DIGITAL PAKISTAN POLICY: A DOCUMENT OF WORDS OR PLANS FOR IMPLEMENTATION, A CRITICAL ANALYSIS

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ABSTRACT
Digital Pakistan Policy is a pivotal stride toward technological progress and innovation. A rigorous comparative analysis is used delving into a multifaceted landscape of Digital Pakistan Policy, shedding light on achievements and hurdles. The legislative reforms, infrastructural enhancement, and innovative initiatives are evidence of the sweeping impact of this policy resulting in E-Commerce and IT Growth. However, persisting gaps, the absence of necessary legislation, and the least focus on skills development require attention. Amidst the ever-changing political milieu, policy stability stands as a cornerstone for sustained progress. This study illuminates a spectrum of untapped potential and success requiring exigency to get the best fruitful result. By comparing the policy against international best practices, this research provides pivotal strategic directions and insight paving the path for shaping the digital journey

INTRODUCTION
With the advancement of Information and communication technologies (ICTs), governments across the globe have formulated policies to get the most out of this advancement. Although developed countries had taken revolutionary steps to infuse technology into different aspects of life in the early years of the 21st Century. Pakistan initiated steps for the introduction of technology in different aspects of government and the Ministry of Science and Technology started an IT development program in 2001 through the creation of several taskforces for the introduction of e-Governance and E-Commerce (Ara, 2001). The Ministry of Science and Technology (MoST) initiated steps for starting new steps at the Government level for the introduction of the latest technology (MoST, 2007).

According to the 2017 Census, Pakistan has More than 64% of the Youth aged below 30 years (Talib, H. L. and M. 2022). For the best utilization of this youth, a revolutionary step toward digitization is required. Pakistan having a burgeoning population and eager toward a growing economy took a transformative step by introducing Digital Pakistan Policy in 2018. The Policy aims to best utilize ICTs for sustainable economic development, enhance the quality of life, and improvement of governance.

Pakistan was ranked 4th in the international freelancing market in 2017 (Odesk, 2017). Pakistan's online services export grew by 70% before the announcement of this Policy (SBP, 2017). Pakistan's first IT Policy was announced in 2000 under the Pervaiz Musharaf regime which has been replaced by Digital Pakistan Policy in 2018.

This policy has a wide range of initiatives for the services as well as the ICT sector which includes the promotion of Electronic Commerce (E-Commerce), expansion of broadband infrastructure, initiatives of new skills program training, and digitization of government services. This policy also aims to empower youth, especially women and girls, and to enable innovative steps for new start-ups.

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Fig-I Digital Pakistan Policy†

This research paper aims to critically evaluate the Digital Pakistan policy by evaluating the set targets and achievements made after the enactment of this policy. We will also analyze dimensions of policy like alignment with global applied best practices, its economic impact, and overall readiness of available infrastructure to support this policy. This paper also aims to provide valuable insights for policymakers, and researchers regarding digital transformation initiatives in Pakistan.

METHODOLOGY
This research uses a comparative analysis research design for analyzing the Digital Pakistan Policy and steps taken to achieve the goals of the policy and critically analyze them to provide a solution for unattained goals.

REVIEW OF LITERATURE
As we know the World has been working for a long to make the most of ICTs in every field of life. To improve IT usage continuous programs are conducted and they monitor and analyze performance and productivity (Turban McLean et al 2004). While going to opportunities and challenges in ICT Pakistan, it has been revealed that the IT infrastructure available in Pakistan is not capable of infusing the latest technology in Pakistan and political stability also has been a hurdle in the implementation of Policies relating it ICT (Kundi et al. 2008).

In the evaluation of the government's ICT policy to find out gaps in the implementation of this policy it has been found that several factors affect the implementation of ICT Policies including lack of participation of citizens in the policy-making process, political instability, inconsistent policies, and no protection for private organization relating to ICT (Baqir et al, 2009). While focusing on the effectiveness of E-Commerce, it has been found that the Digital Pakistan Policy has been designed to boost the economy through subsidized broadband, technology parks for new employment opportunities, and research (Javed, A. 2020).

Goals of Digital Pakistan Policy
The Vision of this Policy is to become strategic and enable digitization for the expansion of a knowledge-based economy and socio-economic growth. Similarly, this policy is designed to get holistic digital strategy digitization of different sectors, growth of the current market through e-commerce, Empowerment of Youth, women, and girls through IT skills, and promotion of entrepreneurship. The objectives also include increasing exports of IT products, improving ICT ranking, E-Governance, increasing investments through ICT, and introducing international standards in the IT sector. The key components of this policy are elaborated one by one hereafter.

- Legislation

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- Infrastructural Development
- Human Resource Development and Freelancing in IT
- Readiness for Adoption of Technology and Software Exports
- ICT for Girls and Persons with Disability
- Local Manufacturing
- E-Governance
- Proposed Electronic Services to Different Socio-Economic Sectors
- IoT, AI & Robotics

Fiscal Incentives in Digital Pakistan Policy

With the announcement of this policy, the Government announced income tax, withholding tax, and minimum tax exemption till 2025 for all registered startups. Moreover, there is the exemption of sales tax on the export of IT services and IT start-ups are allowed to open foreign exchange accounts in Pakistan. The other incentives include:

- 5% cash reward on remittances.
- 5% sales tax on domestic services.
- 5% interest rate on long-term loans for the opening of IT Startups.

Initiatives of Digital Pakistan Policy

Although this policy is sin quo non to the must require IT innovation in the public as well as the private sector. However, there are various lacunas in this policy as well as the implementation of the policy which will be thoroughly discussed here.

Legislation

After the enactment of the Digital Pakistan Policy, only two pieces of legislation have been done during five years namely Removal of Unlawful Online Content (Procedure, oversight, and Safeguard) Rules, 2021, and Universal Service Fund Rules 2023. Moreover, six different drafts of legislation were under process under the Digital Pakistan Policy(MOIT&T, 2022). It is necessary to mention here that no new Acts or any amendment in Acts have been made to enable IT Policy to be implemented in letter and spirit. Moreover, no new regulations have been made.

It is pertinent to point out here that the National Information Technology Board (NITB) has shared a plan to shift E-Office / E-Government on mobile phones through a dedicated application enabling officers to clear their work from home. This project will be completed by June 2023.

Pakistan's Largest Software Technology Park

According to the Pakistan Economic Survey 2022, the Pakistan Export Board has 21 operational Software Technology Parks. Economic Affairs Division and EXIM Bank South Korea are building Pakistan's largest Software Technology Park in Karachi on a loan of $158 million, which will be completed by 2025. The software will house IT Companies, Incubation Centers, Software Testing labs, etc.

IGNITE (National Incubation Center)

Another key setup taken was IGNITE whereby top IT Notchs has committed to make investments of 10.4 Billion Rupees and till December 2022, 4.7 Billion revenue has been generated. This project has created 1.1 million jobs and inducted 934 start-ups in the project (Ignite, 2022). This project has been declared one of the Champions Projects by the International Telecommunication Union (ITU) in 2022 (ITU, 2022).

National Grassroot IT Research Initiative

Through this initiative, the undergraduates of the Universities are invited to submit their final year projects (FYP) whereupon they have been granted financial support. The detail from 2011 to 2021 is as below:

Program Year	FYP Submitted	FYP Approved	FYP Funded	Disbursements (Rs. million)
2011-12	785	272	272	15.27
2012-13	1017	418	418	31.78
2013-14	1247	430	430	25.13
2014-15	1324	436	436	29.59
2015-16	1166	512	360	18.14

2017-18	1623	569	439	21.45
2018-19	2124	815	677	30.72
2019-20	2832	1042	857	29.02
2020-21	3417	1155	978	In progress
Total	**15535**	**5649**	**3929**	**201**

Fig-2: Initiatives for IT Research Enhancement[‡]

The government has also launched Kamyab Jawan Program whereby 513 billion rupees have been disbursed to the youth for initiating their startups in IT. The details of sector-wise loan disbursement and job creation are best elaborated in Fig-3:

| Services	Loan Disbursed (in Millions)	Jobs Created
E-Services	39766	42802
Agriculture	36101.95	27840
Manufacturing	5544.44	5998
Total	81412.39	76640

Fig-3: Job creation through the Kamyab Jawan Program[§]

ICT for Girls and Persons with Disability

Although the Government has initiated loans for women and girls to make IT startups but still the participation of Women in the IT Sector is still low. According to a report by the Pakistan Software Housing Association, 18% of Women and Girls entrepreneurs are working in the software industry. In 2015 a total participation of 5% was seen from the women's side in the IT sector which has grown to 14% in 2021.

E-Commerce

The E-Commerce sector in Pakistan has grown tremendously. According to the State Bank of Pakistan, a 107% soar in transactions has been seen from 4.5 million to Rs. 106 billion over a year. Whereas 32% growth has been seen in the number of merchants from September 2021 to December 2021 which is a significant number.
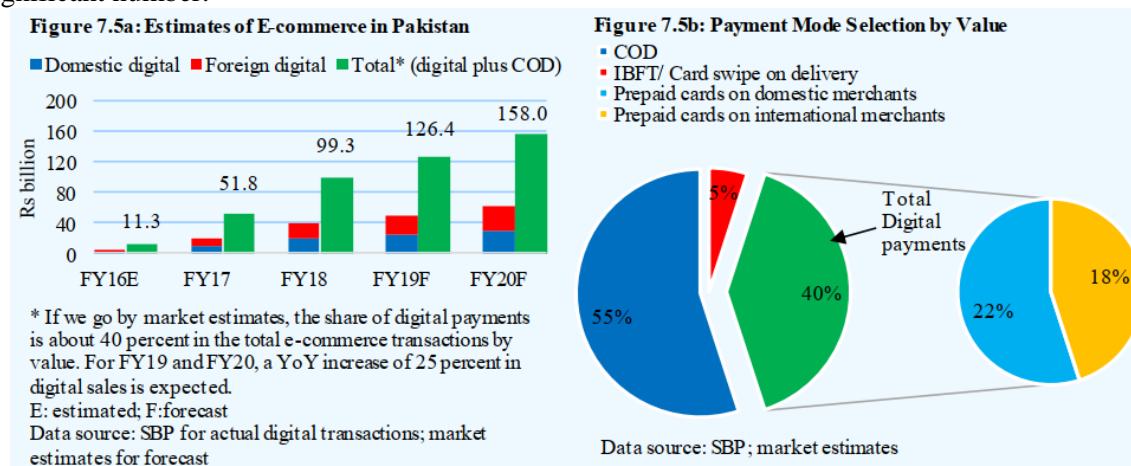
Fig-4: Transactions and Estimation of E-Commerce[**]

E-Governance

With the start of the Digital Pakistan Policy, the main focus of the Government of moving toward e-government. E-Government improves service delivery. The key aim of the government of initiate e-governance and make paperless procurement. The government has launched the following apps for Government Citizen (G2C) services.

- Pakistan Citizen Portal App.
- Computerization of Land Records in KP and Punjab

[‡] National Economic Survey 2022

[§] Kamyab Jawab Program 2022

[**] State Bank of Pakistan, 2021

- Computerization of Police Stations in Punjab.
- E-Stamping in Punjab
- E-Vaccs program for vaccination and immunization.
- Monitoring mechanism for the Health and Education sector in KPK.
- National Job Portal for online jobs announcement.
- Pass Track app for Management of travelers coming over to Pakistan including recording and tracking of foreigners' basic information.
- Think-Tank Portal for finalization of national policies or decisions based on the data and queries by the National Security Division.
- FM Portal, a complaint Management System for foreigners
- EAD Portal for NGOs in which different NGOs register themselves for one year initially.
- Bait-Ul-Mal Portal The Bait-Ul-Mal Portal is being developed for Bait-Ul-Mal Headquarters and its regional officers located across the country. The purpose of the software/portal is to get the registration of students, especially females from backward areas for technical education.

DISCUSSION AND ANALYSIS

Although, after 18 years, the Digital Pakistan Policy was a good initiative by the Government, however, several critical points have been found in this policy. These critical drawbacks require attention in the next policy to achieve the real essence of Information Technology economically and technologically.

Readiness for Adaption of Technology

According to the Technology and Innovation Driver Ranking Report of 2018, Pakistan has been ranked 88 for technology and innovation whereas India is at 34, Bangladesh at 86, and Philpine at 59. This shows our lack of commitment to ensuring the adaption of new technology in the Country.

Table 7.3: Rankings on 'Technology & Innovation' Driver out of 100 sample countries

	Pakistan	Bangladesh	India	Philippines
'Technology & Innovation' driver ranking	88	86	34	59
(1) Technology platform	87	78	59	47
FDI and technology transfer	60	88	52	56
Cyber security commitment	66	55	26	39
Mobile-cellular telephone subscriptions	97	94	88	72
Internet users	98	97	86	65
(2) Ability to innovate	80	97	29	85
Govt. procurement of advanced tech products	26	69	7	68
Companies embracing disruptive ideas	39	83	12	35
Company investment in emerging technology	43	67	28	54
State of cluster development	47	57	29	54
Patent applications	86	87	54	68
Venture capital deal volume / size of economy	90	99	27	59

Data source: WEF Readiness for the Future of Production 2018 Report

Fig-5: Ranking of Technology and Innovation[††]

No Legislation for E-Governance

Although Digital Pakistan Policy is aimed to transform governance and government system to electronically run the system. The policy is aimed to make amendments to PPRA Rules, Rules of Business, and Secretariat Instructions. E-Government has been announced and is being run on a pilot basis in different Ministries, however, no such binding has been made through legislation to make e-government / e-office mandatory to run official business in the public sector

Ease of Doing Business for Startups

From the below-given stats of the State Bank of Pakistan, in 2021-22 Pakistan's IT exports were $1.9 billion which was $1.1 Billion in 2018-19 before the announcement of the Digital Pakistan Policy.

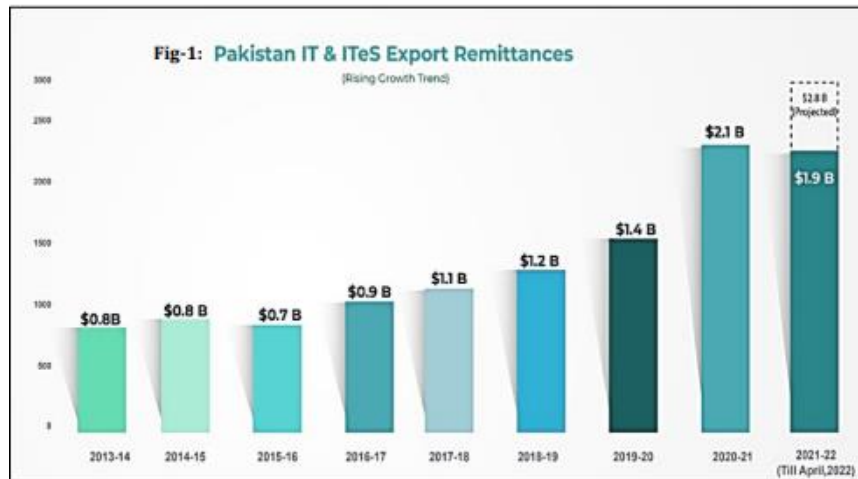[††] WEF Readiness for Future Production Report, 2018

Fig-6: IT exports and Remitences till April 2022[‡‡]

Whereas the figure shows that $40 million were imports for IT equipment. Moreover, important payment platforms like PAYPAL may be approached to start their services in Pakistan to provide ease to the exporters and service providers.
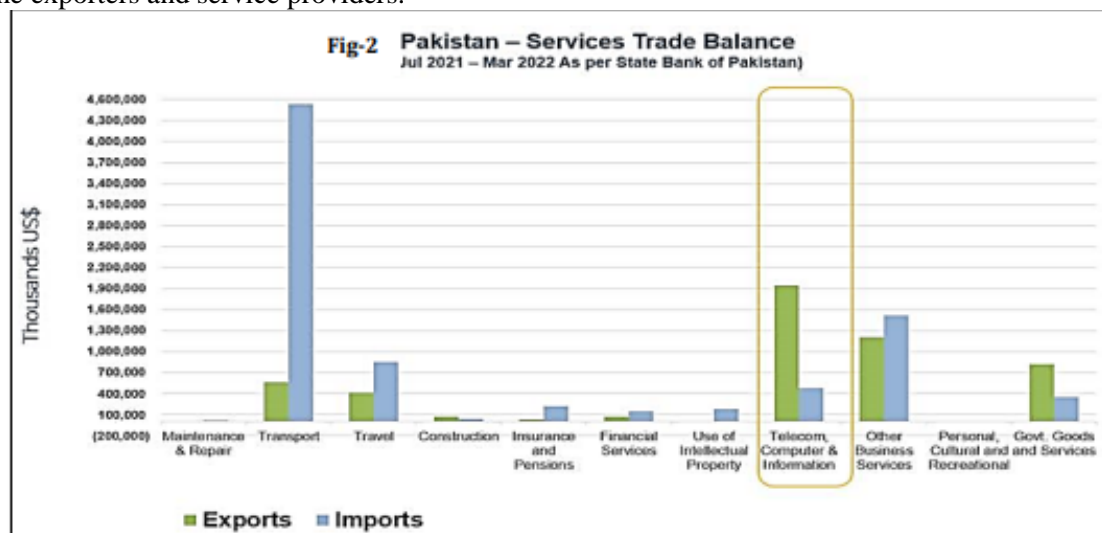

Fig-7: Exports and Imports of Various Sectors in Pakistan[§§]

According to National Economic Survey 2021-22, Pakistan's ICT exports plunged to Rs. 11,665 Million during 2021-2022 which is 39% of total exports during 2021-2022. This shows that the ICT sector has the potential to run the government's affairs if given priority.

[‡‡] State Bank of Pakistan, 2021
[§§] National Economic Survey, 2022

Goods and Services Balance (A-B)	-31,150	-3,253	-44,890	-9,270	-6,324	-1,578	-5,024	-1,776	-36,559	-22,394
1. Goods - Export (FOB)	25,639	3,152	32,493	7,391	6,841	2,438	6,867	2,112	26,858	23,211
2. Exports of Services	5,945	645	7,102	1,654	2,080	610	1,789	486	5,923	6,009
1. Manufacturing Services on Physical inputs owned by Others	0	0	0	0	0	0	0	0	0	0
2. Maintenance and Repair Services n.i.e.	3	0	3	0	0	0	0	0	3	0
3. Transport	544	68	814	218	210	54	169	55	652	652
4. Travel	501	44	542	123	356	98	358	44	463	881
5. Construction	116	5	94	7	11	2	5	3	83	26
6. Insurance and Pension Services	47	2	42	13	19	4	15	5	34	52
7. Financial Services	138	20	201	18	24	4	10	4	151	56
8. Charges for the use of Intellectual Property n.i.e.	13	1	13	3	4	1	3	1	11	11
9. Telecommunications, Computer, and Information Services	2,108	249	2,619	633	700	224	609	191	2,199	2,133
10. Other Business Services	1,448	153	1,690	391	421	121	359	131	1,392	1,302
11. Personal, Cultural, and Recreational Services	11	2	13	3	5	1	3	1	11	12
12. Government Goods and Services n.i.e.	1,016	101	1,071	245	330	101	258	51	924	884
of which: Logistic Support	0	0	0	0	0	0	0	0	0	0
A. Exports of Goods and Services (1+2)	31,584	3,797	39,595	9,045	8,921	3,048	8,656	2,598	32,781	29,220

Fig-8: Pakistan Exports During 2021-22[***]

Political Stability

It has been witnessed in the past that the policy announced by the previous government was either abolished by the new government or no focus has been given to that policy. The same is the case with this policy. After the change of government in 2022 no special care has been made for accomplishment of goals under this policy.

No Focus on New Skills Development Universities

The Government has not focused on the establishment of any new university specifically for skills development. Although National Skills University in Islamabad is working, however, such kinds of universities are necessary to be established at the provincial level.

Focus on Made in Pakistan

As per National Economics Survey, Pakistan's local manufacturing in 2016 was $0.3 million had only 03 companies working in mobile manufacturing plants in Pakistan. Whereas, this revenue generation has pledged to 7.16 million in 2022 and 2.83 million smartphones have been manufactured creating 22,000 jobs. The companies working on "Made in Pakistan" has reached 30 which is not a good increase, however, it can be more if special focus is given. However, it is imperative to mention here that government should approach big tech giants for making investments in the Manufacturing of ICT products as seen in the case of India and Bangladesh which have brought Google, Facebook, Apple, and other tech giants to India.

Calendar Year	Local Manufacturing Quantity (million)	DIRBS Impact	Job Creation (approx)	No. of Companies
2016	0.3		200	3
2017	1.7		600	3
2018	5.2		3000	9
2019	11.7	Increase by 125% from 2018	8000	11
2020	13.1	2.16 Million 4G Smart Phones assembled in Pakistan	600	3
2021	24.7	10.06 Million Smart Phones Manufactured in Pakistan	2,000	30
2022 (Mar)	7.16	2.83 Million 4G smart Phones Manufactured in Pakistan	22,000	30
Source: PTA				

Fig-9: Smart Phones Industries in Pakistan[†††]

[***] National Economic Survey, 2022
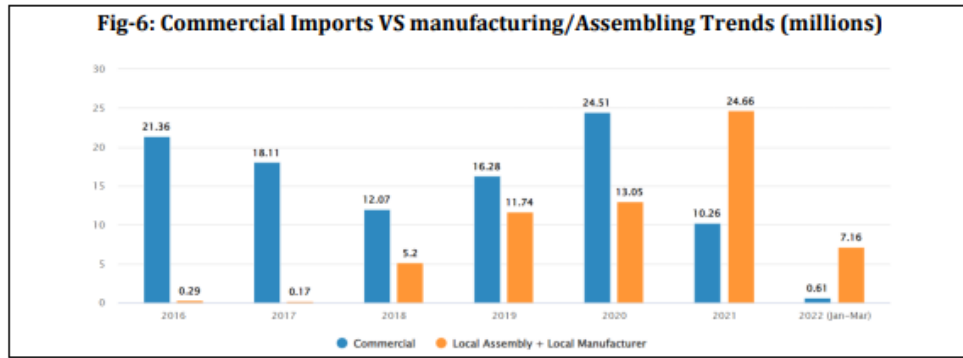[†††] Pakistan Telecommunication Authority, 2022

Fig-10: Local and Commercial Assembly of Mobile in Pakistan‡‡‡

CONCLUSION

This study reveals that the Digital Pakistan Policy is a good initiative for boosting the economy and IT Sector in Pakistan. Although, this research was desk based on a qualitative approach, however, limitations in finding data regarding IT exports, human resources in ICT, and unregistered tech startups were faced during this research. Even though it was required in the first decade of the 21st Century, however, Pakistan can reach in top countries of the ICT market if the government pays special attention to this sector. We have seen that the ICT sector is growing surprisingly without many incentives. However, if given priorities, we can boost our economy, and the ICT sector can give a breakthrough which is the need of the hour for Pakistan's economy. The Government should continue this policy by announcing its policy for 2023-2028 in the future focusing on lacunas given in this research as well as in the economic surveys.

RECOMMENDATIONS

The government of Pakistan should focus on the IT Sector to increase exports of ICT services for running government affairs by giving short-term and long-term plans for IT freelancers, startups, and companies. Special incentives may be announced for domestic manufacturers to start industries in Pakistan to reduce IT imports and move toward Made in Pakistan products. Special initiatives be taken to establish skills development universities, first at the Provincial Level and then at regional and district levels. All policies should be state-owned rather than government-owned which will bind the new government to carry on such policies or to give a special reason for discontinuing any policy. Amendments may be made in ROB and Secretariat Instructions to make E-Office and E-Governance mandatory for government officers to get the most out of the latest technologies. Government should work on its legislation and other process to enable ease of doing business making Pakistan ready for new innovative technologies. For exporting parts to manufacture MADE IN PAKISTAN products, the government should announce special incentives for new companies.

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