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Doing Digital for Development

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Executive Summary

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Technology has changed the world and every aspect of the way we live our lives. Its pace and scale is unprecedented in history. In just two decades, digital technology has reached 50 per cent of the developing world's population.

Pakistan ranks low on the Human Development Index (HDI), at 164th out of 193 countries, according to the global Human Development Report (HDR) 2023-2024. Pakistan also ranks low on all global digital indices. For example, it ranks 45th out of 52 countries in the World Internet Development Index (2023). Pakistan performs poorly compared to most countries, but better than countries in Sub-Saharan Africa.

The U.N. Secretary-General's Roadmap for Digital Cooperation convened in 2018-2019 has mandated that every person should have safe, affordable and meaningful access to technology by 2030. While Pakistan has demonstrated a strong policy commitment to the Roadmap in achieving equitable digital transformation, it is still early in its digital transformation. Without having better governance and regulation, technology will exacerbate current deprivations, vulnerabilities, and inequalities.

The National Human Development Report (NHDR) 2023/2024, *'Doing Digital for Development: Access, Adopt, Anticipate, Accelerate',* presents a comprehensive exploration of digital transformation as a critical lever for uplifting the socio-economic fabric of Pakistan. Anchored in the ethos of human-centered development, this report navigates the intricate interplay of technology, governance, and socio-economic well-being, charting a course for a future where digital

empowerment is a right, not a privilege.

Pakistan's journey towards digital transformation is articulated against a backdrop of formidable challenges, including economic volatility, governance inefficacies, and pronounced socio-economic disparities. The Report explores how, despite these challenges, digital technology stands as a transformative force capable of bridging the gap between existing human development deficits and a future of prosperity and growth. It presents digital technology as a 'democratizing' force that connects communities, districts, institutions, businesses, and governments, and qualitatively advances their interplay through digital instruments and processes. This does not ignore that digital access is highly unequal, with deep-set barriers to affordability and availability for excluded cohorts. These can be overcome through interventions that 'level' the digital playing field.

Digital technology has allowed countries to leapfrog traditional pathways to development, in spite of their challenges, and the NHDR 2023/24 advocates a course of action for governments, businesses, and most importantly, people, who are the real wealth of any nation. Across Pakistan's districts, people are already expanding their opportunities, exposure, and choices through digital usage. As discovered through NHDR's field research, digital usage has brought profound changes in livelihoods, political participation, entrepreneurship, commercial transactions, work cultures, and even social relations. People have embraced digital technology voluntarily, and recognize its transformative potential for improving lives.

Hypothesis and Theory of Change

Districts in Pakistan with higher levels of digital adoption, this includes usage of computers,

digital devices, internet, and a modicum of digital literacy, show a direct correlation

with higher human development outcomes, including higher learning, better health and quality of life.

This finding emerged clearly from the data available in Pakistan's Social and Living Standards Measurement (2019-2020). This finding became the basis of NHDR's research on whether digital technology can be leveraged to enhance human development outcomes. Acknowledging that districts have uneven HDI, how can digital transformation lead to qualitative improvements in human development?

The Report's **Theory of Change** is: *If* Pakistan enables digital capabilities, innovation, investments, and policy reform across prioritized sectors *then*, it will achieve improved outcomes in digital access, infrastructure, rights, governance, job creation, growth and resilience, which will accumulate to improve and enhance the country's human development indicators.

The NHDR's **Digital Transformation Model** was developed in light of this. Key sectoral domains including Governance; Basic Social Services, Climate Change; Economic Growth; and Human Security, which can undergo transformation if four critical enablers are brought to bear on them. These enablers include a) Policy Reform; b) Innovation; c) Investments; and d) Digital Capabilities. These sectors can experience inclusive growth, improved service delivery and qualitative upgrades in rights for all with the aid of these enablers. The aggregate of these outcomes can lead to an increase in Pakistan's human development indicators and Human Development Index (HDI) ranking, as experienced in other developing countries.

The **Theory of Change** underpinning the NHDR 2023/2024's Digital Transformation Model is: If Pakistan enables digital capabilities, innovation, investments, and policy reform across prioritized sectors, then, it will achieve improved outcomes in digital access, infrastructure, rights, governance, job creation, growth and resilience, which will accumulate to improve and enhance the country's human development indicators and HDI ranking.

Fieldwork and Research

NHDR 2024 is informed by global, regional, and national literature on digital transformation, as well as contemporary sector specific insights in the aftermath of COVID-19 that saw an accelerated usage of digital platforms. It also carries the valuable lessons of previous NHDRs themed on Pakistan's youth and inequality. In addition, several recently introduced governmental policy documents, frameworks and strategies, that are relevant to digital transformation, have guided the research.

The NHDR's research undertook a household-level survey of 5,500 respondents conducted across 15 districts in all four provinces, Pakistan-Administered Kashmir and Gilgit-Baltistan regions. The survey was supplemented by 30 focus group discussions with 296 participants, and 35 key informant interviews. These interactions spanned diverse cohorts including educators, IT industry workers, students, housewives, adolescents, informal workers, urban professionals, marginalized communities, influencers, activists, businesspersons, etc. In addition, a digital sentiment analysis was held in major urban centers as a 'digital listening' tool that helped collect thousands of digital sentiments on social media. Furthermore, NHDR also incorporated data from a profiling of Pakistan's 20 least developed districts.

Data and perspectives from these multiple sources have been invaluable in producing District Digital Development Index (DDI).

Digital Development Index (DDI)

The DDI has been develop in a similar fashion to the HDI, using the micro-data set of Pakistan Social and Living Standards Measurement Survey (PSLM) for the year 2019-2020. DDI has four dimensions namely, access, usage, attainment, and transformation that denote a cumulative rank for each district. The DDI has been constructed at national and provincial levels with urban/rural breakdowns, and at the district level. The Index is also decomposed by wealth quantities. The dimensions of DDI were carefully selected as under:

1. *Access*, or measuring digital penetration at the household level through gauging (1) access to computers (2) access to mobile phones; and (3) access to internet.

2. *Usage*, or measuring digital usage at the individual level through gauging (1) usage of computers; (2) usage of smart phones;

and (3) usage of internet.

3. *Attainment*, or measuring computer skills at the individual level through gauging ability to undertake a number of computer-based commands (including copy paste tools, sending emails with attached files; downloading, installing and configuring software).

4. *Transformation*, or measuring the percentage of people using the internet for education, research, business, banking etc.

A **Gender Digital Development Index (GDDI)** was also developed to measure gender inequalities in achieving the above mentioned four dimensions of District Digital Development Index.

A 4 As Framework: *Access, Adopt, Anticipate, Accelerate*

Central to the NHDR 2023/2024's discourse is the innovative 4As Framework — Access, Adopt, Anticipate, Accelerate — which encapsulates the sequential pillars crucial for realizing the full spectrum of digital transformation's potential in Pakistan. This framework serves as a strategic blueprint, guiding the nation's journey from enhancing digital access to fostering widespread adoption, anticipating future technological shifts, and ultimately accelerating the integration of digital initiatives across the government, social service delivery, and economic domains.

1. Access:

Access as the foundation, underscores the necessity of dismantling digital divides and democratizing the benefits of technology. It calls for policy interventions, infrastructure development, and collaborative efforts to ensure that digital tools are accessible and affordable for all Pakistanis, thereby laying the

groundwork for inclusive digital empowerment.

NHDR's research found that 47 per cent of the country was unable to use the internet in any way for reasons due to poor digital infrastructure, and affordability challenges. *A second-level digital divide occurs beyond physical access* when those who have access to the internet and digital devices are unable to utilize them because of deficient digital skills, aptitude or hesitance. This research found that basic phones had near universal penetration across Pakistan at 93.15 per cent; internet access was at 32.27 per cent and computer usage will likely remain low (11.75 per cent), even if access increases.

Pakistan's occupational profile determines internet usage patterns, in addition to affordability and accessibility. Among those who have internet access, the purpose of using the internet is undiversified — the majority of internet usage for entertainment at 93.2 per cent, whereas e-learning notches 11.9 per cent.

This is consistent with other countries where educational attainment is low, and communities are confronted with crisis and prolonged instability. Across the gender divide, digital literacy, phone ownership, familiarity with technology and diverse usage is extremely low. Pakistan's digital access challenge can be addressed through interventions that improve digital infrastructure, lower costs for phone ownership, and concerted efforts aimed at enhancing digital literacy among targeted cohorts.

2. Adopt:

The Adopt pillar delves into the practical integration of digital technologies across sectors, highlighting both successes and challenges in digital uptake. It emphasizes the transformative impact of digital adoption on governance, economy, and social services, advocating for a concerted effort to scale digital literacy, enhance user engagement, and streamline digital processes within public and private sectors. The Report illustrates how digital technology, when thoughtfully integrated, can catalyze improvements in service delivery, citizen engagement, and overall institutional efficiency.

Adoption is a challenge for governments, corporate sector and among people for a number of reasons. The largest impediment in adoption is an attitudinal one, not because people do not see purpose in digital adoption but because of an avoidance of conversion to new skill sets. Furthermore, the environment within which people upgrade their digital skills matters more than the technology. Forced learning often brings about negative consequences for productivity. Not everyone has accessed digital technology in their entire life, and adoption interventions must be sensitive to the digital divide. There has to be greater sensitivity in programing for digital uptake, so as not to render the experiences and insights of digitally 'disconnected' persons irrelevant. The digital divide is an active barrier among age groups and across the gender divide, but it the most evident between socio-economic groups. It must also be kept in mind that a specific political economy surrounds digital adoption; those threatened by increased transparency and accountability will prevent increased digitalization.

To meet the adoption challenge, digital capabilities have to be built through enhancing digital literacy and skills across population segments, particularly women, youth and marginalized communities. Policy reform is essential for fostering a thriving digital ecosystem and the government's recent policy framing is an important step in this regard. Investments in digital infrastructure are imperative, and public and private sector collaboration in this regard can mobilize resources. Innovation is the engine that drives digital transformation.

3. Anticipate:

Anticipate highlights the unprecedented reach of digital technology at a time when the world is going through a global polycrisis. Technological advancement is also fueling some of these challenges, and the global community is confronted by the need to harness technologies for greater good. Digital transformation requires new thinking, enhanced digital skills, cross-sectoral partnerships, as well as monitoring and analysis of solutions aimed at closing the digital divide. In doing so, practitioners must be wary of 'digital colonialism', or frameworks designed on 'Western' precepts and knowledge sharing. Digital platforms must be more participatory and inclusive of the voices of the Global South, and ensure that do no digital harm.

To close the digital divide, inequities between the Global North have to be considered. Inequalities within countries and within different social groups also have to be borne in mind. There are plenty of successful models that can be emulated in key areas. In anticipating the future of work, there are estimates that

50 per cent of all the world's employees will need reskilling by 2025 as adoptions of new technology increase. There is a big gap in digital skills between richer and poorer countries, of whom the latter are struggling to meet basic digital literacy, especially women. There needs to be an urgent new emphasis on digital skills in school curricula, as well as science, engineering, mathematics, and soft skills like resilience and critical thinking.

The rise of fintech solutions aimed at enhancing financial inclusion, including mobile banking and digital payments have become the moonshot initiative for the Global South. Mobile wallets have brought millions of unbanked cohorts into formal financial nets because they bypass commercial banks' requirements. More women than ever before are using mobile wallets in Pakistan, and digital payments have demonstrated the likelihood of lifting people out of poverty. Digital governance and citizen engagement also needs to be anticipated. Governments are providing everything from telehealth support to tax payments online. This needs more deliberate whole-of-government approaches, instead of isolated delivery by related ministries.

4. Accelerate:

This culminating pillar makes recommendations to scale up digital transformation efforts in Pakistan. The key intervention areas are: E-government and E-governance; resilience to shocks; economic growth; social service delivery; and empowering people.

- **E-government and E-Governance:** E-solutions in governance and government accelerates results in transparency and accountability within national and local public institutions. E-services that are human-centered allow for increased citizen participation with government, building a new digital social contract, that allows for agile and meaningful public services. Investments in human-centered E-Government and

E-Governance solutions is critical as they can increase institutional transparency, accountability and efficiency, as well as reach more citizens at scale. This should be supplemented by supportive policy environment for oversight and building institutional capacity.

- **Economic Growth:** For accelerating economic growth, there are opportunities in the recent growth in Pakistan's IT service exports, tech start-up funding, and increased demand for technology as a result of COVID-19. Pakistan's mobile ecosystem's $16.7bn contribution to GDP should also be enhanced. Digital solutions for tax collection are a need, as less than one per cent of Pakistan's population is filing tax returns. It is recommended that government will need to ensure good quality connectivity for businesses.

- **Resilience to Shocks:** To accelerate resilience from shocks, digital ministries can invest in incorporating digital solutions in their disaster reduction strategies. For instance, satellite imagery of disaster-prone areas, Geographic Information Systems (GIS), digital twins (virtual models) can help develop simulations for disaster preparedness, as well as sending early warning messages through mobile applications.

- **Social service delivery:** Social service delivery through e-platforms catering to education, telehealth, justice and social protection need to be scaled at national levels in Pakistan. A lot has been done by government, but more sustained focus can be transformative.

- **Empowering people:** To accelerate investments in people, more targeted interventions are needed for women's digital literacy and to ensure their safety online. A supportive regulatory environment needs to be created for tech entrepreneurs that does away with

cumbersome registration procedures and compliance requirements that startups can neither fulfil nor afford. A much higher investment needs to be made in skills to match demand for skills domestically, and have young people absorbed in the international labor markets. Digital skills in particular need to be imparted above and beyond the outmoded curricula approved by the Higher Education Commission.

Call to Action

The chief recommendations of this Report are to prioritize strategic investments in digital infrastructure, undertake policy reforms, build capacity of public institutions, and empower the private sector to take a lead in digital innovation and growth. These investments will deliver a cascading effect on people's economic, political, and social choices, whose results are already evident among digitally connected cohorts. By undertaking inclusive digital transformation, Pakistan will be able to achieve higher human development outcomes and ensure as best as possible that no one is left behind.

The Report's call-to-action focuses on major stakeholders that can shift the needle on digital change. The federal and provincial governments will need a comprehensive and integrated digital transformation agenda, investing in people-focused digital public services and making further investments in private sector and innovation. International development partners must make digital transformation a key priority in their funding in Pakistan. More collaboration between the private sector, international partners, and the government is required to co-design and co-finance digital initiatives. Finally, it is recommended that civil society, academia, and think-tanks form a key stakeholder working group to advocate for Pakistan's digital promise and mainstreaming technology in education.

As Pakistan stands at this critical juncture, the NHDR 2024 presents a vision and an actionable roadmap for overcoming its perennial challenges of low economic growth, exports crises, high exposure to climate related stresses, poor human capital, and deficits in governance. Through leveraging digital transformation, these challenges can be addressed and potentially overcome in short, medium, and long-term timeframes. In undertaking the recommended strategies outlined in this Report, Pakistan can fulfill the ambition of its own policy documents through making digital transformation the cornerstone of a sustainable development journey. In doing so, it will deliver on the global endeavor to achieve the SDGs, and build an inclusive and resilient future.
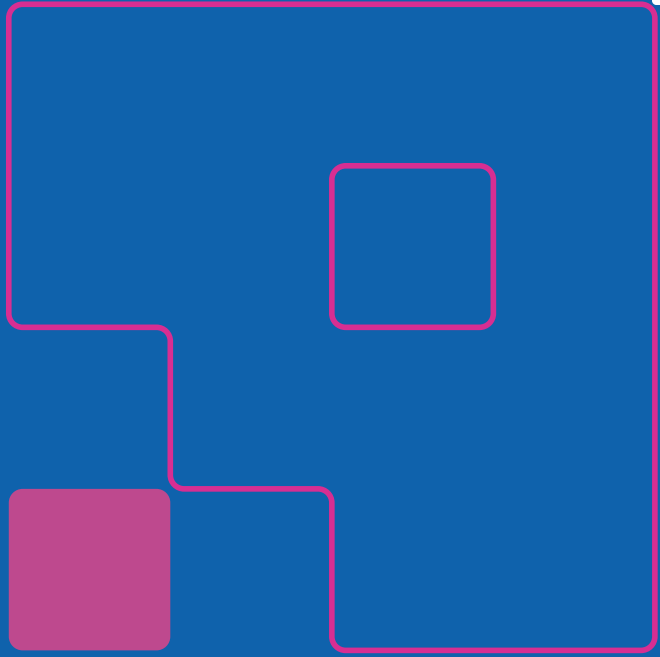
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