Digital Pakistan Policy

Ministry of IT & Telecom

Contents

List of Acronyms

3G/4G – 3rd Generation/4th Generation

BPO - Business Process Outsourcing

CMMI – Capability Maturity Model Integration

FBR - Federal Board of Revenue

FDI – Foreign Direct Investment

G-Cloud – Government Cloud

GIS - Geographical Information System

GOP - Government of Pakistan

HEC – Higher Education Commission

HRD – Human Resource Development

IaaS - Infrastructure as a Service

ICT - Information Communication Technology

ITeS – IT enabled Services

IoT- Internet of Things

IPO – Intellectual Property Organization

IPR – Intellectual Property Right

ITA – International Trade Agreement

ISO – International Standards Organization

ITU - International Telecommunication Union

LED - Light-Emitting Diode

SMEs – Small Medium Enterprises

TDAP - Trade Development Authority of Pakistan

TPs – Technology Parks

USF – Universal Service Fund

VAS – Value Added Services

PRAL – Pakistan Revenue Automation (pvt) Ltd

M-Government – Mobile Government

MoIT- Ministry of Information Technology and Telecommunication

MNC – Multi-National Corporation or Company

MSME – Micro, Small and Medium Enterprises

NADRA - National Database and Registration Authority

NITB – National Information Technology Board

ODR – Online Dispute Resolution

PaaS - Platform as a Service

PASHA - Pakistan All Software Houses Association

PC – Personal Computer

PSEB - Pakistan Software Export Board

PSO – Payment Service Operator

PSP – Payment Service Provider

PPP – Public Private Partnership

PTA - Pakistan Telecommunication Authority

PSDP – Public Sector Development Program

PWD - Persons with Disabilities

R&D – Research & Development

R&I – Research & Innovation

ROI – Return on Investment

SaaS - Software as a Service

SBP – State Bank of Pakistan

SDG - Sustainable Development Goals

SECP - Securities & Exchange Commission of Pakistan

Preamble

Information technology has assumed a central enabling role in the emerging dynamics of a knowledge society and knowledge economy. It is a key lever of economic development. The growth trends of Pakistan's economy have been corroborated and praised by numerous independent global institutes. Pakistan's Information Technology (IT) sector is carving a differentiated position as the preferred source for software development, BPO and freelancing. Pakistan was ranked at number four[1] for freelance development in the world and IT exports have increased 70%[2] during the last three years.

Pakistan, which has about 60% of its 200 million population in the 15 to 29 age group, represents an enormous human and knowledge capital. Pakistan has more than 2000 IT companies & call centers and the number is growing every year. Pakistan has more than 300,000 English-speaking IT professionals with expertise in current and emerging IT products and technologies. More than 20,000 IT graduates and engineers are being produced each year.

The Government of Pakistan (GOP) continues to facilitate the IT industry through numerous sustainable development and accelerated digitization projects, research and innovation, software technology parks, subsidized bandwidth, international marketing, international certifications, internships and trainings. Incentives to bolster growth include 100% equity ownership, 100% repatriation of capital/dividends, tax exemption on IT & ITeS export revenues, tax exemptions to startups and subsidized state of the art Software Technology Parks.

The GOP has a holistic strategy for positioning Pakistan on the global outsourcing map, participation in international forums, organizing domestic conferences, scaling software technology parks and facilitating certification (ISO 27001 and CMMI) programs.

Given the augmented IT demand and growth, it has become imperative to reformulate the Digital Pakistan Policy: one that takes into account its increasingly transformed role across all sectors of socio-economic development; their accelerated digitization, and transformational modernization into integrated components of a holistic knowledge based economy. With this in mind, Ministry of IT & Telecom (MoIT) has formulated this policy document based on a multi-stakeholder model. The Digital Pakistan Policy imperatives are also very much intertwined and therefore addressed holistically to transform the IT and other sectors of economy on fast track basis.

This policy will also serve as the foundation for the construction of a holistic digital ecosystem with advanced concepts and components for the rapid delivery of next generation digital services, applications and content. It will serve as an aggregator of demand for innovative digital services and as a supplier of data for value added services and applications.

It is an opportunity for local entrepreneurs and firms to acquire core competencies, experience, and credibility and become better positioned to compete and prosper on the international stage.

[1] Odesk.com, [2] State Bank of Pakistan

Policy Vision

The Government of Pakistan (GOP) strives to improve its citizens' quality of life and economic well-being by ensuring availability of accessible, affordable, reliable, universal and high quality ICT services. GOP strongly believes in mass adoption of emerging digital technologies and innovative applications to enable cross-sector socio-economic development and transformation of economic activities, governance models, social interaction, and achievement of sustainable development goals.

The vision with regards to Digital Pakistan Policy is:

To become a strategic enabler for an accelerated digitization eco system to expand the knowledge based economy and spur socio economic growth

Policy Objectives

I. **Holistic Digital strategy**
A key goal of the Digital Pakistan Policy is to create a digital ecosystem with infrastructure and institutional frameworks for the rapid delivery of innovative digital services, applications and content. This policy represents a shift away from a piece-meal approach to a holistic technology strategy clearly focused on ICT as a broad enabler of every sector of socio-economic development.

II. **Sectorial Digitalization**
Promote the use of technology in education, health, agriculture and other key socio economic sectors. Encourage the use of ICT in public schools and ensure they are online and have a meaningful impact on the current education eco-system in a phased manner.

III. **E/M-Commerce**
Enhance the current market size of e/m-commerce. According to some estimates, the market carries an enormous growth potential due to exponential growth in broadband subscribers from 3.7 million in 2013 to over 44.3 million in 2017 and increasing. With these growth trends projected to persist in the future, overseas investments will continue to grow in e-commerce.
Promote e-commerce by providing and enabling an environment where Payment Service Providers (PSP) and Payment Service Operators (PSO) can operate and establish an effective e-commerce platform and take e-commerce activities in Pakistan to the next level.

IV. **Youth, Women and Girls empowerment using IT**

Youth and Women represent roughly 60% and 49% respectively of the population. Ensuring women and girls have equal access to ICTs will help reduce inequalities and support gender

equality. The value of ICTs is largely seen through increased productivity, improved access to health and education, equitable participation in social, political and economic spheres, thus breaking barriers of isolation.

Initiate specific ICT for Girls' programs for imparting quality trainings in computer skills, including software coding, across the country to reduce inequalities, provide decent work and promote economic growth in line with relevant SDGs.[5]

V. **Promote Innovation, Entrepreneurship, Incubators/Startups in IT sector**

Generate sustainable innovation, entrepreneurship and employment opportunities for the country's rapidly growing technology savvy and entrepreneurial youth. To conduct digital skills programs for the human resource development in current and emerging technology domains. Collaborate with international partners to boost innovation. Set up venture capital funds to hold national level competitions on regular basis in all key emerging technologies and applications.

Establish and build a framework for setting-up incubation centers in provincial capitals & major secondary cities facilitating IT startups to get off the ground more quickly and smoothly by tapping into a vast network of business partners and mentors, including specialized innovation centers in thematic areas including FinTech, Artificial Intelligence (AI), Internet of Things (IoT) and Robotics. Promote and encourage entrepreneurship by providing incentives to IT sector and training for young professionals to become freelancers.

VI. **Increase software exports, IT remittances & Domestic Market**
The success of the IT industry and freelance sector, the ability of Pakistani IT professionals to win international awards and the availability of a large highly qualified English speaking workforce point to a huge potential for boosting software exports and outsourcing opportunities expanding the domestic market.

VII. **ICT Ranking of Pakistan**
Improve Pakistan's ICT ranking based on international indices and benchmarks measuring the business & innovation environment, infrastructure, affordability, skills readiness, and socio-economic impact. Improve the provision of data to the international rating agencies.

VIII. **Digital Inclusion**
Bridge the digital divide including the urban and rural divide, gender disparity, unserved and underserved areas, inequality for the person with disabilities, by connecting the unconnected with broadband.
   i. **Development of IT Zones/Software Technology Parks**
      To setup at least one state of the art purpose built 'Software Technology Park' at major cities of Pakistan (federal and provincial capitals) to promote efficient and cost-effective collaboration, digitization, Research & Development (R&D), entrepreneurship and innovation.

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[5] **Supporting UN SDG's 1, 4, 5, 8, 10**

ii. **Telecenters**

Setting up Telecenters in unserved and underserved areas of Pakistan to provide public with easy access to ICT services.

IX. **E-Governance**

Promote e-Governance to make Pakistan the frontrunner in good governance through IT enablement at all levels. Ensure efficiency, transparency and accountability by setting up integrated government databases and applications.

X. **Increase foreign and domestic investment**

Make Pakistan an attractive destination for investment in the IT/ITeS industries to create jobs and fuel economic growth.

XI. **Persons with Disabilities**

Reduce barriers to online access for "Persons with Disabilities" (PWDs). Include provisions of prodigious empowerment of PWDs in IT accessibility.

XII. **Standardization**

Coordinate and support standardization efforts, maximize reusability, create synergies and deliver cost effectiveness. This includes facilitation of international standards certification e.g. CMMI, ISO, procurement etc.

Section-I: Key Components

1. Legislation

1.1.   Promulgate necessary policy frameworks, laws and rules to enable creation of a sustainable IT environment including enactment of data protection law that covers:

   1.1.1.   Protection of personal data and online privacy for improved transparency and security of sensitive and confidential information through appropriate Data Protection law.

   1.1.2.   Develop a framework for cloud based services and its regulation which include data classification mechanism, standards for access, data privacy & transparency, ownership and security to promote the adoption of cloud services for better & agile delivery of services to end users.

   1.1.3.   Continue cooperation with Ministry of Commerce to formulate e-Commerce framework/policy guidelines in consultation with relevant stakeholders in e-commerce. This will include measures such as appropriate regulation, tax rationalization, trade facilitation, Online Dispute Resolution (ODR), Consumer Protection and Privacy etc.

   1.1.4.   Promote the use of digital signatures to augment data security and authentication.

   1.1.5.   Amendment of relevant rules/laws related to e-Governance such as "Rules of Business", "Secretariat Instructions" etc. to accommodate electronic workflows, processes and e-Approvals/e-Submissions etc.

2. Infrastructure Development

2.1.   Enable cross-sector collaboration with a strategic shift towards a Digital Ecosystem for maximum economic impact by establishing Software Technology Parks (STPs) and engagement models to promote digitization, Research and Innovation in new emerging technologies within the ICT as well as other socio-economic sectors.

2.2.   Establish state-of-the-art Software Technology Parks (STPs), in the federal and provincial capitals and devise a framework for development of STPs in secondary cities that provide relevant world class data and network facilities to SMEs and MNCs. The STPs will have built-in facilities for women and Persons with Disabilities (PWDs) as per international standards.

2.3.   Establish National Technology Incubation Centers across the country. Software Technology Parks will also house an 'Accelerator' and 'Incubation Center' with attached Investment fund to help entrepreneurs and emerging technology startups find stable support and access to the resources they need.

2.4.   Promote an Open Digitization infrastructure for shared services including cloud technologies to achieve synergies and economies of scale in both the public and private sectors.

2.5.   Provide access to subsidized workspaces, shared services, funding, promotional and accreditation agencies, R&D facilities and professional training.

2.6.   Coordination with relevant stakeholders for interoperability to enable any-to-any settlement amongst various existing mobile banking systems specifically with respect to Pakistan's e-Payment Gateway.

2.7.   Establish 'Telecenters' across Pakistan to encourage the usage of digital services, promote innovation and help bridge the digital divide.

2.8.   Facilitate IT related innovation through developing smart cities and help solve local problems through use of Technology.

3. Human Resource Development, Entrepreneurship, R&I and Freelancing in IT

3.1.   Utilize the power of IT to enhance the outreach and quality of education, at all levels, across the country through HRD programs to enhance requisite digital skill set of individuals that are of relevance and value to the IT industry. Initiate programs to train young graduates, freelancers and professionals on market intensive skills through both class room and virtual training sessions.

3.2.   Collaborate with relevant stakeholders, including International Universities, to advance e-learning for the educational and other strategic sectors to improve our knowledge economy.

3.3.   Bridge the gap between Industry and Academia through a 'Structured Gap Analysis' program by engaging with key stakeholders. Periodic advisories to be issued to all respective stakeholders for implementation with set timelines.

3.4.   Design and develop customized programs with a special focus on Girls and Women. This should aim to ensure socio-economic uplift of a significant percentage of our demographics particularly in rural and underserved areas of Pakistan, giving them with a stronger voice in their communities and local government, the national and international level.

3.5.   Work with industry stakeholders to ensure the provision of equal opportunities of employment for women and girls in the field of IT and to put in place employment policies that encourage their effective participation by removing barriers that hinder career development.

3.6.   In alignment with industry demands, execute internship program to make young IT graduates market ready on cutting edge technologies and to enhance the employability of our youth and their development in latest IT trends such as Internet of Things (IoT), Artificial Intelligence, Robotics , Fintech, Cyber Security, Big data, Entrepreneurship etc.

3.7.   Regular review and assessment of supply-demand equilibrium through market studies to make planning & execution more effective.

3.8.   Support Startups and MSME sector through IT skills training & usage, sponsorships, national level competitions, certifications, facilitation for Mergers & Acquisitions (M&A), equity sale and connecting these startups with relevant funding organizations.

3.9.   Advance entrepreneurship and Research and Innovation (R&I) by implementing a paradigm shift towards the strategic exploitation of traditional as well as emerging

technology sectors such as Robotics, FinTech, Augmented/Virtual reality, Internet of Things (IoT), Big Data and Artificial Intelligence etc.

3.10. Encourage international collaboration to develop partnerships to promote relevant research and innovation.

3.11. Promote a culture of entrepreneurship through technology incubators within the IT community. Invest in creating the ecosystem that is needed for entrepreneurs to successfully compete in global knowledge economies.

3.12. Promote sector-wise digitization and entrepreneurship by developing viable and cost effective next generation services, applications and content that is relevant to key economic sectors for mass adoption and commercialization. Promote smart IT applications to facilitate health, education, energy, commerce, agriculture and entertainment sectors.

3.13. Facilitate seed funding to "Proof of Concept" projects of entrepreneurs to encourage localization, content creation and user adoption.

3.14. Collaborate with technology industry associations, academic & industry incubation centers and stakeholders to promote the products produced with seed funding initiatives at national and international forums.

3.15. Create incentives and initiatives for entrepreneurs for indigenous development by helping the domestic IT and ITeS industry build upon its success in its traditional sectors of strength including banking, insurance, health and telecommunication applications.

3.16. Promote National Innovation and Entrepreneurship competitions in emerging ICT technologies across the country and their participation in relevant international events to gain global exposure and to attract international investors.

3.17. Encourage financial institutions and major key Industry players for the provision of funding for IT Startups.

3.18. Launch digital skills training programs for freelancers.

4. Software Exports

4.1 Pursue all measures including legislative, policy, administrative and international marketing measures, to augment software exports, create jobs and contribute towards the government's efforts to increase overall IT exports and remittances.

4.2 Concentrate on emerging areas of mobile application development, responsive web applications, big data analytics, Internet of things (IoT) and cloud computing to leverage existing competencies in Pakistani IT industry and to improve its export potential.

4.3 Focus on moving up the global IT value chain through innovative product development while also exploring new markets where 'Business Process Outsourcing' jobs can be created.

4.4 Attract global multinational companies to leverage Pakistan's talent for backend services by providing appropriate incentives in a transparent manner.

4.5 Promote domestic software market through public sector projects.

4.6 Utilize the Pakistani Diaspora in the North American, European and Middle Eastern markets to enable inclusion of young Pakistani IT entrepreneurs into the global IT value chain.

4.7 Provide enabling environment for companies to set up Venture Capital funds, Accelerators and other support mechanisms for startup companies.

4.8 Work with public sector relevant stakeholder's for developing conducive business environment for IT Industry.

4.9 Educate IT companies for proper reporting of IT remittances as mandated by SBP.

4.10 Maintain a database by conducting market surveys regarding IT companies' annual exports, domestic revenues, HR strengths and areas of technical expertise etc.

4.11 Pursue the placement of ICT Business Development experts at Pakistani embassies, commercial consulates, and offices of Trade Development Authority of Pakistan (TDAP) to promote and showcase Pakistani IT products & services. For some large markets, such as North America, Europe, and Middle East, dedicated consultants to be hired to spearhead the market development and promotional efforts.

4.12 Encourage equity participation of banks in software projects by setting up venture capital funds.

4.13 Earmark sufficient additional funds & support infrastructure for PSEB to perform its role effectively in promoting IT exports by encouraging Pakistani IT companies' participation in international IT events, trade fairs and exchange of IT delegations.

4.14 Attract local investors and business groups to invest in software industry through a comprehensive incentive program.

4.15 Encourage major multinationals operating in Pakistan to set up their software houses in Pakistan and expand their business footprint for serving their domestic and international markets.

4.16 Engage in international marketing campaigns to highlight Pakistan's software expertise, government initiatives & incentives.

5. ICT for Girls

5.1. Promote the use of ICT technology among women and girls for their empowerment and to bridge the digital divide.

5.2. Initiate 'ICT for Girls' programs across the country for training in computing skills so that girls can have an opportunity to earn. Establish computer labs in girls' schools of unserved and underserved mandated areas of the country to train women and girls in computing skills (computing, coding, and communication) through collaboration with private sector.

5.3. Provide incentives to boost digital services and applications for Girls' empowerment (direct-to-mobile strategy) lowering barriers to technology adoption.

5.4. Strengthen international cooperation in the area of access to ICT and active participation of women and girls in the digital society.

5.5. To provide legal protection to women and girls to encourage online participation.

6. Local Languages Content Development

6.1. Support creation and sharing of content in natural and regional/local languages which is now possible after the establishment and operationalization of پاکستان internet registry in Pakistan.

6.2. Support the creation of text to speech software for Urdu and regional/local languages that can be used to enhance the utility of basic mobile phone based text messages as well as for normal computer usage.

6.3. Collaborate with local technology associations, academia and industry incubation centers to promote R&D and localization of relevant content and its usage.

## 7. Persons with disabilities (PWDs)

7.1. Involve Civil Society, Private Sector Organizations and other relevant stakeholders for developing and instituting holistic ecosystem to promote ICT accessibility for Persons with Disabilities (PWDs).

7.2. Collaborate with local and international software industry to introduce ICT infrastructure and software applications for PWDs along with local language support.

7.3. Ensure compliance of universal standards in development of websites that allow inclusiveness of PWD community.

7.4. Encourage the local development of software tools for PWDs and its availability at economical rates.

7.5. Consideration of PWDs in all national level ICT schemes/initiatives of MoIT.

8. Open Source

8.1. Enhance the skills and capabilities within government to evaluate open source ICT products and services as an option.

8.2. Ensure fair consideration of both types of software i.e. open source and proprietary during the procurement process. Government IT initiatives should make assessments and cost-benefit and security analysis to determine most appropriate action for each project.

8.3. Encourage R&D of "Open Source" across the country through appropriate means.

9. Local Manufacturing of Hardware
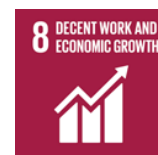
9.1. Promote the local manufacturing of IT hardware (Desktop PCs, Laptops, Mobile Handsets, Network equipment, LEDs, Microprocessors, etc.) to augment measures already in place to incentivize local manufacturing of handsets, if so required.

9.2. Transfer management control of existing manufacturing concerns in the public sector to the private sector through equity participation or long-term lease, or any other public-private partnership modes.

9.3. Work with relevant stakeholders regarding accession to Information Technology Agreement (ITA) under the framework of WTO in-line with necessities of local hardware manufacturing industry.

10. e-Governance

10.1 Enable delivery of public services to citizens through innovative use of ICT. Assist relevant department in developing technology solutions and platforms for greater productivity & effectiveness in service delivery and its standardization.

10.2 Establish holistic enterprise architecture through the creation of data center clusters at essential sites. Facilitate integration of government databases and software systems to share requisite data and knowledge within the government and with citizens through e-government service portals.

10.3 Enable implementation of e-procurement in all areas of the public.

10.4 Enable efficient governance focused platforms for identity/transaction management, payment mechanisms, digital documentation etc.

10.5 Encourage placement of dedicated IT human resources in government organizations for ownership, change management and successful implementation of e-Government initiatives/programs.

10.6 Establishment of G-Cloud to integrate different databases and to provide a resilient and secure ICT environment.

Section-II: Enabling the digitization of key socio-economic sectors

MoIT will play the role of an enabler and facilitator, for digitization, providing necessary guidance where required, while relevant federal ministries, divisions and departments will take the lead role for the implementation of policy strategy falling within their domain.

Through this policy, the Federal Government mandates the Ministry of Information Technology and Telecommunications to develop an 'Action Plan' along with relevant ministries and departments detailing the time frame and outputs. Financial details of each initiative as outlined by the action plan will be worked out by the relevant ministries and departments in consultation with MoIT. The key initiatives for ICT enablement and sectorial digitization are detailed as below:

11.   e-Agriculture

To facilitate and assist Ministry of National Food Security & Research to:

11.1   Create mobile "Agriculture Information Portal" for collection and dissemination of knowledge regarding price, horticultural diseases with remedial actions, water quality, weather updates and supply/demand data from agricultural commodity markets, on a sustainable model.

11.2   Revamp Geographical Information Systems (GIS) for Pakistan to monitor the environment and plan sustainable agirculture.

11.3   Prepare latest agriculture R&I material in local languages in order to improve its dissimination and agricultural yields.

11.4   Make avaliable agricultural extension services by empowering and equipping farm extension workers with IT skills. Support farmers through the use of IT in relevant areas such as digital mapping, land use, soil types, meteorology, ecology, oceanography (particularly off-shore fisheries exploitation), hydrology, agricultural records etc.

11.5   Build ICT capacity in agricultural institutions, farmer organizations and groups based on "train the trainer" concept.

11.6   Effectively utilize the available HR and financial resources for demand side digitization programs as per the mandates of these organizations.

12.   e-Health

To facilitate and assist Ministry of National Health services, Regulation and Coordination to:

12.1   Accelerate the use of telemedicine to provide clinical health care to distant rural communities, especially for emergencies. Leverage access to qualified specialists by building an online network of doctors and paramedical staff working directly or remotely with them.

12.2   Promote digitization and automation of existing hospitals to develop a network across the country to facilitate nationwide integration of health related records and data through a

central health database/s. Legal requirements including a clear and consistent mechanism for patient data security to be ensured and appropriate instruments to be put in place at all levels.

12.3 Share information for preventive care of dominant disease groups in local languages through appropriate ICT tools and technologies.

12.4 Set E-health service providers accreditation and requisite protocols and standards.

13. e-Energy

To facilitate and assist Ministry of Water and Power to:

13.1 Utilize IT to optimize energy consumption in the domestic, industrial, and retail sectors.

13.2 Establish public-private partnerships with cellular operators and utility providers to utilize 3G/4G network for solutions such as smart grids, demand forecasting and availability of consumer portals to manage energy consumption.

13.3 Promote implementation of a secure wireless Smart Metering system to improve control over electricity consumption and billing, theft, tampering with meters and supply lines.

13.4 Scale & adopt research developed for indigenous energy efficiency solutions.

14. e-Commerce
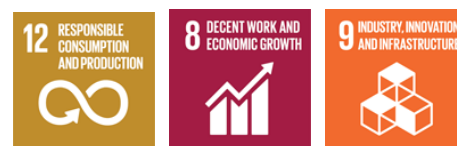
To facilitate and assist Ministry of Commerce to:

14.1 Create an enabling environment that empowers stakeholders in trade and commerce with the underlying infrastructure to improve productivity and positively position the nation for global competition.

14.2 Establish a national e-commerce gateway with the State Bank of Pakistan (SBP) with the support and coordination of relevant stakeholders to promote internet merchant accounts to facilitate B2B and other in-bound transactions.

14.3 Develop a framework to allow e-banking activities in order to maximize the usage of mobile financial services

14.4 Encourage the use of e-commerce amongst general public through awareness campaigns to promote a culture of e-commerce in the country which supports electronic business transactions at national, regional and international levels.

14.5 Promote Pakistan as a competitive Foreign Direct Investment (FDI) destination for e-commerce as well as attract local private sector participation and investment in the development of e-commerce solutions and attract international key players in the field.

14.6 Bring Micro Small and Medium Enterprises (MSMEs) and disadvantaged groups online to enhance their effective participation in e-commerce activities.

14.7 Promote the IT enabled logistic systems of Logistic Operators, especially the operations of Pakistan Post.

14.8 Bring regulatory frameworks in-line with international obligations such as those being envisaged under the World Trade Organization (WTO) for signing off fruitful multilateral agreements.

15. e-Justice

To facilitate and assist Ministry of Law & Justice to:

15.1 Encourage use of IT for administration of Justice to reduce delays in dispensation of justice, eradicate corruption and remove barriers to easy and equitable access to Justice. Automation will provide efficient case management and significantly reduce disposal time of cases.
15.2 Provision of online forms required in various courts.
15.3 Development of online portals for Judges to access various kinds of information such as calendar, pending tasks, pending cases and quick links to research tools.
15.4 Support introduction of Online Dispute Resolution (ODR) for low value civil claims to promote Alternative Dispute Resolution (ADR).

16. ICT Education

To facilitate and assist Ministry of Federal Education and Professional Training to:

16.1 Create opportunities to ensure inclusive and equitable quality ICT education and promote lifelong learning process for all.
16.2 Bridge the industry academia gap to ensure relevance of ICT education to the industry needs.
16.3 Enhance Primary & Secondary School students capability to construct, hypothesize, explore, experiment, evaluate, foster logical thinking, problem solving, persistence and collaboration by encouraging next generation computing and analytical curricula and ICT tool adoption programs.
16.4 Initiate projects to provide network accessibility at educational institutes across Pakistan (PERN, HEC program to be expanded to schools).
16.5 Promote integration of computing courses particularly coding, cloud computing etc. into the curriculum at all levels starting from elementary to high school and beyond.
16.6 Update curriculum of IT higher educational degree programs in line with international guidelines.
16.7 Encourage the development of e-portals for the provision of academic, research and other supplementary materials for schools, colleges and universities across the country.

17. IoT, FinTech, Artificial Intelligence & Robotics

17.1 Establish specialized innovation centers for FinTech, Artificial Intelligence (AI), Internet of Things (IoT) and Robotics in major cities of Pakistan.

17.2 Promote home grown players in IoT, FinTech, AI and Robotics by encouraging a highly integrated startup ecosystem through collaboration with national and international incubation centers, financial institutions, universities, relevant government departments, industry consultants and associations.

17.3 Devise appropriate capacity building measures (awareness campaigns, trainings, seminars, and Workshops) to promote smart technologies and increase HR talent pool.

17.4 Accelerate adoption of IoT, FinTech, Artificial Intelligence & Robotics and enable cost-effective introduction of new technologies, including open standards efforts, targeted federal funding, and impactful public-private partnerships.

17.5 Actively collaborate with HEC, IT industry and other relevant institutions to modernize the education curriculum to be in sync with the emerging technologies and align to the requirements of the industry.

18. Cloud Computing and Big Data

To engage with relevant stakeholders like NADRA, FBR, AGPR and ICT Administration etc. to:

18.1 Integrate Federal Government's distributed databases to enable data mining and analysis on big data through establishment of state of the art tier 3/4 national level data centers. Enhance the quality of e-Government services through real-time integrated management and data analytics. Discourage the establishment of silo IT infrastructures (small islands) in different government offices to mitigate duplication of efforts, HR requirements and operational expenses.

18.2 Integrate national and provincial databases to avert duplication and ensure synergy.

18.3 Remove legal and administrative barriers for exchange of data for citizen-oriented services and pattern analysis.

18.4 Provision of cloud based citizen centric services for public, paving the way for subsequent transformation to e/m-government.

18.5 Provide a Common infrastructure platform for Public and Private Sector for the development and implementation of citizen-centric mobile applications to improve the communication between Government and the citizens and to improve the efficiency, agility and Innovation.

18.6 Promote the cloud infrastructure and associated delivery models (PaaS, SaaS, and IaaS) to be offered across the globe to attract local and international markets through special incentives programs.

18.7 Focus on capacity building in big data and cloud computing to build requisite skills for effective and efficient delivery of new and improved services.

18.8 Provide measures for the security of sensitive business & individual data in a big-data environment

Section-III: Fiscal & non-fiscal incentives for the IT/ITeS sector

Since the launch of first IT Policy in 2000, the IT/ITeS sector has registered a remarkable growth during the last 17 years. The telecom infrastructure expansion across the country has played a

pivotal role in the growth of IT &ITeS sector and this is now getting global acknowledgment and a reputation for reliable and cost-effective delivery of IT and IT enabled services.

According to latest forecast by Gartner Inc. in October 2017, Worldwide IT spending is projected to total $3.7 trillion in 2018, an increase of 4.3 percent from 2017 estimated spending of $3.5 trillion. Enterprise software and IT services continue to exhibit strong growth, with communications services continuing to drive the majority of spending. Software spending is projected to grow 8.5 percent in 2017, and it will grow another 9.4 percent in 2018 to total $387 billion. IT services spending is on pace to grow 4 percent in 2017 to reach $931 billion, and increase 5.3 percent in 2018 to reach $980 billion. This report depicts the potential of ITeS sector and it is time to re-align the government strategies to attract a reasonable chunk out of $980 billion. This will help to create thousands of new jobs in IT sector of Pakistan in line with current Government policy to create more and more jobs for youth in digital economy.

Current incentives and promotional initiatives already in place for the sector include

- 100% foreign ownership Allowed
- 100% repatriation of capital & dividends (subject to SBP Approval)
- IT & ITeS Export Income Tax exemption till June 2019
- Income tax holiday for Venture Capital companies/funds till June 2024, under Venture Capital Companies and Funds Management Rules, 2000

Additional incentives particularly for IT startups were awarded in the budget (FY 2017-18) to promote innovation & entrepreneurship that included:

- Exemption for a period of three years from Income Tax, Minimum Tax and Withholding Tax for PSEB registered and certified IT startups that are offering technology driven products and services
- Exemption from sales tax on export of IT services from Islamabad and other federal territories
- IT Companies allowed to open Foreign Exchange Accounts in Pakistan

However, in order to achieve the policy objectives, Ministry of IT & Telecom plans to further incentivize the IT sector through a number of attractive fiscal & non-fiscal incentives to create a favorable business environment.

Fiscal Incentives

Proposals for fiscal incentives for IT industry are recommended in-consultation with IT industry including PASHA to boost the IT/ITeS Exports. Ministry of IT & Telecom will recommend the proposals for inclusion in the relevant documents such as Finance Bill and BOI's Special Economic Zone (SEZ) Act etc. after due process.

- ➢ <u>Extension of Income Tax Holiday -</u> In order to attract long term investment in the IT/ITeS sector, income tax holiday under clause 133 of the Second Schedule of the Income Tax Ordinance, 2001 to be extended till 2025 to IT / ITeS Companies registered with the Pakistan Software Export Board on their export revenue/income;

- ➢ <u>5% Cash Reward on Export Remittances</u> - Improving the export remittances and the reporting of remittances in the purpose codes assigned by the State Bank of Pakistan for the IT & ITeS sector is key to boosting the economic growth of the country. Hence, 5% cash reward shall be awarded on the net export remittances of PSEB registered IT/ITeS companies and PSEB registered call centers subject to a verifiable criteria to be agreed among the State Bank, FBR, Ministry of IT & Telecom, and Pakistan Software Houses Association (PASHA);

- ➢ <u>5% Sales Tax on Services</u> (Domestic) – Profit margins in the domestic market are already low, and customers are unwilling to pay double digit sales tax which results in IT companies shouldering the cost. Hence, reduced sales tax of about 5% shall be charged on domestic revenues of IT/ITeS companies located in Islamabad Capital Territory. Additionally, MoIT will take up the matter of rationalizing sales tax in provinces through appropriate channels;

- ➢ <u>Provision of Bank loans to IT/ITeS Industry</u>: - Finance Division in consultation with Ministry of IT & Telecom will work with relevant stakeholders including State Bank on a proposal to reduce long term financing rates to 5% for IT/ITeS companies as well as financing arrangements based on trade receivables/contracts and intellectual property such as trademarks, copyrights and patents. This will enable IT enterprises to compete for large projects locally and internationally;

- ➢ <u>Tech SEZs (Special Economic Zones)</u> – Ministry of IT & Telecom will recommend to incentivize investment in IT infrastructure in the country to Board of Investment (BOI) through the concept of technology SEZs, availing the already in place Special Economic Zone Act 2012 of Pakistan through modifications and exceptions, extending the incentives of SEZs to IT industry;

- ➢ <u>Proliferation of new IT Parks</u> – Given the high land cost in major metropolitans such as Islamabad and Karachi, PSEB would allocate land on a long term lease to IT/ITeS companies. Detailed terms and conditions for the leased land will be decided as part of the Action Plan and would include specific commitments for development, occupation and employment generation as specified by the PSEB;

Non-Fiscal Incentives

- ➢ Reinforce the industry status of IT Sector at all levels of the government in pursuance to previous formal notification of the government.

- Ratification of World Trade Organization's Information Technology Agreement (ITA) by the Government – MoIT will work with Ministry of Commerce & other stakeholders for accession to the ITA regime to eliminate tariff barriers on imports of ICT products;
- Increasing the timeframe of initial registration period of call centers with PSEB to 5 years from the current 1-year period. Similarly, the renewal of call centers registrations will be for 5 years as well as opposed to yearly renewal regime currently in place. PSEB to provide registration certificate/NOC to call centers in 3 days in both initial registration and renewal cases;
- Call center certifications to Individual/Sole proprietors will be allowed;
- PSEB/PTA to enable telecommuting/work from home facility for the call centers to expand BPO workforce;
- Government of Pakistan to encourage trade delegations comprising of IT/ITeS-BPO to the major international market and to launch an international branding & PR campaign projecting Pakistan as a leading outsourcing destination for IT & ITeS-BPO services.

Section IV: Policy Implementation & Reviews

The policy implementation will require consistent monitoring and evaluation of its outcomes. However, an appropriate strategy will also be prepared to align the 'Action Plan' with key priority areas for proper monitoring and evaluation.

MoIT will encourage provincial departments and bodies to use this Digital Pakistan Policy as a guideline for their own IT initiatives. Provinces can identify their own unique requirements and implementation frameworks. However broad alignment to the National Digital Pakistan Policy may be pursued. The IT Sector is one of the most dynamic sector. Therefore, requisite measures will be adopted to cope with latest trends and technologies. One such measure will be to ensure a biennial review of the policy to keep it relevant, vibrant and up-to-date.

Roles and Responsibilities

For implementation of the Digital Pakistan Policy, various ministries and departments will be involved. Considering the involvement of broad spectrum of agencies, it is appropriate to align the agencies with their specific roles and responsibilities for clarity. Responsibilities/assignments being proposed as part of this policy are attached at Annexure-1.

Annexure-1

(Roles & Responsibility Matrix)

Policy Initiatives	Key Areas	Lead Ministry	Facilitating Ministries/Departments/Bodies
Legislation	• Intellectual Property Rights • E-Commerce Policy/framework	- Ministry of Commerce	- Ministry of Law & Justice
	• Data Protection & Privacy	- Ministry of IT & Telecom	
Infrastructure Development	• Software Technology Parks • National Incubation Centers • IT Incubators • Telecenters • Wireless Broadband	- Ministry of IT & Telecom	
Human Resource Development Entrepreneurship, R&I, Freelancing	• Structured Gap Analysis Program	- Ministry of Federal Education & Professional Training	- CADD
	• Digital Skills Trainings • ICT for Girls Programs • Internships • IT Incubators • Seed funding for Startups • Awareness Programs	- Ministry of IT & Telecom	- Pakistan Bait-ul-Mall - FATA Secretariat
E-Governance	• Integration of Databases	- Ministry of Interior (NADRA)	- Ministry of IT & Telecom
	• e-Procurement	- Ministry of Planning, Development and Reform	
	• e- Government • G-Cloud	- Ministry of IT & Telecom	- Cabinet Division
E-Agriculture	• Agriculture Information Portal • Geographical Information System (GIS) • IT Trainings for farm extension workers	- Ministry of National Food Security & Research	- Ministry of IT & Telecom
	• ICT Capacity Building of Agriculture institutions and farmers	- Ministry of National Food Security & Research	- Provincial Agriculture Departments
E-Justice	• Automation of Courts • Provision of online forms	- Ministry of Law & Justice	- Supreme Court of Pakistan

	• Online dispute resolution		- Federal and Provincial High Courts - Federal Services Tribunal - District Courts - Accountability Courts - Bar Councils/lawyer community - Ministry of IT & Telecom
E-Health	• Tele-medicine • HMIS	- Ministry of National Health Services, Regulations and Coordination	- CADD - Ministry of IT & Telecom
E-Energy	• Smart Meters • Smart Grids	- Ministry of Water and Power	- Ministry of IT & Telecom
E-Commerce	• E-Payment Gateway • E-Commerce	- State Bank of Pakistan	- Ministry of IT & Telecom
	• E-Commerce Policy/framework	- Ministry of Commerce	
	• IT enablement of logistics operator	- Ministry of Finance, Revenue, Economic Affairs Statistics and Privatization - TDAP - CCP	- Ministry of IT & Telecom
Software Exports	• Venture Capital Funds • Accelerators	- Ministry of IT & Telecom	- Ministry of Finance, Revenue, Economic Affairs, Statistics and Privatization - Competition Commission of Pakistan - Ministry of Industries & Production - Ministry of Law & Justice - SECP
	• International Events & Marketing campaigns • Incentive Programs • Placement of Business Development experts • Training	- Ministry of IT & Telecom	- Ministry of Commerce - TDAP
	• Tax Treatment of software Industry	- Ministry of Finance, Revenue, Economic Affairs, Statistics and Privatization	- Ministry of IT & Telecom
Cloud computing & big Data	• Database Integration • Cloud based citizen services	- Ministry of Interior (NADRA)	- Ministry of IT & Telecom

	• Capacity building in Big Data	- Ministry of IT & Telecom	
ICT for GIRLS	• Training, Capacity building • Application Development	- Ministry of IT & Telecom	- CADD - Directorate of Federal Education Islamabad
PWD	• ICT accessibility for PWDs • Standards formulation • Incentives program	- Ministry of IT & Telecom	- Ministry of Human Rights
Open Source	• Skills & Capabilities enhancements • R&D	- Ministry of IT & Telecom	
ICT Education	• ICT Curriculum	- Higher Education Commission (HEC)	
	• Network Accessibility • Early child-hood coding programs • E-Portals	- Ministry of Federal Education & Professional Training - CADD	- Ministry of IT & Telecom
Local language Content Development	• Reduction in digital divide through local content creation • Text to speech software • R&D and Collaboration	- Ministry of IT & Telecom	- Languages Authorities
Local Manufacturing of Hardware	• Hardware related R&D	- Ministry of IT & Telecom	- Ministry of Commerce
	• Accession to ITA	- Ministry of Commerce	
	• Special incentive package • Taxation	- Federal Board of Revenue (FBR)	- Ministry of IT & Telecom

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