(e-Governance Board)

Report on

E-governance Assessment and Stocktaking Study in Nepal - 2081

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ACRONYMS AND ABBREVIATIONS

AHMIS	Ayurveda Health Management Information System
AI	Artificial Intelligence
BCP	Business Continuity Plan
BFIs	Banks and Financial Institutions
BIM	Building Information Modeling
CCIMS	Centralized Citizenship Information Management System
CCTV	Closed-circuit television
CDSS	Clinical Decision Support System
COPOMIS	Cooperative Management Information System
CEO	Chief Executive Officer
D4D	Data for Development
DevOps	Development Operations
DHIMS2	District Health Information Management System 2
DNF	Digital Nepal Framework
DNS	Domain Name System
DOTM	Department of Transport Management
eBPS	Electronic Building Permit System
EGDI	E-Government Development Index
eGMP	e-Governance Master Plan
e-governance	Electronic Governance
e-GP	e-Government Procurement
EHMIS	Electronic Health Management Information System
ELMIS	Education Logistics Management Information System
EMIS	Education Management Information System
E-Rickshaw	Electric Rickshaw
ETA	Electronic Transaction Act
FGD	Focus Group Discussion
FHIR	Fast Healthcare Interoperability Resources
GEA	Government Enterprise Architecture
GEDSI	Gender Equality, Disability, and Social Inclusion
GIDC	Government Integrated Data Center
GIOMS	Government Integrated Office Management System
GIWMS	Government Integrated Website Management System
GNSS	Global Navigation Satellite Systems
GoN	Government of Nepal
G-to-B	Government to Business
G-to-C	Government to Citizens
G-to-G	Government to Government

GTFS	General Transit Feed Specification
HR	Human Resources
HL7	Health Level Seven
ICD	International Classification of Diseases
ICT	Information and Communication Technology
ICANN	Internet Corporation for Assigned Names and Numbers
IEEE	Institute of Electrical and Electronics Engineers
IETF	Internet Engineering Task Force
IFRMS	Integrated Forest Resource Management System
IHIMS	Integrated Health Information Management System
INGO	International Non-Governmental Organization
IOTPS	Integration Online Tax Payment System
IP	Internet Protocol
IPV6	Internet Protocol version 6
IPFMS	Integrated Public Financial Management Services
ISMS	Integrated Scholarship Management System
ISO	International Organization for Standardization
IT	Information Technology
JSON	JavaScript Object Notation
KII	Key Informant Interview
LED	Local Economic Development
LG	Local Government
LISA	Local Government Institutional Capacity Self-Assessment
LOINC	Logical Observation Identifiers Names and Codes
LRIMS	Land Records Information Management System
MOALD	Ministry of Agriculture and Livestock Development
MoCIT	Ministry of Communication and Information Technology
MuAN	Municipal Association of Nepal
MySQL	My Structured Query Language
NARMIN	National Association of Rural Municipalities in Nepal
NDRRM	National Disaster Risk Reduction and Management System
NeGIF	Nepal e-Governance Interoperability Framework
NGO	Non-Governmental Organization
NHFR	Nepal Health Facility Registry System
NHMIS	Government of Nepal
NID	Government to Business
NHMIS	National Health Management Information System
NID	National Identity Card
NWASH	National Water Supply, Sanitation, and Hygiene
OMOP	Observational Medical Outcomes Partnership

OTA	Open Travel Alliance
PAMS	Public Assets Management System
PG	Provincial Government
PhD	Doctor of Philosophy
PHP	PHP Hypertext Preprocessor
PLMBIS	Provincial Line Ministry Budget Information System
PSC	Public Service Commission
RMIS	Revenue Management Information System
RMS	Relief Management System
SCORM	Sharable Content Object Reference Model
SDGs	Sustainable Development Goals
SEZs	Special Economic Zones
SIMS	Social Information Management System
SMS	Short Message Service
SNOMED CT	Systematised Nomenclature of Medicine – Clinical Terms
SQL	Structured Query Language
SSAMIS	Social Security Allowance Management Information System
SSL	Secure Sockets Layer
SuTRA	Sub-National Treasury Regulatory Application
TAF	The Asia Foundation
TSA	TREASURY SINGLE ACCOUNT
UKAID	United Kingdom Agency for International Development
UNWTO	United Nations World Tourism Organization
VPN	Virtual Private Network
XBRL	eXtensible Business Reporting Language

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- Federal government, ministries, departments, and constitutional bodies.
- Provincial governments (Koshi, Madhesh, Bagmati, Gandaki, Lumbini, Karnali and Sudurpaschim)
- Municipal Association of Nepal (MuAN)
- National Association of Rural Municipalities in Nepal (NARMIN)

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EXECUTIVE SUMMARY

The rapid evolution of digital technologies has made e-governance a critical tool for enhancing public service delivery, improving government efficiency, and fostering transparency. Nepal has been steadily advancing its e-governance initiatives at the federal, provincial, and local levels. However, the proliferation of digital solutions has created a need for a unified understanding of the e-governance ecosystem to ensure uniformity in policy, projects, and service delivery.

This comprehensive stocktaking exercise was aimed at creating a detailed inventory of ICT systems, software, and digital infrastructure, providing valuable insights into the effectiveness of existing e-governance initiatives and identifying gaps for future improvements. The findings from this exercise are expected to inform evidence-based policy formulation, strategic planning, and targeted interventions to improve Nepal's e-governance landscape.

It has provided a comprehensive overview of the current state of e-governance in Nepal through the mapping of national scenarios of e-governance tools and technologies, assessing their effectiveness, and identifying vulnerabilities in IT systems, cybersecurity, and data protection.

The findings of this study will serve as a cornerstone for evidence-based policy formulation, strategic planning, and targeted interventions in Nepal's e-governance landscape. The insights gathered will facilitate the federal and sub-national governments in effectively addressing public needs, reducing time and cost to access services, and forging better inter-government cooperation and collaborations in creating e-governance infrastructure. Ultimately, these efforts will contribute to building a more integrated, efficient, and citizen-centric digital governance system in Nepal.

Objectives of the Study

The primary objective of the study was to provide a snapshot of the current e-governance landscape in Nepal and to serve as a foundation for future innovations, business process re-engineering, and improvements. The specific objectives included:

1. Creating a detailed record of hardware and software components used in e-governance systems across federal, provincial, and local governments.
2. Evaluating the effectiveness of existing e-governance infrastructure in performing its intended roles.
3. Identifying gaps, duplications, or inefficiencies in the IT infrastructure.
4. Assessing the alignment of existing infrastructures with national e-governance priorities and objectives.
5. Proposing actionable solutions for improving e-governance infrastructure to ensure it is robust, scalable, and future-proof.

Design and Methodology

- This study covered a comprehensive nationwide assessment of ICT systems—both software and hardware—across the three tiers of government. The study engaged diverse stakeholders, including government entities, institutions, and civil servants, to ensure the collection of comprehensive insights and perspectives. The assessment covered several thematic sectors, including health, education, civil registration, social welfare, environmental management, disaster response, agriculture, transportation, banking and financial institutions, business and economic development, public administration, judiciary services, and research institutions.
- The study adopted both quantitative and qualitative research approaches to conduct the stocktaking of e-governance infrastructures. The research design included:
- Institutional Comprehensive Questionnaire Survey: This survey was designed to collect quantitative data on software and hardware infrastructures and human capital for e-governance at the provincial and local levels. ICT personnel from 483 offices at the various levels of the government participated

in the survey. It included 60 ICT personnel from provincial and 30 from federal governments. Data was collected using a customised form accessible via the Android platform and computer systems.

Key Informant Interviews (KIIs): The KIIs were conducted to gather insights on service delivery, service mechanisms, interoperability, and potential integration with other systems. A total of 44 IT staff were included in the KIIs.

Focus Group Discussions (FGDs): To validate findings from KIIs and institutional surveys, two FGDs were organised to capture respondents' perceptions of e-governance initiatives in Nepal. A validation workshop was also organised at the federal level to further improve the analysis and make it more comprehensive.

Key Findings

- This study identified 98 unique software systems used across local and provincial governments. The majority of these systems were related to governance and administration, followed by finance, accounting, budgeting, and economic affairs. Health, education, and project planning and monitoring were also significant areas of focus.
- Data management and analytics and citizen service delivery are the most widely used software functions at the local level while automation of administrative processes is also a major area. The Nagarik App is the most popular online service, followed by the tax portal and mobile banking applications.
- Majority of respondents had a positive perception of e-governance, particularly in urban areas. However, there was a lack of confidence in data security and intergovernmental coordination, which are significant barriers to adoption.
- There is a significant gap in hardware infrastructure, particularly in cybersecurity measures. Only 85 out of 380 local governments used firewalls, and 295 did not have power backup systems. Broadband adoption was low, with only 57 local governments having access to broadband internet.
- Most of the local and provincial offices are equipped with basic IT equipment like desktop computer, laptop, printer and scanner.
- Although most software applications of the subnational agencies are deployed in the Government Cloud (GIDC) and some are hosted locally, a significant number of IT personnel are unaware about it.
- Over 61% of ICT personnel were hired on a contract basis, with only 35% being permanent staff. The skills gap in emerging technologies like AI and cybersecurity was particularly concerning, as these are critical for the future of e-governance.
- Only 25% of respondents believed that their software systems were interoperable with other organisations. A significant number of respondents were unaware of the interoperability of their software systems.
- A significant number of offices were not connected to the digital payment system. It indicates a need for greater adoption of digital payment systems to enhance citizen-centric services.
- The study assessed local governments based on 10 indicators for digital governance enablement, including data backup, broadband connection, firewall availability, and budget allocation to hardware and software. The top-ranked municipalities in digital readiness were Waling Municipality, Panch Pokhari Thangpal Rural Municipality and Mechhayayem Rural Municipality.
- There is a strong demand for training in Data Management and Security, Cybersecurity, and Digital Transformation. Project Management and Cross-domain Integration are also key areas requiring capacity building.
- Budget allocation for ICT development has increased over the years, but there is no consistent balance between hardware, software, and capacity building.
- Many local governments lack ICT policies, master plans, and budget allocations for ICT development. There is a need for stronger integration of ICT plans into broader governance and planning frameworks.

Challenges in Implementing E-Governance

The study identified several challenges in implementing e-governance in Nepal, some of which are:

- Poor Infrastructure: Limited access to internet, electricity, and ICT facilities, especially in remote areas, hinders the delivery of digital services.
- Lack of Budget: Insufficient budget allocation for ICT infrastructure and capacity building programs.
- Capacity Building: The need for training programs to enhance digital skills and cybersecurity awareness among ICT personnel.
- Coordination Issues: Lack of coordination among sub-national governments, leading to inefficiencies and duplication of efforts.
- Cybersecurity Risks: Weak cybersecurity measures and data protection policies increase the vulnerability of government systems to cyber threats.
- Political Insensitivity: Lack of political will and support for e-governance initiatives.

Recommendations

- Based on the findings, the study made several recommendations to the federal, provincial and local governments for the actions needed in improving e-governance in Nepal:
- Adoption of Technical Standards: Align with international frameworks like the European Interoperability Framework (EIF) and blockchain-based data exchange models to enhance cross-agency data exchange and minimise security risks.
- Enterprise-Level Programming Language: Choose programming languages based on security, scalability, interoperability, and long-term support for national digital governance initiatives.
- Enterprise-Level Database: Select database systems that can efficiently handle large volumes of data while aligning with architectural principles such as scalability, interoperability, and security.
- Internet and Other Infrastructures: Expand broadband connectivity, strengthen government cloud infrastructure, and implement redundancy and disaster recovery measures to ensure service continuity during emergencies and cyber threats.
- Citizen-Centric Design: Design and develop citizen-facing applications with ease of use, accessibility features, and localisation aspects in mind.
- Strengthening Human Capital: Develop specialised human capital in key areas of technology, such as advanced data management, cybersecurity, artificial intelligence, and blockchain technology.
- Enhancing PPP Model: Leverage public-private partnerships (PPP) to access expertise and innovation, cost efficiency, and faster service deployment.
- Focus on Enterprise Resource Planning (ERP) Level Applications: Consolidate multiple systems into a smaller number of larger ERP-level applications to reduce complexity, increase security, and improve interoperability.
- Policy and Legal Arrangements: Develop a federal e-government policy, align e-governance strategies with broader administrative reforms, enact e-government legislation, and ensure data privacy and security.
- Institutional Arrangements: Strengthen the e-governance authority, promote interagency collaboration, and engage stakeholders in the planning and implementation of e-governance projects. Data Standardisation and Cross-Domain Data Exchange Strategy: Establish a national data sharing and access policy, develop a national interoperability framework, and adopt a common data strategy to ensure standardised data structures and seamless communication between government systems.
- Monitoring and Evaluation: Establish performance metrics, carry out periodic assessments, and promote transparency to ensure continuous improvement in digital governance initiatives.

BACKGROUND

CONTEXT

The Data for Development (D4D) has initiated a crucial project to support the e-Governance Board, Government of Nepal (Formerly e-Governance Commission) in its mission to advance digital governance across the country. The e-Governance Board has identified the need for a comprehensive stock-taking exercise to create a detailed inventory of ICT systems, software and digital infrastructure currently implemented across all levels of government in Nepal. This exercise aimed at gaining valuable insights into the current state of e-governance initiatives, assess their effectiveness, and chart a course for future developments with the integration of latest innovations to address the demands at the multiple fronts of commercial and public life.

In the rapidly evolving digital landscape, e-governance has emerged as a critical tool for enhancing public service delivery, improving government efficiency, and adopting transparency across nations. Recognising the very transformative potential of digital technologies, Nepal has been steadily advancing its e-governance initiatives at the federal, provincial, and local levels. However, as these digital solutions proliferate, there is a growing need for a comprehensive understanding of the current e-governance ecosystem in the country. This is also crucial to map the national scenario of the application of e-governance tools and technology in order to integrate the stand-along initiatives into a broader national initiative to create uniformity in policy, projects and service delivery. It is also needed to support informed decision and policy making and technology management.

The e-Governance Board of Nepal, as the apex body responsible for steering the nation's digital transformation in governance, has identified the crucial need for a thorough stock-taking exercise. This initiative aims to create a detailed inventory of the ICT system, software and digital infrastructure currently implemented across all levels of government in the country. By doing so, the Commission seeks to gain valuable insights into the current state of e-governance initiatives, assess their effectiveness, and chart a course for future developments.

Stocktaking of e-governance status, including hardware, software, and policies of the country, can provide governments at all levels with a clear picture of their digital infrastructure, readiness, and gaps.
It will help the government in evaluating whether existing hardware is sufficient, software is compatible and upgraded, servers are capable to handle the traffic, and policies are aligned with data management and cybersecurity parameters adopted globally. The findings of this stocktaking are also expected to sensitise the stakeholders in streamlining government-to-citizen, government-to-business and government-to-government services. Improved service delivery with efficient, accessible and reliable digital/online services in tax filing, digital payments and business registration, and reduced bureaucratic delays as well as enhanced transparency will foster greater satisfaction in public which increases the trust in the government. It ultimately strengthens democracy at the grassroot level. Meanwhile, adoption of e-participation tools will enable people to engage with the government more effectively.

This stocking, through the assessment of laws, regulations and mechanisms, has identified vulnerabilities in the IT systems and cybersecurity and data protection. Governments at various levels can develop and implement strategies to protect the data and system against cyber threats and data breaches. Likewise, this report will also sensitise the governments to integrate their data and system, facilitate rural and marginalised populations, and apply smart governance through digital interventions. In the long-run their strategies, programmes and initiatives should align with national programmes and global frameworks such as United Nations E-government Development Index (EGDI).

At an advanced level, this stocktaking has a potential to be a base for encouraging AI-driven automation, blockchain integration and big data analytics in digital governance.

This stocktaking has offered a basis for the reality-based planning and development of the sector. The government, policymakers and concerned stakeholders like the Commission now have concrete description of the ground-reality in the form of this report. The insights gathered by this study will serve as a cornerstone for evidence-based policy formulation, strategic planning, and targeted interventions in Nepal's e-governance landscape. It will facilitate the federal and sub-national governments in effectively addressing the public needs, reducing time and cost to access service and forging better inter-government cooperation and collaborations in creating e-governance infrastructure.

By doing so, they will not only build an uniform and effective mode of service delivery with reduced investment compared to what they are doing now but also create a highly satisfied public. Since it will help in making informed policy decisions and implement development initiatives for simplified processes, it will play an important role in fostering a conducive environment to entrepreneurs and innovators as well.

OBJECTIVES OF THE STUDY

This stocktaking exercise was designed to provide a snapshot of the current e-governance landscape, and to serve as a foundation for future innovations, business process re-engineering and improvements. By identifying gaps, showcasing successes, and highlighting opportunities, it will equip the e-Governance Board with the knowledge needed to steer Nepal towards a more integrated, efficient, and citizen-centric digital governance.

The objective of the assignment is to assess, share and institutionalise a mechanism to understand citizen's attitude and perception on public service delivery and to identify local government's efforts towards ensuring transparency and accountability.

The specific objectives of the study were as follows:

- To create a detailed record of hardware and software components currently used in e-governance systems across the three spheres of governments.
- To evaluate how effectively the existing e-governance infrastructure performs its intended roles.
- To uncover gaps, duplications, or inefficiencies in the IT infrastructure.
- To evaluate the alignment of existing infrastructures with national e-governance priorities and objectives.
- To propose actionable solutions for improving e-governance infrastructure, ensuring it is robust, scalable and future-proof.

RATIONALE OF THE STUDY

Citizen satisfaction with public services is a key measure of government performance. Public service institutions have a statutory duty to deliver high-quality services that meet citizens' expectations and needs. These institutions are expected to provide services in a fair, transparent, reliable, and responsive manner to ensure public satisfaction. However, despite the growing demand for improved public services, governments often struggle to respond effectively and in a timely manner.

High-quality public services not only enhance citizen satisfaction but also build confidence and trust in the government. To meet public expectations, public sector institutions must leverage ICT interventions, encompassing both software and hardware, to deliver efficient and accessible services.

This stocktaking exercise aims to assess the current state of e-governance in Nepal by reviewing ICT infrastructure—both software and hardware—across key agencies at all three tiers of government. It also seeks to evaluate usability, identify gaps, generate data-driven insights, facilitate cross-domain integration, standardise data, promote citizen engagement, ensure institutionalisation, and enhance responsiveness in governance, particularly in the e-governance sector. Ultimately, the findings will contribute to the development of a strategic roadmap for strengthening e-governance infrastructure and capabilities nationwide.

The study's findings will support government institutions at all levels in understanding their digital landscape and formulating plans aligned with broader digital transformation and e-governance objectives. As Nepal strives to make its federal governance system more effective, development-oriented, and citizen-centric, it is crucial to catalogue existing ICT infrastructure, identify gaps—especially in rural areas—and enhance cybersecurity measures. Evidence-based policies and informed decision-making will be essential in implementing e-governance solutions to improve service accessibility and operational efficiency.

Bridging the digital divide, building public trust, and fostering accountability are core responsibilities of the government and relevant agencies. These goals can only be achieved through well-defined e-governance strategies. A robust and reliable digital infrastructure will simplify business processes, such as company registration and tax filing, thereby promoting entrepreneurship and startup growth.

In summary, stocktaking of e-governance infrastructure establishes a baseline for continuous monitoring and evaluation, reduces operational silos, and fosters an integrated approach to digital governance. This effort is a crucial step towards implementing Nepal's national digital framework and realising the country's vision for e-governance.

SCOPE OF THE STUDY

This stocktaking of e-governance infrastructure has undertaken a comprehensive nationwide assessment of ICT systems across Nepal. It has gathered data on all ICT infrastructure—both software and hardware—across the three tiers of government. The process involved engaging diverse stakeholders to ensure the collection of comprehensive insights and perspectives from government entities, institutions, and civil servants.

Information and insights were collected across several thematic sectors, including health, education, civil registration, social welfare, environmental management and disaster response, agriculture, transportation, banking and financial institutions (BFIs), business and economic development, public administration, judiciary services, research institutions, and other relevant domains. These data points were used to assess key aspects such as interoperability, integration capability, scalability, data standardisation, data management, security, system architecture compatibility, support mechanisms, and overall sustainability within a broader e-governance framework.

Additionally, this stocktaking included a brief evaluation of existing policies, laws, and regulations to identify policy gaps. It also examined inclusiveness, accessibility, and responsiveness to facilitate the mainstreaming of Gender Equality, Disability, and Social Inclusion (GEDSI) in digital services.

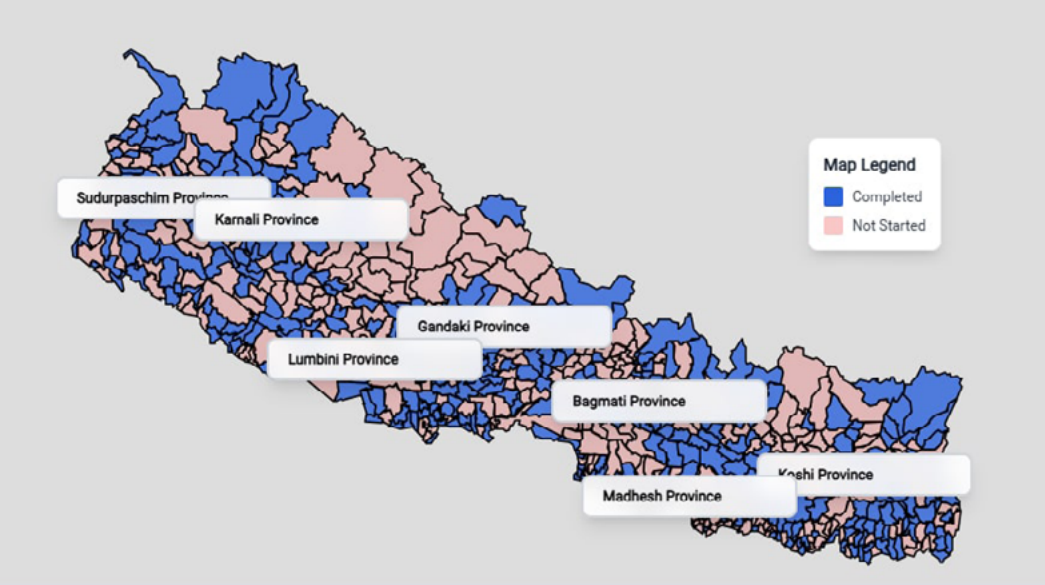
However, the process encountered several challenges. Despite orientation sessions and support initiatives, a significant number of survey questionnaires were only partially completed. In some instances, multiple follow-ups were required to ensure the proper completion of the questionnaires.

DESIGN AND METHODOLOGY OF THE STUDY

STUDY DESIGN

This stocktaking study has adopted both quantitative and qualitative approaches of research to conduct stocktaking of e-governance infrastructures at the three spheres of government in Nepal as of mid-February 2025 and preparing reports as a knowledge product. It had two primary objectives - informing the stakeholders and policy makers about the status of the e-governance infrastructure and offering suggestions to set the future course of development in the sector.

Figure 1. Geographical Distribution of Respondents (Local Levels)



This study covered the entire country with the inclusion of more than 64 per cent (nearly two-third) local governments (LGs) of seven provinces (PGs) and three geographical areas - Mountains, Hills and Plains. The coverage area of the study is shown in Figure 1. Although the questionnaire was shared with all the 753 local bodies, only 485 submitted the online form. However, the number of respondents was not exactly the same for each question as respondents had the option to skip questions they preferred not to answer. The highest number of fully completed questionnaires received from local governments was 380.

Table 1 presents the total number of respondents for each data collection tool used in this research.

The sample survey was designed as follows.

Table 1. Number of sample covered by institution, KII and FGDs

Agencies	Total Population	Sample Size		
		Survey Sample	Key Informat Interview (KII)	Focus Group Discussion (FDG)
Federal Level	22+30=52	10	Institution	Validation Workshop
Provincial Level	68	10	2*10=20	2 FGD
Local Level	753	10	10	
Constituent Body	10	10	5	From Federal Level
Oversight agencies	10	10	5	From Federal Level
Total Number of Samples	915	473	44	
Total respondents involved in the study= 483				

KII Participants: i) Chairs/Deputy chairs, Chief Administrative Officers and ITOs at the local level ii) Chief Ministers, Provincial Secretaries, ICT personnel at the provincial level iii) Officials from the Department of ICT, ICT focal persons of different Departments, Parliamentarian from the ICT Committee at the federal level iv) ICT experts, Journalists covering ICT beat, ICT Activists, e-government activist and academicians.

FGD Participants: policymakers, executives, thematic champions of ICT and e-governance.

ICT personnel at the local levels were deployed to conduct surveys and collect data in close coordination with their respective associations - NARMIN and MuAN. Before the commencement of data collection, participants were oriented on the assignment, including the use of tools such as the questionnaire. A pre-test of the questionnaire was also conducted, and feedback from this testing phase was incorporated to refine the survey before its official rollout.

Data was collected using a customised form accessible via the Android platform and computer systems. The collected data was then edited, cleaned, coded, and tabulated for descriptive statistical analysis, including cross-tabulations, graphs, and charts. Qualitative data was gathered from interview transcripts, field notes, and recordings of Focus Group Discussions (FGDs). To facilitate data collection, researchers at the provincial and federal levels were mobilised to conduct surveys, FGDs, and Key Informant Interviews (KIIs).

This study has also conducted a review of relevant policies, laws, practices and mechanisms regarding e-governance systems and services as well as other relevant literature. In order to solicit information on e-governance infrastructures and service delivery, an integrated research approach was adopted. Through quantitative and qualitative data collection approaches, this study has collected information on the status of hardware, human capital, software infrastructure, inclusiveness and responsiveness in e-governance systems, interoperability and cross-domain data integration. Three different tools are designed to capture the information from the target areas.

INSTITUTIONAL COMPREHENSIVE QUESTIONNAIRES SURVEY

The institutional survey was designed to collect quantitative data using a structured questionnaire. It captured the primary data and information regarding software and hardware infrastructures, and human capital for e-governance at the provincial and local levels of Nepal. Since it was an institutional survey, the respondents were expected to represent their institution while filling it up. However, the questionnaire had a section to collect data about their perception, observation and opinion.

SEMI-STRUCTURED QUESTIONNAIRES AND KII CHECKLIST

The Key Informant Interviews (KIIs) were conducted to gather insights on service delivery, service mechanisms, interoperability, and potential integration with other systems, as well as the legal provisions and their impact. Additionally, the KIIs collected information on the practices of government officials, elected representatives, and oversight agencies across all three tiers of government—local, provincial, and federal.

FOCUS GROUP DISCUSSION

Two multi-stakeholder Focus Group Discussions (FGDs) were organised—one in Gandaki Province and another in Karnali Province—to capture respondents' perceptions of e-governance initiatives in Nepal. The findings from these FGDs played a crucial role in validating and triangulating the information gathered from Key Informant Interviews (KIIs) and institutional surveys.

The discussions provided a broad spectrum of insights from IT staff across different levels of government, policymakers, academics, and IT experts. Participants shared their views on existing service operations, service delivery mechanisms, and ongoing e-governance interventions, as well as their perspectives on the future direction of e-governance in Nepal. Likewise, challenges in implementing e-governance initiatives were highlighted, along with suggestions for improving e-governance services.

PLENARY

In addition to the survey, KIIs, and FGDs, two panel discussions were held one each in Gandaki and Karnali provinces. The panelists were representatives from the provincial government, local government, academia and IT sector. These discussions primarily focused on the initiatives undertaken by provincial governments, the synchronisation of e-governance efforts within and between different levels of government, and the key challenges in implementing e-governance.

DATA PROCESSING AND ANALYSIS

To ensure accuracy, reliability, and alignment of data with the research objectives, a comprehensive guideline was developed for analysing survey data. This guideline incorporated clear definitions and best practices at each stage of the analysis, ensuring a systematic and consistent approach to data interpretation.

In the first phase, the collected survey data was cleaned, organised, and formatted to ensure accuracy and readiness for analysis. Incomplete, duplicate or invalid responses were discarded while the missing data was cured by using the techniques like imputation or exclusion. Likewise, open-ended responses were converted into categorical codes. Logical consistency was maintained with cross check and responses were validated against the predefined survey rules.

In the second phase, to highlight patterns, distributions and trends, frequency analysis and central tendency measurement were conducted as the part of descriptive analysis. Likewise, various graphical presentations including charts, graphs and histograms were used to present data visually. To make the inferences more meaningful and comprehensive, contingency tables were created to compare variables and identify patterns, trends, or significant differences.

In the third phase, the results were interpreted in line with the survey objectives. While doing so, significant trends, correlations and anomalies were highlighted, and explanations and contextual insights were provided when necessary.

POLICY REVIEW

Nepal is undergoing a transformative shift in governance, driven largely by digital technologies and policy reforms aimed at modernising public administration. The concept of e-governance, which leverages ICT to enhance government services, transparency, and citizen engagement, has gained significant momentum in recent years. The GoN is now focused on institutionalising e-governance through comprehensive policies, legal frameworks, and institutional mechanisms. The government's commitment to digital transformation is evident in the establishment of an e-Governance Board, a high-level body responsible for overseeing and implementing Nepal's e-governance initiatives. This board will play a crucial role in formulating the e-Governance Blueprint, a strategic document that will outline the roadmap for Nepal's journey towards digital governance.

Alongside the Blueprint, Nepal is also drafting a comprehensive e-Governance Policy and an Act to create a strong legal foundation for digital governance. The proposed policy will define the roles and responsibilities of government agencies in implementing e-governance initiatives, set regulatory standards for digital service delivery, and establish guidelines for interoperability between government systems. Additionally, the policy will promote the use of emerging technologies such as artificial intelligence, blockchain, and cloud computing to enhance governance efficiency. The E-governance Act, once enacted, will formalise these principles into law, ensuring long-term sustainability and accountability in Nepal's digital transformation efforts.

Nepal's digital transformation efforts are rooted in earlier policy frameworks that laid the groundwork for e-governance. The IT Policy 2000 was one of the first national frameworks that highlighted the importance of IT for development with a focus on IT infrastructure, capacity building, and digital literacy. The policy aimed to encourage the use of IT in sectors such as education, health, and governance, while also promoting private sector participation in the IT industry. It also helped to initiate the process for the adoption of e-governance in the public and private sector institutions.

Building upon these developments, the ICT Policy 2015 advanced digital governance by promoting ICT for economic growth, service delivery, and public administration. It strengthened governance, digital infrastructure, and accessibility, laying the foundation for the Digital Nepal Framework (DNF) 2019. The DNF identified key sectors like agriculture, education, and health for digital transformation, emphasising smart governance and innovation-driven services. Similarly, the Electronic Transactions Act, 2008 established legal support for online transactions, digital signatures, and cybersecurity, thus fostering Nepal's digital expansion.

The E-Governance Master Plan 2010 (EGMP 2010) was Nepal's early effort to institutionalise e-governance which aimed to digitise services, improve inter-agency coordination, and develop a national e-government platform. Key projects included a national data center, e-GP, and digital identity management, though challenges like limited infrastructure and funding hindered the implementation of the EGMP. Despite setbacks, it laid the groundwork for future initiatives.

Likewise, to strengthen digital security, Nepal introduced the National Cyber Security Policy in 2023 with a focus on cybersecurity readiness, institutional strengthening, and cyber incident response. Given the rising cyber threats, of late, this policy underscores the government's commitment to a secure digital environment.

However, despite these progresses, Nepal faces challenges in fully implementing e-governance as infrastructure gaps, especially in remote areas, poor digital inclusion due to limited internet access, electricity, and ICT facilities. Expanding broadband, improving infrastructure, and promoting digital adoption are essential in this regard. Policy implementation also faces delays due to bureaucratic inefficiencies and coordination issues, requiring stronger institutional mechanisms and accountability.

Digital literacy is another key challenge, with rural populations lacking basic skills to access online services. The government must prioritise training programmes in collaboration with stakeholders to enhance digital skills and cybersecurity awareness. Without widespread digital literacy, e-governance benefits will remain limited.

Nepal's e-governance progress relies on policy commitment, capacity building, and technological growth. Key initiatives, including the e-Governance Board, e-Governance Blueprint, Personal Data Protection Policy, and BCP Framework are/will be shaping a transparent, efficient, and citizen-centric governance system. Still, there is a need for strengthening legal frameworks, enhancing service delivery, and investing in digital security are essential. For this, collaboration among government, private sector, and civil society should be promoted in order to maximise e-governance potential in Nepal.

Various regulatory policies enacted in Nepal are shown in the table below.

Table 2. IT/E-governance Regulatory Policy Development in Nepal

S.N.	Policies and Legal Instruments	Remarks
1	National Communication Policy 1992	
2	National Broadcasting Regulation 1995	
3	Telecommunication Regulations 1997	
4	Telecommunications Act 1997	
5	Copyright Act 2000	

S.N.	Policies and Legal Instruments	Remarks
6	IT Policy 2000	
7	New IT policy in Nepal 2000	
8	National Strategy Paper on ICT (National Planning Commission), 2002	
9	Telecommunications Policy 2004	
10	E-Governance Master Plan (e-GMP) 2007	
11	Electronic Transactions Act 2008	
12	ICT Policy 2015	
13	National Broadband Policy 2015	
14	Privacy Act 2018	
15	Government Enterprise Architecture Directives 2023	
16	National Cyber Security Policy 2023	

A draft 'National IT Roadmap' was developed in 2014 which pointed to the need for a review of the existing e-GMP and transforming all the government services into e-services by formulating a strategic plan in coordination with the concerned ministries within the next five years. The e-GMP 2015-2019, developed after the review of the e-GMP 2007 and other related policies and regulations like IT Policy, Electronic Transactions Act (ETA), and National IT Roadmap, prioritised four streams: e-Agriculture, e-Education, e-Health, and e-Tourism. The review team suggested that each government agency should have qualified IT officers and a technical team in place to support the IT requirements to implement e-governance. The vision of the updated e-GMP has been built on the foundation of ICT infrastructures and legal provisions related to ICT, and supported by the four pillars viz. sustainability, capacity building, service delivery and implementation leading to effective governance.

Digital Nepal Framework, 2019

The increment in the internet and mobile penetration rate is an advantage for Nepal to leverage the growth of digital technologies to drive accelerated growth. The GoN released Digital Nepal Framework (DNF) in 2019 to utilise the opportunity created with the increase in the internet services and mobile penetration rate. The framework provides a roadmap on how digital initiatives can contribute to economic growth, and to find innovative ways in a shorter period with limited resources to solve major challenges that our society is facing, and to identify opportunities for Nepal to participate in the global economy. Nepal aims to achieve the status of a middle-income country by 2030, and the DNF follows the vision 'Prosperous Nepal, Happy Nepali' (MoCIT, 2019).

The DNF emphasises eight sectors and 80 digital initiatives that will support the socioeconomic growth of Nepal. The eight sectors identified in the framework are digital foundation, agriculture, health, education, energy, tourism, finance, and urban structure. The DNF contributes to achieving Sustainable Development Goals (SDGs) besides supporting the government's aim of good-governance. The National ICT Policy introduced in 2015 aims to achieve the vision of transforming Nepali society into knowledge and information based society by harnessing the rapid advancements made in the ICT sector. The National Broadband Policy announced in 2016 put forward a framework for stimulating broadband access and availability across the country.

In addition, the policy emphasises the effective utilisation of universal service access funds as a means to bridge the digital divide. This will serve as a robust mechanism for expanding broadband access to communities beyond urban areas through effective implementation. Furthermore, the government has

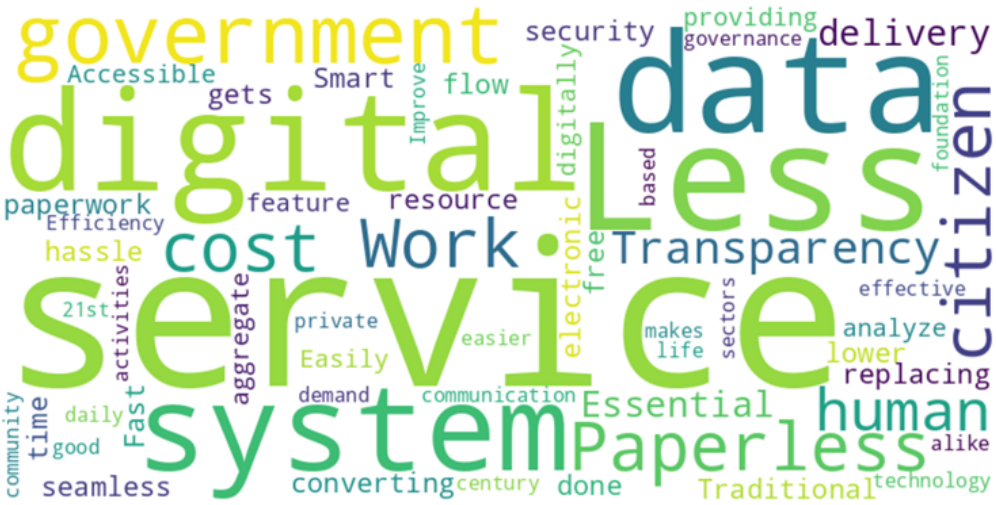
developed the Government Enterprise Architecture (GEA) and the Nepal e-Governance Interoperability Framework (NeGIF)—key foundational initiatives aimed at enabling the rollout of citizen-centric digital services. These frameworks ensure system interoperability and provide a structured approach for seamless integration across government platforms.

RESULTS AND ANALYSIS

GENERAL UNDERSTANDING OF E-GOVERNANCE

This study began with mapping public perceptions regarding the definition of e-governance. It found that the majority of respondents associated it with key concepts such as digital services, systems, data, citizen-centric governance, paperless administration, and transparency. Notably, the prominence of the term 'service' in their responses underscores the critical need for reforms aimed at enhancing efficiency in service delivery. Many of them gave priority to the uses of data and its privacy, digital technology and costs associated with the online/digital services. The word cloud below visually represents these perspectives, offering insight into the prevailing public understanding of e-governance in Nepal.

Figure 2. Word cloud of e-governance understanding



E-GOVERNANCE INVENTORY

SOFTWARE

Offices of the LGs and PGs were asked to provide an inventory of the software they were using, their development platform, database used, ownership of the software documentations and the deployment (locally, over government cloud and at vendors' site). A total of 838 and 101 software names were listed by the LGs and PGs, respectively. After cleaning the data and removing the duplication in the names, a final unique number of software (98) was obtained. Softwares with different names but having the same functionality was also merged to a single name/category. The list is presented in Table 3. Some software which was not truly identified as an unique product or entity was merged together in the 'other' category.

Table 3. List of Unique Softwares Used in Local and Province Level Offices

S.N.	Standard Names of Software/ Systems
1	Public Assets Management System (PAMS)
2	Sub-National Treasury Regulatory Application (SuTRA)
3	Education Management Information System (EMIS)
4	Integrated Health Information Management System (IHIMS)
5	Vital Registration System
6	Revenue Management Information System (RMIS)
7	Social Security Registration
8	Planning Management Information System
9	Cooperative Management Information System (COPOMIS)
10	Health Insurance Claim Management System (Palika Level system)
11	Senior Citizen Card Management System
12	Disable Identity Card Management System
13	Sifaris Automation System
14	Project Management System
15	Attendance Management System
16	Digital Profile Management System
17	Integration online Tax Payment System (IOTPS)
18	Electronic Building Permit System (eBPS)
19	Judicial Management System
20	SMS System
21	Employment Management Information System (E-MIS)
22	Agricultural Subsidy Distribution Management System
23	Grievance Handling System
24	Business Registration and Management System
25	e-Government Procurement (e-GP) System
26	Electronic Logistic Management Information System (ELMIS)
27	Institutional Mobile Application
28	Computerized Government Accounting System
29	Darta Chalani System
30	District Health Information Management System 2 (DHIMS2)
31	Government Integrated Office Management System (GIOMS)
32	Municipal Education Management System
33	Centralized Citizenship Information Management System (CCIMS)
34	Electronic Health Management Information System (EHMIS)
35	Provincial Line Ministry Budget Information System (PLMBIS)

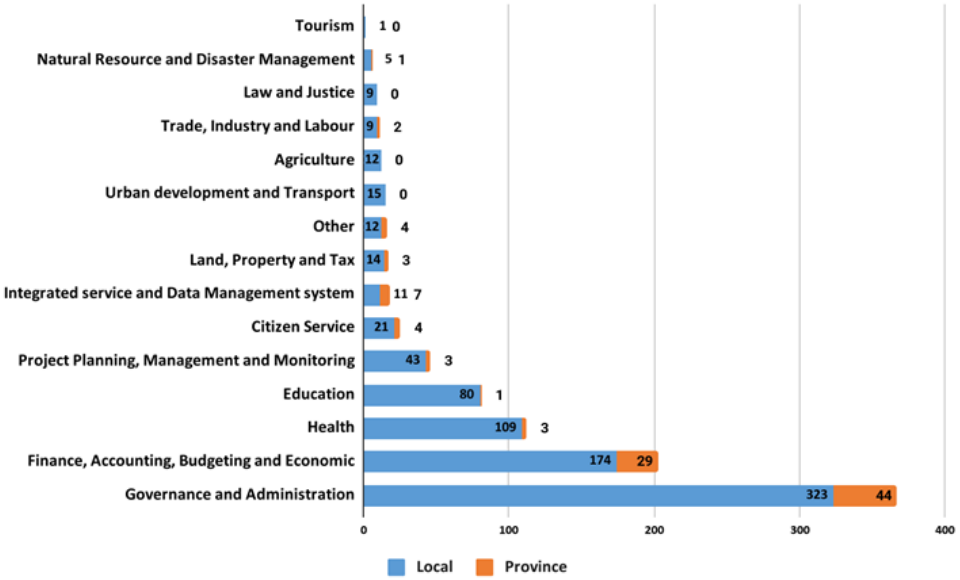
S.N.	Standard Names of Software/ Systems
36	Local Government Institutional Capacity Self-Assessment (LISA)
37	Fiduciary Risk Assessment
38	Human Resource Management System
39	Complementary and Special Grants Program System
40	House Number Management System
41	Personnel Information System
42	Integrated Scholarship Management System (ISMS)
43	Bipad Portal
44	Social Information Management System (SIMS)
45	Employment Provident Fund System
46	Farmer Listing Management System
47	Agriculture MIS and APP
48	Hospital Management System
49	Nepal Audit Management System
50	Micro Enterprise Management System
51	National Disaster Risk Reduction and Management System (NDRRM)
52	Foreign Employment Management Information System
53	Fuel Management System
54	Digital Citizen Charter System
55	Geo-Spatial Planning System
56	R
57	Project Management Information System (MOALD)
58	Bagmati Alert System
59	National Health Management Information System (NHMIS)
60	Relief Management System (RMS)
61	National Data Portal System
62	Community Forest Data Portal
63	Consular Portal
64	Provincial Grant Portal
65	Sampati Bibaran Portal System
66	Local Economic Development (LED)
67	Deprive Peoples Health Treatment Database Management System
68	Network Monitoring System
69	Nepal Health Facility Registry System (NHFR)
70	Integrated Public Financial Management Services (IPFMS)
71	Integrated Public Financial Management Services (IPFMS)

S.N.	Standard Names of Software/ Systems
72	Chief Minister Employment Program System
73	Chhori Khata System
74	Ayurveda Health Management Information System (AHMIS)
75	Production Control System
76	National Land Commission Information System
77	Trek card management system
78	Line Ministry Budget Information System (LMBIS)
79	Online Recruitment System
80	Appointment Management System
81	Integrated Property Tax Management System
82	GIS Based System
83	Integrated Service Management System
84	Foreign Employment Welfare Information Management System
85	Land Records Information Management System (LRIMS)
86	File tracking System
87	National Tuberculosis Program Management Information System
88	E-reporting System
89	Reproductive Maternal Newborn Child and Adolescent Health Service Site and Service Providers
90	Chief Minister Dashboard
91	Province Public Service Recruitment Management System
92	Integrated Website Management System (GIWMS)
93	TREASURY SINGLE ACCOUNT System (TSA)
94	Journalist card management system
95	Forest Management Information System
96	Global Navigation Satellite Systems (GNSS)
97	Management Information System
98	Others

SECTOR-WISE CLASSIFICATION OF SOFTWARE

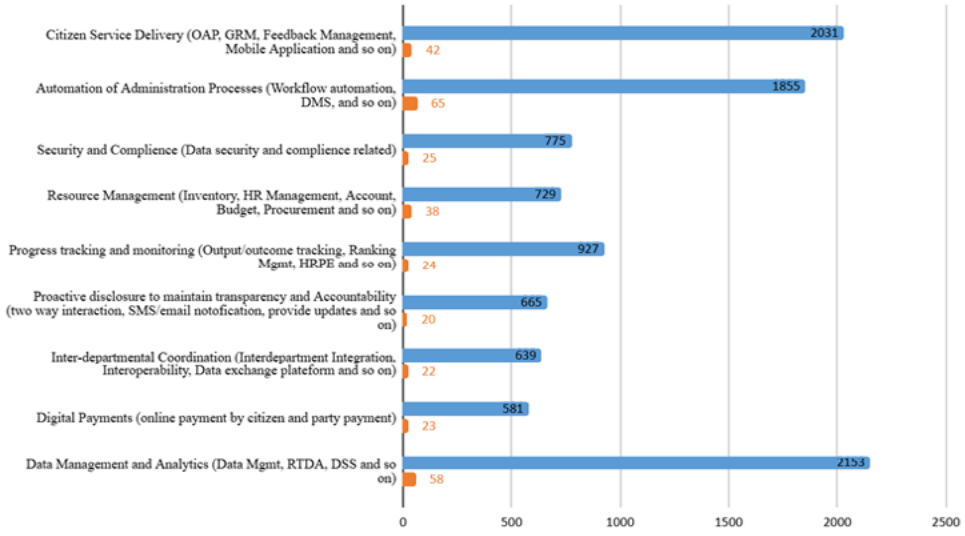
These software systems were grouped based on the sectors as envisioned by DNF 2019. However, in order to make the list more pragmatic and comprehensive, some categories like natural resource and disaster management, citizen services, law and justice, project planning, management and monitoring sectors were added.

Figure 3. Number of Software Used in Various Sectors



The result showed that the maximum number of software used in the country were related to Governance and Administration (local levels operate 323 software for the task related to these sectors while provincial governments use 44 software), followed by Finance, Accounting, Budgeting and Economic Affairs (174 by local levels and 29 by provinces). Health (109+3), Education (80+1) and Project Planning and Monitoring (43+3) were on the fourth, fifth and sixth positions, respectively in local level (shown in blue) and province level (shown in orange). This list also provides an impression about the priority areas of the local and provincial governments. Given the largest number of software used in governance, economic affairs, health, education and planning, it can be said that the sub-national governments are putting their efforts in improving governance through the adoption of digital and online technology. A well coordinated effort among the three levels of the government can have an overwhelming impact in the improvement of service delivery.

Figure 4. Function wise software distribution



The offices/agencies of the LGs and PGs were asked to write the function of the software they were using. To make it organised, nine distinct functional groups were identified and provided as options. Since a single software solution could be related to multiple functional groups, a multiple choice was provided to the respondents. If at most the participating 380 LGs could have one software covering all 9 functional groups, then the total count on that functional group would be 3420. Figure 4 explains the count of total responses in respect to the functionality of software from each sector.

At the local level, software related to Data Management and Analytics (for 2153 functions) are most widely used, followed by Citizen Service Delivery (2031), and Automation of Administration Process(1855), as per the responses received from the participants of the survey.

In case of the provincial government, the top three list remains the same, however, citizen service delivery comes third in the list replacing automation of administrative processes which ranked up to the second in the list. This is very natural as at the province level, the citizen interaction is expected to be lower than that of the local government. These findings may help the policy makers and planners about the level and sector they need to prioritise while formulating plans and programmes.

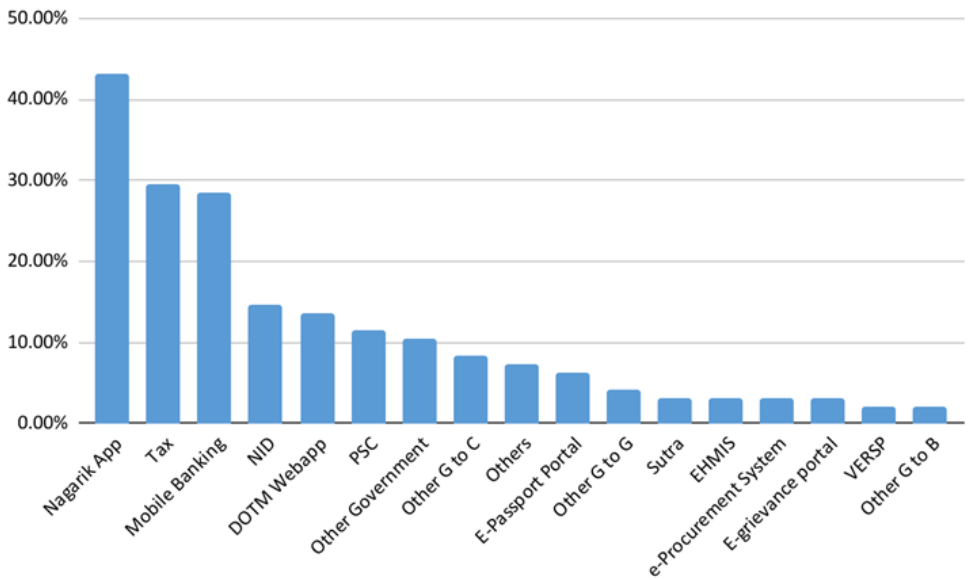
TOP APPLICATIONS BY POPULARITY

Given the scenario of the use of multiple applications for various services at local and federal level, the participants of the multi stakeholder groups were asked to name the top three initiatives that they liked.

Among the online services related to governance, the much-hyped 'Nagarik App' ranks at the first position by popularity followed by Tax Portal. People have mentioned Mobile Banking applications next to the Taxpayers' Portal/App. Recently launched NID is on the fourth choice which is followed by The Department of Transport Management (DOTM)'s portal for vehicle license application and management. Public Service Commission (PSC)'s portal, e-passport portal and other government websites and other G-to-C apps are also among the top.

Other G-to-B apps mentioned in Figure 5 include ELIMS and DHIS2, G-to-C apps include Registration, LRIMS, IMIS, Election Management System and Voters Registration. Likewise, G-to-G apps include Forest Office Database System, Industry/Firm Registration Database System, LMBIS, Public Assets Management System (PAMS). SuTRA means Sub-National Treasury Regulatory Application (SuTRA) which is used for financial reporting of the sub-national governments.

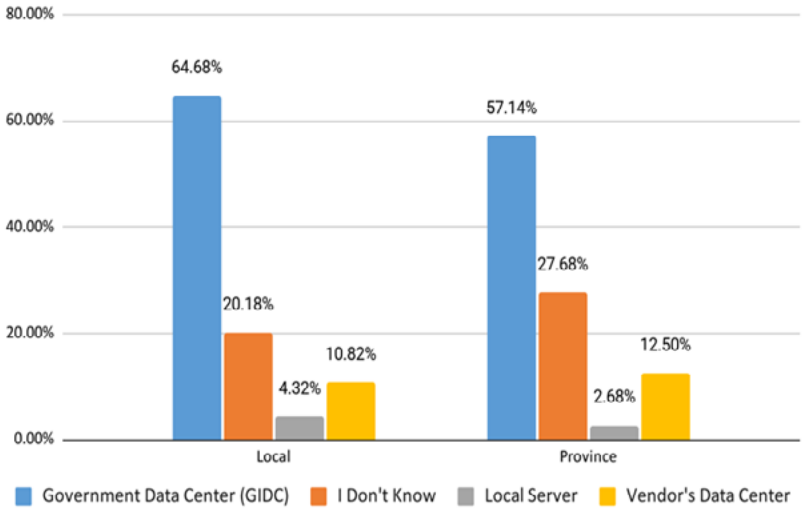
Figure 5. Popularity of Online Service Applications/Platforms



DEPLOYMENT OF SOFTWARE

While analysing the deployment status of each software application used at the local level, it was found that most of the applications (1,052) were deployed in the government cloud (GIDC). However, it is concerning that a significant number of respondents, primarily IT officers, were unaware of where the software systems were deployed, with 329 of them expressing ignorance on this matter. Additionally, 69 applications were found to be deployed locally, and 178 applications were hosted in vendors' data centres, which could increase the vulnerability of government data. This situation calls for urgent attention from all three levels of government and the agencies involved in IT and e-governance to ensure the security and integrity of data, preventing any potential risks in the future.

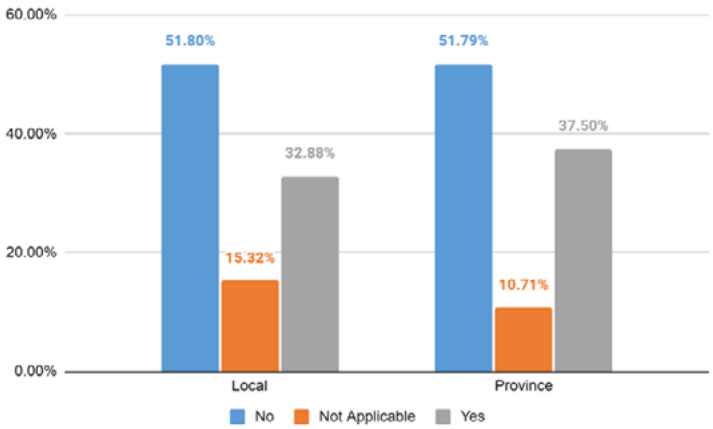
Figure 6. Hosting Server



This study found that the majority of the data of the local government is stored in GIDC as represented in the figure above whereas 20.18% respondents were not sure or have no specific idea about where the data is currently being managed at or who it is being managed by. Additionally, 10.82% local bodies are using vendors' data centres while 4.32% rely on the local servers. At the provincial level, 57.14% use GIDC, 12.50%use vendors' data centres, and only 2.68% rely on local servers. A significant percentage of them - 27.68% - expressed ignorance about the hosting platform. Although this finding indicates a strong preference for GIDC at both levels, ignorance about the hosting data centres in the IT personnel is a concern that should be taken seriously.

DIGITAL PAYMENT SYSTEM INTEGRATION

Figure 7. Connection to the Digital Payment System

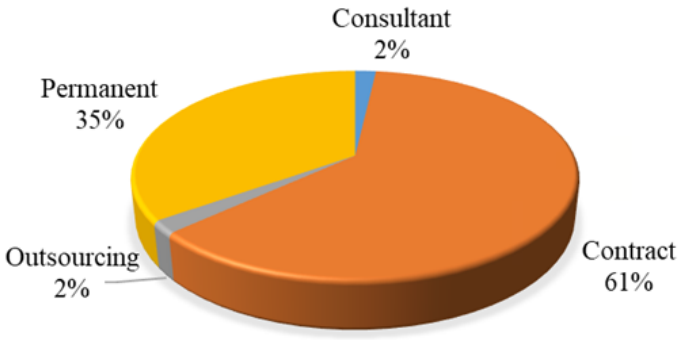


Analysis of the digital payment system at both local and provincial levels does not show encouraging results. At the local level, a significant number of offices are not connected to the digital payment system. Approximately 1,623 respondents said that they didn't find digital payment systems at their respective offices/agencies of the local bodies. But 1,030 said they could make payment via digital payment systems while 480 respondents said that it was 'not applicable' in their respective areas. These 'not applicable' offices are those that don't directly deal with the citizens or don't need to charge fees for their services. At the provincial level, only 42 agencies are connected, while 58 are not, and 12 marked as 'not applicable'. This indicates that while some local entities have adopted digital payments, a large portion is running without this fundamental citizen-centric facility. Such adoption is even lower at the provincial level. This may be due to the fact that provincial offices do not engage directly with citizens in economic transactions.

HUMAN CAPITAL IN IT SECTOR

APPOINTMENT SYSTEM

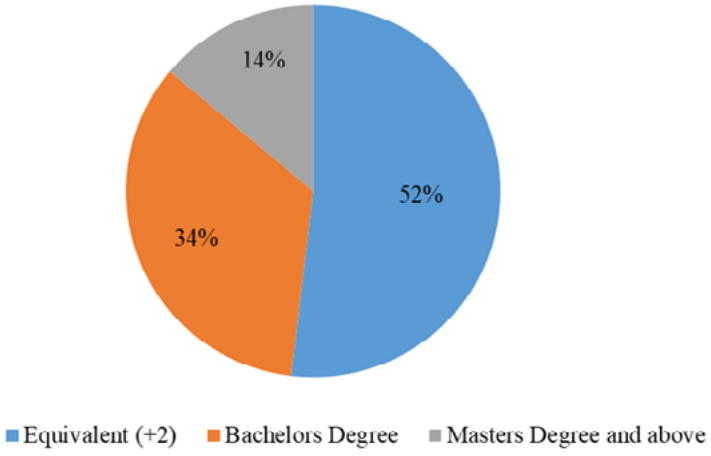
Figure 8. Human Capital in the ICT Sector on the Basis of Appointment



Of the 2094 ICT personnel currently hired by the 380 local governments who participated in this stocktaking survey, 34.95% were permanent staff of the respective offices. The number of ICT professionals who were appointed as consultants was only 1.8% followed by outsourced human resources with 1.9%. Astonishingly, more than 61 percent ICT professionals were appointed on the 'contract' basis.

QUALIFICATION OF ICT PERSONNEL

Figure 9. Qualification of ICT Personnel

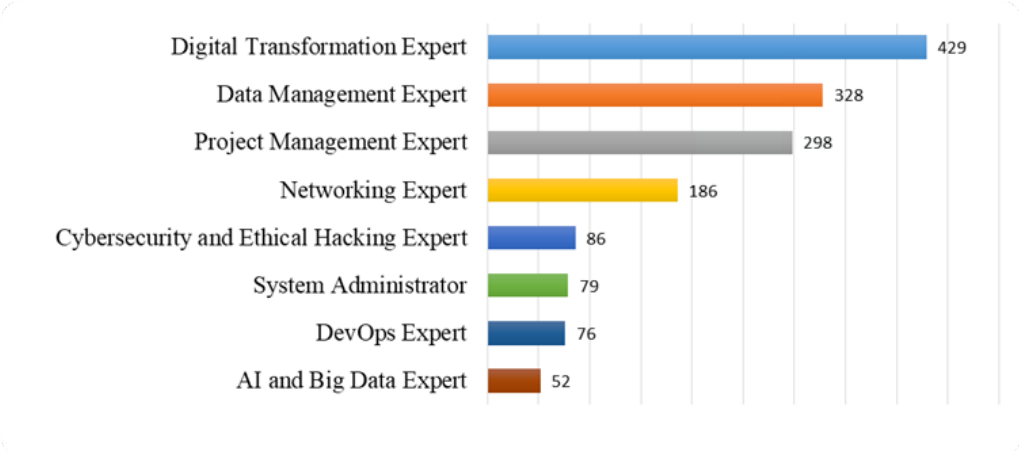


The pie chart above illustrates the educational qualifications among the sample of this stocktaking. Less than a half of the total ICT staff is well-qualified with 48 % of them having the educational qualification of a Bachelor's Degree or above. However, the largest proportion, accounting for 52%, consists of individuals with a high school degree. This finding shows that the subnational governments and their agencies are

in need of 'qualified' ICT personnel to manage the software and hardware used in e-governance and facilitate the smooth operation of the service delivery of the respective offices.

COMPETENCY OF ICT PERSONNEL

Figure 10. Expertise of ICT Personnel

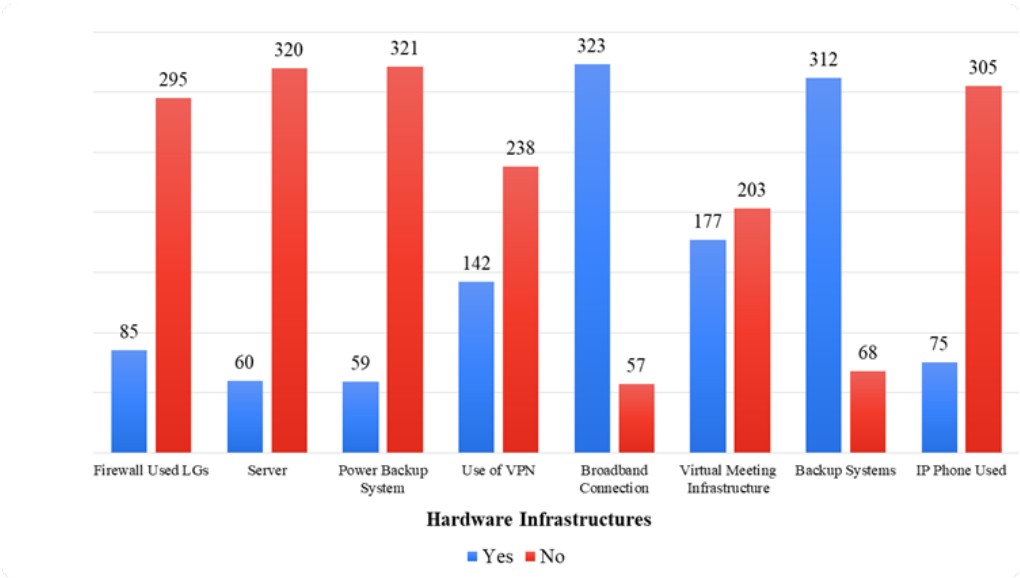


The ICT workforce at the local level is dominated by Digital Transformation experts (429), Data Management experts (328), and Project Management experts (298). Most of the ICT workforce have claimed their expertise in more generic domain while they lack skills in domain specific area such as Networking (186) and Cybersecurity (86) experts are moderately represented, while System Administrators (79), Development Operations (DevOps) (76), and AI/Big Data experts (52) represent a small portion, indicating potential skills gap. The low availability/presence of AI and cybersecurity professionals suggests a need for upskilling or hiring to meet growing industry demands. It also indicates the need for a proactive approach in terms of policy and action on the part of local as well as provincial governments.

HARDWARE INFRASTRUCTURE

AVAILABILITY OF HARDWARE

Figure 11. Status/Availability of Hardware Infrastructure at the LGs



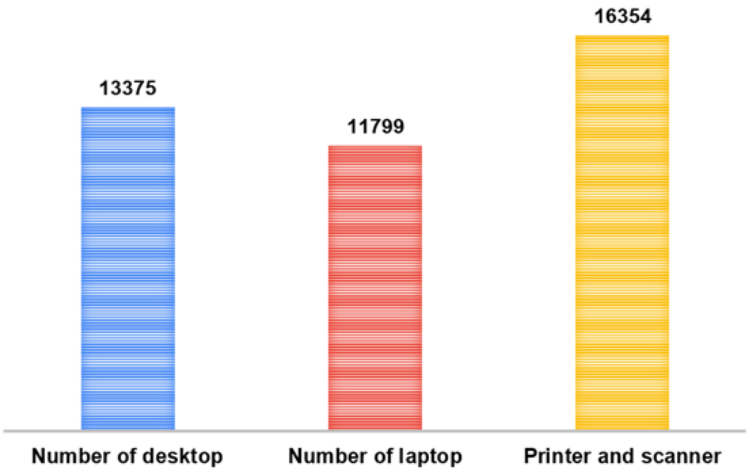
The local governments are using eight hardware infrastructures - Firewalls, Servers, Power Backup Systems, VPNs, Broadband, Virtual Meeting Infrastructure, Power Backup Systems, and IP Phones.

However, only 85 local bodies (out to 380 respondents) use Firewalls while 295 do not, indicating underprotection from cyber threats. Server Adoption is also low with just 59 local governments responding positively about this issue while 320 suggesting limited infrastructure and possible data management issues. Similarly, only 60 respondents have Power Backup and 320 do not. It poses continuity risks making the entire system vulnerable and less sustainable.

Meanwhile, 145 local bodies use VPNs while 238 do not, reflecting moderate uptake and some awareness of secure remote access. Adoption of Broadband internet is even poorer as only 57 local bodies have it and the local bodies that don't have this facility stands at 320. People in those local bodies have connectivity challenges and problems in smooth service delivery by the respective governments. Likewise, Virtual Meeting infrastructure is used by 175 entities against the 203 non-users, indicating moderate adoption likely driven by remote collaboration. Only 92 local units have Backup Systems and 280 don't have the facility. So, there exists a risk of data loss. Interestingly, use of IP Phone is evenly split at 303 yes versus 303 no, indicating half have embraced IP telephony while half rely on traditional systems.

PERIPHERAL DEVICES

Figure 12. Availability of Peripheral ICT Equipment



Peripheral ICT Equipment covers three key categories: printers and scanners, desktops, and laptops. The highest number of devices recorded by this survey is for printers and scanners, totaling 16,354 units (Figure 12), reflecting their widespread use in offices for document processing and management. Likewise, about 13,375 units of desktop computers are installed at the offices of the surveyed local bodies while 11,799 units laptops are in use. Use of laptops indicates the growing preference for mobility and flexibility in digital work environments.

A very high number of printers (even more than laptop or desktop) indicates that the LGs still prefer to use printed documents in the era of paperless or less-paper strategy.

CURRENT STATE ASSESSMENT

PERCEPTION TOWARDS E-GOVERNANCE INITIATIVES

A Multi-Stakeholder Perception Survey was performed to understand the opinion of stakeholders towards the e-governance initiatives and its status in the country.

The survey captured perception on the following 10 statements:

- E-governance is applied in public service
- Additional e-governance services are in demand
- E-governance is in demand in rural areas
- Urban people have skill to use e-governance
- Rural people have skill to use e-governance
- Programmes of three-levels of governments are synchronised
- People feel confident about online data security
- E-governance services are user-friendly
- E-governance services are satisfactory
- Efficiency has been increased due to e-governance

Demographics

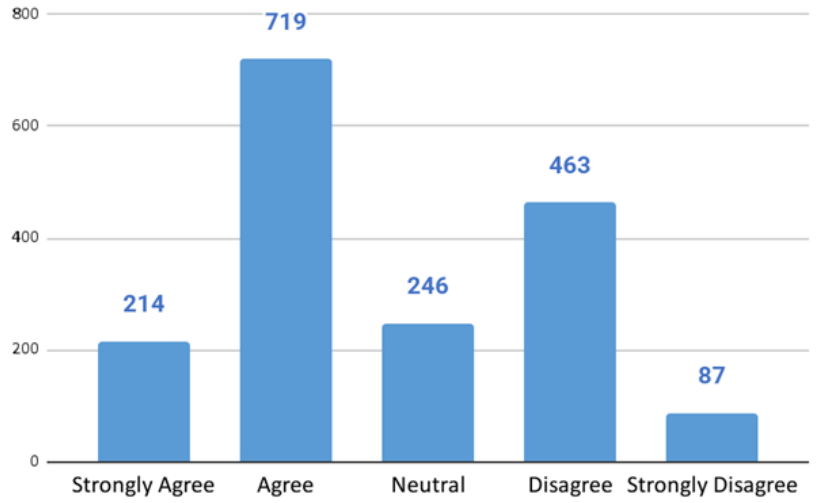
A total of 187 responses were received from citizens representing diverse sectors including from government officers, academicians, private sector business persons and civil servants from the seven provinces. The table below shows the distribution of the responses from each province.

Table 4. Number of Responses Received on the Perception on e-Governance Services

Province	Number of Responses
Koshi	8
Madesh	10
Bagmati	28
Gandaki	59
Lumbini	11
Karnali	59
Sudurpaschim	12
Total	187

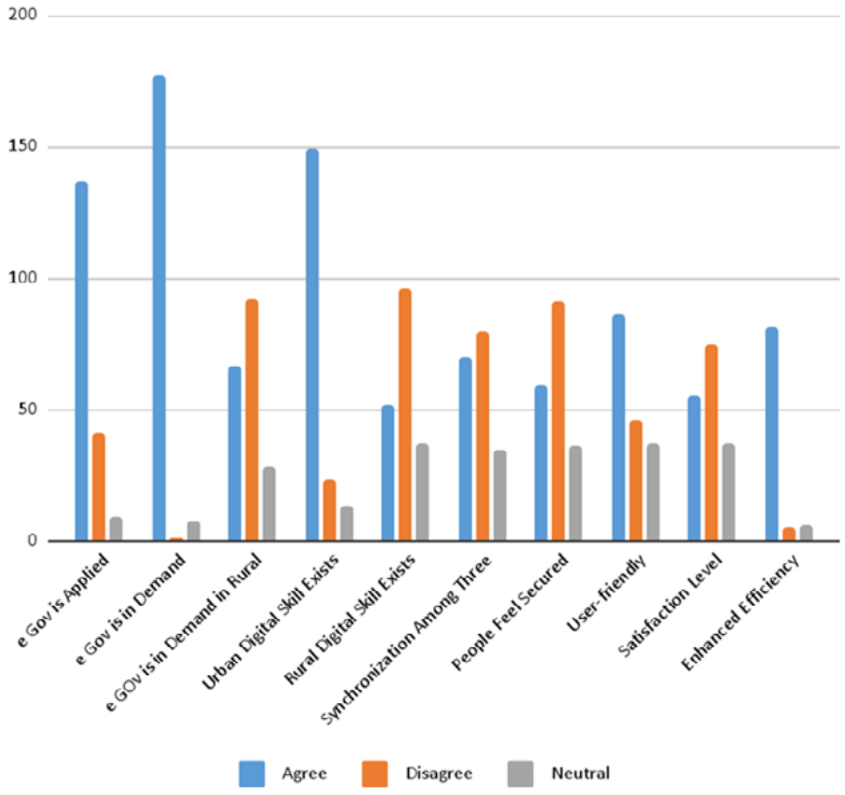
The cumulative level of agreement (in likert scale of 1 to 5) in the e-governance statements is shown in the figure below.

Figure 13. **Perception on e-Governance Service**



The result shows that overall people have a positive perception towards the indicators (as mentioned in above) of e-governance. In order to have greater and aggregate understanding of the perception towards individual statements, the responses have been merged. If 'Agree' and 'Strongly Agree' are merged to 'Agree' and 'Disagree' and 'Strongly Disagree' to 'Disagree', it makes the results more comprehensive. Following the combination, the number of positive perceptions on combined parameters of e-governance measures reaches 933 and negative perceptions stand at 550. Overall, positive responses make about 54 percent in the total perception while negative response and neutral response make about 32 percent and 14 per cent, respectively.

Figure 14. **Level of Agreement with Individual Statement**



The study also found that people have a positive perception of several aspects of e-governance, including the application of e-governance in public services, the increasing demand for additional e-governance services, the digital skills of urban residents, the user-friendliness of e-governance services, and the efficiency gains achieved through e-governance.

However, respondents expressed disagreement with certain statements, particularly regarding the demand for e-governance in rural areas, the digital skills of rural populations, the synchronisation of e-governance programmes and strategies across the three levels of government, and confidence in data security while using e-governance services. A correlation analysis (Table 5) was conducted to examine the relationship between these perceptions and factors such as age group, province, and the sector the respondents represented. However, no significant associations were found between these variables.

Table 5. Correlation (Province, Sector and Age)

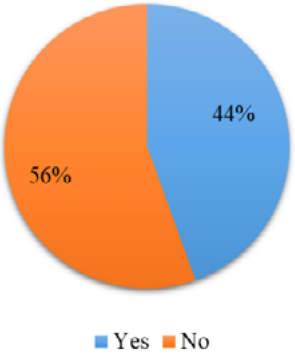
Variables		Province	Sector	Age Group
Province	Pearson Correlation	--		
Sector	Pearson Correlation	-0.158	--	
	Sig. (2-tailed)	0.127		
Age Group	Pearson Correlation	0.108	0.592	--
	Sig. (2-tailed)	0.299	0	
E-governance is applied in public service	**Pearson Correlation**	**0.188**	**-0.05**	**0.02**
	Sig. (2-tailed)	0.068	0.628	0.848
Additional e-governance services are in demand	**Pearson Correlation**	**0.037**	**-0.037**	**-0.045**
	Sig. (2-tailed)	0.723	0.723	0.665
E-governance is in demand in rural areas	**Pearson Correlation**	**-0.027**	**0.032**	**-0.027**
	Sig. (2-tailed)	0.794	0.756	0.797
Urban people have skill to use e-governance	**Pearson Correlation**	**-0.058**	**0.156**	**0.153**
	Sig. (2-tailed)	0.583	0.136	0.143
Rural people have skill to use e-governance	**Pearson Correlation**	**-0.071**	**-0.014**	**0.064**
	Sig. (2-tailed)	0.497	0.892	0.542
Programmes of three-levels of governments are synchronised	**Pearson Correlation**	**0.16**	**0.144**	**0.069**
	Sig. (2-tailed)	0.125	0.169	0.513
People feel confident about online data security	**Pearson Correlation**	**0.196**	**-0.04**	**-0.13**
	Sig. (2-tailed)	0.058	0.704	0.211
E-governance services are user-friendly	**Pearson Correlation**	**-0.125**	**-0.015**	**-0.11**
	Sig. (2-tailed)	0.229	0.884	0.29

E-governance services are satisfactory	**Pearson Correlation**	**.244***	**0.015**	**-0.049**
	Sig. (2-tailed)	0.019	0.89	0.646
Efficiency has been increased due to e-governance	**Pearson Correlation**	**0.053**	**0.074**	**0.058**
	Sig. (2-tailed)	0.615	0.484	0.584

Many offices at the LGs are still struggling to get quality broadband connectivity in order to make their service delivery faster, people-oriented and effective. As the pie chart above illustrates, 55.3% (209 respondents) of the LGs maintained that the quality has not been an issue for them, they have a fair quality in their connectivity. However, a significant 44.7% (169 respondents) reported experiencing challenges. This suggests that a significant portion of LGs still face difficulties due to connectivity limitations, potentially affecting efficiency and communication at multiple fronts.

QUALITY OF CONNECTIVITY

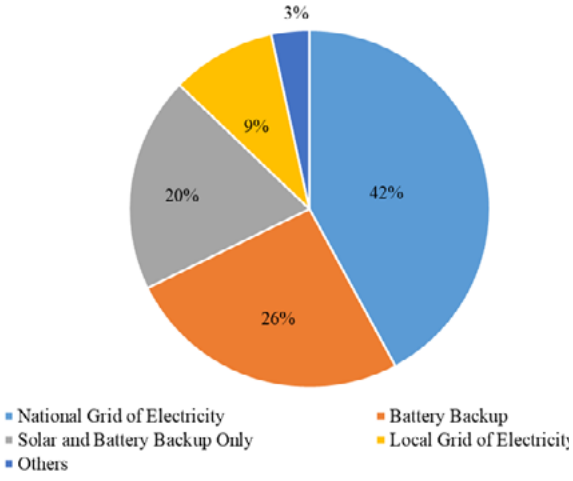
Figure 15. Satisfaction with Bandwidth



Many offices at the LGs are still struggling to get quality broadband connectivity in order to make their service delivery faster, people-oriented and effective. As the pie chart above illustrates, 55.3% (209 respondents) of the LGs maintained that the quality has not been an issue for them, they have a fair quality in their connectivity. However, a significant 44.7% (169 respondents) reported experiencing challenges. This suggests that a significant portion of LGs still face difficulties due to connectivity limitations, potentially affecting efficiency and communication at multiple fronts.

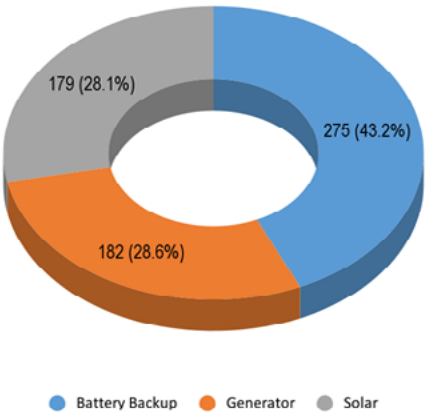
POWER SUPPLY

Figure 16. Source and Status of Regular Power Supply



This study revealed that about 42.1% of the offices rely on the national grid for electricity as their primary power source. A notable 25.6% use battery backup, while 19.5% rely exclusively on solar and battery backup, suggesting that almost half of the sub-national agencies supplement or replace grid power with stored or renewable energy. It exhibits a sensitivity towards the management of reliable power-supply which would make the system sustainable and effective. Likewise, 9.4% of them depend on local grids. About 3.4% fall under the 'Other' category, indicating a mix of less common solutions.

Figure 17. Source and Status of Backup/Alternative Power Supply

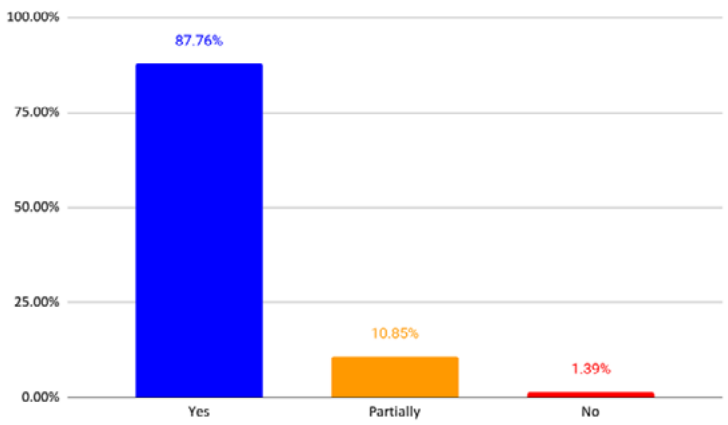


The LGs are well sensitised about the need for the alternative power supply to ensure the smooth delivery of services to the citizens. As an alternative power provision, battery backup sets are the most popular with 275 units in operation during the time of the survey. Reliability and easy application were the reasons for their popularity. Generators (182 units) also remain as a significant backup source, particularly for the areas that experience extended power outages and batteries may not be sufficient. The presence of 179 units of solar sets indicates a growing shift towards renewable energy solutions, though they are slightly less prevalent than generators. This distribution suggests a balanced approach to power backup where energy-mix is being created with the mix of traditional and sustainable solutions.

SOFTWARES BY BY USABILITY

The majority of respondents believe that the software they use is delivering services as expected. When asked whether the software was performing tasks according to its intended purpose, the highest number of responses were affirmative. Only a small percentage (1.39%) reported that the software was not functioning as intended, while 10% felt that the software only partially fulfilled its purpose.

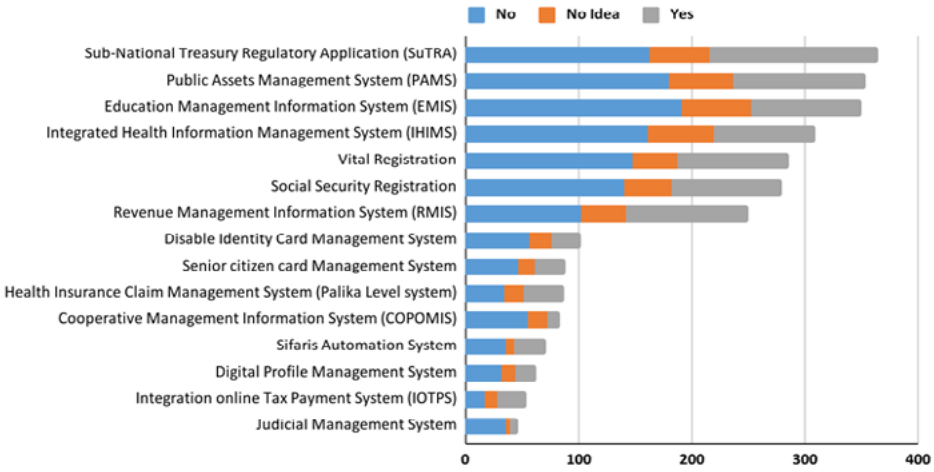
Figure 18. Software Meet the Work Objectives



OPERABILITY

INTRA-ORGANISATIONAL OPERABILITY

Figure 19. Software Meet the Work Objectives



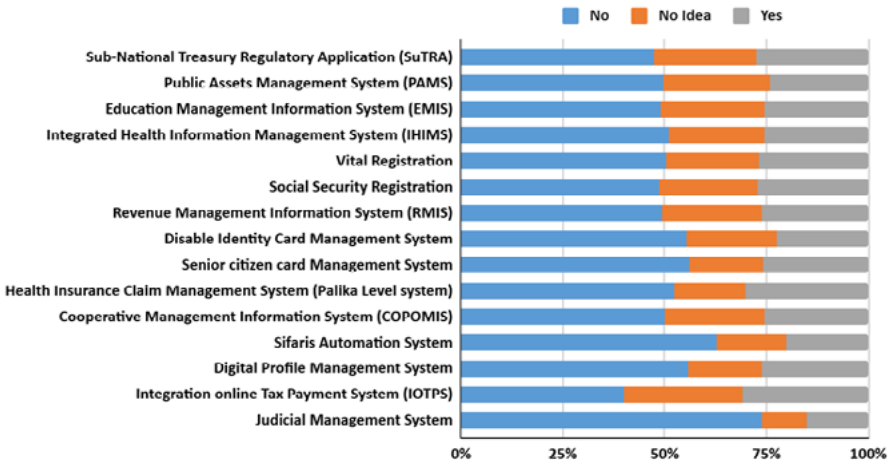
The conclusion on software interoperability was drawn based on inferences from a pool of 98 unique software applications, selected based on the highest number of responses. According to the results, around 50% of respondents believe that none of the applications are interoperable even within their own organisation, whereas approximately 25% think that all 15 listed software platforms are interoperable within their organisation.

One key reason for the lack of interoperability is that multiple vendors have developed different software for the same or similar functions, using varied code bases and databases. This fragmentation limits seamless integration. The study found that the Integrated Online Tax Payment System, Revenue Management Information System, Health Insurance Claim Management System (municipal-level), and Sutra have higher levels of interoperability. In contrast, COPOMIS, Disabled Identity Card Management System, and Education Management Information System have the lowest levels of interoperability.

Improving software interoperability enhances efficiency and user experience, reduces data silos by enabling data sharing, streamlines workflows, and facilitates data-driven decision-making. Additionally, it can help lower development, operation, and maintenance costs while boosting productivity. These findings underscore the need for a well-defined strategy, targeted investment, and greater awareness to improve software interoperability in Nepal's e-governance ecosystem.

INTRA-ORGANISATIONAL OPERABILITY

Figure 20. Inter-organisational Interoperability of Software



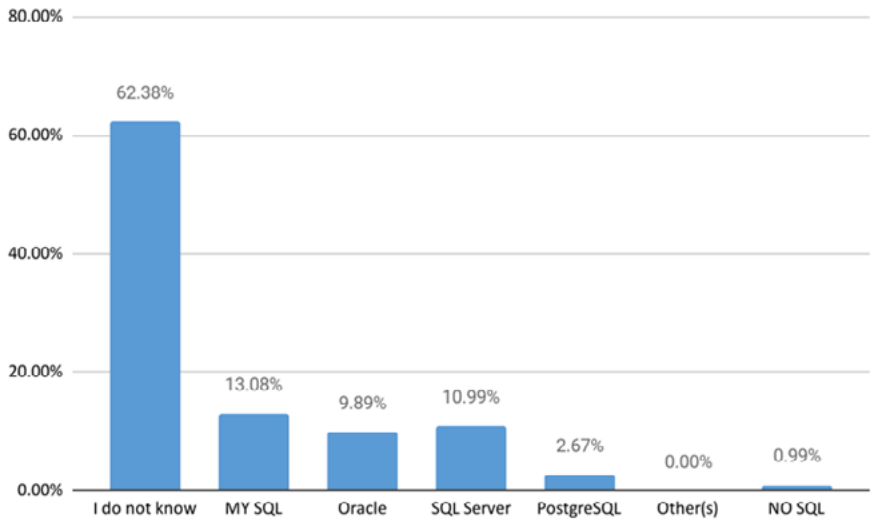
Note: This bar chart illustrates the interoperability of the top 15 software platforms, selected from a pool of 98 unique software based on the highest number of responses.

Around 50% of IT personnel in sub-national organisations reported that none of the applications are interoperable with other organisations, while approximately 25% stated that all 15 listed software platforms function seamlessly within their organisation. This lack of interoperability is primarily due to multiple vendors developing different software for similar functions using varied code bases and databases.

If a system is interoperable within an organisation, it has the potential to be interoperable across organisations as well. However, apart from a few exceptions, respondents indicated that most of the 98 major and unique software systems used by local governments (LGs) lack interoperability. Additionally, a significant portion of respondents expressed a lack of awareness regarding interoperability issues. Given these findings, there is a clear need to enhance software interoperability while also implementing sensitisation and capacity-building programmes at the earliest to ensure effective integration and utilisation of digital systems.

DATABASE SYSTEM

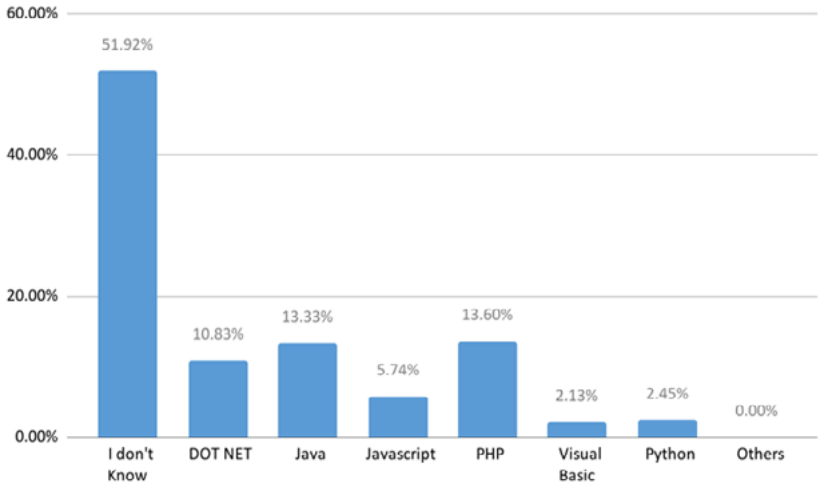
Figure 21. Database Systems Used by the Sub-national Governments



Analysis of the status of database usage at the local levels demonstrated that a significant portion of users, particularly at the local level, are unaware of the database in use. About 62.38% responses expressed ignorance about it. However, from the positive responses, this study found that MySQL (confirmed by 13.08% responses), SQL Server (10.99%), and Oracle (9.89%) are the most commonly used databases locally, with a smaller presence of PostgreSQL (2.67%) and NoSQL (0.99%). These findings highlight a lack of awareness about database usage, indicating a need for better documentation and training. Such programmes should be developed and executed across the country.

PROGRAMMING LANGUAGE

Figure 22. Programming Language Used in the Software Implemented by the Sub-national Governments

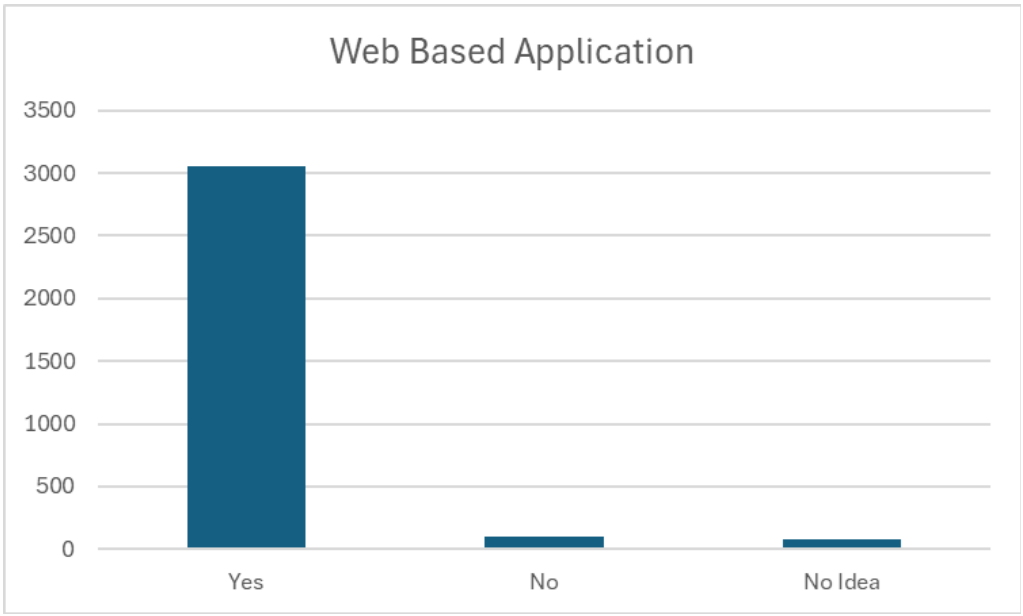


Similarly, there exists a significant lack of knowledge about the programme languages used in the softwares being used by the subnational governments. Figure 22 illustrates the status of programming languages used at local levels. A significant portion of responses(51.92%) are unaware of the programming languages used. Likewise, conclusion made on the basis of the positive responses showed that PHP (13.60%), Java (13.33%), and DOT NET (10.83%) are the most commonly applied programming language followed by Javascript (5.74%), Visual Basic (2.13%), Python (2.45%), and other languages (0). The data suggests a lack of awareness and documentation regarding programming language adoption, particularly at the local level.

ARCHITECTURE OF THE SYSTEM

The majority of the applications used by the LGs were cloud-based softwares providing a strong baseline for capability of being interoperable with other software systems within and outside of the organisations.

Figure 23. Software Architecture



E GOVERNANCE READINESS

This study has selected 10 indicators for enabling an environment of digital governance. The indicators and their respective criteria has been described in the table below:

Table 6. Indicators for Digital Governance Enablement

Symbol	Indicators	Description
I1	Data Backup	Availability of data backup mechanisms
I2	All wards broadband connection	All wards are connected to broadband internet
I3	Local firewall	Availability of firewall
I4	National electricity grid	Connected to national electricity grid
I5	Virtual meet infrastructure	Installation of virtual meeting infrastructure
I6	Budget allocation to hardware	Allocation of budget to hardware for three or more years in the last 5 years
I7	Budget allocation to software	Allocation of budget to software for three or more years in the last 5 years
I8	Budget allocation to capacity building	Allocation of budget in Capacity Building for three or more years in the last 5 years
I9	ICT policy/Master plan	Formulation of ICT plan or policy
I10	ISMS audit	Information system audits are in place

The local governments were then assessed based on the presence of positive indicators for each of them. Each indicator was assigned a weight of 1 for a positive indication and 0 otherwise. The LGs were subsequently ranked according to the total sum of these indicators. Among the LGs that successfully completed all questions in the comprehensive institutional survey and submitted the form online, the top three ranked municipalities are listed in the table below. According to the results, Waling Municipality, Panch Pokhari Thangpal Rural Municipality, Mechhayayem Rural Municipality, and Gaurishankar Rural Municipality ranked highest in digital readiness. Their scores out of 10 and respective ranks are presented in the table.

It is interesting to see that of the 485 local bodies that participated in this survey, 38 of them have secured their place in the top 3 in terms of digital readiness. Equally encouraging is the fact that many of these are rural municipalities that receive less funding from the federal and provincial governments. This finding can help the provincial as well as the federal governments in making decisions about the areas they should begin with while intensifying the e-governance development initiatives.

Table 7. Top Ranked Municipalities in Digital Readiness

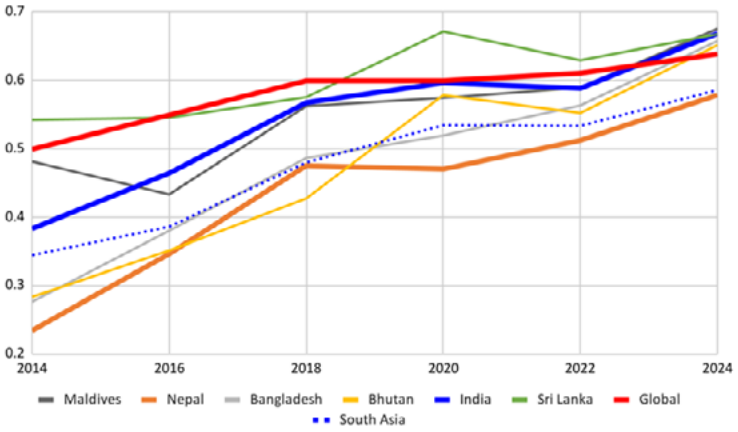
S.N.	Municipality/Rural Municipality	e-Readiness Rank	e-Readiness Score
1	Walling Municipality	1	10
2	Panchpokhari Thangpal Gaunpalika	1	10
3	Menchhayayem Gaunpalika	1	10
4	Gaurishankar Gaunpalika	1	10
5	Netrawati Dabjong Gaunpalika	2	9
6	Ratnanagar Municipality	2	9

S.N.	Municipality/Rural Municipality	e-Readiness Rank	e-Readiness Score
7	Dhawalagiri Gaunpalika	2	9
8	Janakpurdham Sub-metropolitian City	2	9
9	Aadarsha Gaunpalika	2	9
10	Sammarimai Gaunpalika	3	8
11	Mathagadhi Gaunpalika	3	8
12	Annapurna Gaunpalika	3	8
13	Palhinandan Gaunpalika	3	8
14	Mithila Bihari Municipality	3	8
15	Letang Municipality	3	8
16	Barahachhetra Municipality	3	8
17	Bhimphedi Gaunpalika	3	8
18	Bhimphedi Gaunpalika	3	8
19	Dhunibenshi Municipality	3	8
20	Madhya Nepal Municipality	3	8
21	Dupcheshwor Gaunpalika	3	8
22	Yasodhara Gaunpalika	3	8
23	Satyawoti Gaunpalika	3	8
24	Bhairabi Gaunpalika	3	8
25	Sharada Municipality	3	8
26	Chhatrakot Gaunpalika	3	8
27	Nagarjun Municipality	3	8
28	Kanaka Sundari Gaunpalika	3	8
29	Chichila Gaunpalika	3	8
30	Madhav Narayan Municipality	3	8
31	Sidingba Gaunpalika	3	8
32	Golanjor Gaunpalika	3	8
33	Mahashila Gaunpalika	3	8
34	Namobuddha Municipality	3	8
35	Ramdhuni Municipality	3	8
36	Thakurbaba Municipality	3	8
37	Mahalaxmi Municipality	3	8
38	Byas Gaunpalika	3	8

GAP ANALYSIS

E GOVERNANCE INDEX

Figure 24. E-Governance Development Index



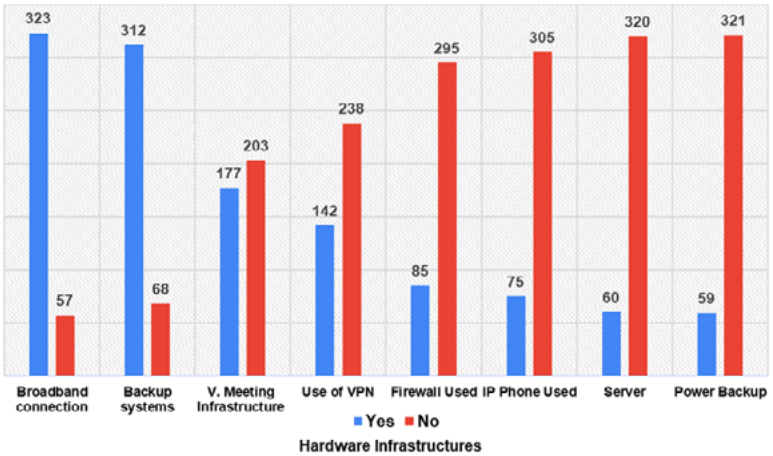
Note: Chart Created with Data Adapted from https://publicadministration.un.org

The chart presents the e-Governance index trends from 2014 to 2024 for various South Asian countries, along with the regional (South Asia) and global averages. Nepal has demonstrated steady growth in its e-governance performance, starting from a lower baseline in 2014 and gradually improving over the years. While Nepal's index remains below the global average, it has closely followed the South Asian regional trend, showing significant progress after 2016. In comparison, India and Sri Lanka have consistently maintained higher rankings, with India showing a notable peak around 2020.The bigger gap among other South Asian countries in the year 2014 has now narrowed down in 2024 but the gap is still persistent in case of Nepal. Nepal's growth trajectory suggests continuous efforts in digital governance but still lags behind the regional leaders.

Similarly, while the South Asian average has surpassed the global average making strides in terms of improvement over the last one decade, Nepal is falling behind, meanwhile, Bangladesh and Bhutan also jumped above the global average.This persistent gap with its regional peers suggests that Nepal needs to give a push in terms of policy and implementation to fill the gap and make the e-governance really work for the citizens. At least Nepal should try to meet the level of Bangladesh since both the countries are graduating from the 'Least Developed Countries' to the 'Developing' ones in 2026.

DIGITAL INFRASTRUCTURE GAP

Figure 25. Hardware Managed by the Local Governments



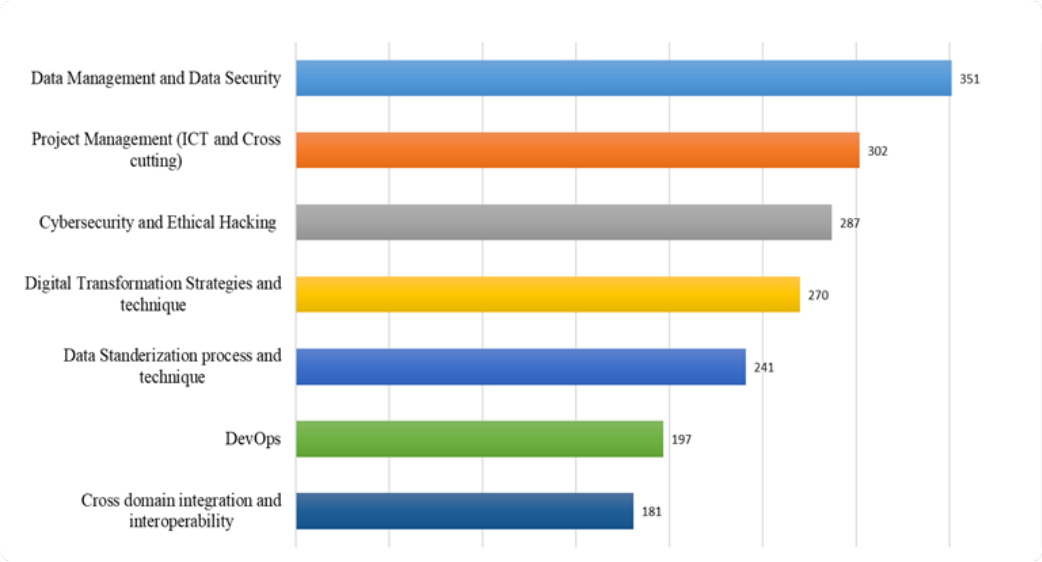
The local governments are using eight hardware infrastructures - Firewalls, Servers, Power Backup Systems, VPNs, Broadband, Virtual Meeting Infrastructure, Backup Systems, and IP Phones.

However, only 85 local bodies (of 380 respondents) use Firewalls while 295 do not, indicating underprotection from cyber threats. Server Adoption is also low with just 59 local governments responding positively about this issue while 320 suggesting limited infrastructure and possible data management issues. Similarly, only 60 respondents have Power Backup and 320 do not. It poses continuity risks making the entire system vulnerable and less sustainable. Meanwhile, 145 respondents use VPNs and 238 do not, reflecting moderate uptake and some awareness of secure remote access. Adoption of Broadband internet is even poorer as only 57 local bodies said they have it and 320 said they don't. People in those local bodies have connectivity challenges and problems in smooth service delivery by the respective governments. Likewise, Virtual Meeting infrastructure is used by 175 respondents against the 203 non-users, indicating moderate adoption likely driven by remote collaboration. Only 92 local units have Backup Systems and 280 don't have the facility. So, there exists a risk of data loss. Interestingly, use of IP Phone is evenly split at 303 yes vs. 303 no, indicating half have embraced IP telephony while half rely on traditional systems.

TRAINING GAP

Capacity Building of Human Resources in IT

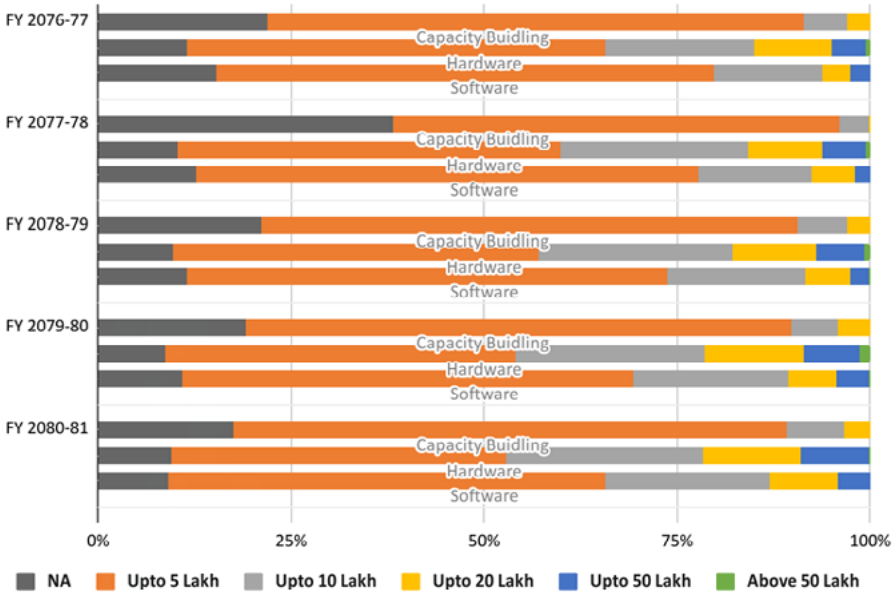
Figure 26. Key Areas for Capacity Building



This study found that of the total 1829 ICT professionals, Data Management and Security (according to 351 IT employees) is the major stream that required immediate capacity building programmes. Project Management (demanded by 302) and Cybersecurity and Ethical Hacking (by 287) are the key areas that need capacity building and skill enhancement training for the IT personnel at the LGs. This indicates a strong demand for data protection and governance skills. Given the growing concerns towards the use of public data and its safety, this should be the area of immediate consideration. Likewise, 270 professionals indicated need for training on Digital Transformation and 241 on Data Standardization while DevOps (197) and Cross-domain Integration (181) sectors have comparatively lower but still notable training needs. This demands a focus on strengthening data handling, security, and digital transformation capabilities in Local Governments.

BUDGETARY PROVISION

Figure 27. Trend in Budget Allocation for IT Sector Development



The LGs have been regularly allocating a budget for IT sector development. Analysis of the past five fiscal years showed that a significant portion of the ICT sector budget has been earmarked for hardware procurement and installation. The budget allocation caps (the maximum amounts allowed) for each category (Capacity Building, Hardware, Software) increase with each fiscal year. This suggests a growing investment and emphasis on the ICT sector over time.

However, there is no logical balance and consistency in the budget allocation for hardware, capacity building and software. Still more than 10% of the LGs have not allocated budget (NA) for either software, hardware or human capital capacity development. Higher budget allocation (up to Rs. 50 Lakhs) was provisioned only for procuring hardware. During FY 2077-78 a significant drop is observed in the budget allocation in ICT infrastructure. This probably was due to COVID-19 outbreak. However, most of the programmes across the three sectors have received a very small budget allocation, only small-scale programmes can be executed with the budget allocation of Rs. 5 Lakh.

POLICY GAP

Figure 28. ICT-related Plans and Policies, and Budget Allocation

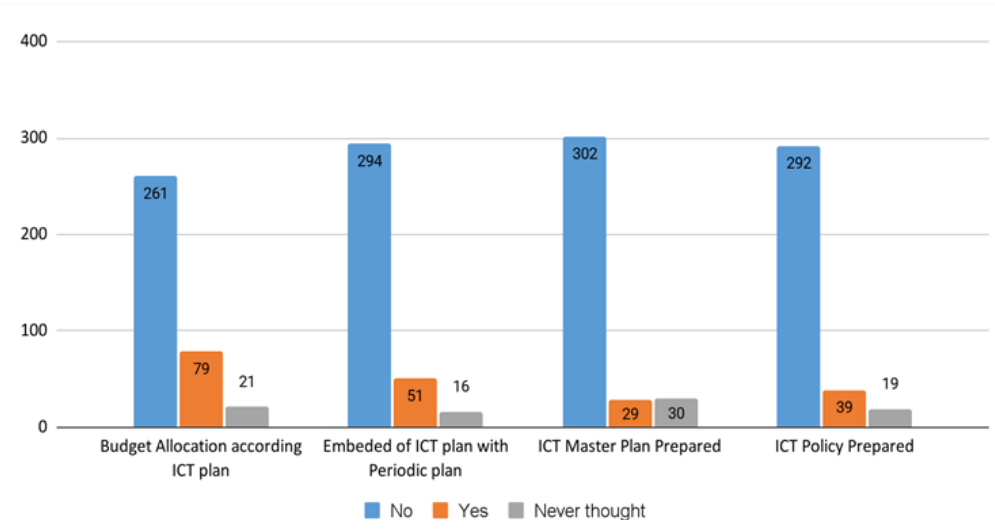


Figure 28 highlights the status of policy, planning, and budgeting in ICT implementation within the province. A majority of respondents indicated that ICT budget allocation (261), embedding ICT plans in periodic plans (294), ICT master plan preparation (302), and ICT policy preparation (292) have not been implemented. The number of affirmative responses remains significantly lower, with only 79 confirming budget allocation, 51 for ICT plan embedding, 29 for ICT master plan preparation, and 39 for ICT policy preparation. A small percentage has never considered these aspects, suggesting a need for stronger ICT integration in governance and planning. This clearly indicates that it is high time the LGs start working on developing their ICT related plans and policies.

CHALLENGES OF IMPLEMENTING E GOVERNANCE

Figure 29. Challenges in the Implementation of E-Governance in Nepal

From the two Focus Group Discussions conducted in Gandaki and Karnali provinces to get their understanding on some key aspects of e-governance, this study has reached to a conclusion that poor infrastructure is the largest challenge in the application of the e-governance system at the sub-national level. Likewise, lack of budget, capacity building programmes and coordination among the sub-national governments, data safety, inefficient system, political insensitivity, poor cybersecurity measures, and weak systems are the key challenges in terms of implementing e-governance. Lack of uniformity in policies across the local government, shortage of human resources, and digitally illiterate citizens also posed challenges in the proper and timely implementation of the e-governance measures. Several participants emphasised on policy guidance and political will as an entrypoint to the desired technological achievement in e-governance.

Policy and operational cooperation and collaboration among the LGs and PGs can support the development of robust and sustainable digital solutions. More investment in technology, human resources and interoperability in software can also yield impressive results.

RECOMMENDATION AND CONCLUSION

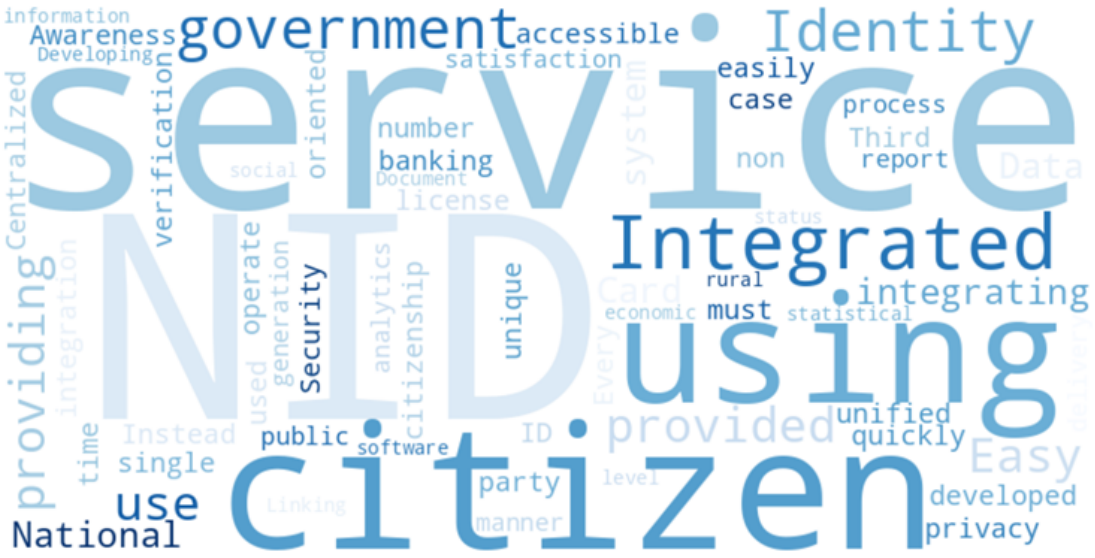
RECOMMENDATION

SUGGESTIONS ON MAKING E GOVERNANCE MORE EFFECTIVE

Through the multiple research methods applied in this study, it was found that improving services through technological modernisation and integration is fundamental to making e-governance effective.

According to the participants, the National Identity Card (NID) was a central concern for both the public and IT staff. Many agreed that without citizen-oriented, accessible, and efficient ICT services, the targets for e-governance could not be achieved. Some raised concerns about public awareness, digital literacy, and accessibility of e-governance services. They also emphasised the need for secure operations, data protection, and prompt service delivery. Banking, driving licences, and citizenship services were also highlighted as key areas of concern. Therefore, it is the responsibility of governments at all levels to address these needs effectively.

Figure 30. Way to Make E-governance Effective



Adaptation to Technical Standards

So far the Nepal Government Enterprise Architecture (NGEA) has served as the guiding framework for the development and implementation of digital governance initiatives in Nepal. This architecture envisions the Nepal Government Interoperability Framework (NeGIF) and the Nepal Analysis Standard Code for Information Interchange (NASCII) as foundational standards for e-governance and interoperability.

However, considering global advancements in cybersecurity, cloud computing, artificial intelligence (AI), and open data, Nepal could benefit from upgrading its frameworks or aligning with more widely adopted international standards. Some commonly used global standards include ISO 12207, NIST SSDF, CERT, and NASA frameworks. While NeGIF defines interoperability, it lacks modern features such as linked data and blockchain integration. Aligning with international frameworks like the European Interoperability Framework (EIF), Linked Data Standards, and blockchain-based data exchange models could enhance cross-agency data exchange and minimise security risks.

Enterprise Level Programming Language

For national digital governance initiatives, the choice of programming languages should be based on security, scalability, interoperability, and long-term support. Not every system needs to be built with a single programming language. The best programming languages are categorised by their use cases in e-governance, citizen services, and digital transformation projects. Backend core data engine can be developed using Java, don Net, Python, Golang or Rust technologies. Citizen facing applications and services can be developed using JavaScript, React or Flutter.

Enterprise Level Database

Though the Nepal Government Enterprise Architecture (NGEA) does not specifically recommend particular database technologies, it stresses the importance of selecting database systems that can efficiently handle large volumes of data while aligning with architectural principles such as scalability, interoperability, and security.

Considering the strengths of various technologies and their widespread use, Oracle, PostgreSQL, IBM DB2, and Microsoft SQL Server are often regarded as the best options. Depending on the nature of transactions, data volume, and the specific domain, different database technologies can be adapted. For example, Oracle and PostgreSQL as well as blockchain-based databases are commonly used for National ID Systems, while SQL Server and Oracle are frequently used in taxation systems. For handling big data and supporting smart city initiatives, NoSQL technologies like MongoDB are recommended, as they are more suitable for managing large, unstructured data sets.

Internet and other infrastructures

The quality of internet connection is crucial for fostering effective digital governance. Over the past two decades, Nepal's internet services have made substantial progress. Key internet service providers (ISPs) in the country include Nepal Telecom, Ncell, Worldlink, and Vianet. While major cities and urban areas benefit from quality internet services, substantial work remains to be done to extend these benefits to rural regions. The assessment indicates a robust connectivity network, with very few ward centres lacking internet access. However, significant gaps remain in the availability of cable/optical fibre connections, especially in rural areas.

To improve and expand digital governance, the following actions should be prioritised:

Expand Broadband Connectivity – Invest in high-speed internet infrastructure to ensure seamless and efficient e-governance services nationwide. This includes expanding broadband coverage, optimising digital systems, and ensuring the availability of necessary hardware. Achieving this goal will ensure that all citizens, irrespective of their location, can access online government services efficiently.

Strengthen Government Cloud Infrastructure – Enhance secure and scalable cloud-based hosting solutions to support government applications and data. This will ensure reliability, accessibility, and security for public sector services, allowing for the efficient management and storage of large amounts of government data.

Implement Redundancy and Disaster Recovery Measures – Develop robust backup systems and disaster recovery strategies to ensure service continuity during emergencies and cyber threats. Recent cyberattacks on both public and private online platforms have underscored the critical need for proactive security measures and resilience planning. Having reliable recovery plans in place will ensure that digital government services remain operational even in the face of unforeseen disruptions or security incidents.

Citizen Centric Design

The design and development of the citizens facing applications needs to be carefully done keeping citizens at the center. Ease of use, accessibility features for visually impaired people, and localisation aspects in terms of language, time, calendar, are some key factors to be considered.

Strengthening Human Capital

Advancement in the field of Information technology is ever evolving. The updates are too frequent and it's really tough to keep up with the evolving technology. So, the government needs to select the technology including the programming language, database and data exchange very carefully and manage the human talent in the specific field accordingly. This study has shown that the ICT personnel in municipalities lack

the specific skills in core technologies like cyber security, database management, AI, etc. It is crucial to develop suitable strategies and programmes to address the technology expertise required in government offices. Some institutions in Nepal, such as the Supreme Court, Parliament, and the National ID and Vital Event Registration, have successfully created specialised pools of technical human capital. These teams, consisting of experts in areas such as programming, system administration, networking, and quality control, are capable of performing specific tasks within their areas of expertise.

Beyond the generic computer engineers and IT officers, there is a pressing need to develop specialised human capital in key areas of technology. This could include roles focused on advanced data management, cyber security, artificial intelligence, and blockchain technology, among others. To achieve this, need-based training and capacity-building programmes should be prioritised. Additionally, adequate budgetary allocation for these initiatives is essential to ensure the development and sustainability of this technical workforce. Municipality and rural municipality associations can play a pivotal role in strengthening human capital expertise by supporting training initiatives, facilitating knowledge sharing, and ensuring that local governments are equipped with the necessary skills to manage and implement digital governance initiatives effectively.

Enhancing PPP Model

The government can focus on core functions, such as policy-making, regulation, and oversight, while private companies focus on technology implementation, maintenance, and operation. Private companies can work on cutting edge technologies and innovation for service delivery. Public-Private Partnership (PPP) model can be very effective for digital governance under the right conditions. However, its success depends on various factors, such as the structure of the partnership, transparency, clear objectives, and the alignment of both public and private sector interests. With the right kind of partnership, the ecosystem can benefit with access to expertise and innovation, cost efficiency and risk sharing, faster service deployment, sustainability and long term sustainability of the initiatives. Misalignment of the goals, lack of accountability, complexity of the contract agreements, vendor locking are some of the downsides that should be carefully addressed while entering into the contract.

Focus on Enterprise Resource Planning (ERP) level Applications

Close to 1,000 different software applications have been recorded across local governments (LGs) in the survey. However, when examined in detail, fewer than 100 unique software applications were identified. Since each local government is unique and operates independently under legal provisions, the adoption of information systems has been fragmented. The same or similar software, developed by different vendors using varying databases, programming technologies, and development frameworks, has been implemented across different government offices. This fragmentation creates complexity in integration, increases security vulnerabilities, and leads to dependency on multiple service providers.

An integrated approach is necessary, where multiple systems could be consolidated into a smaller number of larger Enterprise Resource Planning (ERP) level applications. However, this integration must be approached with caution, following an engineering methodology that preserves data integrity, ensures interoperability, and facilitates the successful migration of existing data. During this process, the government must also play an active role in supporting the private sector ecosystem to ensure its sustainability and continued contribution to digital governance.

Policy and legal arrangements

Develop a Federal e-Government Policy – Establish a clear, unified policy that outlines the vision, objectives, and strategic roadmap for e-governance across all tiers of government for the next three to five years. Policies must be synchronised to ensure cohesive implementation rather than operating in isolation.

Align with Sustainable Administrative Reforms – Integrate e-governance strategies with broader administrative reforms to enhance governance efficiency at the sub-national level. Since most service delivery occurs at the local level, an integrated approach should be adopted to support these reforms through digital governance.

Enact E-government Legislation – Develop comprehensive laws that support Nepal's digital transformation, ensuring legal clarity, accountability, and compliance in all e-governance initiatives.

Ensure Data Privacy and Security – Implement robust data protection laws to safeguard citizens' information, enhance trust, and align with global data security standards. Establish a universal legal framework for all e-governance-related projects, operations, and activities.

Standardize Data Management and Interoperability – Develop a National Interoperability Framework to ensure standardised data structures, protocols, and seamless communication between government systems. This will enable secure and efficient data exchange across agencies.

Institutional Arrangements

Strengthen the E-governance Authority – Empower the e-Governance Board with greater authority and financial resources to oversee, regulate, and coordinate digital governance initiatives across all levels of government.

Promote Interagency Collaboration – Foster cooperation among federal, provincial, and local governments to enhance service delivery and efficiency. Establish a dedicated coordination unit under the E-Governance Board to facilitate seamless collaboration.

Engage Stakeholders – Actively involve public institutions, private sector actors, civil society, and academia in the planning and implementation of e-governance projects. Establish capacity-building programs to strengthen the skills and expertise of stakeholders, ensuring effective participation in digital transformation efforts.

Data Standardization and Cross Domain Data Exchange Strategy

Large volumes of diverse data, including evidence and implementation science, are critical for ensuring timely and effective service delivery. To facilitate this, a National Data Sharing and Access Policy is essential to build a robust public service delivery framework. A foundational requirement is the establishment of National Common Data Elements/Metadata Standards, adhering to the Conceptual Data Model (CDM) for consistent data points. This would serve as the groundwork for standardising data across various sectors.

In alignment with these objectives, the development of a National Interoperability Framework is crucial. This framework would consist of a set of standards, policies, and guidelines to ensure that ICT systems can communicate and seamlessly share data across government agencies. A Common Data Strategy should be adopted, following a building blocks approach. This would involve the creation of essential national infrastructure components, including the National ID System, Common Terminology Standard Server, Consent Management Platform, Data Conversion Mechanisms, and Client Data Matching Algorithms. These elements would help ensure that data is standardized, accessible, and usable across various platforms, facilitating effective e-governance and enhancing public service delivery.

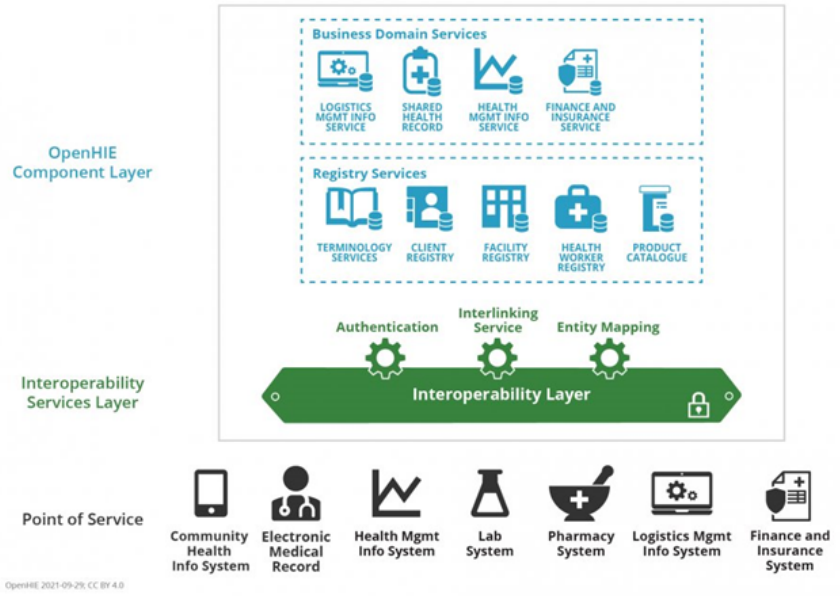
Cross Domain data exchange modality and technical overview for the health sector.

1. Business Domain layer- Shared health records, national portal to share the information to health care service providers, aggregation of the services count for National decision and universal health coverage to engage multiple facility and cader health care providers.
2. Building Blocks Layer- NationalID/Health ID to connect the business domain layer and validate the citizen/ authentication as the foundational ID to authorise the services, National Master Patient Index to disseminate the client information to all the health care providers including the patient

matching algorithm (reverse lookup for the authenticity and security), Master the National Registry for the health care facility and health care workers registry as the building blocks, all of the blocks are interlinked and follows the open protocol open standard service standards.

3. Interoperable/Data Model layer- Few of the data models encompasses metadata standards e.g. XML/json based data model, common data model (National data dictionary, sectoral data model for major strategic pillar of DNF).
4. Service Engagement Layer- Point of services including all the service providers relies with building blocks for the verification of the providers, client, terminologies/dictionaries being used over the National Business Domain layer.

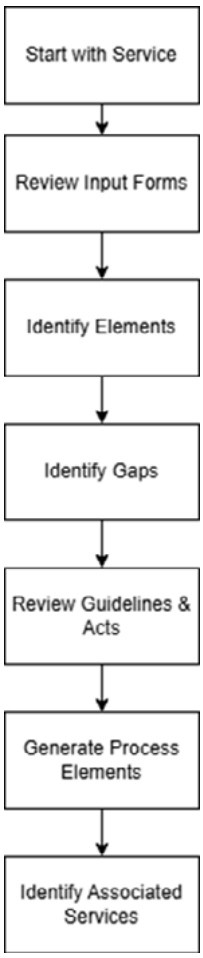
Figure 31. National Architecture for the Sectoral Data Exchange with DPI Principle



Note: Adapted from OpenHIE Framework

National Architecture for the Sectoral Data Exchange with DPI Principle.

Figure 32. Data Standardization Workflow during the inception to collection of the data



Data Governance Framework

Establish a central data governance body: A designated group to oversee data standards development, implementation, and compliance across agencies.

Define roles and responsibilities: Clearly outline who is responsible for data quality, data standards development, and data sharing within each agency.

Establish a central data governance body: A designated group to oversee data standards development, implementation, and compliance across agencies.

Data Identification and Definition

Identify core data elements: Determine the essential data fields required for analysis across agencies, prioritising critical information.

Create standardised data definitions: Develop clear, consistent definitions for each data element, including acceptable values and data types.

Develop data dictionaries: A Create a centralised repository documenting data definitions, usage guidelines, and data quality rules.

Data Formatting and Structure

Standardised data formats: Agree on common data formats (e.g., date/time formats, numeric formats) for data exchange across systems.

Data encoding standards: Utilise standard coding schemes (e.g., industry codes, geographic identifiers) for consistent data representation.

Data validation rules: Implement data validation checks to ensure data quality and identify inconsistencies before sharing.

Implementation and Monitoring

Training and awareness: Provide training to staff on data standards, data quality procedures, and proper data handling practices.

Data quality monitoring: Regularly monitor data quality across agencies and implement corrective actions where necessary.

Change Management: Establish a process to periodically review and update data standards as needs evolve.

Recommended Data Standards

Digital Public Infrastructure serves as the foundational component for designing and developing public services, ensuring that these services are interoperable within the public service domain. This domain encompasses sectoral representations such as tourism, education, health, and energy, with a national-level data dictionary acting as the central reference for all sectors. The Common Data Element serves as the core process for building the foundational blocks of service delivery, establishing consistency across various platforms.

Data standardisation is critical for ensuring consistency, reusability, and providing a solid base for interoperability. The sources of information and the flow of data vary depending on its collection, transport, and archiving layers.

Collection Layer: This encompasses uniform data collection processes, such as demographic data, ensuring that information is gathered in a standardised manner.

Integration Layer (or Interoperability Layer): This layer uses variable-type-centric data models, such as HL7 for health data and RESTful XML or JSON-based models for communication between systems. These models allow for efficient data exchange and integration across various systems.

Common Data Models—supported by industry-specific models—are essential for formalising the specifics of data standards, ensuring that data can be effectively integrated and utilised across sectors.

A Foundational Sectoral Data Model should be established, based on the norms of the National Data Dictionary or a collection of metadata, which should be shared across multiple sectors during the application design phase. Key factors to consider when implementing Data Standardisation across all sectors include: technology, content, community and governance.

The Annex 1 lists recommended data standards to guide the implementation and standardisation processes across various sectors.

MONITORING AND EVALUATION

For any initiatives it is necessary to establish a strong monitoring and evaluation process in place so that its continuous improvement is achieved. In order to measure the success of the digital initiatives, in Nepal, the following mechanism is recommended.

Establish Performance Metrics – Develop clear and measurable indicators to evaluate the efficiency and impact of e-governance initiatives.

Carry Out Periodic Assessments – Continuously monitor and refine digital governance strategies based on performance reviews and data-driven insights.

Promote Transparency – Share progress reports and key findings with the public to uphold accountability and strengthen trust in digital governance.

WAY FORWARD

Short-Term Initiatives

To enhance digital governance in the short term, immediate efforts must focus on improving the quality of existing digital services by addressing inefficiencies, ensuring reliability, and optimising the user experience. This includes enhancing the performance of government portals, mobile applications, and citizen-facing digital services. Likewise, increasing acceptability within government services is crucial by fostering a digital-first culture among public servants through training, workshops, and incentives for digital adoption. Awareness programmes should also be conducted to educate both government officials and citizens on the benefits, usability, and security of digital governance initiatives.

Simultaneously, strengthening security measures in government cloud infrastructure is vital to ensure data protection, prevent cyber threats, and build public trust in digital services. Regular security audits, multi-factor authentication, and compliance with global cybersecurity standards should be prioritised to mitigate risks and enhance the resilience of digital systems.

Medium-Term Initiatives

A structured data standardisation and sharing strategy is essential to create an interoperable digital ecosystem across government entities. Developing standardised data formats, metadata frameworks, and APIs will enable seamless integration between different digital platforms. Furthermore, data-sharing mechanisms and service integration should be implemented to eliminate redundancy and enable efficient information exchange between departments. This will not only improve efficiency in service delivery but also facilitate evidence-based policymaking. By ensuring that data-sharing practices adhere to privacy and security guidelines, government agencies can balance accessibility with data protection, fostering trust among stakeholders.

Long-Term Vision

The ultimate goal is to achieve a 'Whole of Government' approach, where all government entities operate as a unified digital ecosystem, offering integrated and citizen-centric services. This requires a robust national digital governance framework, which includes centralized service delivery platforms, unified digital identity systems, and a strong governance structure for ICT initiatives. A long-term commitment to investing in digital infrastructure, capacity building, and emerging technologies such as AI, blockchain, and IoT will further enhance governance efficiency. By fostering collaboration across agencies and prioritizing digital inclusivity, Nepal can establish a future-ready, efficient, and transparent digital government that serves all citizens effectively.

Continuous Integration and Implementation

Digital government initiatives must be viewed as an ongoing process rather than a one-time project. Continuous implementation ensures that digital services evolve with emerging technologies, user needs, and security requirements. Governments should adopt an agile approach to digital transformation, where services are continually improved based on feedback from citizens and stakeholders. Regular assessments, policy adjustments, and iterative upgrades will help maintain the relevance, efficiency, and sustainability of digital services.

Strengthen the Service Delivery Component

A strong service delivery mechanism is at the core of successful digital governance. Governments at all levels must focus on enhancing the user experience, accessibility, and reliability of digital services. This includes improving government portals, mobile applications, and self-service kiosks to ensure that citizens can easily access public services. Additionally, efficiency in service fulfilment, such as faster application processing, automated workflows, and reduced bureaucratic hurdles, will enhance citizen satisfaction. Governments should also establish help desks, chatbots, and support centres to assist users in navigating digital services.

Integrate Where Possible

Integration across government services and systems is essential to prevent duplication, reduce costs, and enhance efficiency. A whole-of-government approach should be pursued, where different ministries, agencies, and local government units share data and collaborate on digital platforms. This requires standardised APIs, interoperable systems, and centralised service platforms to enable seamless interactions between departments. For example, integrating digital identity (such as national IDs) with financial services, healthcare, and tax systems can create a more connected and efficient government service ecosystem.

Build a Data Strategy

A well-defined data strategy is critical for digital governance, as data-driven decision-making enhances efficiency, transparency, and accountability. Governments must establish policies for data collection, storage, sharing, and security while ensuring compliance with international standards and regulations. This involves defining data ownership, governance frameworks, and privacy protection measures to build trust among citizens. Additionally, open data initiatives should be encouraged to enable innovation, research, and public participation in governance.

Implement Fully

Full implementation of digital government initiatives requires strong political will, adequate funding, skilled human resources, and clear execution roadmaps. Governments should ensure that digital projects move beyond the pilot stage and are scaled up for national adoption. This includes providing adequate infrastructure, cybersecurity measures, legal frameworks, and public awareness campaigns to ensure widespread adoption. A phased implementation approach with measurable milestones will help track progress and ensure that digital governance initiatives deliver tangible impacts in terms of efficiency, transparency, and citizen engagement.

CONCLUSION

This report prepared for the e-governance stocktaking in Nepal provides a comprehensive overview of the current state of e-governance in Nepal, focusing on public perception, software and hardware infrastructure, human resources, and challenges in implementation. The study highlights both the progress made and the gaps that need to be addressed to improve the efficiency and effectiveness of e-governance in the country.

Nepal is undergoing a significant transformation in governance, driven by digital technologies and policy reforms aimed at modernising public administration. The GoN has prioritised e-governance, leveraging ICT to enhance service delivery, transparency, and citizen engagement through the initiatives like the e-Governance Board, draft of e-Governance Policy and Act, and e-Governance Blueprint. These efforts aim to institutionalise digital governance, promote interoperability, and integrate emerging technologies like artificial intelligence, blockchain, and cloud computing.

Nepal's digital transformation is rooted in earlier policies such as the IT Policy 2000, which emphasised IT infrastructure, capacity building, and digital literacy. The ICT Policy 2015 further advanced digital governance, focusing on economic growth, service delivery, and public administration. One of the major breakthroughs was made with the launch of the Digital Nepal Framework (DNF) 2019 which identified eight key sectors—including agriculture, health, education, and tourism—for digital transformation, aligning with the Sustainable Development Goals (SDGs) and the vision of 'Prosperous Nepal, Happy Nepali'. Electronic Transactions Act 2008 and the National Cyber Security Policy 2023 also strengthened the policy environment while the proposed e-Governance Blueprint and e-Governance Policy are expected to address the remaining needs in terms of implementing e-governance.

Despite progress, Nepal faces significant challenges in fully realising its e-governance potential primarily because of infrastructure gaps like limited access to internet, electricity and IC facilities especially in the remote areas, bureaucratic inefficiency, lack of digital literacy, and cybersecurity risk. This study has made a thorough analysis of the situation with the stocktaking of hardware and software infrastructure, human resources and other concerned aspects.

The results showed that the public's understanding of e-governance in Nepal is largely centred around the delivery of digital services by the governments at various levels, which aligns with global trends where e-governance is often seen as a means to improve public service delivery. However, the emphasis on data privacy and costs suggests that while citizens are appreciative of the convenience of digital services, they are also concerned about the security of their personal information and the affordability of these services. This is consistent with findings from other developing countries, where data privacy and cost are often barriers to the adoption of e-governance.

However, developed countries like Estonia and South Korea have successfully implemented e-governance systems that give high priority to data security and affordability which have received high levels of public trust and adoption. Nepal's focus on service delivery is a positive step, but the lack of robust data protection measures and affordable services could hinder the widespread adoption of e-governance.

The diversity of software systems in use reflects the complexity of Nepal's e-governance landscape. A total of 98 unique software systems were identified across the offices at the LGs and PGs. The majority of software systems are deployed in the government cloud (GIDC), but a significant number of respondents were unaware of where their software was hosted.

While the deployment of software in the government cloud is a positive step towards data centralisation and security, the lack of awareness among IT personnel about where the software is hosted is concerning. This could lead to vulnerabilities in data management and security, especially if sensitive information is stored in vendors' data centres without proper oversight. This gap in e-governance and training, should be addressed to ensure data security and operational efficiency.

In terms of the sectors of software use, governance and administration, finance, accounting, budgeting, and economic affairs and at the top. This focus including to other sectors like health and education reflects the government's priorities in improving public service delivery and economic management. However, the relatively low number of software systems in sectors like tourism and agriculture suggests that these areas are not receiving adequate attention in the digital transformation process as envisioned by various policies and strategies promulgated by the GoN. This could be a missed opportunity, as digital tools in these sectors could drive economic growth and improve service delivery.

Likewise, automation of administrative processes and data management are the most common functions of software systems followed by citizen service delivery, resource management, and progress tracking. The emphasis on automation and data management is a positive sign, as these are foundational elements of effective e-governance. However, the relatively low focus on transparency and accountability (44 software systems) is concerning, as these are critical for building public trust in e-governance systems.

The reliance on contract-based IT staff indicates a lack of long-term investment in human capital, which could affect the sustainability of e-governance initiatives. Over 61% of ICT personnel are hired on a contract basis, with only 35% being permanent staff. The skills gap in emerging technologies like AI and cybersecurity is particularly concerning, as these are critical for the future of e-governance.

Talking about the hardware infrastructure, only 85 out of 380 local governments use firewalls, and 295 do not have power backup systems. Broadband adoption is low, with only 57 local governments having access to broadband internet. The lack of basic hardware infrastructure like firewalls and power backup leaves government systems vulnerable to cyberattacks and power outages. The low adoption of broadband internet also hinders the delivery of digital services, particularly in rural areas. Poor quality e-governance services increase dissatisfaction on the part of service-seekers.

However, on an aggregate, people have a positive perception of e-governance, particularly in urban areas. This is encouraging, but the lack of confidence in data security and inter-governmental coordination is a significant barrier to adoption. This pointed to the need for better data protection measures and stronger coordination among local, provincial, and federal governments.

This study has tracked that poor infrastructure, lack of budget, and insufficient capacity building are the main challenges in implementing e-governance. Likewise, political insensitivity and weak cybersecurity measures are also significant barriers. While the challenges identified are consistent with those faced by other developing countries, the lack of political will and weak cybersecurity measures are particularly concerning, as these could undermine the effectiveness of e-governance initiatives.

Similarly, the capacity of the ICT human resources at various levels of the government is not satisfactory. Their qualification and competency both should be addressed through various measures. Only 25% of respondents believe that their software systems are interoperable with other organizations while a significant number of respondents are unaware of the interoperability of their software systems. As many participants of the study reckoned, the lack of interoperability is a major barrier to the efficiency of e-governance systems as it has negatively impacted data sharing and coordination among government agencies. It has also resulted in inefficiencies and duplication of efforts.

Citizen engagement in e-governance is limited, particularly in rural areas. This limited engagement of citizens is a significant barrier to the success of e-governance.

In a nutshell, the research findings show that while there is a strong focus on service delivery and digital transformation, significant gaps remain in areas like data security, interoperability, and citizen engagement. Addressing these gaps demands a coordinated effort among local, provincial, and federal governments, as well as increased investment in infrastructure, human capital, and cybersecurity. By learning from international best practices and prioritising these areas, Nepal can build a robust and sustainable e-governance system that meets the needs of its citizens and drives economic growth.

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ANNEXES

ANNEX – 1: DATA STANDARDS

1. Health

- HL7 (Health Level Seven) – Standard for electronic health information exchange.
- SNOMED CT (Systematised Nomenclature of Medicine – Clinical Terms) – Standardised medical terminology.
- LOINC (Logical Observation Identifiers Names and Codes) – Standard for lab and clinical observations.
- ICD (International Classification of Diseases - WHO) – Disease classification system.
- FHIR (Fast Healthcare Interoperability Resources - HL7) – Standard for health data exchange.
- RxNorm – Standardised names for clinical drugs.
- CDSS (Clinical Decision Support System) – Standardized decision support for clinicians.
- OMOP (Observational Medical Outcomes Partnership) – Standard for health data modeling and analytics.

2. Agriculture

- AgGateway ADAPT – Agricultural data interoperability.
- ISO 22000 – Food safety management system standards.
- AgroXML – Data standard for farm management systems.
- GlobalG.A.P. – Standards for good agricultural practices

3. Energy

- Common Information Model (CIM - IEC 61970/61968) – Power system data exchange.
- Green Button Data Standard – Energy usage data standardization.
- IEEE 2030.5 (Smart Energy Profile 2.0) – Standard for smart grid communication.

4. Tourism

- Open Travel Alliance (OTA) Standards – XML-based messaging for travel services.
- Tourism Satellite Account (TSA - UNWTO) – Economic measurement of tourism.
- GTFS (General Transit Feed Specification) – Public transportation data standard.

5. Financial Services

- ISO 20022 – Financial transactions and messaging.
- XBRL (eXtensible Business Reporting Language) – Financial reporting standard.
- SWIFT MT/MX Standards – Global banking transaction standards.

6. Connectivity (Telecommunication & Internet)

- 5G NR (New Radio - 3GPP Standard) – Standard for 5G networks.
- IEEE 802.11 (Wi-Fi Standards) – Wireless networking standard.
- DNS & IP Standards (ICANN, IETF, IPv6, etc.) – Internet standardization.

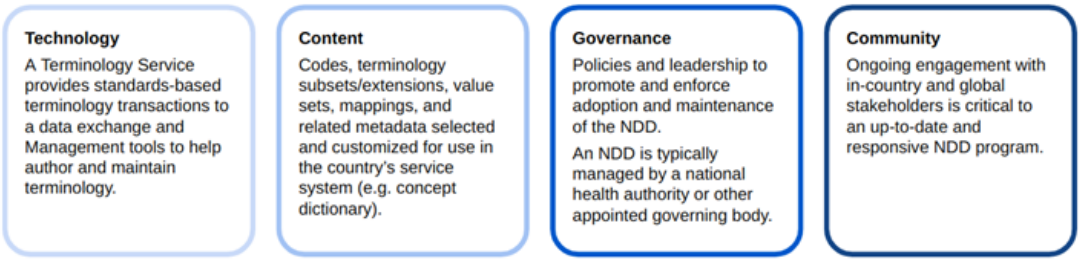
7. Urban Infrastructure

- CityGML – Standard for urban planning and 3D modeling.
- ISO 37120 – Indicators for urban services and quality of life.
- BIM (ISO 19650) – Building Information Modeling standard.

8. **Education**

- SCORM (Sharable Content Object Reference Model) – E-learning content standard.
- IMS Global Learning Consortium Standards – Interoperability in education technology.
- ISO 21001 – Education management system standard.

Figure 33. Development model of the National Data Dictionary repository to achieve the sectoral standardisation



- Proposed frameworks and guidelines for standardising data across government agencies.
- Strategic recommendations for enhancing interoperability and data quality in government systems using the common data point incorporating technology, content and change management, governance and community.

ANNEX – 2: QUESTIONNAIRE FOR WORKSHOP AT LOCAL LEVEL

Basic Info

S.N.	Labels	Type	Particulars	Remarks
1	Institution Associated With	Choice	Federal Government Provincial Government Local Government	If Federal (List of federal Ministry, Constitution Body, Other..) If Provincial (List of Provinces) If Local Level (First select District and then List of Local)
2	Name of Institution	Text		
3	Name of Respondent	Text		
4	Are you an ICT personnel at this institution?	Boolean	Yes No	
	Designation	Text		
5	Netrawati Dabjong Gaunpalika	Number		

Software

S.N.	Particulars	Sectors/Thematic Area	Particulars
	Information of Software		
1	Application Software	Finance	- Sub-National Treasury Regulatory Application (SuTRA) - Revenue Management Information System (RMIS) - Integration online Tax Payment System (IOTPS) - Public Assets Management System (PAMS)
		Vital Registration	- Vital Registration - Social Security Registration
		Health	- Integrated Health Information Management System (IHIMS) - Health Insurance Claim Management System (Palika Level system)
		Agriculture	- Agricultural Subsidy Distribution Management System
		Office Automation	- Integrated service Management System - Sifaris Automation System - File tracking System
		Education	- EMIS - Municipal Education Management System - Integrated Scholarship Management System
		Tourism	- Cultural Heritage record Management System
		Urban Infrastructure	- Building Permit System - Housing Number Management System - E-Rickshaw Registration System
		Citizen Engagement	- Institutional Mobile Application - Grievance Handling System
		Other thematic area	- Judicial Management System - Geo-Spatial Planning System - Cooperative Management System - Project Management System - Disable Identity Card Management System - Digital Profile Management System - Housing Numbering System - Business Registration and Management System
		Write Theme	Write System Name

Attributes of Software

S.N.	Major Function	Multiple Choice	- Service Delivery - Workflow/Process Automation - Performance Monitoring and Evaluation - Engagement of Citizen - Decision Support - Data Management - Proactive disclosure to maintain transparency and Accountability - Other(s) (Write)
1	Implementation Date/ Year	Date	
2	Does the software provide complete functionalities needed for its purpose?	Choices	Yes No Partially
3	Does the software integrate well with other systems within the institution?	Choices	Yes No No Idea
4	Does the software integrate well with other systems outside the institution?	Choices	Yes No No Idea
5	Is it a web based application		Yes No No Idea
6	Is Secured Socket Layer (SSL) implemented in this software ?	Choices	Yes No No Idea
7	Are data standards followed in every software component?		Yes No I don't know if yes then mention which standard
8	Which Programming Language is used in this software component ?		- PhP - JAVA - DOT NET - Visual Basic - Javascript - Python - don't Know - Other(s) (Write)
9	Which Database is used in this software component		- Oracle - MY SQL - SQL Server - PostgreSQL - NO SQL - Other(s) - I do not know
10	Have you ever experienced a security breach or data loss while using the software?		Yes No If Yes, please indicate whether the data was recovered or not.
11	How would you rate the software's compliance with data privacy regulations?		Excellent Good Fair Poor Very Poor
12	Does the office have full ownership of this software component (including the source code, database, all technical documentation, and copyright)?		Yes No Partially

13	Is technical support readily available when you encounter issues?		Always Often Sometimes Rarely Never
14	Would you recommend this software to other similar public institutions?		Yes No IF Yes/No (Please write at least one reason)
15	Does the service taker need to visit office to complete the process		Yes No Partially
16	Is the software component connected to the digital payment system ?		Yes No Not Applicable
17	Where is the data server located?		Local Server Government Data Center (GIDC) Vendor's Data Center I Don't Know
18	Is accessibility features available in this software components		Yes No I Don't Know
19	Has the software been re-engineered in the last 3 years?		No Due to Technological Issues Due to Government Policies Due to Service Provider Issues Due to Low-Budget Development
20	Has the software been re-procured in the last 3 years?		No Due to Technological issues Due to Govt policies Due to service provider issues Due to improved architecture
21	Developed and supplied by	Text	Name of Vendor Address of Vendors Contact no.
22	Funded by		- Federal - Provincial - Local - Development Partner

Attributes of Software

S.N.	Labels	Types	Particulars
A	**Data Center and Server Infrastructures**		
4	Are there any in-house servers?	Choices	Yes No If Yes (Capacity Memory: Storage:)
5	Utilization of Server	Choices	Partially Utilized Fully Utilized Not Utilized Not Used – Needs Maintenance Not Used – Needs Replacement
6	Do you have access to backup systems to ensure continuous operation during failures?		

7	Where do you employ critical backup storage to keep data safe?	Choices	Regular Backups Off-site Storage.
B	**Internet and Network Infrastructures**		
8	Broadband connection	Choices	Yes No If No (Number of Ward(s):
9	Virtual private network (Intranet)	Choices	Yes No If Yes, specify the number of connected units:
10	Total number of Router(s)	Number	
11	Total number of Switch(s)	Number	
12	Firewall		
C	**Peripheral ICT Equipment**		
	Total Number of Workable Desktop(s)		
	Total Number of Workable Laptop(s)		
	Total number of Printer(s) & Scanner(s)		

E	**Power Supply and Backup Systems**		
	Regular Power supply	Multiple Choices	National Grid Solar Others If Others(Write:)
	Backup power system	Multiple Choices	Generator Battery Backup Solar
F	**Surveillance and Service Delivery**		
	CCTV(s)	Number	
	Biometric Attendance Device(s)	Number	
	Queue Management Device(s)	Number	
	Digital Display Board(s) for Citizen Charter	Number	
G	**Communication**		
	Virtual Meeting Infrastructure		
	IP Phone		

H	**Overall Status**		
1	Is the existing hardware infrastructure adequate to support the current e-governance applications?	Choices	Yes No Partially
2	Does your agency have a reliable and secure network infrastructure to support e-governance services?	Choices	Yes No Partially
3	Are there any bandwidth or connectivity challenges that impact service delivery?	Choices	Yes No If Yes (Specify reason)

Human Capital

S.N.	Labels	Types	Particulars
A	**Human Resource Information**		
1	Total Non-Gazetted Staffs	Number	Digital illiterate Personnel: Female Male Dalit Janjati Madhesi Minority BCDTN (Ethnic and Religious Minority) Digitally literate Personnel:Female Male Dalit Janjati Madhesi Minority BCDTN (Ethnic and Religious Minority) Professional ICT Personnel: Female Male Dalit Janjati Madhesi Minority BCDTN (Ethnic and Religious Minority)
2	Total Gazetted Staffs	Number	Digital illiterate Personnel: Female Male Dalit Janjati Madhesi Minority BCDTN (Ethnic and Religious Minority) Digital literate Personnel: Female Male Dalit Janjati Madhesi Minority BCDTN (Ethnic and Religious Minority) Professional ICT Personnel: Female Male Dalit Janjati Madhesi Minority BCDTN (Ethnic and Religious Minority)
3	Non-Graded	Number	Digital illiterate Personnel: Female Male Dalit Janjati Madhesi Minority BCDTN (Ethnic and Religious Minority) Digital literate Personnel: Female Male Dalit Janjati Madhesi Minority BCDTN (Ethnic and Religious Minority)
4	Total Staffs	Auto Sum	
5	Contract type (Only ICT Personnel)	Number	Permanent: Contract:
6	How many gazetted and non-gazetted ICT posts are there in O&M?	Number	Gazetted ICT post: Non-gazetted ICT post: If not allocated: Write Reason
B	**Internet and Network Infrastructures**		
7	Number of ICT human resources with competencies in key areas of expertise		- Digital Transformation Expert - Project Management Expert - Data Management Expert - Networking Expert - Cybersecurity and Ethical Hacking Expert - DevOps Expert - AI and Big Data Expert
C	**Academic Qualification**		
8	Academic Qualifications of Human Resources	Number	- High School Diploma or Equivalent (+2) - Bachelor's Degree or Equivalent - Master's Degree or Equivalent - Doctoral Degree (Ph.D.) or Equivalent

Overall Status

S.N.	Labels	Types	Particulars
A	**Policies and Planning**		
1	Is ICT Policy prepared for this institution?		Yes No Never thought
2	Do you have any institutional directives to operate the ICT system?		Yes No
3	Is the ICT Master Plan prepared for this institution?		Yes No Never thought
4	Is the ICT master plan incorporated as an annex of the periodic plan of this institution?		Yes No Never thought
5	Trend of Budget Allocation in ICT sector according annual budget		FY 2076-77 FY 2077-78 FY 2078-79 FY 2079-80 FY 2080-81
6	How many .gov.np email addresses are in use in your organization	Number	
7	Regular data back-up is taken and stored in separate place		Yes No Sometimes I Do not know
8	Information Security Management System (Audits) are done regularly		Yes No Sometimes I Do not know
B	**Perception Analysis**		
6	In recent years, digital literacy in the region has increased due to use of technology in multiple area		Yes No If No (Number of Ward(s):
7	Existing e Governance infrastructure (including hardware & Software) have been proven effective and time saving		Yes No If Yes, specify the number of connected units:
8	The cost of operation has decreased due to use of digital technologies		I Strongly Agree I Agree Neutral(Not Sure) I Disagree I Strongly Disagree
9	Use of digital technologies have enhanced the local business ecosystem in the region		I Strongly Agree I Agree Neutral(Not Sure) I Disagree I Strongly Disagree
10	Use of digital technologies has helped increase the revenue of the organization		I Strongly Agree I Agree Neutral(Not Sure) I Disagree I Strongly Disagree
11	Use of digital technologies has helped minimize the disputes and disparities		I Strongly Agree I Agree Neutral(Not Sure) I Disagree I Strongly Disagree

12	Local people have faith and trust over the systems used	I Strongly Agree I Agree Neutral(Not Sure) I Disagree I Strongly Disagree
13	Use of Digital technologies has increased overall citizen satisfaction towards government and its services	I Strongly Agree I Agree Neutral(Not Sure) I Disagree I Strongly Disagree
14	Area of Improvement to strengthen the ICT system in three sphere of Government	Budget Allocation Capacity Building (Technical, Management and Security) Political will of leadership (Local to Federal) Local Policy Provincial Policy Procurement Act/Policy Improvement of Digital Literacy

Focused Group Discussion

A. Citizen Experience and Perception

GANDAKI PROVINCE
(Please tick where applicable)

I primarily represent: Government Sector [] Academia [] Development Partner [] Private Sector [] Public Citizen [] Journalist [] Others .....

Age Group: Below 20 [] 20-30 [] 30-40 [] 40-50 [] 50-60 [] Above 60 []

क्र.स.	धारणाहरु	म धेरै सहमत छु	सहमत छु	मलाइ थाहा छैन	म सहमत छैन	म बिल्कुलै सहमत छैन
१	हाल सार्वजनिक सेवा प्रवाहमा ई-गभर्नेन्सको व्यापक प्रयोग भईरहेको छ ।					
२	यस प्रदेशमा थप ई-गभर्नेन्स सेवाहरूको माग धेरै भैरहेको छ।					
३	ई-गभर्नेन्सको पहुँच सहरी क्षेत्रमा मात्र सिमित नभएर ग्रामिण क्षेत्रमा पनि व्यापक छ।					
४	सहरी क्षेत्रका नागरिकहरुको ई-गभर्नेन्स प्रयोग गर्न सक्ने शिप विकास भएको छ।					
५	ग्रामिण क्षेत्रका नागरिकहरुको ई-गभर्नेन्स प्रयोग गर्न सक्ने शिप विकास भएको छ।					
६	ई-गभर्नेन्स सम्बन्धि नीति, रणनीति र कार्यक्रमहरुमा तिनवटै सरकारबीच तालमेल छ ।					
७	ई-गभर्नेन्स सेवा प्रयोग गर्दा आफ्नो तथ्यांकको सुरक्षा प्रति ढुक्क हुन सकिन्छ ।					
८	ई-गभर्नेस सेवाहरु प्रयोगकर्ता मैत्री छन।					
९	तिन तहका सरकारको ई-गभर्नेस सेवाहरु प्रति सन्तुष्ट हुन सकिन्छ ।					
१०	ई-गभर्नेन्सको प्रयोगको कारण समय र खर्चको बचत भएको छ।					
११	ई-गभर्नेस सेवा मार्फत सरकारी सेवा लिदा मन परेका प्रमुख ३ प्लेटफर्म वा सेवाहरु?					
१२	नेपालमा ई-गभर्नेन्स सेवा विस्तारीकरणमा तपाइको/ तपाई संलग्न संस्थाको भूमिका के हुनसक्छ ?					

B. Outline of Focus Group Discussion (Question Set)

(8 minutes of discussion for each question)

१. विधुतीय सुशासन (ई-गभर्नेन्स) लाइ कसरी बुझ्नुभएको छ ?
२. राष्ट्रिय परिचयपत्र (NID) को प्रयोगलाई कसरी थप प्रभावकारी बनाउन सकिन्छ ?
३. Nagarik App, Social Security Fund App लगायतका इ-गभर्नेन्स एप्लिकेसन सेवाहरुलाई कसरी व्यापक र प्रभावकारी गराउन सकिन्छ ?
४. त्यस्तो के अर्को Initiative हुन् सक्छ जसले नेपालको इ गभर्नेन्स सेवालाइ थप टेवा दिन सक्छ ? (Innovation र त्यसको प्रयोग)
५. गभर्नेन्स सेवा संचालन / प्रबाह गर्न हाल विद्यमान चुनौती र अवरोध (Challenges & Barriers) के के छन् ? (नीतिगत, संरचनागत, पुर्वाधार, मानव संसाधन, उच्च शिक्षा ..... सहित अन्य)
६. नेपालमा इ गभर्नेन्स सेवा प्रबाह लाई थप सुरक्षित, गुणस्तरीय, सहज र व्यापक बनाउनको लागि अन्य सुझाव के के हुनसक्छ ?

KII (Federal)

E-Governance Stock-Taking Exercise and Assessment in Nepal

KII Questionnaire for Organization (ICT & e- Governance)

Section A: General Information

Name of Organization:	
Name of Respondent:	
Designation:	
Years of Experience in this organization	
Contact No:	
Email ID:	

Section B: Sectoral Initiatives and Challenges for e/Digital Governance

Theme and list of software/ Particulars	Policy Intervention (पूर्ण कार्यान्वयन गर्न नीतिगत व्यबस्थामा अझ(ावधिक जरुरी छ? छ भने के छ?)	Upstream, Down-stream and horizontal linkage (यस निकायमा प्रयोग भईरहे का सफ्टवेयर प्रणालीहरु तल्लो निकाय वा समानान्तर निकायमा प्रयोग या अन्तर आबद्दता गराउन सकिन्छ? सकिन्छ भने कसरी?)	Implementation GAPs/ Challenges कार्यान्वयमा अन्तर तथा चुनौतिहरु
Data and Network Infrastructure			
• Data Storage Center • Efficient network and internet Infra-structure			
Sectoral Software System for Service Delivery (यस निकायले नागरिक वा अन्य निकाय वा संस्थालाई सेवा दिने प्रणालीहरुको नाम उल्लेख गरी प्रत्येक सफ्टवेयरहरुको लागि नीति, तहगत अन्तर-आबद्दता र चुनौतीहरूको बारेमा कोलममा उल्लेख गरिदिनु होला।)			
Cyber Security Data standardization and Protection (साईबर सुरक्षा, डाटा स्ट्यान्डराजेसन, डाटा सुरक्षा र व्याक्तिको गोपनियता सम्बन्धि कतिको ख्याल गरिएको छ। यसलाई ख्याल गर्नको लागि के के गर्नपर्दछ उल्लेख गरिदिनु होला।)			
• Data Consistency and accuracy • Data Interoperability, Scalability, Reusability • Standardization of Metadata • Data Traceability, Flexibility			
Integrated, Interdependent and Interoperability (सफ्टवेयर प्रणालीहरुविच एकीकृत, अन्तरनिर्भर र अन्तरक्रियाशीलता गराउन नि(तगत रुपमा, अन्तरसरकार समन्वयमा के गर्नपर्दछ र तिनका अन्तर तथा चुनौतिहरु के के हुन?)			

Section C: Perception

क्र.स.	धारणाहरु	I strongly agree म धेरै सहमत छु	I agree म सहमत छु	Neutral मलाइ थाहा छैन	I disagree म सहमत छैन	I strongly disagree म बिल्कुलै सहमत छैन
१	युवा नागरिकहरूले ई-गभर्नेन्स सेवाहरूको माग धेरै गर्छन । (Youths in the Federal government highly demand the e-Governance Services.)					
२	सार्वजनिक सेवामा प्रवाहमा ई-गभर्नेन्स व्यापक प्रयोग भईरहेको छ । (E-governance has been extensively used in public service delivery.)					
३	ई-गभर्नेन्सको पहुँच सहरी क्षेत्रमा मात्र सिमित नभएर ग्रामिण क्षेत्रमा पनि व्यापक छ। (E governance has been realized not only on the urban region but also good in the rural area)					
४	सहरी क्षेत्रका नागरिकहरुको ई-गभर्नेन्स प्रयोग गर्न सक्ने शिप विकास भएको छ । (Citizens in the urban area have enough digital skills to use e governance services)					
५	ग्रामिण क्षेत्रका नागरिकहरुको पनि ई-गभर्नेन्स प्रयोग गर्न सक्ने शिप विकास भएको छ। (Citizens in the rural area have enough digital skills to use e governance services)					
६	नागरिकहरु ई-गभर्नेन्स सेवा प्रयोग गर्दा आफ्नो तथ्यांकको सुरक्षा प्रति ढुक्क छन्। (Citizens feel secured regarding their personal and financial data while using e governance services)					
७	योजना तथा कार्यक्रमहरु नेपालको संघिय ई-गभर्नेन्स सम्बन्धि नीति र रणनीतिहरुसँग तालमेल भएका छन । (Programs, plans, and policies in this Federal are well aligned with the national e-governance frameworks and policies.)					

Section D: Feedback and Suggestions

१. यस बाहेक नेपाल सरकारले लागु गरेको नेसनल आइडी (NID) मार्फत पब्लिक सर्भिस सेवा विस्तारमा तपाइको निकायले केहि काम गरेको छ ? छ भने के छ र छैन भने के योजना छ ?
(Apart from this, has your organization/agency undertaken any work to expand public services through the National ID (NID) implemented by the Government of Nepal? If yes, what has been done, and if not, what are the plans?)

२. नागरिक एपमार्फत सेवा विस्तारमा तपाइ आवद्द निकायले केहि काम गरिरहेको छ ? यसबारेमा केहि तयारी छ ?
(Is your organization expanding government services delivered through the Nagarik App, and are there any preparations underway in this regard?)

३. राष्ट्रिय स्तरका कार्यक्रमहरू (भ.न.डिजिटल नेपाल फ्रेमवर्क २०१९) सँग यस आयोगमा ई-गभर्नेन्स रणनीति कत्तिको तालमेल छ?
(How well does this Federal's regional e-governance strategy align with national-level programs (e.g., the Digital Nepal Framework 2019)?)

४. यस मन्त्रालय/विभाग/आयोगमा सूचना प्रविधि क्षेत्रका Startup and innovation हरुलाई सहयोग गर्ने कस्ता नीति तथा कार्यक्रमहरु छन ?
(What policies and programs are initiated in this Federal to support start-ups and innovations in the information technology sector?)

५. सेवा प्रवाह र दक्षता सुधार गर्न चुनौतीहरूलाई कसरी सम्बोधन गर्न सकिन्छ?
(How can the challenges of improving service delivery and efficiency be addressed?)

६. अन्य मन्त्रालय/विभाग/आयोगहरुबाट सिक्न र लागु गर्न सकिने कुनै असल अभ्यासहरू भए उल्लेख गर्नुहोस ।

(Please mention any good practices that can be learned and implemented from other countries and regions)

७. इ-गभर्नेन्सलाइ प्रभावकारी बनाउन ३ तहको सरकार र अन्य सरोकारवालाहरुलाइ तपाइको सुझाव के के हुनसक्छ ?

(What suggestions would you provide to make e-governance effective for the three tiers of government and other stakeholders?)

E-Governance Stock-Taking Exercise and Assessment in Nepal

KII Questionnaire for Provincial Government on eGovernance (ICT Development)

Section A: General Information

Name of Ministry/Department/Organization:	
Name of Organization:	
Name of Respondent:	
Designation:	
Years of Experience in this organization	
Contact No:	
Email ID:	

Section B: Sectoral Initiatives and Challenges for e/Digital Governance

Theme and list of software	Policy	Program/ Project	Coordination/ Collaboration	GAPs/ Challenges
Digital Infrastructure				
• Development of Knowledge/ ICT/ Tech Parks • Efficient Broadband Infrastructure • Provincial Data Centers				
Health				
• Integrated Health Information Systems • Telemedicine Services for Rural areas • Digital Health Identities Connected with NID • Citizen engagement services in Provincial Hospital • Others				
Education				
• Provincial education management System • Provincial Digital Learning Initiatives • SchoolNet Initiatives				
Agriculture				
• Provincial Agri-Subsidy Disbursement and Tracking System • Provincial Crop Production Monitoring Systems				

• Provincial Agriculture Market Information System • Access of Digital Soil Health System
Land and Property
• Access of Digital Land Record Management System • Geo-spatial based property tax management System • Geo-spatial based land valuation System • Geo-space-based Land Use Planning System
Citizen Services
• Integrated Citizen Service Centers (Nagarik App) • Provincial One-Stop Government Service Centers for citizens • Promotion of One-Stop Government Service Centers for citizens in Local Government
Governance & Administration
• Office Automation for all provincial entities (Less paper concept) • Data Exchange Platform (Local, Provincial and National) • Data Security and privacy protection • Provincial ICT act • Provincial Master Plan
Transport
• Smart Licensing System • Online Vehicle Tax Payment System • Legal framework of Ridesharing
Financial Inclusion
• Inclusive Digital Finance Initiatives • Online payment system • Tourism • Heritage Record Management System (Geo-Spatial) • Tourism Spot Record Management System (Geo-Spatial)
Law and Justice
• Support to strengthening the eJudiciary Systems for local government • Provincial Online Grievance • Redressal • Provincial Online FIR registration system • Legal Aid Information System (Access to justice) • Access of "Mediation Management System" • Digital awareness programs for legal rights and access

	• Digital awareness programs to minimize digital harassment. • Police, judiciary, Mediation and correctional facility integration (Inter-agency Collaboration)
Water, Energy and Environment	
	• Integrated Forest Resource Management System (IFRMS) (Government, Community, Religious and Private Forest) • Lake and pond registration system (Geo-spatial) • Integrated energy producer Management system • Access of "NWASH system" • Access of "Integrated Water Resources Management Systems" • Provincial Waste Management Information Systems
Social Security	
	• Social Security Allowance Management Information System (SSAMIS) • Integrate local and provincial allowance with the National allowance system.
Disaster Management	
	• Provincial system of Disaster Management or Access of National DRM. • Integrating local systems with provincial System
Trade and Industry	
	• National/Provincial/Local Single Window System • Provincial-level portals for promoting Special Economic Zones (SEZs) • Online Trade License Issuance at the provincial level
Linkage Upstream and Downstream	
	• Provincial and Federal Linkage • Provincial and Local Linkage
Data standardization	
	• Data Consistency and accuracy • Data Interoperability, Scalability, Reusability • Standardization of Metadata • Data Traceability, Flexibility

Section C: Perception

क्र.स.	धारणाहरु	I strongly agree म धेरै सहमत छु	I agree म सहमत छु	Neutral मलाइ थाहा छैन	I disagree म सहमत छैन	I strongly disagree म बिल्कुलै सहमत छैन
१	यस प्रदेशमा युवा नागरिकहरूले ई-गभर्नेन्स सेवाहरूको माग धेरै गर्छन । (Youths in the province highly demand the e-Governance Services.)					
२	यस प्रदेशमा सार्वजनिक सेवामा प्रवाहमा ई-गभर्नेन्सको व्यापक प्रयोग भईरहेको छ । (E-governance has been extensively used in public service delivery in this province.)					
३	इ-गभर्नेन्सको पहुँच सहरी क्षेत्रमा मात्र सिमित नभएर ग्रामिण क्षेत्रमा पनि व्यापक छ। (E governance has been realized not only on the urban region but also good in the rural area)					
४	सहरी क्षेत्रका नागरिकहरुको ई-गभर्नेन्स प्रयोग गर्न सक्ने शिप विकास भएको छ । (Citizens in the urban area have enough digital skills to use e governance services)					
५	ग्रामिण क्षेत्रका नागरिकहरुको पनि ई-गभर्नेन्स प्रयोग गर्न सक्ने शिप विकास भएको छ । (Citizens in the rural area have enough digital skills to use e governance services)					
६	यस प्रदेशका नागरिकहरु ई-गभर्नेन्स सेवा प्रयोग गर्दा आफ्नो तथ्यांकको सुरक्षा प्रति ढुक्क छन् । (Citizens feel secured regarding their personal and financial data while using e governance services)					
७	यस प्रदेशका योजना तथा कार्यक्रमहरु संघिय ई-गभर्नेन्स सम्बन्धि नीतिहरुसँग तालमेल भएका छन । (Programs, plans, and policies in this province are well aligned with the national e-governance frameworks and policies.)					

Section D: Feedback and Suggestions

१. यस बाहेक नेपाल सरकारले लागु गरेको नेसनल आइडी (NID) मार्फत पब्लिक सर्भिस सेवा विस्तारमा तपाइको सस्था/निकायले केहि काम गरेको छ ? छ भने के छ र छैन भने के योजना छन ?

(Apart from this, has your organization/agency undertaken any work to expand public services through the National ID (NID) implemented by the Government of Nepal? If yes, what has been done, and if not, what are the plans?)

२. नागरिक एपमार्फत सेवा विस्तारमा तपाइ आवद्द निकायले केहि काम गरिरहेको छ ? यसबारेमा केहि तयारी छ ?

(Is your organization expanding government services delivered through the Nagarik App, and are there any preparations underway in this regard?)

३. राष्ट्रिय स्तरका कार्यक्रमहरू (भ.न.डिजिटल नेपाल फ्रेमवर्क २०१९) सँग यस आयोगमा ई-गभर्नेन्स रणनीति कत्तिको तालमेल छ?

(How well does this Federal's regional e-governance strategy align with national-level programs (e.g., the Digital Nepal Framework 2019)?)

४. यस मन्त्रालय/विभाग/आयोगमा सूचना प्रविधि क्षेत्रका Startup and innovation हरुलाई सहयोग गर्ने कस्ता नीति तथा कार्यक्रमहरु छन ?

(What policies and programs are initiated in this Federal to support start-ups and innovations in the information technology sector?)

५. सेवा प्रवाह र दक्षता सुधार गर्न चुनौतीहरूलाई कसरी सम्बोधन गर्न सकिन्छ?

(How can the challenges of improving service delivery and efficiency be addressed?)

६. अन्य मन्त्रालय/विभाग/आयोगहरुबाट सिक्न र लागु गर्न सकिने कुनै असल अभ्यासहरू भए उल्लेख गर्नुहोस ।

(Please mention any good practices that can be learned and implemented from other countries and regions)

७. इ-गभर्नेन्सलाइ प्रभावकारी बनाउन ३ तहको सरकार र अन्य सरोकारवालाहरुलाइ तपाइको सुझाव के के हुनसक्छ ?

(What suggestions would you provide to make e-governance effective for the three tiers of government and other stakeholders?)

ANNEX – 3: STAKEHOLDERS FOR KEY INFORMANT'S INTERVIEWS

Federal	
S.N.	Stakeholder Agency
1	Ministry of Education, Science & Technology
2	Ministry of Industry, Commerce and Supplies
3	Ministry of Communication & IT
4	Ministry of Urban Development
5	Ministry of Tourism
6	Department of IT (DoiT)
7	Department of Customs
8	Department of Foreign Employment
9	Department of Immigration
10	Department of Transport
11	Inland Revenue Department (IRD)
12	Integrated Data Management Center
13	Election Commission Nepal
14	Financial Comptroller General Office (FCGO)
15	Supreme Court of Nepal
16	National Statistics Office
17	Office of Company Registrar
18	Auditor General Nepal
19	Public Service Commission
20	National Planning Commission
21	Public Procurement Monitoring office
22	Kathmandu Metropolitan City

Provincial		
S.N.	Stakeholder Agency	Province
1	Ministry of Internal Affairs and Law	Koshi
2	Ministry of Social Development	Koshi
3	Province Planning Commission	Koshi
4	Ministry of Economic Affairs and Planning	Koshi
5	Ministry of Health	Koshi
6	Office of Chief Minister and Council of Ministers, Province Planning Commission	Koshi
7	Province Planning Commission	Koshi
8	Ministry of Physical Infrastructure Development	Koshi
9	Ministry of Education and Culture, Janakpurdham	Madhesh
10	Ministry of Industry, Commerce & Tourism, Janakpurdham,	Madhesh
11	Ministry of Energy, Irrigation and Water Supply, Janakpurdham, Nepal	Madhesh
12	Ministry of Health & Population, Madhesh Province	Madhesh
13	Ministry of Land management, Agriculture and Cooperative, Janakpurdham	Madhesh
14	Ministry of Home Affairs, Communication and Law, Madhesh Province	Madhesh
15	Office of Chief minister and council of minister, Madhesh Province, Province Planning Commission Janakpurdham	Madhesh
16	Ministry of Labour & Transport, Madhesh Province, Janakpurdham	Madhesh
17	Ministry of Sports and Social Welfare, Janakpurdham	Madhesh
18	Ministry of Forests and environment, Janakpurdham	Madhesh
19	Province Public Service Commission	Bagmati
20	Province policy and planning commission	Bagmati
21	Office of the chief Minister and council of ministers	Bagmati
22	Minister for Internal Affairs and Law	Bagmati
23	Ministry of Economic Affairs and Planning	Bagmati
24	Minister for Agriculture and Livestock Development	Bagmati
25	Minister for Health	Bagmati
26	Ministry of Cooperatives and Poverty Alleviation	Bagmati
27	Minister for Forest and Environment	Bagmati
28	Hetauda Sub-Metropolitan City	Bagmati
29	Ministry of Social development, Youth and Sports , Gandaki Province	Gandaki
30	Ministry of Economic Affairs and Planning	Gandaki
31	Minister for Agriculture and Livestock Development	Gandaki
32	Ministry of Economic Affairs, Gandaki	Gandaki
33	Minister for Agriculture and Livestock Development	Gandaki

Provincial		
S.N.	Stakeholder Agency	Province
34	Ministry of Physical Infrastructure Development and Transport Management	Gandaki
35	Gandaki Province Government, Ministry of Health, Provincial Public Health Laboratory, Gandaki Province.	Gandaki
36	Gandaki provincial policy and planning	Gandaki
37	Transportation Management Office, Kaski	Gandaki
38	Ministry of Internal Affairs and Law	Lumbini
39	Ministry of Economic Affairs and Planning	Lumbini
40	Ministry of Industry, Tourism and Transport	Lumbini
41	Ministry of Industry, Tourism and Transport	Lumbini
42	Office of the Chief Minister and Council of Ministers	Lumbini
43	Ministry of Internal Affairs and Law	Lumbini
44	Office of the Chief Minister and Council of Ministers	Lumbini
45	Ministry of Health	Lumbini
46	Ministry of Social Development	Lumbini
47	Ministry of Forest and Environment	Lumbini
48	Office of the Province Head, Government of Nepal, Karnali Province, Birendranagar, Surkhet	Karnali
49	Ministry of Physical Infrastructure and Urban Development, Karnali Province Government, Birendranagar, Surkhet, Nepal	Karnali
50	Statistics Coordination Office, Birendranagar, Surkhet, Nepal	Karnali
51	Ministry of Water Resources and Energy Development, Karnali Province Government, Birendranagar, Surkhet	Karnali
52	Ministry of Economic Affairs and Planning, Karnali Province Government, Birendranagar, Surkhet, Nepal	Karnali
53	Nepal Police, Karnali Province, Birendranagar, Surkhet, Nepal	Karnali
54	Karnali Province Assembly, Birendranagar, Surkhet, Nepal	Karnali
55	Karnali Province Planning Commission, Karnali Province Government, Birendranagar, Surkhet	Karnali
56	Ministry of Social Development, Karnali Province Government, Birendranagar, Surkhet, Nepal	Karnali
57	Birendranagar Municipality, Birendranagar, Surkhet, Nepal	Karnali
58	Ministry of Internal Affairs and Law, Karnali Province Government, Birendranagar, Surkhet, Nepal	Karnali
59	Nepal Telecom, Karnali Province Office, Birendranagar, Surkhet, Nepal	Karnali
60	Office of the Chief Minister and Council of Ministers, Karnali Province Government, Birendranagar, Surkhet	Karnali
61	Ministry of Internal Affairs and Law Sudurpaschim Province, Dhangadhi, Kailali	Sudurpaschim
62	Ministry of Land Management, Agriculture and Cooperatives Dhangadhi, Kailali	Sudurpaschim
63	Ministry of Economic Affairs Sudurpaschim Province, Dhangadhi Kailali	Sudurpaschim
64	Nepal Telecom	Sudurpaschim

Provincial		
S.N.	Stakeholder Agency	Province
65	Office of the Chief Minister and Council of Ministers Sudurpaschim Province, Dhangadhi, Kailali	Sudurpaschim
66	Provincial Policy and Planning Commission, Dhangadhi, Kailali	Sudurpaschim
67	Provincial Assembly Assembly Secretariat, Dhangadhi, Kailali	Sudurpaschim
68	Province Public Service Commission, Sudurpaschim Province, Dhangadhi, Kailali	Sudurpaschim
69	Ministry of Social Development, Sudurpaschim Province, Dhangadhi, Kailali	Sudurpaschim
70	Ministry of Industry, Tourism, Forest and Environment, Dhangadhi Kailali	Sudurpaschim
71	Ministry of Physical Infrastructure Development, Sudurpaschim Province, Dhangadhi, Kailali Nepal	Sudurpaschim

ANNEX – 4: LIST OF PARTICIPANTS

A. Attendance list of Organizations from Karnali Province, Surkhet

S.N.	Name	Organisation
1	Mahendra Jung Shahi	Ministry of Economic Affairs and Planning
2	Roshan Bahadur Shahi	Ministry of Economic Affairs and Planning
3	Uttam Gautam	Ministry of Internal Affairs and Law, Karnali Province
4	Man Bahadur Sijali	Ministry of Internal Affairs and Law, Karnali Province
5	Dhan Bahadur Bhandari	Ministry of Internal Affairs and Law, Karnali Province
6	Pushp Raj Shahi	Ministry of Internal Affairs and Law, Karnali Province
7	Indra Bahadur Budhathoki	Ministry of Internal Affairs and Law, Karnali Province
8	Basanti Aryal	Ministry of Internal Affairs and Law, Karnali Province
9	Sushil Acharya	Ministry of Physical Infrastructure and Urban Development
10	Dikendra Rana	Ministry of Social Development
11	Navin Shahi	Ministry of Social Development
12	Akhil Ahamat	Ministry of Social Development
13	Ghanashyam Bhandari	Ministry of Social Development
14	Pawan Kumar Thapa	Ministry of Social Development
15	Tekendra Basnet	Ministry of Social Development
16	Ramprasad Upadhyaya	Ministry of Social Development
17	Khagendra prakash gaire	Ministry of Social Development
18	Bisu Raj Rayamajhee	Ministry of Water Resources and Energy Development
19	Padam Raj Devkota	Ministry of Water Resources and Energy Development
20	Suraj Shrestha	Karnali Province Planning Commission
21	Chakra Joshi	Karnali Province Planning Commission
22	Surya Nath Yogi	Karnali Province Planning Commission
23	Chandra Bir Shahi	Karnali Province Planning Commission
24	Dambar Bahadur Rawal	Karnali Province Planning Commission
25	Suraj Shrestha	Karnali Province Planning Commission
26	Dipa Hamal	Directorate of Education Development
27	Karna Bahadur Thada Magar	Directorate of Water Supply, Irrigation and Energy Development
28	Kamal Sapkota	Province Public Service Commission, Karnali Province

S.N.	Name	Organisation
29	Padam Bahadur Budha Chhetri	Province Public Service Commission, Karnali Province
30	Jyot Narayaj Rai Yadav	Provincial Police Office Surkhet
31	Saraswoti Sapkota	Public Services Commission
32	Nabin Poudel	Education Development Directorate
33	Purna Bahadur Giri	Chief Judicial Magistrate's Office
34	Binod Acharya	Statistics Coordination Office, Surkhet
35	Gobinda Sijapati	Barhatal Municipality
36	Dil Bahadur Bhandari	Birendranagar Municipality, Surkhet
37	Uttam Acharya	Birendranagar Municipality, Surkhet
38	Prabesh Acharya	Employee Provident Fund
39	Dil bahadur Paudel	Gurans Rural Municipality, Dailekh
40	Netra Raj khadka	Health Insurance Board Karnali
41	Dipak Raj Karki	Health Insurance Board Surkhet
42	Krishna Bahadur Hamal	High Court Surkhet
43	Ratna Prakash Giri	High Court Surkhet
44	Binod Acharya	High Court Surkhet
45	Nar Bahadur Batala	High Court Surkhet
46	Binod Kumar Thapa	High Court Surkhet
47	Prem Prakash Chand	CAN Federation, Karnali
48	Dibyashwor Baral	CAN Federation, Karnali
49	Sudeep Thakuri	Midwest University
50	Sajan Oli	Nepal Telecom Limited
51	Madhav Prasad Khanal	Surkhet Multiple Campus, Surkhet
52	Namaraj Khatri	Surkhet Soft Pvt. Ltd
53	Prakash Khanal	DIT Software Pvt. Ltd.
54	Ram Kishor Rawal	Hritik Info Tech, Surkhet
55	Pawan Paudel	Business Online Service Pvt Ltd

B. Attendance list of of Organizations from Gandaki Province, Pokhara

S.N.	Name	Organisation
1	Anup Poudel	Ministry of Economic Affairs
2	Saroj Baral	Ministry of Physical Infrastructure and Transport Management
3	Sanjivan Adhikari	Ministry of Physical Infrastructure Development and Transport Management
4	Anita Timilsena	Ministry of Physical Infrastructure Development and Transport Management
5	Tanka Prasad Dhakal	Ministry of Social development
6	Shuseel Baral	Office of the Chief Minister and Council of Ministers
7	Chandi Prasad Aryal	Office of the Provincial Chief, Gandaki Province, Pokhara
8	Rudra Nath Neupane	Province Election Office
9	Amrit Raj Pageni	Provincial Health Directorate, Gandaki Province, Pokhara Nepal
10	Saroj Bhandari	Provincial Health Directorate, Gandaki Province, Pokhara Nepal
11	Nabaraj Bhandari	Provincial Health Directorate, Gandaki Province, Pokhara Nepal

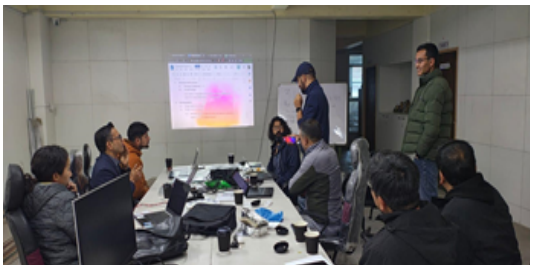
12	Asmit Poudel	Provincial Health Directorate, Gandaki Province, Pokhara Nepal
13	Sajan Baral	Provincial Health Logistic Management Center, Gandaki
14	Sagar Acharya	Provincial Public Health Laboratory, Gandaki Province
15	Chandrakala Basnet	Gandaki Province Assembly, Nadipur, Pokhara
16	Subash Dhungana	Pokhara Metropolitan City Office
17	Suresh Pangeni	Bhirkot Municipality, Bayarghari, Syangja
18	Basanta Kumar Basnet	Bhirkot Municipality, Syangja
19	Saroj Thapa Magar	Palungtar Municipality-Gorkha
20	Rabindra Koirala	Civil Aviation Authority of Nepal
21	Khagaraj Subedi	Varagung Mukti Kshetra Rural Municipality
22	Bhoj Raj Adhikari	Pokhara International Airport Civil Aviation Office
23	Hari Prasad Rijal	Agricultural Development Directorate, Gandaki Province
24	Krishna Subedi	Vianet Communication Ltd
25	Tanka prasad Devkota	Vianet Communication Ltd
26	Tanka Prasad Adhikari	Aakash Digital Pvt.Ltd
27	Mukunda Yogi	Siddhartha Computer Institute
28	Dinesh Mani Bhandari	CESAR
29	Santosh Koirala	CESAR
30	Dhaka	CESAR
31	Sushant Paudel	Pokhara University
32	Neesha Rajkarnikar	School of Business, Pokhara University
33	Deepanjal Shrestha	School of Engineering Pokhara University
34	Basanta Baral	Kalika Multiple Campus
35	Aarjit Poudel	Gandaki Boarding School
36	Subash Acharya	Infodevelopers Pvt Ltd
37	Dilip Kumar Shrestha	IT Deurali Inc. Pvt. Ltd.
38	Gyanu Acharya	Jagaun Nepal Media Pvt Ltd.
39	Balkrishna Neupane	Lele Ventures Pvt Ltd.
40	Sujan Babu Adhikari	Macrotech Computech Pvt. Ltd.
41	Navraj sharma paudel	Nipuna Prabidhik Sewa Pvt. Ltd.
42	Binod Khatri	Nixor Tech Pvt. Ltd.
43	Dudh Man Gurung (Ashish)	Professional Trading House Pvt. Ltd.
44	Mahendra Bhurtel	Sega Computer Link Pvt. Ltd.
45	Abiral Poudel	Urja Tech Academy
46	Saugat Acharya	Urja Tech Academy

ANNEX – 5: PHOTOGRAPHS

1. FCD: Pokhara, Gandaki Province

2. FGD: Surkhet, Karnali Province

Images of KII and Meetings



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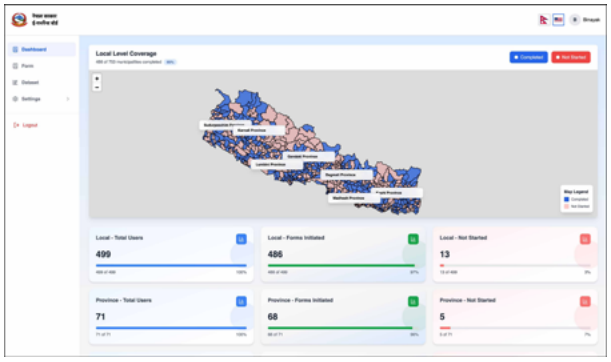

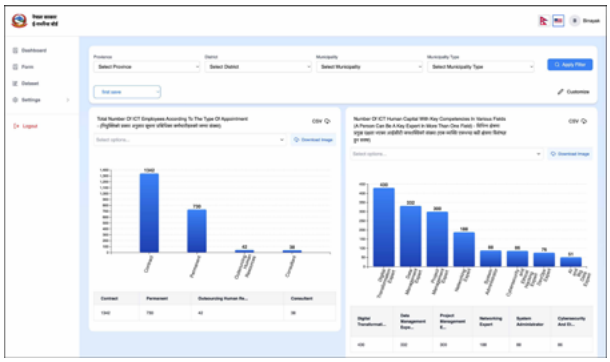

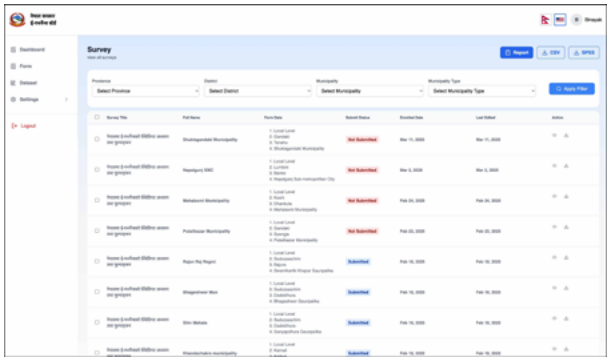

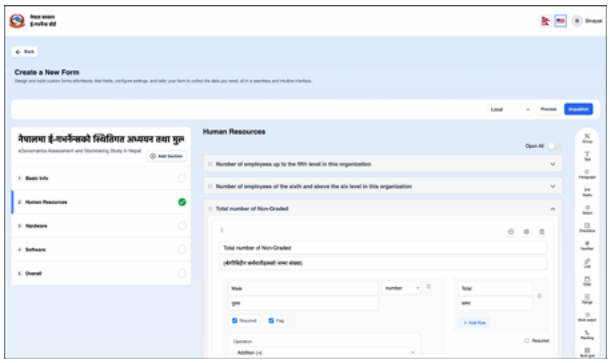

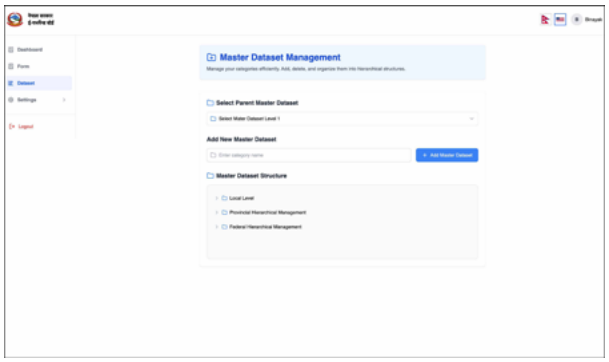

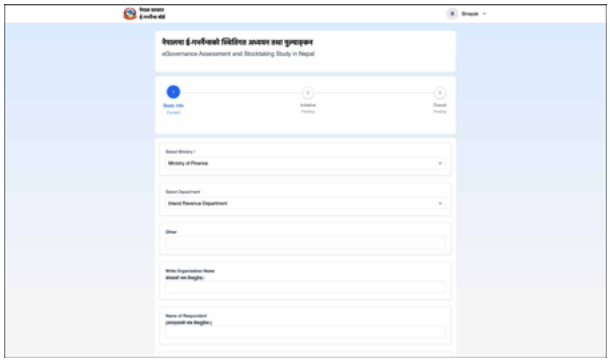

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