



Azad Jammu & Kashmir

Digital Policy

2024–2030



Azad Jammu And Kashmir
Information Technology Board

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Azad Jammu & Kashmir

Digital Policy 2024–2030



Azad Jammu And Kashmir
Information Technology Board

Acknowledgments

The Information Technology Secretariat, Government of Azad Jammu and Kashmir (GoAJ&K), and the United Nations Development Programme (UNDP) are pleased to introduce the first Digital Policy for Azad Jammu and Kashmir. This groundbreaking policy, tailored to address the unique needs of AJ&K, offers a holistic framework to harness the potential of information and communication technologies. By embracing digital transformation, we aim to drive economic prosperity, social inclusion, e-governance, and sustainable growth, ultimately shaping a brighter future for the state.

The development of this Digital Policy is a testament to the collaborative efforts of UNDP and IT Secretariat GoAJ&K, who worked together to finalize this policy document through extensive research, insightful SWOT analysis, and constructive feedback from numerous consultations. We extend our heartfelt gratitude to the various stakeholders, including the ICT industry, academia, private sector, civil society, government, and sector experts in digital governance and transformation, whose invaluable contributions were instrumental in shaping this comprehensive policy. Their expertise, insights, innovative perspectives, and practical solutions were crucial in informing policy integration approaches and ensuring the policy's effectiveness. We appreciate their collaboration and commitment to this initiative.

We are particularly grateful for the support and leadership of the Secretary of Information Technology Secretariat, GoAJ&K, Mr. Rafaqat Hussain Khan, and extend our special appreciation to Dr. Khalid Rafique, Director General of the AJ&K IT Board, for his invaluable contributions to the formulation of this Digital Policy. We also acknowledge the tireless efforts and dedication of his team, who worked closely with us throughout the policy development process.

Likewise, the sincere efforts of the lead consultant, Mr. Ghulam Shabbir, must be commended for putting heart and soul into crafting this Kashmir Digital Policy.

Finally, we would like to pay a special tribute to the late Syed Ali Hussnain Gillani, whose seamless coordination and unwavering commitment to the Kashmir Digital Policy remained instrumental in its formulation.

Through this collective endeavor, we have created a comprehensive policy framework that will drive digital innovation, foster sustainable growth, and significantly enhance the quality of life for the people of AJ&K, paving the way for a brighter digital future.

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Acronyms and Abbreviations

5G	Fifth Generation of Wireless Mobile Telecommunications Technology
AI	Artificial Intelligence
AJ&K	Azad Jammu and Kashmir
DG	Director General
GoAJ&K	Government of the State of Azad Jammu & Kashmir
ICT	Information and Communications Technology
IIoTs	Industrial Internet of Things
IT	Information Technology
KIIs	Key informant interviews
MS	Microsoft
P&DD	Planning & Development Department AJ&K
PM	Prime Minister
SAP	System Applications and Products in Data Processing
SDGs	Sustainable Development Goals
STEM	Science, Technology, Engineering, and Mathematics
ToRs	Terms of Reference
UC	Union Council
USF	Universal Service Fund
UK	United Kingdom
LRMIS	Land Record Management Information System
PSEB	Pakistan Software Export Board
TDAP	Trade Development Authority of Pakistan
PPRA	Public Procurement Regulatory Authority

Foreword

Azad Jammu and Kashmir Digital Policy 2024-2030 marks a foundational step towards a digitally empowered and inclusive State.

The policy, developed collaboratively by the Information Technology Board, GoAJ&K, and the United Nations Development Programme (UNDP), provides a comprehensive framework for digital transformation to achieve economic prosperity, social inclusion, and sustainable growth, all of which are equally important. It encapsulates elaborated guidelines in access, connectivity, and infrastructure for ICT, e-governance, legislation and regulation, entrepreneurship, human resource development, and research. The policy also features provisions to ensure the effective implementation of digital initiatives and the creation of an inclusive digital ecosystem, leveraging private sector potential.

The departments of the GoAJ&K have a significant opportunity to align their efforts with the goals outlined in this policy and leverage the power of digital technologies to improve service delivery, enhance economic growth, and improve the quality of life for citizens. Let's prepare to embrace innovation while embedding new technologies in all our governance mechanisms to build a digitally empowered Azad Jammu and Kashmir.

As the Secretary for Information Technology Secretariat, Azad Government of the State of Jammu & Kashmir, I want to express my sincere gratitude to all those, including my colleagues from the government of AJ&K, academic and digital transformation experts, regulators, and the public, whose invaluable contributions were instrumental in formulating this policy.

I extend special thanks to the United Nations Development Programme (UNDP) Pakistan for their exceptional cooperation and technical expertise in formulating this policy. Their invaluable contribution has been instrumental in shaping a robust and comprehensive framework for our digital future.

I assure you that the Information Technology Board, GoAJ&K, is available for any cooperation required to implement this policy in Azad Jammu & Kashmir.

Rafaqat Hussain Khan

Secretary, Information Technology Secretariat
Azad Government of the State of Jammu & Kashmir

Message from the Prime Minister

Azad Government of the State of Jammu & Kashmir

The Azad Government of the State of Jammu and Kashmir is firmly committed to embarking on an ambitious digital transformation roadmap for public facilitation and empowerment, achieving the Sustainable Development Goals, and ensuring quality digital services to all citizens of AJ&K, promoting inclusive prosperity.

The unveiling of the first-ever Azad Jammu & Kashmir Digital Policy 2024-2030 is a landmark achievement. It underscores our commitment to embracing the transformative power of information and communication technologies to shape a brighter future for our State.

Digital technologies possess enormous potential to transform how we interact and undertake our day-to-day activities. The Digital Policy 2024-2030 unlocks the transformative power of digital technologies, driving growth, productivity, and efficiency across all socio-economic sectors. This forward-looking policy harnesses the potential of digitalization to catalyze innovation, foster inclusivity, and propel our society towards a more prosperous and sustainable future.

The policy will also help us improve governance through well-defined technology management approaches, utilizing compatible and appropriate technologies.

We are committed to empowering our youth. By prioritizing education and skill development, especially in science, technology, English, and mathematics, right from the grassroots level, we can equip them with the tools and knowledge they need to thrive in the digital age. We will encourage their participation in innovative entrepreneurial initiatives, increasing self-employment and contributing product-based dividends for policy implementation. Through this approach, we aim to secure a brighter future for generations to come.

I appreciate the efforts of the AJ&K IT Board in developing this important policy. Special thanks to UNDP Pakistan for their sincere cooperation and technical support.

Digitalization requires concerted efforts at all levels. We need an all-inclusive approach to implement this policy and reap its benefits. All stakeholders – government agencies, private sector partners, civil society organizations, and citizens – must join hands in realizing the ambitious objectives outlined in the Azad Jammu & Kashmir Digital Policy 2024-2030.

Finally, ensuring that quality digital services are accessible and available to all, particularly marginalized and vulnerable populations, is crucial to achieving the SDGs.



**Chaudhry
Anwar ul Haq**

Prime Minister
Azad Government of the
State of Jammu & Kashmir

Message from the Resident Representative

United Nations Development Programme, Pakistan

Pakistan holds enormous potential for a digital future that promises to be the gateway to sustainable, equitable development and prosperity for all. Digitalization may be the smartest, fastest, cheapest, and most transformative of global public goods. It can be an accelerator when it comes to achieving the Sustainable Development Goals and a great equalizer – provided that the digital gap is closed to allow everyone to benefit equally.

The Pakistan National Human Development Report 2024 (NHDR) on “Doing Digital for Development” argues that if Pakistan prioritizes digital capabilities and innovation, policy reform and policy continuity, and investments across pivotal social and economic sectors, it will achieve commensurate or greater outcomes in access and inclusion, infrastructure, rights, job creation and growth, and resilience, which, taken together will significantly boost and sustain human development. However, this ambition remains hampered by Pakistan’s rankings on relevant global indices, showing significant gaps in digital accessibility, availability, and relevance, placing it in the moderate digital development category with a cumulative Digital Development Index (DDI) of 0.205. Amongst Pakistan’s provinces and federally administered regions, AJ&K holds medium-high levels of digital development with a DDI of (0.209), highlighting the immense potential for a digital future.

Against this backdrop, and within the context of collaboration on Pakistan’s Sustainable Development Goals (SDGs), I am pleased to have witnessed the collaborative effort between the Information Technology Board, the Government of Azad Jammu & Kashmir (GoAJ&K), and the United Nations Development Programme (UNDP), for the formulation of the Kashmir Digital Policy, 2024 -2030. I commend the GoAJ&K for its commitment to digital technology as a stepping stone toward inclusive, transformative and sustainable development future for all.

The AJ&K Digital Policy envisions a comprehensive transformation across key areas including digital infrastructure, economic and societal inclusion and resilience through technology, and the promotion of e-governance for transparent public service delivery. Additionally, the policy foresees stronger legislation for a safe digital space, human capital development, youth entrepreneurship, imparting gender-responsive digital skills, and environmental protection through technology.

The effort does not shy away from acknowledging the persistent challenge of digital exclusion. To address this, a collaborative effort by government, civil society, the private sector, and development partners is required to build an inclusive digital ecosystem for all concerned. Embracing digital development is timely, forward-leaning, proactive step taken by the GoAJ&K towards a digital future.

I am grateful to everyone involved in shaping this policy, particularly the dedicated teams from Azad Jammu & Kashmir government and UNDP. Creating a comprehensive policy framework for digital innovation and growth is a significant milestone for AJ&K.

I am confident that this comprehensive and holistic policy framework will have a transformative impact, driving inclusive digitalization, and improved governance, toward future-smart and future-ready development prospects for all.



Dr. Samuel Rizk

Resident Representative
UNDP Pakistan

Message from the Minister for IT

Azad Government of the State of Jammu & Kashmir

It is a matter of great pleasure for me to introduce the groundbreaking Azad Jammu & Kashmir Digital Policy 2024-2030, a landmark initiative poised to propel our State towards a digital future. Aligning with the United Nations' 2030 Agenda for Sustainable Development, the Azad Government of the State of Jammu & Kashmir is committed to achieving the Sustainable Development Goals (SDGs). This visionary policy will serve as a key driver in realizing our SDG commitments, fostering inclusive growth, and ensuring a prosperous and sustainable future.

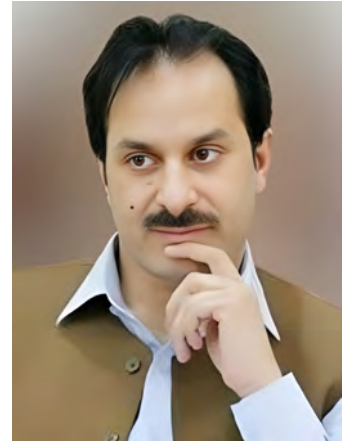
The policy proposes well-thought-out approaches to develop and strengthen digital infrastructure in AJ&K, promote digital literacy for self-employment enablement, and strengthen e-governance initiatives for public empowerment.

We are committed to promoting a fabulous role for the private sector in every aspect of the State's digital transformation. We will support the endeavours of our ICT industry and other private sector providers through bespoke programmes or well-defined initiatives outlined in this policy.

Engaging youth and human capital development, leveraging digital technologies and related products and services, fosters long-term success. Owing to the rapidly evolving digital technologies, we must stay abreast of these changes and devise timely mechanisms to integrate them into our digitalization journey.

I sincerely acknowledge the collaborative efforts of AJ&K Information Technology Board, the Planning and Development Department, GoAJ&K and its SDGs Unit, and UNDP Pakistan for bringing this policy to fruition. I am also grateful to officials of all departments of GoAJ&K and other stakeholders who provided valuable input for formulating this flagship policy.

I encourage all stakeholders to collaborate in efforts to realize the objectives of this policy. Together, let's harness the power of technology to unlock new opportunities and build an even brighter future for Azad Jammu and Kashmir.



**Sardar
Zia Ul Qamar**

Minister for Information
Technology

Azad Government of the
State of Jammu & Kashmir

Executive Summary

Digitalization is the priority agenda of countries and societies today. Recent and envisaged developments in information, computing, telecommunication technologies, and mechanisms are continually reshaping governance, service delivery, and people-to-people connections in society. Keeping in view the significance of information and computing technologies and their profound impact on overall value addition across various facades of the economy and society, the State of Azad Jammu and Kashmir has promulgated its first-ever digital policy spanned across 2024-2030. The policy is well-rounded and informed, based on extensive inputs from different walks of life including government, academic experts, industry and private sector, regulatory bodies, trade and commerce associations as well as internationally recognized technology governance experts.

The policy aligns with the Sustainable Development Agenda 2030 of the United Nations and other socio-economic development goals being pursued by the State, through its policy initiatives across various realms.

The policy envisions empowering AJ&K through digital transformation, improved digital access, and digital literacy, thus placing the State on the path of continued, inclusive, equitable, and sustainable prosperity.

The policy proposes salient guidelines across the core areas comprising of a) access, connectivity, and digitalization infrastructure, b) digital governance and e-governance services, c) legislation and regulation, d) human resource development and research e) entrepreneurship, innovation, and private sector development. The detailed policy provisions have been included in each of the above mentioned areas. A few significant policy guidelines under each of the core areas are summarised below:

A. Access, connectivity, and digitalization infrastructure

- The policy guides towards the development and implementation of a comprehensive framework for digital infrastructure encompassing fixed and soft components, thus aligning it with governance and service delivery needs. The framework should include the requirements and standards for elements of fixed infrastructure such as fiber networks, data warehousing and integration, cloud, and cybersecurity. Overall technology architecture, governance, interoperability, and integration considerations should be kept in focus, aligned with applicable standards.
- Plan and conduct a study to assess fiberization levels across union councils of the State of AJ&K and estimate long haul fiber infrastructure requirements for ensuring high-speed broadband access.
- Assess feasibility and develop financial models to encourage private sector involvement in setting up core infrastructure components like fiber, data centres, cloud, and cybersecurity.
- Introduce and implement citizen-centric service delivery models and necessary legislation for ICT service providers.
- Support local/small infrastructure providers to improve services in rural areas through partnerships with the government and subsidies to ensure access to digital technologies and bridge the digital divide.
- Streamline relationships and engagement processes with federal authorities and regulators to facilitate the timely adoption of new technologies like 5G and satellite internet.
- Collaborate with international entities and leverage investment opportunities for ICT infrastructure through multilateral agencies and private investors, with legislative support for foreign direct investment under the aegis of AJ&K Board of Investment.

B. Digital governance and e-governance services

- Introduce and implement a digital governance framework, well-knitted and fully integrated across all the departments and organizations of the State. The framework should encompass departmental structures, mandates, and functions while ensuring interoperability and data sharing. Process mapping and process re-engineering exercises for optimization of digital governance and service delivery should be completed to provide seamless service delivery to the people of AJ&K across various domains.
- Adopt a platform approach to strengthen existing e-services and introduce new ones as needed to support seamless citizen-centric service delivery model aligned with Sustainable Development Goals 2030.
- Introduce and implement complete digital service suites in key sectors like education, health, local government, agriculture, transport, land records, small industries, and tourism, with technical support and governance oversight from the AJ&K IT board.

C. Legislation and regulation

- The policy provisions for introducing legal reforms to strengthen the role of AJ&K IT Board are proposed based on the need for such reforms. The AJ&K IT Board should be empowered, and its legislative authority should be strengthened to attract investments, engage the private sector, and oversee ICT infrastructure planning, erection, and governance. It is proposed that the IT Board should be retitled as AJ&K Information and Communication Technology Board. The legislation should be introduced to grant immunity to the Board and its staff for activities undertaken to fulfill its mandate. The accountability of the staff should solely be assigned to the Board's governing body.
- Conduct legislative scrutiny to identify and address gaps in ICT laws in AJ&K. Legislation should be introduced to promote e-commerce, data protection, individual privacy, cybersecurity, and safe use of emerging technologies.
- Strengthen legislation to promote investment in the ICT sector, address sovereignty concerns, and align with the Pakistan Regulatory Modernization Initiative.
- Review procurement legislation to enable ICT procurement while ensuring post-project implementation services, introducing service level agreements for ICT providers, and encouraging managed services model to avoid upfront exorbitant investments.

D. Human resource development and research

- Introduce and implement reskilling and upskilling programs for government employees to enhance the ICT capability of the existing workforce.
- Review and strengthen primary and secondary education curricula to include mathematical and computer programming concepts. Equip schools with computing equipment and train teachers for hands-on ICT lessons.
- Enhance higher education curriculum to nurture and develop human resources in contemporary technologies like big data, cybersecurity, robotics, etc. Develop high-end ICT skills programs in universities and establish partnerships with online course providers. Arrange certification courses for youth collaborating with technology companies like CISCO, Microsoft, SAP, etc.

- Establish a dedicated research and development framework involving stakeholders like academia, industry, and the AJ&K IT board. Foster linkages between state universities and centres of excellence in Pakistan and abroad.
- Share specific research requirements from industry and government with universities through the AJ&K IT board, to develop the proof of concept and proof of work-based projects which can be scaled later.
- Pool research funds from various sources for collaborative research projects, with outputs accessible to all stakeholders.

E. Entrepreneurship, innovation, and private sector development

- The policy guides to strengthen private sector engagement in ICT through enabling legislation and streamlined enterprise setup procedures.
- Provide tax holidays for ICT investments and earnings, with possible extensions. Offer substantial subsidies to companies to be established in existing and upcoming software technology parks and technology zones.
- Establish an ICT development and innovation fund to support aspiring entrepreneurs and small businesses.
- Establish banking channels and venture capital partnerships to support ICT businesses financially for enabling their growth.
- Create a research and development department within the AJ&K IT board to guide ICT companies across various areas of technology led product development, business development, expanding their global outreach and the like.
- Promote entrepreneurship at universities through business incubation centers and final-year projects.
- Introduce freelancing skill development in university coursework and support freelancers' growth.
- Prioritize investment and support for women-led ICT businesses.
- Organize regular ICT exhibitions locally and internationally with support from relevant institutions.
- Develop linkages with original equipment manufacturers in ICT hardware production through public-private partnerships.
- Promote IT exports through collaboration with relevant institutions like PSEB, TDAP and setting up annual export value targets for the ICT sector of AJ&K.
- Establish IT export facilitation desks in Chambers of Commerce and Industries to support freelancers and ICT companies.
- Strengthen linkages with AJ&K diaspora to explore international markets for ICT products.

The policy guides towards its overall implementation through setting up a high-level committee on the recommendation of AJ&K IT board. The implementation should be carried out through preparation and subsequent approval of an action plan. It is envisaged that the digital policy can bring invaluable dividends to the people of AJ&K if executed in letter and spirit.

ایک مقدس فرض کی تکمیل ہوتی ہے یہاں

ان شاء اللہ

شرعیہ تبدیل ہوتی ہے یہاں

VERNMENT MODEL GIRLS
SEHLISARKAR NIZAMUDDIN FARABAD A

COMPUTER PARTS



AL-HAFIZ



Introduction

Azad Jammu and Kashmir, the land renowned for its scenic splendours, has been endowed with rich culture, intellectual advancement, and religious diversity coexisting in an atmosphere of tolerance. It has an area of 5,134 square miles (13,297 square kilometers). AJ&K comprises 03 administrative Divisions (Muzaffarabad, Poonch and Mirpur), 10 Districts, 34 Sub-Divisions (Tehsils), 278 Union Councils, and 1,769 Villages/Mouzas. The population of AJ&K is 4.399 million, 81.27% population is rural, and 18.73% of the population lives in urban areas. The Male population is 2.141 million while the female population in AJ&K is 2.247 million (AJ&K Statistical Yearbook 2022). The annual growth rate of the population of AJ&K is 1.61% and the density of the population per square km is 325. The literacy rate of AJ&K is 77% (PSLM, 2021), the Infant Mortality Rate (per 1,000 L.B) is 47, Maternal Mortality Rate (per 100,000 L.B) is 104 and the Life expectancy at birth is 67.7. The unemployment rate in AJ&K is 10.7%. The region has been polio-free for the last 23 years, (WHO 2014). In addition, according to UNDP National Human Development Report 2024, AJ&K is ahead of the rest of the country, with an HDI value of 0.781 as the sub-indices are all higher, especially in education. Majority of the population is directly or indirectly linked with agriculture, a low income-generating sector due to small landholdings, large rain-fed areas, scarcity of cultivatable lands, and low productivity of mountain ecosystems. The economy of AJ&K is generally dependent on subsistence agriculture, livestock rearing, the informal sector, tourism, small/cottage industry, hydropower, services sector, and foreign remittances. The abundant natural resources – forests, mountains, and freshwater ecosystems of AJ&K provide tourism attractions and promote direct and indirect employment opportunities in the region. The prevailing law and order situation fosters a peaceful environment, attracting tourists and encouraging private-sector investment. These factors have significantly contributed to AJ&K's socio-economic and

environmental development.

While the Azad Government of the State of Jammu and Kashmir 'adopted a similar approach to Pakistan - to enhance economic growth while improving human well-being through the Sustainable Development Framework, it is equally imperative to address the challenges to achieve the SDG Agenda in this region. Some of these are access to basic services (education, health, water, sanitation, social protection, communications and works, power, industries, tourism, information technology), institutional capacities in service delivery, climate change, rapid and unplanned urbanization, youth bulge and unemployment (10.7%), limited social safety nets, lack of reliable data, gender inequality, issues in digital transformation, limited revenue generation capacity and private sector engagement, and natural disasters.

1.1 Existing Situation of Digitalization in AJ&K

Digitalization is the process of adoption of digital technologies and integration of digital applications into everyday life by organizations, governments and the public at large. It involves leveraging digital technologies like computing, internet, mobile devices, automation, cloud integration, analytics and social media to transform business operations, workflows, services and activities into digital ones resulting in increased efficiency, data accessibility, and innovation across various domains.

The adoption of digital technologies requires substantial resources, including infrastructure, digital skills, and governance frameworks. Similarly, the 2030 Agenda for Sustainable Development Goals (SDGs) of the United Nations aims to increase access to affordable and equitable internet for all segments of the population.¹

1. United Nations, Department of Economic and Social Affairs Sustainable Development, 'Transforming our world: the 2030 Agenda for Sustainable Development', <https://sdgs.un.org/2030agenda>, (accessed 6 January, 2024).

Azad Jammu and Kashmir (AJ&K) generally follows Pakistan's digitalization policies and trajectories; therefore, it is useful to refer to Pakistan's overall progress in this realm. Pakistan's progress on the journey towards digitalization presents a mixed picture. The internet penetration rate of Pakistan's total population is 36.5%, during 2022.² Based on various indices of performance against digitalization of governance and economy, Pakistan is consistently behind its peers in South Asia including Bangladesh and India. The country ranks 150th out of 190 on the UN e-government development index³, 79th out of 100 on the inclusive internet index⁴ and 75th out of 100 on Huawei's global connectivity index.⁵

As far as AJ&K is concerned, tele density of AJ&K is 95%, with 94.5% mobile telephony.⁶ Various providers undertake infrastructure development and maintenance services in AJ&K. However, it's worth mentioning that only 24% of the population of AJ&K has access to internet⁷, which is very low. Challenging geographical terrain, limited road network, and weak digital infrastructure are some of the key factors, that contribute to low access of internet services.

According to the latest data available through PSLM 2018-2019 for AJ&K, the proportion of youth and adults with information and communications technology (ICT) skills varies by the type of skill they possess and exhibit. It is conspicuous from PSLM 2018-19 data that 40.80% people can copy and paste digital information using a device and only 13.23% people can transfer files or applications between devices. Other measured skills include using basic arithmetic formulas in a spreadsheet (12.01%), connecting and installing new devices (8.60%), finding, downloading, installing, and configuring software

and applications (9.9%), electronic presentations (6.18%), and programming (8.64%). Gadget usage for entertainment is demonstrated by 58.53%, but it may not be directly relevant to ICT skills.

Delving deep in to the current stature of digital in the context of gender, a significant gender gap exists in Azad Jammu and Kashmir (AJ&K), in terms of access to digital technology and devices. As per Multiple Indicator Cluster Survey (MICS 2020-21) 58.2% of women own mobile phones and only 31.7% aged 15-49 have been able to use the internet in the last three months. Furthermore, digital literacy has become a prerequisite, as over 90% of jobs worldwide contain a digital component. As far as AJ&K is concerned, the women's literacy rate is 67% compared to that of 86% for men.⁸ The low literacy rate of women reflects their inability to use digital devices to become part of the ongoing revolution. Similarly, the unemployment rate of women in AJ&K is 22.9%, compared to 8.8% for men, highlighting significant gender disparities.⁹

This divide hampers women's full participation in the digital society, limiting their ability to engage in various aspects of life and advocate for issues affecting them. Concrete measures are desirable to bridge the digital divide for girls and women in the State. Prioritizing ICT education and imparting digital skills to girls and women are the precursors to digital inclusion. Technology also serves as a potent tool for female activism and leadership on pertinent issues. However, it requires mass digital literacy and specified programs for girls to participate in income-generating activities while exploiting the utilities of e-commerce.

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2. Pakistan Telecommunication Authority, "Telecom Indicators", January 2022. <https://www.pta.gov.pk/en/telecom-indicators> (accessed 6 January, 2024).
 3. United Nations E-Government Survey 2020
 4. The Economist Intelligence Unit, "The Inclusive Internet Index 2022". <https://theinclusiveinternet.eiu.com/> (accessed 6 January, 2024).
 5. Huawei Global Connectivity Index 2022. <https://www.huawei.com/en/about-huawei/publications/winwin-magazine/26/hw-611395> (accessed 6 January, 2024).
 6. PTA data Q 1, 2023
 7. *ibid.*
 8. PSLM 2019-20
 9. AJ&K Labour Force Survey 2018-19

1.2 Need for Kashmir Digital Policy

AJ&K's small size, economic and political constraints, and inconsistent ad-hoc interventions over the years in AJ&K's digital adoption journey are the result of an absence of its own digital policy. However, increasing digital adoption makes a progressive digital policy imperative going forward. Similarly, policies recently introduced by the Government of Pakistan, such as the draft Artificial Intelligence Policy 2022, Digital Pakistan Policy 2017, Pakistan Cloud-First Policy 2021, and National Cyber Security Policy 2021, require concerted efforts by the state of AJ&K to align its digitalization initiatives with these policies. Given this scenario, there is an established need for a coherent and forward-looking digital policy for the State, so that required benefits can be transcended across the layers of governance and society. Also, to achieve the targets under Sustainable Development Goals (SDGs), a robust digital policy for AJ&K is imperative.

It is no hidden fact that digitalization and mechanisms offered by the prolific use of technologies lead to socioeconomic growth and development while

integrating almost all sectors.¹⁰ Digital solutions and utilities improve education¹¹, health¹², trade and commerce¹³, industrialization¹⁴, law enforcement¹⁵, water and sanitation¹⁶, agriculture¹⁷, communications¹⁸, tourism¹⁹, banking and finance²⁰ and many more. Digital technologies can be used at the width and depth of these sectors to prune unnecessary processes and improve the speed of execution thus securing a sustainable future for all.

Considering the need, importance, and effective utilization of digitalization in improving governance and service delivery, the AJ&K IT Board has successfully endeavoured to transform various sectors using digital technologies under smart AJ&K and other related initiatives. Various departments including public procurement regulatory authority, judiciary, public complaint management, police, government employment, etc., have been digitized through well-conceived projects. Alongside, these initiatives, the Board has successfully started or completed the following e-services and ICT-led service delivery activities in the State:

- IT literacy for young and adults undertaken for more than 100,000 individuals

10. OECD, "Digitalization and productivity: A story of complementarities", <https://www.oecd-ilibrary.org/sites/5713bd7d-en/index.html?itemId=/content/component/5713bd7d-en#:~:text=Digital%20technologies%20are%20transforming%20our,productivity%20and%20ultimately%20living%20standards>. (accessed 16 January, 2024).
11. World Bank, "Realizing the Future of Learning: From Learning Poverty to Learning for Everyone, Everywhere", <https://thedocs.worldbank.org/en/doc/764111606876730284-0090022020/original/TheFutureOfLearningdic12.pdf>. (accessed 7 January, 2024).
12. World Bank, "DIGITAL-IN-HEALTH: Unlocking the Value for Everyone", <https://www.worldbank.org/en/topic/health/publication/digital-in-health-unlocking-the-value-for-everyone>. (accessed 7 January, 2024).
13. WTO, "Digital Trade for Development", https://www.wto.org/english/res_e/publications_e/dtd2023_e.htm. (accessed 7 January, 2024).
14. World Bank, "Global Study on Digital Capabilities", <https://documents1.worldbank.org/curated/en/959181623060169420/pdf/A-Global-Study-on-Digital-Capabilities.pdf>. (accessed 7 January, 2024).
15. Ibid.
16. Ibid.
17. FAO, "Realizing the potential of digitalization to improve the agri-food system proposing a new international digital council for food and agriculture", <https://www.fao.org/3/ca7485en/CA7485EN.pdf>. (accessed 7 January, 2024).
18. Ibid.
19. Jiang, C., Phoong, S.W. A ten-year review analysis of the impact of digitization on tourism development (2012–2022). *Humanit Soc Sci Commun* 10, 665 (2023). <https://doi.org/10.1057/s41599-023-02150-7> (accessed 7 January, 2024).
20. WEF, "Future of banking: 5 trends reshaping a sector in turmoil", <https://www.weforum.org/agenda/2023/06/future-of-banking-5-trends-reshaping-sector/>. (accessed 7 January, 2024).

- Digitalization of State subjects/domiciles in AJ&K – 70,000 total state subjects and domiciles processed through end-to-end automated application.
- Computerization of Land Records (Phase-II), through operationalization of 10 digital service centres.
- Digitalization of driving licenses in the State and 327,850 cards provided to eligible citizens.
- Establishment of telehealth centres in AJ&K, through necessary infrastructure deployment including operationalization of centres. According to the data received from the AJ&K IT Board, 40000 patients have been served so far through telehealth centres.
- The establishment of the IT Excellence Centre at Muzaffarabad is in progress.
- A centralized biometric attendance system and e-Office to improve governance has been rolled out.
- Electronic Results Management System has been initiated.
- The establishment of a software technology park and special technology zones are stalwart projects in the pipeline.

In addition to AJ&K IT Board's specific initiatives related to digitalization, various departments like health, education, industries & tourism, have also introduced their indigenous management information systems to improve their services for the public. Such digitalization endeavours, support in achieving the SDG 1,2, 3, 4, 8, and 9. The initiatives of these departments are primarily focused on introducing e-services for registration of beneficiaries as well as installation of management

information systems, to fulfil their data and reporting requirements. Governance reforms and re-engineering of processes within the government departments have not been introduced in detail so far.

In this context, it can be ascertained that AJ&K is endeavouring to take advantage of the ICT-driven mechanisms to bring prosperity and growth in line with the SDGs agenda. However, these initiatives need coherence, convergence, and integration at infrastructure (both hard and soft) and application cores. There is a need for a unified policy to foster coherence and integration, supported by requisite legislation.

The importance of a dedicated digital policy for AJ&K is evident when considering the various challenges faced by the region in terms of internet access, affordability, coverage, and quality of telecom services. A well-defined digital policy can address these issues and provide a framework to improve digital infrastructure and services in AJ&K.

A well-crafted digital policy can attract investment in the IT and telecommunications sector, creating jobs and fostering innovation. This can diversify the local economy and reduce dependence on traditional sectors like agriculture, government employment, and tourism.

Furthermore, digitalization brings a few critical challenges alongside many opportunities for inclusion and sustainable growth. Cybersecurity, online harassment, and radicalization are a few challenges requiring prudence. A digital policy can help establish a framework for cybersecurity measures and online content regulation, promoting a safe and secure digital environment for all.

Given the above mentioned background and context, the AJ&K IT Board initiated the formulation of the Kashmir Digital Policy with technical support from the United Nations Development Programme (UNDP).





Sustainable Development Goals 2030 and Kashmir Digital Policy 2024–30

The 2030 Agenda of Sustainable Development (SDGs) is quite comprehensive and embraces every aspect of growth, inclusion, equity, and development. The International Telecommunication Union (ITU), a UN organization specializing in information and computing technologies (ICTs), urges using ICTs to ensure progress toward each SDG. The Kashmir Digital Policy 2024-30 provides concentrated guidelines to support the commitments of the State of AJ&K to SDGs. The key manifestations of the SDGs 2030 development agenda in policy guidelines are as follows:

- ICT infrastructure is the key enabler for the initiation and uninterrupted provision of access to digital services and accelerates digital inclusion and equity. ICTs, potentially impact accelerated delivery across the SDGs, however, the provision of these technologies directly relates to achieving SDG 9. SDG 9 is about building a resilient infrastructure for inclusive and sustainable industrialization and fostering innovation. In the sphere of SDG 9, ICT infrastructure is the key to bringing the benefits of the digital economy to any country, to foster competitiveness and overall well-being. Furthermore, ICT infrastructure, services, and digital technologies have a cross-cutting effect for delivering various SDGs-related targets. Kashmir Digital Policy 2024-30 provides guidelines for quality and affordable ICT infrastructure, its governance, and the role of various stakeholders in developing this infrastructure in the region.
- The policy proposes measures for adequate utilities, legislation, and applications in digital financial inclusion and fintech. Aligned with the overall targets of SDG 1, these policy provisions will support addressing equitable growth and reducing poverty while ensuring access to finance and improving the bankable population rate.
- Kashmir Digital Policy proposes measures for digitalization in agriculture and the provision of e-health services, thus making the policy aligned with SDGs 2 and 3.
- The policy conspicuously provides guidelines for promoting e-learning and improving overall teaching and learning at primary, secondary, and higher education levels especially based on Science, Technology, Engineering, and Mathematics (STEM) concepts. Aligned with the targets of SDG 4, the policy suggests befitting measures to develop the requisite human resource and talent development pipeline for the State capable of addressing the needs in the areas of information, computing, and other engineering disciplines.
- AJ&K has a gender digital development index (GDDI) value of 0.561, placing the region in second position after Punjab which has a GDDI value of 0.643.²¹ However, the GDDI value for AJ&K requires attention to reduce the existing disparities in

21. UNDP calculations based on PSLSM (2019-20) data, NHDR 2024

access, utilization, affordability, and adoption of digital utilities across various age groups. Kashmir Digital Policy has given workable suggestions for improving access to digital technologies, provision and strengthening of infrastructure, and improving digital literacy amongst girls and women to help address the digital inequalities and gender disparities, thus supporting SDGs 5 and 10.

Furthermore, in the quest to integrate the use of ICT and various digital capabilities in the journey towards sustainable development and improving the stature of human capability in AJ&K, the Kashmir Digital Policy 2024-30 proposes measures across socio-economic sectors.





Vision, Mission, and Principles of the Digital Policy

3.1 Vision

Digital & progressive Azad Jammu & Kashmir for public empowerment.

3.2 Mission

Transforming Azad Jammu and Kashmir into an innovative State, through the responsible use of:

- Digitalization with a future focus on e-services, students, and network infrastructure
- Information, computing, and allied technologies for fostering socio-economic growth, equitable and sustainable development, and transparent governance, in collaboration with local and global partners.

3.3 Overall Goal

The AJ&K Digital Policy aims to establish a comprehensive and inclusive digital ecosystem that benefits all residents of Azad Jammu and Kashmir. The motto is

”ڈیجیٹل نظام بااختیار عوام“

۳،۴ Policy Objectives and Principles

The AJ&K Digital Policy is built upon a foundation of guiding principles that ensure its effectiveness and alignment with the needs of Azad Jammu and Kashmir. These principles act as a roadmap for the implementa-

tion and ongoing development of the policy.

The Policy pursues the following guiding principles:

- i. The Government of AJ&K will establish a comprehensive framework for ICT infrastructure (physical and digital) to meet the current and future digitalization needs, aligned with applicable global and regional standards on technology governance.
- ii. Priorities as elaborated in the National Human Development Report 2024: Doing Digital for Development; under each of the approaches including access, adopt, anticipate, and accelerate, shall be the key for conceptualizing and implementing desirable measures under Kashmir Digital Policy 2024-30.
- iii. Citizen and stakeholder-centric approach shall remain pivotal for conceptualizing, planning, developing, and implementing all initiatives about information and computing technology introduction, regulation, and promotion in AJ&K.
- iv. Equity, access, affordability, safety, resilience, adaptation to local conditions, and governance and culture shall be the prime considerations for all the initiatives under Kashmir Digital Policy.
- v. All the initiatives to be planned and undertaken in line with the Kashmir Digital Policy, shall consider indigenization and localization to promote the involvement of local talent, private sector, industry, and resources.
- vi. Transformative gender approaches and reduction of

the digital divide for the population at large shall remain a focus across the policy measures.

vii. Ensure citizens benefit from digitalization and e-services across key sectors like health, education, agriculture, and social services.

viii. Bridge the digital divide, promote gender participation in technology, and leverage digitalization to achieve sustainable development goals.

ix. Develop effective legislation and regulations to enhance ICT infrastructure and empower the AJ&K IT Board to create an enabling environment for digitalization.

x. Leverage ICT infrastructure and human resources to promote entrepreneurship, self-employment, and job creation.

xi. Promote a strong private sector role in developing ICT by creating an attractive environment for local, national, and foreign investments.

xii. Invest in developing human capital skills aligned with the demands of a digital economy.

xiii. Promote research and development initiatives to advance the ICT sector.

xiv. Prioritize robust cybersecurity measures to protect critical infrastructure and data privacy and ensure the online safety of the citizens.

xv. Promote open-source technologies and interoperable standards to ensure accessibility and innovation.

xvi. Establish clear principles for data governance, ensuring data security, privacy, and responsible use for public benefit.

xvii. Promote digital literacy programmes for all citizens, focusing on empowering marginalized and vulnerable populations.

xviii. Work towards ensuring affordable access to ICT infrastructure and services for all citizens.

xix. Promote the use of local languages in digital platforms and services to ensure inclusivity.

xx. Leverage digital tools to promote citizen participation in government decision-making processes.

xxi. Promote the open and accessible sharing of non-sensitive government data to foster innovation and transparency.

xxii. Continuously improve the quality and accessibility of e-government services to enhance citizen experience.

xxiii. Promote an innovative ecosystem to foster the development and adoption of new digital technologies.

xxiv. Promote ICT solutions that contribute to environmental sustainability and address climate challenges.

xxv. Integrate ethical considerations into all aspects of digital policy, focusing on responsible development and use of technologies.





Key Policy Measures/ Actions

4.1 Access, Connectivity, and Digitalization Infrastructure

4.1.1 Current Situation and Challenges

Accurate and adequate information and computing technologies (ICT) infrastructure is a prerequisite to the digitalization of any country or state. Therefore, it's imperative to ascertain the availability, access, and quality of the ICT infrastructure before embarking on a policy for the same. The current situation of connectivity and digitalization infrastructure is briefly given below:

i. It's a noteworthy fact that the proliferation of private operators, their network, and continued infrastructure expansion by Special Communications Organization (SCO), has increased tele density in AJ&K to 95%, with 94.5% mobile telephony.²²

ii. The data about access and connectivity-centric performance parameters for AJ&K is unavailable. However, it can be referred to that the internet penetration rate of Pakistan was 36.5%, at the start of 2022²³ and that of AJ&K is 24%.²⁴ Similarly, the country's performance is behind its peers in South Asia (Bangladesh and India), keeping in view various indices referred to digitalization of governance. The country ranks 150th out of 190 on the UN e-government development index, 79th out of 100 on the inclusive internet index and 75th out of 100 on

Huawei global connectivity index. Pakistan's ranking in various critical indices regarding digitalization gives an idea about the state of the overall infrastructure in AJ&K as well.

iii. Quality of telecom services in AJ&K is a persistent challenge. Based on the 7 x Quality of Service KPIs²⁵, parameters, as measured by the Pakistan Telecommunications Authority (PTA) during quarter 1, 2023, service accessibility and call completion ratios are not satisfactory for various operators providing services in the region. Key reasons inflicting on the quality of telecom services include lack of regulations to steer ICT services within the State of AJ&K, delayed spectrum auction for 3G/4G services, and limited fibre connectivity infrastructure. The transfer of USF contributions allocated to AJ&K is still pending from the centre.

iv. Data and cloud infrastructure are the backbone of digitalization. There is no dedicated and unified data storage and management infrastructure available in the State, resultantly the State adopts varying approaches and methods to handle its data including the use of dedicated servers and engagement of hosting services from various providers.

v. Dedicated information security infrastructure and required mechanisms are unavailable in the State of AJ&K.

vi. Geographical terrain of AJ&K as well as its population density (304/Sq KM)²⁶ are major challenges for setting up the fibre infrastructure. Low population density makes

22. Pakistan Telecommunications Authority (PTA) Official Statistics 2022

23. Ibid

24. Pakistan Telecommunications Authority (PTA) data Q 1, 2023

25. Network Accessibility, Call Setup Success Rate, Call Setup Time, Call Completion Rate, Mean Opinion Score, Inter System Handover Success Rate & RAB Setup Success Rate

26. AJ&K Official Statistics P&DD Report 2023

the infrastructure investment non-viable in commercial terms.

vii. The State requires a framework for the acquisition, erection, governance, and utilization of fixed and soft digital infrastructure, covering all the components related to fibre, connectivity and telecommunications, data and cloud, cyber security, and backbone software layers.

4.1.2 Policy Provisions

i. The government shall prepare a framework for fixed and soft digital infrastructure development based on the system-wide need for digitalization of governance and service delivery. The framework should include the requirements and standards for elements of fixed infrastructure such as fibre networks, data warehousing, and integration, cloud, and cybersecurity. An overall backbone software technology framework should be introduced to foster integration and interoperability within the digitalized environments of government departments. Similarly, the framework should be able to integrate and interoperate with the government's ecosystem partners, especially the private sector providers.

ii. The government shall introduce and promote open data-sharing protocols to enhance transparency, improve accountability, and foster innovation.

iii. The State should conduct a study to determine the current level of fiberisation across the union councils. The union councils with no fibre network should be marked and an estimation shall be carried out for the fibre infrastructure and investment requirements for all the union councils to provide high-speed, reliable, and next-generation broadband. The backhaul fibre infrastructure and connectivity requirements estimation should entail the provision of fibre to union council-based schools, local government, health units, public wi-fi hot spots, etc.

iv. The government of AJ&K should undertake commercial, technological, and operational feasibility for the

core infrastructure components such as backhaul fibre, data centres, cloud, and cybersecurity. In line with the feasibility requirements, viable financial models should be prepared to stimulate private sector investors for undertaking public-private partnership-based provision of ICT infrastructure. The government should introduce infrastructure pooling and sharing guidelines for various service providers and operators. The private sector role and mutual benefit profiling for all such projects shall be determined to safeguard the interest of the public and private institutions. The AJ&K IT Board can introduce these guidelines.

v. The government shall refer to applicable standards, frameworks, and benchmarks for successful digital transformation in the infrastructure and digital utilities for service delivery. Technology governance standards such as The Open Group Architecture Framework (TOGAF), Control Objectives for Information and Related Technologies (COBIT), and Fiber Grid Network (FGN) should be referred to the planning and governance of digitalization initiatives in the State. Applicable frameworks in countries like Estonia, Germany, Czech Republic should be referred to.

vi. Based on the commercial feasibilities, financial investment packages should be introduced by the government while working with leading banks, financial institutions (both local and foreign), and bilateral donors to make feasible financial propositions to be availed by the private sector in the realm of ICT infrastructure development for AJ&K. The government should introduce soft loans, matching grants, and insurance guarantees to make it viable for private investors to erect ICT infrastructure.

vii. The IT Board should develop and implement service delivery standards or levels for all service providers involved in the provisioning of ICT services and infrastructure. Necessary legislation should also be introduced to this end.

viii. The government of AJ&K should encourage local/small infrastructure and service providers at local levels to improve the services in low-density rural areas while partnering with the government and/or large-sized

private sector infrastructure providers in laying down fibre network at the UC level. The government should use various public-private partnership modes, joint venture arrangements, or other possible collaboration models to support the small local operators in providing cable-based internet and other telecom services to local households and government offices. It will improve access and connectivity alongside bridging the digital divide. The access and connectivity-related gaps shall be addressed for women and vulnerable groups through such household-based measures. The government should consider subsidizing these bundled services for the household. Tax rebates or complete tax waivers should also be allowed for such small-scale infrastructure providers for a considerable period, where the revenue can subsidize the expenditure.

ix. An independent, secure, and state-of-the-art data centre should be established to house all government department-related data securely and sustainably. Secure and reliable cloud services should be engaged to provide uninterrupted support to the software applications and utilities.

x. Effective use of USF and Spectrum Auction Proceed Money for digital inclusion, digitalization, citizen-centric services delivery, skill development programs, and process automation.

xi. The government should ensure the environmental and financial sustainability of all the infrastructure projects on digitalization. Alternative energy utilization must be considered for fulfilling the energy needs of all such projects to ensure no harm to the planet.

xii. The government of AJ&K should streamline its existing relationship and processes with the federal authorities while addressing legislative hurdles and bureaucratic challenges for timely spectrum auctions and applications of 5G and satellite internet for the State. It will ensure the State keeps pace with introducing new technologies and revenue generation for the government shall remain intact as well.

xiii. The government should leverage the role of the AJ&K Board of Investment with multilateral donor

agencies, international development institutions, infrastructure development banks, and private infrastructure providers in UK, Europe, China, and Singapore, for securing soft loans, development funds, and foreign investment in the realm of ICT infrastructure. Strengthening of the legislative under the aegis of sovereign guarantees should be undertaken to promote foreign direct investment in the ICT sector.

4.2 Governance of Information and Computing Technologies Infrastructure

4.2.1 Current Situation and Challenges

In the realm of governance of ICT infrastructure, the key situational factors are given below:

i. AJ&K IT Board (the main governing body of ICT in the State) requires a strengthened role to plan, initiate, implement, monitor, steer, and regulate the overall ICT infrastructure in the State.

ii. AJ&K IT Board needs additional human resources to undertake its functions effectively. The IT Board needs to induct a new workforce at various cadres to fulfill the human resource requirements.

iii. The governance and utilization of ICT infrastructure is not centralized. Similarly, the infrastructure management is being done in siloes. All the key line departments including P&DD, education, health, industries, etc., have their own data management, data storage, and access infrastructures. Such arrangements are either done on premises or while engaging other providers. A cohesive policy or action plan is missing, in this context. It leads to complexities of management, increased costs, and delays in project initiation and implementation. Therefore, the State needs to introduce an elaborate framework for the governance of ICT infrastructure in the region.

4.2.2 Policy Provisions

- i. The AJ&K IT Board should be empowered to govern the entire infrastructure of information and computing technologies in the State. The IT Board should be assigned to centrally plan, implement, constitute, monitor, and maintain the information and computing technologies infrastructure.
- ii. The Board should be given the title of "AJ&K Information and Communications Technology Board (AJ&K ICT Board)", to undertake the governance of ICT infrastructure across the State coherently.
- iii. The capacity of the AJ&K IT Board to initiate, implement, monitor, maintain, and govern the ICT infrastructure should be enhanced by introducing required human resources and strengthening the role and mandate of the IT Board to steer the performance of infrastructure providers for the ICT sector.
- iv. The IT Board should prepare ICT governance framework to be internalized by the state. The ICT governance framework should contain the guidelines for hard and soft backbone ICT infrastructure. It should feature planning and implementation guidelines for department-specific ICT interventions. The core hard and soft ICT backbone infrastructure needs to be governed by the AJ&K IT Board, and the departments should plan and initiate the digitalization activities per their priorities, mandates, and needs. Capacity assessment and development plan should be prepared by all departments in line with their respective requirements of digitalization to develop the desirable capacity in their human resource, technology governance processes, monitoring, and supervision of technology-led initiatives taken by the respective department.
- v. All digital platforms, utilities, and services should be undertaken and aligned with the user-centric design approach for such digital mediums and services. It will help provide e-governance services to enhance user experience and accessibility.
- vi. Feedback mechanisms should be introduced and established to solicit continuous feedback from citizens

and other stakeholders, to enable a responsive improvement for e-governance services.

vii. The IT Board and other departments should prepare and implement an overall awareness-centric training programme for current government employees about the nature, need, use, benefits, and implementation of digitalization and ICT initiatives in government sector organizations. The IT Board and other departments should prepare and conduct sensitization sessions for the legislatures and members of the cabinet about the digitalization of governance. It will help promote an overall understanding of ICT's need, importance, and use for improved governance and service delivery.

viii. The State of AJ&K should establish a high-level forum to continuously steer and review the performance of the infrastructure and IT services providers to maintain and improve the quality of digitalization. Necessary inter-departmental arrangements with telecom regulators, like the Pakistan Telecommunications Authority, should be undertaken to materialize this priority.

4.3 Digital Governance, e-Governance Services, Equity, and Inclusion for Sustainable Development

4.3.1 Current Situation and Challenges

Digital governance is the key to improved service delivery in this era. Similarly, effective digital governance improves inclusion and fosters equitable yet sustainable development. In this regard, specific situational factors are outlined below:

i. AJ&K has taken significant strides on the path to digital progress. Under the Smart AJ&K Vision, various departments including public procurement regulatory authority, judiciary, complaint management, police,

government employment, etc., have been digitized. Land Record Management Information System (LRMIS), e-health, digitalization of State subjects' records, and Electronic Results Management System during local bodies elections 2022, have also been introduced successfully. Similarly, departmental-level support infrastructure required for ICT has been strengthened for various departments such as education and the Prime Minister's Secretariat. However, digital governance requires integration across vertical and horizontal layers of technology as well as the governance structure of the State. Therefore, it is established that AJ&K needs to introduce a cohesive and coherent framework for digital governance.

ii. There is a need to carry out detailed process mapping of all the departments in the State. The process mapping will help in determining the process overlaps and governance mechanisms that can propel integration and interoperability.

4.3.2 Policy Provisions

i. The State should introduce a digital governance framework, encompassing all the departments and allied organizations. The department-wise process mapping and process re-engineering exercises should be conducted to determine the internally optimized process paths for various departments. Similarly, mapping the service delivery process and drawing the inter-departmental process cohesion and path dependency to be ensured to help introduce the existing departmental and service delivery processes. The outputs of this exercise should be used to conceptualize and design a framework for introducing digital governance. The framework should assign and identify various layers for the digitalization of governance based on the departmental structure, mandate, and functions. It will help choose the right mega-structure of software layers capable of containing the activities of the departments. Interoperability, data sharing, pooling, and necessary protocols shall also be established.

ii. The State of AJ&K is already on its path to digital progress by introducing requisite infrastructure and e-

services in education, health, land record management, and other domains. The State should take a platform approach for strengthening existing e-services and introduce newer ones as and when required. This will support seamless, accessible, and equitable service delivery to the population, through effective infrastructure. Continued strengthening of e-services shall enable the State to achieve its commitments under the 2030 Agenda, especially in education, health, tourism, small and medium business development, poverty alleviation agricultural development, and ICT infrastructure development.

The State should introduce complete digital suites for services in the areas of education (secondary and higher), health, local government, agriculture, transport, land records management, small industries, tourism, and the like. The digital services suites should be designed and introduced by respective departments with technical and ICT support from the AJ&K IT Board. The departments should be able to determine the inclusion of new e-services in the existing e-services modules implemented in the areas of their departmental mandates.

4.4 Legislation and Regulation for the ICT Sector

4.4.1 Current Situation and Challenges

The situation related to legislation and regulation suggests that:

i. The regulation governing AJ&K IT Board needs strengthening to enable the Board to fulfill the requirements relating to digitalization.

ii. The IT Board needs legislative strength in funds acquisition for ICT infrastructure development, governance of ICT infrastructure, private sector engagement, regulation of infrastructure providers, and engaging and retaining the required human resources. The IT Board

needs legislative provisions to steer the introduction, implementation, and regulation of digital governance in the State. It will help introduce and maintain a centralized mechanism for digital governance, where all the departments of AJ&K will be able to acquire support from the Board for seamless service delivery to the public through digital channels.

iii. The State needs to introduce and promulgate laws related to e-commerce, electronic payments and fintech, cyber security, personal data protection, and other protection desirable for the online safety of the masses. Furthermore, legislative scrutiny of the existing laws is desirable in line with digitalization-centric activities.

iv. AJ&K is eagerly introducing ease of doing business-related regulatory and legislative reforms to level up the overall operating and enterprise setup environment in conjunction with the relevant stakeholders. AJ&K needs to maintain the pace of legislative reviews undertaken to provide the desirable support for the ICT sector in continuation of the initiative.

v. Procurement-related legislation especially for infrastructure-intensive projects needs a dedicated review to provide an enabling stimulus to the private sector providers of ICT infrastructure.

vi. Digital literacy needs to be enacted through legislation.

4.4.2 Policy Provisions

i. Keeping in view the overall requirements of digitalization in the State of AJ&K, the role of IT Board requires strengthening. IT Board should be re-named as AJ&K ICT Board. It will denote the significance and cover the breadth and depth of responsibilities assigned to the Board.

ii. The legislation/act of AJ&K ICT Board should be strengthened, especially on the vested authority of the Board in the areas of seeking and attracting ICT investments, private sector engagement, ICT infrastructure

planning, development and governance, funds acquisition and utilization.

iii. Through amendments in the current Act, the AJ&K IT Board should have immunity to implement its activities and actions undertaken as per its mandate. The staff should only be held accountable by the governing body of the Board for all its undertakings.

iv. Legislation should be strengthened to elevate the role of the IT Board to act as an apex department for preparing and enacting a framework for ICT governance and digitalization of all departments of the Secretariat. The respective departments shall align their respective digitalization activities with the overall ICT governance framework of the IT Board and shall introduce various digital utility layers for improving e-services accordingly.

v. The government should undertake legislative scrutiny of the existing laws on ICT and digitalization. Regulatory gap analysis should be completed to map the legislative gaps across various sectors and sub-sectors of ICT.

vi. Legislation should be introduced in AJ&K to promote e-commerce and the requisite legal environment to the e-commerce ecosystem players.

vii. The government of AJ&K should introduce legislation for data protection, privacy, online crime, data and cybersecurity, and safe use of existing and emerging information and computing technologies like artificial intelligence, quantum computing, etc., for safeguarding the interests, sovereignty, and rights of all concerned.

viii. The legislation should be introduced to elevate the role of the Board of Investment for the promotion of investment in the ICT sector and safeguarding the interests of banking and financial institutions, venture capital companies/funds, joint venture partners, entrepreneurs, and ICT companies. The required legislation should be introduced to address the sovereignty requirements inevitable to raise foreign direct investment in the State.

ix. The ongoing ease of doing business initiatives shall

be kept under continued focus, for introducing new laws or re-consolidating existing laws in line with the initiative so that the investment climate can be levelled for the private sector.

x. The existing rules of business 1984 and Secretariat instructions 2006 should be translated into Urdu language for the understanding of the Secretariat staff. These rules and instructions should be updated as required for the use of ICT in various Secretariat departments in AJ&K and mandatory legislation should be introduced under this segment as well.

xi. Digital literacy, through legislation, should be mandatory for all adult population groups in AJ&K. It will help raise awareness among adults, especially women, about using digital tools to attain the e-services as introduced by the government. There should be legislation on the safe and ethical use of social media platforms to safeguard the rights of the citizens and the sanctity of information for all concerned.

The existing procurement legislation should be re-examined. Enabling procurement of ICT products and services should be ensured while pruning the stringent laws and replacing them with the market and need-responsive regulations. Specific legislative measures are required to safeguard the post-project implementation services for flawless project continuity and effective service delivery. Service level agreements should be introduced and enacted for all ICT products and service providers.

4.5 Entrepreneurship, Innovation, and Private Sector Development

4.5.1 Current Situation and Challenges

The situation in the domain of entrepreneurship, innovation, and private sector development for ICT is summarized as under:

i. The AJ&K IT Board needs to strengthen its role in the areas of entrepreneurship development while using the existing (incubation centres working in the universities of AJ&K, national incubation centre Muzaffarabad and Mirpur), and upcoming infrastructure (in the shape of Software Technology Zone and IT Park).

ii. Banking and financial arrangements need strengthening and flexibility to promote investment in the ICT sector.

iii. Foreign investors, multilateral funding bodies, venture capital funds, and other providers of loans and grants in the ICT sector need to be touched base through effective outreach and commercially viable measures.

iv. Specific measures are required to help IT sector companies working in AJ&K improve their exports.

v. The State lacks dedicated funding and related mechanisms required to promote entrepreneurship and self-employment in the region.

vi. Since the AJ&K Board of Investment has no policy to promote investments in various sectors, it needs strengthening through legislative and outreach measures to act as a harbinger of growth for foreign direct investment in the ICT sector. There is no mechanism in place to support the freelancers in terms of their capacity development and organize the freelancers' community to emerge as independent ICT enterprises.

4.5.2 Policy Provisions

A. Entrepreneurship, Innovation, and Private Sector Development

i. The role of the private sector shall be strengthened at all levels in the State of AJ&K for effective engagement in the ICT domain. The government shall provide an overall enabling environment to the private companies, to encourage their role in the development and promotion of ICT and digitalization, while introducing required legislation and one-stop enterprise setup procedures.

ii. The private sector shall be given a tax holiday for their investments and earnings upon initiating and expanding ICT activities and services in the State for a considerable period. If required, the tax exemptions should be extended to a further period to make the investment propositions viable for the private sector.

iii. The local and foreign companies willing to set up and/or expand their business ventures in software technology park and special technology zone authority, shall be given substantial subsidies on building rents, ICT infrastructure imports, ICT infrastructure usage, and the like.

iv. The government shall set up an ICT development and innovation fund for aspiring entrepreneurs and existing small businesses working in the ICT sector. The fund shall cater to the investment requirements for vertical and horizontal expansion of the ICT companies in both local and international markets.

v. The Government of AJ&K should simplify the registration and enterprise setup procedures for private sector investors in the domain of ICT and digitalization infrastructure.

vi. AJ&K IT Board shall be empowered to review and approve all such development proposals submitted by the ICT companies (both local and international). Necessary legislation should be introduced for this role of the AJ&K IT board.

vii. Banking channels shall be enabled to encourage ICT business development at a very low cost of credit. The ICT development fund shall be introduced in conjunction with local and foreign banks, venture capital companies, bilateral donors, and international development institutions to provide required investment support to the sector players.

viii. The AJ&K IT Board shall establish a research and development department to conduct product, service, and commercial viability analysis to guide the local and international ICT companies. The private sector should be able to use this research for ICT business expansion in local and international markets.

ix. The AJ&K IT Board shall solicit the ICT-based products and services requirements for digitalization of the governance and service delivery across various sectors, through local ICT companies. Pilot project activities shall be funded by the AJ&K IT board through local ICT companies and after successful review scaled products shall be developed through the local ICT companies.

x. Entrepreneurship Development Fund shall be established under the financial and administrative control of AJ&K IT Board. The fund should be dedicated to the development of young entrepreneurs and freelancers. The fund should be allocated by the Government of AJ&K. However, other external sources of funding shall be explored by the AJ&K IT Board while engaging international development institutions, entrepreneurship development accelerators, and private corporations.

xi. Entrepreneurship shall be promoted at the university level while harnessing the role of business incubation centres at the universities as well as encouraging final-year projects on industry and social development. Interdisciplinary teams of graduates should be encouraged from faculties of computer and engineering sciences as well as social sciences, to ideate and conceptualize the final year projects after conducting field and industry research.

xii. The AJ&K IT Board should collect and share the digitalization needs of various departments with the universities in AJ&K. The final-year students should ideate and prepare the ICT utilities and products based on the requirements shared. Such products should be presented to the concerned departments and their feedback shall be solicited accordingly for implementation and scale-up. It will allow requirement-centric onboarding of young talent.

xiii. Financial inclusion-related start-ups shall be encouraged to ensure access to and adoption of digital finance.

xiv. Startup ecosystem shall be promoted and continuously nurtured to spur innovation and growth through

entrepreneurial ventures. Workable entrepreneurship development models through the role of incubation centres, venture capitalists, and accelerators shall be established and improvised.

xv. The AJ&K IT Board and other government departments should set up a sandbox to experiment and test the concepts to generate proof and use case identification and solution implementation by young undergraduates and product development companies. The universities shall showcase the final year projects of the students while regularly exhibiting the projects with AJ&K IT Board, industry association shows, and in-house exhibition arrangements. The projects with promising growth attributes shall be incubated at the respective incubation centres across AJ&K.

xvi. Successful incubates shall be supported to scale up through the entrepreneurship development fund.

xvii. The universities should introduce freelancing skill development in their coursework. Freelancing platform utilization, lead generation, customer service, and freelancing project delivery skills should be imparted through such coursework. The universities can consider introducing this course in a different format e.g., conducting seminars and inviting guest lectures to provide exposure to the students. The aim of such skill development at the undergraduate level is to prepare the undergraduates for carrying out freelancing immediately after graduating from the universities.

xviii. The Freelancers Development Programme shall be introduced while providing technical, financial, and organizational support to the freelancing community in the State. The freelancers shall be organized to register their entities to help them scale their offerings on a financially viable ground.

xix. Newly introduced entities of freelancers should be given priority in terms of investment provisioning, scaling up, and the use of facilities and services provided by the software technology park and special technology zone authority.

xx. The Entrepreneurship Development Fund,

Freelancers Development Programme, and other entrepreneurship development initiatives should allocate a considerable amount of funds and efforts for developing girls and women-led ICT businesses.

xxi. Regular ICT exhibitions of the state of AJ&K shall be organized locally and internationally. Support from the Pakistan Software Export Board (PSEB), Trade Development Authority of Pakistan (TDAP), and AJ&K Board of Investment as well as other relevant institutions shall be attained regularly to help ICT companies of AJ&K exhibit in the local and international events. A comprehensive market access program can be prepared and implemented to this end as well.

xxii. Innovation hubs shall be established to spur innovation-led growth by providing co-working spaces in key cities to facilitate networking and collaboration among startups, tech companies, and other stakeholders or actors.

xxiii. The State shall focus on the ICT hardware development industry in terms of developing linkages with the key original equipment manufacturers in the domains of chip design and production, telecommunication transmission equipment and accessories, mobile devices design and manufacturing, gaming industry equipment, ICT power, and backup systems, etc. The original equipment manufacturers should be encouraged to build their facilities in the State, through various public-private partnership modes.

B. Improving Export of Information and Computing Technology Products

i. IT export is the key to sustainable economic growth and prosperity. The State should promote IT exports while using the mechanism and departmental arrangements with the Pakistan Software Export Board (PSEB), Trade Development Authority of Pakistan (TDAP), the Chambers of Commerce and Industries, and AJ&K Board of Investment. IT export value targets should be set and regularly monitored on an annual basis.

ii. The Chamber of Commerce and Industries in Mirpur and Muzaffarabad should set up an IT export facilitation

desk under a dedicated export facilitation committee. The committee should meet regularly to support the freelancers and IT product companies in AJ&K while introducing their products in markets like Gulf Cooperation Council countries, Europe, the United Kingdom, far East Asia, the United States, Africa, China, and Canada. Linkages with the AJ&K diaspora in Europe, UK, and USA should also be strengthened to this end.

4.6 Human Resource Development and Research in ICT Sector

4.6.1 Current Situation and Challenges

The situation of human resource development for the ICT sector entails the following:

- i. The majority of government employees at various scales and cadres are not ready to embrace digital technologies and mechanisms required under various interventions of e-facilitation and governance. There is a need for massive up-skilling as well as re-skilling of government employees in the State.
- ii. To produce an effective and productive workforce of the future, AJ&K needs to strengthen its curriculum for primary, secondary, and tertiary education streams. The curriculum needs alignment with the concurrent and futuristic trends of technology in the realm of ICT. AJ&K Education Policy 2022-30 establishes that primary and secondary education requires curriculum updates and strengthening in the areas of applied computer education, coding skills as well as STEM education.
- iii. AJ&K needs to strengthen the existing centre of excellence in Rawalakot and new centres to be established as per plan require timely completion as well. The State needs to introduce internationally acceptable certifications for high-end computing and engineering skills while establishing relationships of academia and

human capital development institutes with the technology manufacturers.

- iv. The linkages for research and development need improvement to promote an overall culture of research in the State. Similarly, AJ&K needs to introduce a mechanism for conducting need centric as well as cutting-edge research in different areas of concurrent as well as futuristic importance.

4.6.2 Policy Provisions

A. Human Resource Development

- i. The State shall introduce re-skilling and up-skilling programme for all the existing employees working in the government sector. The re-skilling and up-skilling program should be made a regular feature for the ICT capacity development of government employees of the State.
- ii. Regular orientation program for the nature and use of ICT for improving governance and public service delivery shall be introduced for legislators, secretaries, and all the key decision makers of all the departments in AJ&K. It will help in raising the awareness of all the quarters concerned with the decision-making related to acquisition and use of ICT products and services for improving governance.
- iii. The curriculum of primary and secondary education shall be reviewed and continuously strengthened to introduce grade-appropriate mathematical and computer programming concepts. The coherence of STEM-based curriculum (as given in AJ&K Education Policy 2023) shall be ensured for the mathematical and computer programming concepts. It will help address the educational quality required to produce able human resources equipped with the right concepts.
- iv. Primary and secondary schools shall be equipped with the necessary computing equipment laboratories for giving hands-on lessons on computer usage and programming.

v. Teachers' capacity building program shall also be introduced for the ICT subject teachers at all the government schools.

vi. The curriculum and learning environment for higher education shall be continuously strengthened to impart contemporary education in the realms of information, computing, and engineering technologies. Courses in the fields of big data, cyber security, language-based programming, quantum computing, generative artificial intelligence, robotics, Industrial Internet of Things (IIoTs), computer vision, etc., shall be continually upgraded in line with the concurrent development in the concepts and related technologies.

vii. The State shall prepare and implement a programme for developing high-end ICT skills in the areas of computer programming, quantum computing, IIoTs, robotics, product development, and the like. Targeted training programs for emerging technologies like AI, blockchain, IoT, robotics, computer vision, etc shall be introduced to fulfill human resource requirements. Universities and degree awarding institutes should upgrade and continuously re-adapt the curriculum towards this end.

viii. Collaborations between the State universities and online course providers such as EdX, Udemy, Coursera, and the like should be established for introducing free online certified courses for undergraduates in various areas of information and computing technologies.

ix. Certification courses should be arranged for youth with or without an ICT education background from specialized service providers and technology product owners like CISCO, Huawei, Microsoft, Samsung, Apple, SAP, Oracle, and the like. These certifications will help align the competence and qualification of the younger workforce with the applicable standards across various parts of the world.

x. Private computer and information technology training institutes should be regularized while introducing a standardization framework under the overall governance of the AJ&K IT Board. The learners of these institutions should be certified through international certification awarding bodies and technology product

owners like CISCO, Huawei, Microsoft, Android, Apple, SAP, Oracle, and the like.

xi. The Existing IT Excellence Centers introduced in AJ&K should be further nurtured, through certified training in various fields of ICT.

xii. Public-private partnership model-based training and certification programs should be introduced for ICT skill development of youth in AJ&K.

xiii. Co-working spaces shall be provided to the graduated and technically trained youth for starting their entrepreneurial ventures in technology parks already planned by the government of AJ&K.

B. Research and Development for ICT

i. Research and development stay at the heart of information and computing technology development. The State should establish a dedicated research and development framework for the advancement of research in the field of ICT. The framework should entail the role of all the stakeholders such as the AJ&K IT Board, academia (both local and foreign), and industry.

ii. The State universities should establish and nurture linkages with the existing centres of excellence for cloud computing, artificial intelligence, and data analytics, already working in Pakistan. Similarly, the State universities should establish collaboration with foreign universities actively researching in the areas of computer programming, quantum computing, IIoTs, robotics, artificial intelligence, data analytics, cloud computing, information, cyber security, and the like.

iii. Industry and government need-specific research requirements should be shared with the universities through the AJ&K IT Board and research projects should be planned accordingly. A collaboration between industry and academia shall be formalized to this end.

iv. A research fund should be established while pooling funds from the universities, international research funding bodies, government, IT companies, and industry in the private sector. The outputs of research projects

(proof of concepts and/or proof of work) undertaken through the pooled research funds should be made available for use by all the stakeholders contributing to the research fund.

v. The research fund shall be specifically introduced for universities to enable them to undertake research projects at their end through local or international collaborations.





Policy Implementation, Review, and Reinforcement

i. Policy implementation is an area of crucial importance. The AJ&K IT Board should be given the legislative mandate to prepare an action plan and oversee the overall implementation of digital policy for AJ&K.

ii. The IT Board should prepare and approve a development plan based on the policy guidelines. A holistic yet integrated plan covering the ICT governance framework, ICT infrastructure framework, ICT infrastructure development, private sector development, human resources development, legislation and regulation, etc. should be prepared by the Board and its approval should be attained through an applicable forum such as the AJ&K cabinet.

iii. The AJ&K IT Board should be legislatively empowered to constitute a high-level committee to steer the implementation of the digital policy of AJ&K. The committee should include members from different departments of the State including P&DD, PM Secretariat, education, health, law, industries and commerce, and private sector. The terms of reference of the committee should be introduced, and the regular committee meeting schedule should be declared mandatory. The committee should be able to review the progress on the implementation of policy alongside guiding the probable course of action required to be adopted for achieving the policy objectives. The committee should be able to solicit and suggest desirable changes in the policy actions. In this manner, the policy would be maintained as a living document by the State.

iv. Performance measurement metrics shall be introduced to define clear performance metrics and KPIs to monitor the progress of policy implementation. The performance measurement matrices should include:

- Timely preparation of action plan for policy implementation
- Introducing legislative changes for policy implementation
- Introducing and implementing a governance framework for ICT infrastructure
- Introducing and implementing new e-governance utilities and strengthening existing platforms for key sectors such as health, education, tourism, revenue and land records, law and justice, agriculture and livestock, industries and commerce, etc.

v. Regular stakeholder engagement shall be ensured to attain feedback from all stakeholders, including citizens, the private sector, civil society, and local and international development partners, to solicit their feedback and make course corrections in the policy.

vi. The AJ&K IT Board shall strive to maintain high levels of transparency and accountability in the implementation process, providing regular public updates and progress reports on the implementation plan of the Kashmir Digital Policy 2024-30.



Policy-Based Activities and Responsibilities Matrix

S. No.	Policy Based Activities	Responsible Departments
1	Prepare a framework for fixed and soft digital infrastructure development based on the system wide need for digitalization of governance and service delivery while inculcating all the requirements and standards for elements of fixed infrastructure such as fiber network, data warehousing and integration, cloud, and cybersecurity.	AJ&K IT Board
2	Plan and conduct a study to assess fiberization levels across union councils of the State of AJ&K and estimate long haul fiber infrastructure requirements for ensuring high-speed broadband access.	AJ&K IT Board
3	Assess feasibility and develop financial models to encourage private sector involvement in setting up core infrastructure components like fiber, data centres, cloud, and cybersecurity.	AJ&K IT Board
4	Implement service delivery standards and necessary legislation for ICT service providers.	AJ&K IT Board
5	Streamline relationships and engagement processes with federal authorities and regulators to facilitate timely adoption of new technologies like 5G and satellite internet.	AJ&K IT Board
6	Secure collaboration with international entities and leverage investment opportunities for ICT infrastructure through multilateral agencies and private investors, with legislative support for foreign direct investment under the aegis of AJ&K Board of Investment.	AJ&K IT Board
7	Implementation of digital governance framework which is well knitted and fully integrated across all the departments and organizations of the State.	AJ&K IT Board and all concerned departments of the GoAJ&K
8	Introduce and implement complete digital service suites in key sectors like education, health, local government, agriculture, transport, land records, small industries, and tourism, with technical support and governance oversight from the AJ&K IT board.	AJ&K IT Board and all concerned departments of the GoAJ&K

S. No.	Policy Based Activities	Responsible Departments
9	Introduce required legislation for strengthening the legislative authority of AJ&K IT board especially in the areas of attracting investments, engagement with the private sector, and overseeing ICT infrastructure planning, erection and governance. The legislation should be introduced to grant immunity to the board and its staff for activities undertaken to fulfil its mandate. The accountability of the staff should solely be assigned to the board's governing body.	AJ&K IT Board and Law Department, GoAJ&K
10	Changing the existing title of the board to AJ&K Information and Communication Technology Board, through necessary legislation.	AJ&K IT Board and S&GA Department, GoAJ&K
11	Conducting legislative scrutiny to identify and address gaps in ICT laws in AJ&K.	AJ&K IT Board and Law Department, GoAJ&K
12	Introduce required legislation to promote e-commerce, data protection, individual's privacy, cybersecurity, and safe use of emerging technologies.	AJ&K IT Board and Law Department, GoAJ&K
13	Strengthen legislation to promote investment in the ICT sector, address sovereignty concerns, and align with the Pakistan Regulatory Modernization Initiative.	AJ&K IT Board and Law Department, GoAJ&K
14	Review of existing procurement legislation to enable ICT procurement while ensuring post-project implementation services, introducing service level agreements for ICT providers.	AJ&K IT Board and Public Procurement Regulatory Authority (PPRA), GoAJ&K
15	Introduction and implementation of re-skilling and up-skilling programmes for government employees to enhance ICT capability of the existing workforce of the government.	AJ&K IT Board, Higher Education Department, and Universities of AJ&K
16	Reviewing and strengthening primary and secondary education curriculum to include mathematical and computer programming concepts	AJ&K IT Board and Elementary & Secondary Education Department, GoAJ&K
17	Enhancing higher education curriculum to nurture and develop human resource in contemporary technologies like big data, cybersecurity, robotics, etc.	Higher Education Department and Universities of AJ&K
18	Developing high-end ICT skills programs in universities and establish collaborations with online course providers and arranging certification courses for youth in collaboration with technology companies like CISCO, Microsoft, SAP etc.	AJ&K IT Board and Law Department, GoAJ&K
19	Establishing a dedicated research and development framework involving stakeholders like academia, industry, and the AJ&K IT board	AJ&K IT Board, Higher Education Department, Finance Department, P&DD and Universities of AJ&K
20	Sharing specific research requirements from industry and government with universities through the AJ&K IT board, to develop the proof of concept and proof of work-based projects which can be scaled later	AJ&K IT Board, Higher Education Department, and Universities of AJ&K
21	Strengthening private sector engagement in ICT through introducing enabling legislation and streamlined enterprise setup procedures	AJ&K IT Board and Law Department, GoAJ&K

S. No.	Policy Based Activities	Responsible Departments
22	Providing tax holidays for ICT investments and earnings, with possible extensions.	AJ&K IT Board and Inland Revenue Department, GoAJ&K
23	Establishing an ICT development and innovation fund to support aspiring entrepreneurs and small businesses	AJ&K IT Board, Industries, and Finance Department, GoAJ&K
24	Establish banking channels and venture capital partnerships to support ICT businesses financially for enabling their growth.	AJ&K IT Board, Finance Department, and Bank of AJ&K
25	Creating a research and development department within the AJ&K IT Board to guide ICT companies across various areas of technology led product development, business development, expanding their global outreach	AJ&K IT Board and Finance Department, GoAJ&K
26	Introducing substantial subsidies to companies to be established in existing and upcoming software technology parks and technology zones.	AJ&K IT Board and Finance Department, GoAJ&K
27	Introduce freelancing skill development in university coursework and support freelancers' growth.	AJ&K IT Board, Higher Education Department and Universities of AJ&K
28	Prioritizing investment and support for women-led ICT businesses.	AJ&K IT Board, Finance Department, and Bank of GoAJ&K
29	Developing linkages with original equipment manufacturers in ICT hardware production through public-private partnerships.	AJ&K IT Board
30	Promote IT exports through collaboration with relevant institutions like PSEB, TDAP and setting up annual export value targets for the ICT sector of AJ&K	AJ&K IT Board, PSEB, TDAP
31	Establish IT export facilitation desks in Chambers of Commerce and Industries to support freelancers and ICT companies across Pakistani missions in Europe, China, Middle East and United States of America	AJ&K IT Board, Ministry of Foreign Affairs GoP, AJ&K BOI, PSEB, TDAP



Information Technology Board

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