trade Related Recommendations

8.5.1 Setting up a Special Economic Zone (SEZ).

Pakistan has plans to set up a SEZ for information technology under CPEC. This zone is expected to house large numbers of employees, have constant infrastructure support, and be able to continue to operate in times of natural calamities, protests, religious processions, etc.

It is also important that this SEZ have facilities like subsidized electricity, inputs, etc. which countries like India, China, U.A.E. and Philippines offer in their technology parks/ Special Economic Zones.

8.5.2 FTAs with Services provisions should be signed to facilitate freedom of movement.

Pakistan needs to sign FTAs and implement them in order to transcend the non-tariff barriers. Pakistanis who need to travel abroad to get business/ contracts are facing difficulties in getting visas. FTAs can facilitate their travel and work abroad, especially in the U.S.A.

8.5.3 Need to focus on exporting High-end services.

High-end services like Data Science, Data Analytics, Software development, AI, Block Chain, etc. are growing in demand and are a source of high revenue. However, there is not enough talent available in Pakistan to provide these services. There is a need for policies that aim towards training the workforce towards these services and an institute for emerging technologies.

8.5.4 Improve Pakistan's Image and PR abroad.

Campaigns like "Majestic Pakistan", encourage tourism but also improve the image of Pakistan. There should be campaigns to improve the country image of Pakistan. Negative coverage on the news and social media, not only hurts the tourism industry but also the IT services sector.

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A1. Classification 9.1, Telecommunications Services

Classification 9.1, Telecommunications services covers the broadcast or transmission of sound, images, data, or other information by telephone, telex, telegram, radio and television cable transmission, radio and television satellite, electronic mail, facsimile, etc., including business network services, teleconferencing, and support services.

Also included are mobile telecommunications services, internet backbone services and online access services, including the provision of access to the internet.

A1.1. Excluded:

They do not include the value of the information transported. Excluded are installation services for telephone networks equipment (included in Classification 5, Construction), and database services (included in Classification 9.3, Information services).

A2. Classification 9.2, Computer Services

Computer services consists of hardware and software-related services and data-processing services. The EBOPS 2010 recommends the breakdown of this item into Classification 9.2.1, Computer software and Classification 9.2.2, Other computer services.

Classification 9.2.1, Computer software includes the following:

- sales of customized software (however delivered) and related licenses to use;
- the development, production, supply, and documentation of customized software, including operating systems, made to order for specific users;
- non-customized (mass-produced) software downloaded or otherwise electronically delivered, whether with a periodic license fee or a single payment;
- licenses to use non-customized (mass-produced) software provided on a storage device such as a disk or CD-ROM with a periodic license fee. (Non-customized software on storage devices with licenses that convey perpetual use are excluded from services and included in general merchandise); and
- sales and purchases of originals and ownership rights for software systems and applications.

It would be useful to separately identify Classification 9.2.1 a, Computer software originals as the information on these products would be of use to national accounts compilers and analysts.



Also includes On-line games CPC ver.2.1

Classification 9.2.2, Other computer services comprise the following:

- hardware and software consultancy and implementation services, including the management of subcontracted computer services;
- hardware and software installation, including installation of mainframes and central computing units;
- maintenance and repairs of computers and peripheral equipment;
- data recovery services, provision of advice and assistance on matters related to the management of computer resources;
- analysis, design and programming of systems ready to use (including web page development and design), and technical consultancy related to software;
- systems maintenance and other support services, such as training provided as part of consultancy;
- data-processing and hosting services, such as data entry, tabulation and processing on a time-sharing basis;
- web page hosting services (i.e., the provision of server space on the internet to host clients' web pages); and
- provision of applications, hosting clients' applications, and computer facilities management.

A2.1. Services Excluded from Classification 9.2, Computer Services

Excluded from Classification 9.2, Computer services are computer-training courses not designed for a specific user (included in other personal, cultural, and recreational services). Also excluded are charges for licenses to reproduce and/or distribute software, which are included in Classification 8, Charges for the use of intellectual property.

A2.2. Classification 9.2, Computer services

The UNCTAD has published the Central Product Classification (CPC) consists of a coherent and consistent classification structure for products (goods and services) based on a set of internationally agreed concepts, definitions, principles and classification rules. It serves as an international standard for assembling and tabulating all kinds of data requiring product detail, including statistics on industrial production, domestic and foreign commodity trade, international trade in services, balance of payments, consumption and price statistics and other data used within the national accounts.

EBOPS 2010	EBOPS* 2010 description	CPC Ver.2.1 Codes	CPC Ver. 2.1 description
9.2.1	Computer services - Computer software	83143	Software corals
		8434	Software downloads
		84391	Online games
		84392	On-line software
9.2.2	Computer services - Other computer services	8313	IT consulting and support services
		83141	T design and development services for applications
		83142	IT dew and development services for networks and systems
		8315	Hosting and information technology (IT) infrastructure provisioning services
		8316	T infrastructure and network management services
		8713	Maintenance and repair services of computers and peripheral equipment

The services classified under this the latest version of CPC, ver 2.1. (2015) are as follows:

Source: United Nations (2015)

Recording of Services under Classification 9.1, Telecommunication services and 9.2, Computer services

Classification 9.1, Telecommunications services and Classification 9.2, Computer services are defined in terms of the nature of the service, not the method of delivery. To illustrate, provision of business services, such as accounting services, is included under the appropriate subcomponent of other business services, even if these services are entirely delivered by computers or the internet. Only amounts payable for transmission should be included under Classification 9.1, Telecommunications services.

A3. Classification 9.3, Information Services

Information services is divided into Classification 9.3.1, News agency services and Classification 9.3.2, Other information services.

A3.1. Classification 9.3.1, News Agency Services:

Classification 9.3.1, News agency services include the provision of news, photographs, and feature articles to the media.

A3.2. Classification 9.3.2, Other Information Services:

Classification 9.3.2, Other information services include database services—database conception, data storage, and the dissemination of data and databases (including directories and mailing lists), both online and through magnetic, optica or printed media; and web search portals (search engine services that find internet addresses for clients who input keyword queries).

Also included are: direct non-bulk subscriptions to newspapers and periodicals, whether by mail, electronic transmission, or other means; other on-line content provision services; and library and archive services. (Bulk newspapers and periodicals are included under general merchandise).

A3.3. Downloaded Content:

Downloaded content that is not software or audio and video is included in Classification 9.3, Information services.

Downloaded content that is software is included in Classification 9.2, Computer services.

Downloaded audio and video content, books and educational material are included in Classification 11.1, Audiovisual and related services.

A4. List of Interviewees

List of Interviewees from the IT services Industry in Alphabetical Order

S.No	Name	Designation	Company/ Association
1	Adeel Shaikh	VP of Productivity	Nash Technologies
2	Ammara Masood	Senior Vice Chairperson President and CEO	P@sha National Data Consultant (PVT) ltd
3	Asif Peer	Chief Executive Officer/Managing Director	Systems Ltd
4	Ather Imran Nawaz	CEO	Sybrid
5	Atif Khan	Chairman & Group CEO Chairman & CEO	LMKR LMKT
6	Badar Khushnood	Chairman Co-Founder & VP of Growth Co-Founder	P@sha Fishry.com Bramerz
7	Faizan Syed	Founder & CEO	East River
8	Hussain Mehmood	Founder & Principal Analytics Consultant	MarketLytics
9	Irfan Iqbal	President	Outsource in PK (Pvt) Itd
10	Mussharaf Hussain	Director	SBT
11	Nadeem Elahi	CEO	Ibex- TRG
12	Owais Shah	Executive Director	Mexyon
13	Qadir Sobhani	CO0	Arwen Tech
14	Rehan Kazim	CFO & Company Secretary	Nash Technologies
15	Salim Ghauri	Founder &CEO	Netsol
16	Salman Akhtar	Co-CEO	Techlogix Pakistan (Pvt) Ltd
17	Shahzad Mehmood	CEO	Future Matrix
18	Syed Ahmad	CEO	DPL
19	Yusuf Jan	Co-Founder & President	TRAfiX
20	Zeeshan Aftab	CEO	10 Pearls







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