

| <a href="#">SLNo</a> | Outcome   | Output  | KPIs  | Data source  |
|----------------------|---|---|---|--|
| 1                    | Bhutan's public sector is more dynamic, results-oriented agent of transformation, demonstrating effectiveness, accountability and robust management of the economy. | Digital Ecosystem is strengthened to drive transformation | 1. Public satisfaction rating of >4.5 by 2029   | Service feedback assessment report                 |
| 2                    |   |   | 2. 10% government operating cost reduced by 2029  | Administrative records                             |
| 3                    |   |   | 3. AI Maturity Level increase to Level 4 - Systemic by 2029                                   | Capability Assessment Report                       |
| 4                    |   |   | 4. Doctors and HAs treat 100% of patients through ePIS by 2029.                               | Survey report, MoH                                 |
| 5                    |   |   | 5. Digital Economy contribution of USD 300 million by 2029                                    | Administrative Records                             |
| 6                    |   |   | 6. 5000 quality jobs by 2029  | Administrative records                             |
| 7                    |   |   | 7. Data Economy established by 2029 (Health, Climate & Agriculture)                           | Open data sharing platform, GovTech                |
| 8                    |   |   | 8. 100,000 citizens know how to productively and safely use digital services by 2029          | Administrative Records                             |
| 9                    |   |   | 9. Improve cyber security maturity level from Level 1: start-up to level 4: strategic by 2029 | Assessment Report, ITU/Self assessment Report, GTA |

| 13th FYP Goals, Targets and strategies |                    |   |  |                    |         |
|--|--------------------|---|--|--------------------|---------|
| Sl.No.                                 | Goals or Projects  | KPIs  | Baseline<br>(Figure/level/Score &<br>year) | 13th plan Target   | Remarks |
| 1                                      | Digital Governance | 1. Public satisfaction rating of >4.5 by 2029   | 4.101 (2021)                               | >4.5               |         |
|  |                    | 2. 10% government operating cost reduced by 2029  | NA   | 10%                |         |
|  |                    | 3. AI Maturity Level increase to Level 4 - Systemic by 2029                                   | Level 1 - Aware                            | Level 4: Systemic  |         |
|  |                    | 4. Doctors and HAs treat 100% of patients through ePIS by 2029.                               | Base line 22.6% (2024)                     | 100 %              |         |
| 2                                      | Digital Economy    | 1. Digital Economy contribution of USD 300 million by 2029                                    | 119 million USD \$ (2023)                  | 300 million USD \$ |         |
|  |                    | 2. 5000 quality jobs by 2029  | 3572 (2023)                                | 5000               |         |
|  |                    | 3. Data Economy established by 2029 (Health, Climate & Agriculture)                           | 0  | 3 Sectors          |         |
| 3                                      | Digital Society    | 1. 100,000 citizens know how to productively and safely use digital services by 2029          | 12,039 (2023)                              | 100,000            |         |
|  |                    | 2. Improve cyber security maturity level from Level 1: start-up to level 4: strategic by 2029 | Level 1: start-up                          | level 4: strategic |         |

| Project 1: Strengthening the Digital Governance |   |  |   |   |                                  |   |
|---|---|--|---|---|----------------------------------|---|
| Goals   | KPIs  | Key activities                               | Sub-activities  | Description of activities   | Lead Agency/Division             | Collaborating Agency/division                               |
| Digital Governance                              | 1. Public satisfaction rating of >4.5 by 2029 | Develop secure and resilient public services | Implement priority services with fees for online services   | 1. Options for service availers to obtain service with fee after office hours (eg. off hour clinic and Medical certificate service).<br>2. Existing online service can be fast tracked by means of fees.  | PSGRD                            | Concerned service owner + GovTech Agency (for tech support) |
|   |   |  | Develop and deploy Citizen Services Technology enabled Call Center  | Creating a Bhutan Chat Bot for PSD<br>1. Training data<br>2. Feeding national policy data and FAQ's<br>3. Testing and Roll out<br>4. Enabled IVR  | DDT, GovTech                     | PSGRD, Cabinet, DSAI  |
|   |   |  | Develop Business Continuity Plan (BCP) for key service with the aim to provide Service Available 24x7                                       | Development of a document for all 90 PSD Services specifying how they will delivery services when we are in offline mode  | PSGRD, Cabinet/DDT               | DDT, GovTech Agency Service Owner                           |
|   |   |  | Implement passwordless authentication process across all government systems using the NDI Wallet for the Issuance of verifiable credentials | 1. Integrate the remaining eGov systems with NDI.<br>2. Ensure that all new systems comply with NDI wallet integration by including it in the eGov Approval checklist.  | WoG, Govtech                     | DDT, GovTech Agency Service Owner                           |
|   |   |  | Increase the usage of Verifiable Credentials in Bhutan NDI Wallet   |   | WoG, Govtech                     | DDT, GovTech Agency Service Owner                           |
|   |   | Develop secure and resilient infrastructure  | Secure & Resilient connectivity   | Strengthening the reliability and security of the Government Initiated Network. For better services delivery there is need for reliable network until the last community centers, and also there is needs for governemt systems to be accessble through the Govt Network even if internet is down. There is also need for affordable internet to our citizents for availing these services<br>(details reflected in under enablers) | GovNet/ DoTs GovTech             | GovNet/ DoTs GovTech Agency                                 |
|   |   |  | Secure & Resilient Data Center  | 1. Strengthening the reliability and security of the Government Data Center<br>2. Establishment of Active Disaster Recovery<br>(details reflected in under enablers)  | Cloud Services Division, GovTech | DSD/DSOM/Cloud /WoG/GovNet/Cyber Security                   |
|   |   |  | Secure Government Application   | All Government applications are secured following standard cybersecurity practices or prescribed measures   | DSD/Cyber                        | DSD/DSOM/Cloud /WoG/GovNet/Cyber Security                   |

| Project 1: Strengthening the Digital Governance |      |                                     |  |   |                             |                                    |
|---|------|-------------------------------------|--|---|-----------------------------|------------------------------------|
| Goals   | KPIs | Key activities                      | Sub-activities   | Description of activities   | Lead Agency/Division        | Collaborating Agency/division      |
|   |      | Re-engineer public service delivery | Development of blueprint for public service delivery for both citizens and businesses  | Conduct an EA on PSD services and draw a future state   | DDT,GovTech                 | PSGRD, Cabinet Agencies            |
|   |      |                                     | Develop robust PSD Monitoring and Evaluation   | Develop mechanism for evaluation and monitoring of TATs and Standards by implement the Assessment of service delivering agencies through Service Evaluation Tools   | RCSC                        | PSGRD, Cabinet DDT, GovTech Agency |
|   |      |                                     | Optimise and re-engineer public service delivery processes and systems top 30 Services | 1. Collaborate with RIM/Pvt Sector/University to apply design thinking principle to transform and improve existing services.<br>2. Conduct gap analysis to simplify process and steps -Automation of approval and renewal of services -Automated renewal services   | PSGRD, Cabinet DDT, GovTech | DDT,GovTech Agency                 |
|   |      |                                     | Optimise and re-engineer public service delivery in Thromday and LGs                   | Currently there different systems in different thromde providing same services there are total of 27 services across 4 throm adding high cost of maintenance and fragmented services<br>1. Conduct an EA at the Thromde/ LG level<br>2. Develop and Thromde/ LG ERP | DDT GovTech                 | PSGRD, Cabinet Thromde and LG      |
|   |      |                                     | Develop Digital Service Standards  | Review and publish TAT and SOP for Technical Services Provided - Develop and Publish DSS  | DDT,GovTech                 | PSGRD, Cabinet Agencies            |

| Project 1: Strengthening the Digital Governance |      |   |  |  |                         |                                  |
|---|------|---|--|--|-------------------------|----------------------------------|
| Goals   | KPIs | Key activities  | Sub-activities   | Description of activities  | Lead Agency/Division    | Collaborating Agency/division    |
|   |      |   | Introduce Emerging Technology in PSD   | 1. Introduce RPA- For systems that has clear eligibility checklist (eg:Trade, Scholarship, admision,)<br>2. IOT- Using IoT devices to collect real-time data for monitoring public infrastructure and services: Using IoT to help MoIT, Thromde and local governments in better maintenance of structural health of bridges, tunnels, and other critical infrastructure.<br>3. AI- Implementing AI/ML to automate routine tasks such as implementing AI in Job Portals for RCSC and MoICE, introducing AI to extract relevant information from submitted documents like identification papers, tax forms, or permits, reducing the need for manual data entry and verification in different RGoB systems | ETD, GovTech            | PSGRD, Cabinet Agencies          |
|   |      |   | Establish citizen feedback mechanisms and improve citizen engagement platforms | 1. Collaborate with PSGRD to revive and strengthen existing eDesk and eKaasel feedback systems or develop a new Citizen engagement portal assessment<br>2. Use AI web scraping to collect public grievance and provided targeted intension   | PSGRD, Cabinet Agencies | DDT,GovTech Agency               |
|   |      | Develop a Dzongkha corpus and integrate a text-to-speech feature on local languages, and automate 37 offline servcies | Increase the number of Online Services   | 1. Processmaping for the 37 offline Services<br>2. Automate the 37 Offline Services  | PSGRD, Cabinet Agencies | DDT,GovTech Agency               |
|   |      |   | Develop dzongkha corpus  | Development of dzongkha corpus so that services can be made available in dzongkhag<br>This will make services Accessible in Dzongkha/  | DCDD                    | DSAI, GovTech Agency             |
|   |      |   | Develop Voice features based on the local language/s                           | Conversion of key public facing services to have features for Text to Speech   | DDT                     | PSGRD, Cabinet Agencies/DSAI/DDC |
|   |      |   |  |  |                         |                                  |

| Project 1: Strengthening the Digital Governance |  |   |   |  |                      |   |
|---|--|---|---|--|----------------------|---|
| Goals   | KPIs   | Key activities  | Sub-activities  | Description of activities  | Lead Agency/Division | Collaborating Agency/division             |
|   | 2. 10% government operating cost reduced by 2029 | Develop and implement Enterprise Architecture                                       | Enterprise Architecture (EA)  | 1. Build EA Capability and Establish EA Governance<br>2. Expand on EA For the Whole of Government (WoG)<br>3. Deep dive EA into Social Cluster<br>4. Deep dive EA into Economic Cluster<br>5. Deep dive EA into Security Cluster<br>6. Deep dive EA into Governance Cluster                                    | DST                  | Agencies                                  |
|   |  |   | Develop an Architecture Repository System                                     | 1. Vendor management<br>2. Software inventory<br>3. API inventory<br>4. Hosting Inventory  | DST                  | DSD/DSOM/Cloud /WoG/GovNet/Cyber Security |
|   |  | Establish software development standards for better integration and faster delivery | Standardisation of Software development process                               | 1. Establish common standards for better integration and faster development<br>2. Streamline and Standardize Project Management<br>3. Standardize and templatize Business Analysis<br>4. Standardize and templatize Quality Assurance (Secure by design)<br>5. Standardize and templatize Software Outsourcing | DST                  | DSOM & DDT                                |
|   |  |   | Reduction of Bugs in Government Systems                                       | 1. Citizen-centered design<br>2. Automation of processes and QA<br>3. Establish IT Auditing & Code review  | DSD                  | DSOM&DST                                  |
|   |  | Provide Technology Solution to Social Cluster                                       | Development of new systems and upgrade existing systems of Social Cluster     | Providing Technology Solution to Social Cluster Including development of new systems, upgrade of existing system   | Social Cluster       | GovTech Agency                            |
|   |  | Provide Technology Solution to Governance Cluster                                   | Development of new systems and upgrade existing systems of Governance Cluster | Providing Technology Solution to Governance Cluster Including development of new systems, upgrade of existing system   | Governance Cluster   | GovTech Agency                            |
|   |  | Provide Technology Solution to Economic Cluster                                     | Development of new systems and upgrade existing systems of Economic Cluster   | Providing Technology Solution to Economic Cluster Including development of new systems, upgrade of existing system   | Economic Cluster     | GovTech Agency                            |

| Project 1: Strengthening the Digital Governance |      |   |   |   |                      |                               |
|---|------|---|---|---|----------------------|-------------------------------|
| Goals   | KPIs | Key activities                                  | Sub-activities  | Description of activities   | Lead Agency/Division | Collaborating Agency/division |
|   |      | Provide Technology Solution to Security Cluster | Development of new systems and upgrade existing systems of Security Cluster | Providing Technology Solution to Security Cluster Including development of new systems, upgrade of existing system  | Security Cluster     | GovTech Agency                |
|   |      | Develop and deploy IFMIS, BITS and ERP          | Develop and Deploy IFMIS  | 1. Financial Management Information System (IFMIS) for use of digital platforms in the implementation of Public Financial Management (PFM)<br>2. Integration and Enhancement of PFM systems<br>Budget Planing Preparation (MYRB)<br>Budget Execution and Monitoring (ePEMS, eDATS)<br>Revenue Administration (BRIMS, RAMIS/MITS, eCMS, Property Tax)<br>Debt and Grand (CM)<br>Payroll Management (ZEST)<br>Procurement Management (eGP, eTools, CRP, CiNET)<br>Assesst/ Inventory (GIMS) | MoF                  | GovTech Agency                |
|   |      |   | Develop and Deploy BITS   | Development of Bhutan Integrated Tax System. BITS will have all the tax related systems of DRC integrated under one platform. Further, GST component of BITS will enable DRC to implement GST law of Bhutan 2020. BITS would help DRC and MoF to address the declining efficiency of the current RAMIS. BITS will also improve the administrative efficiency of DRC, reduce compliance cost and incidences of tax evasion and increase voluntary tax compliance.                          | DRC                  | GovTech Agency                |
|   |      |   | Develop Government Planning and Resoruce allocation system                  | Development of Government planning and resouce allocation system<br>- System integration and Dashboard development between Cabinet, MoF and RCSC to have an complete end to end overview on Stragetic Planning and Resoruces allocation   | DST/DSD              | Governance Cluster            |
|   |      |   | Secure Land Record management   | Study current Land record System<br>Finalised Project Plan document<br>Implement the Land Record System   | NLC                  | DDT/WoG, GovTech Agency       |

| Project 1: Strengthening the Digital Governance |      |   |   |  |                      |                               |
|---|------|---|---|--|----------------------|-------------------------------|
| Goals   | KPIs | Key activities  | Sub-activities  | Description of activities  | Lead Agency/Division | Collaborating Agency/division |
|   |      | Develop Public-Private Partnerships (PPPs) for technology                               | Develop Public-Private Partnerships (PPPs) for technology   | 1. Outsourcing strategy & framework<br>2. Relook and develop PRR for Software Outsourcing<br>3. Identify Project that can have PPP modality<br>4. Have selected project approved for PPP modality  | DDT                  |                               |
|   |      | Upskilling and reskilling of Civil Servants and ICT professionals                       | Upskilling and reskilling CS for Digital Transformation   | 1. Identify skills necessary for Digital Transformation<br>2. Do a skill gap analysis by Category of CS<br>3. Identify Partners who can implement the skills development<br>4. Handover the Project to RCSC for Deployment and Monitoring  | DST                  | RCSC                          |
|   |      |   | Upskilling and reskilling Government ICT Professional for Technology Transformation   | 1. Identify skills necessary for Technology Transformation<br>2. Do a skill gap analysis by Capability<br>3. Identify Partners who can implement the skills development<br>4. Deployment, Monitoring and Evaluation<br>5. GovNET BTNOG training for GovNet officials (Nu. 0.6m)<br>6. Project management | SSS, GTA             | GovTech Agency                |
|   |      | Integrate and automate systems to improve operations & management of Government systems | - Improve System integration (Relook at all the API Integration) for better-integrated data-driven decision-making service/system.<br><br>-Deploy RPA to automate repetitive tasks (procurement, taxation, HR -Eg. data entry/invoice processing/payroll mgmt).<br><br>-Increase use of eKYC for online services from Bhutan NDI Wallet | 1. Automate repetitive, rule-based tasks by embedding RPA to improve service efficiency, performance and productivity.<br>Eg: Procurement, finance, and human resources processes - repetitive tasks like data entry, invoice processing, and payroll management.  | WoG                  | DDT                           |
|   |      |   | Provide Annual Maintenance Contract (AMC) for whole of government systems   | Providing Annual Maintenance Contract for whole of government systems  | DSOM                 | DST                           |



| Project 1: Strengthening the Digital Governance |  |  |  |   |                      |   |
|---|--|--|--|---|----------------------|---|
| Goals   | KPIs   | Key activities                                   | Sub-activities   | Description of activities   | Lead Agency/Division | Collaborating Agency/division                           |
|   |  |  | Introduce IT HelpDesk and implement streamlined bug reporting and response for O&M | Establishing an IT help desk to streamling bug reporting and developing a bug reporting system to improve bug resolving and improve TAT   | DSOM                 |   |
|   |  |  | Implement DevOps practices in all existing and new upcoming systems                | Deploy sources control and automate deployment on all Government Systems and monitoring. This will lead to better real time management of the health of the Govt Systems  | DSOM                 | DDT   |
|   |  |  | Secure & Resilient connectivity  | Strengthening the reliability and security of the Government Initiated Network.<br>1. Better and stable internet in all Government Agencies to all division,section to all regional offices and subdivisons<br>2. Minimum down time<br>3. Minimum drop<br>4. System can still operate on Gov TWAN when internet is down<br>(details reflected under enablers)   |                      |   |
|   |  |  | Secure & Resilient Data Center   | 1. Strengthening the reliability and security of the Government Data Center<br>2. Establishment of Active Disaster Recovery<br>(details reflected under enablers)   |                      |   |
|   |  |  | Secure Government Application  | All Governemnt application hosted in GDC are secured with proper cyber securuity in place   |                      |   |
|   | 3. AI Maturity Level increased to Level 4 - Systemic by 2029 | Identify and develop SST for 13 sectors/services | Identify SST for Employment (Government)   | The purpose of this activity is to develop an inclusive Labour Market System (LMS) which will function as the central repository and dissemination interface for all information on enterprises and labour force. The enterprises and labour force are further categorized into Employment (Government), Employment (Non-Government), Foreign Workers, Bhutanese Overseas (Workers and Students), School Education, Tertiary Education, Technical and Vocational Education and Monastic Education | DSAI                 | RCSC; RUB; RCJ; Constitutional bodies, Zhung Dratshang; |
|   |  |  | Identify SST for Employment (Non-Government) [1]                                   |   | DSAI                 | MoICE; BCTA; BAFDA, Choedhay Lhentshog                  |
|   |  |  | Identify SST for Employment (Foreign Workers) [2]                                  |   | DSAI                 | MoICE; MoHA   |
|   |  |  | Identify SST for Bhutanese Overseas [3]  |   | DSAI                 | MoFAET; MoHA  |
|   |  |  | Identify SST for Education (MoESD) [4]   |   | DSAI                 | MoESD   |
|   |  |  | Identify SST for Education (Tertiary) [5]  |   | DSAI                 | RUB; JSWLaw; KGUMSB; NRC                                |
|   |  |  | Identify SST for Education (TVET) [6]  |   | DSAI                 | MoESD   |

| Project 1: Strengthening the Digital Governance |      |  |   |   |                      |                                     |
|---|------|--|---|---|----------------------|-------------------------------------|
| Goals   | KPIs | Key activities   | Sub-activities                            | Description of activities   | Lead Agency/Division | Collaborating Agency/division       |
|   |      |  | Identify SST for Education (Monastic) [7] |   | DSAI                 | Zhung Dratshang; Choedhay Lhentshog |
|   |      |  | Identify SST for Energy [8]               | In an effort to streamline the traditional processes of data collection and analysis on the energy data points in Bhutan, this project aims to identify the single source of truth for all energy data points and automate processes for data collection as well as add contextualization and trigger actions to the collected data to understand the correlations between data points. | DSAI                 | MoENR                               |
|   |      |  | Identify SST for ACCESS                   | As part of this activity, the Division aims to collate and centralize all the trade and business-related information into one platform thereby enabling interoperability of business related information as part of the requirement for ACCESS Project  | DSAI                 | MoICE; MoF; MoFAET;                 |
|   |      |  | Identify SST for Marital status           | The SST for marital status streamlines the process of identifying the correct source for marital status nationwide, ensuring centralized information provision by a single agency   | DSAI                 | RCJ, MoHA                           |
|   |      |  | Identify SST for Land & Building          | This activity involves identifying the single source of truth for land and building-related information in the country  | DSAI                 | MoIT, NLC, Thromdes                 |
|   |      |  | Identify SST for Roads & Bridges          | This activity involves identifying the single source of truth for information on roads and bridges in the country which will further be aligned with previous years' activities on the SST for Land & Buildings.  | DSAI                 | MoIT                                |
|   |      | Establish data privacy and ethics within Online Transaction Processing (OLTP) and Online Analytical Processing (OI.AP) framework | Conduct SST review workshop               | SST review; Awareness on existing standards (and resources): Data Management Guide 2023, and ICM Act 2018 (focussing on data privacy and protection)  | DSAI                 |                                     |

| Project 1: Strengthening the Digital Governance |      |   |   |  |                      |                               |
|---|------|---|---|--|----------------------|-------------------------------|
| Goals   | KPIs | Key activities  | Sub-activities                              | Description of activities  | Lead Agency/Division | Collaborating Agency/division |
|   |      | Develop AI framework  | Conduct Data Science hackathon              | This event will bring individuals or teams together to solve data-related challenges within a limited timeframe, typically ranging from a few hours to a few days to collaborate and innovate on solving specific problems using data-driven approaches.                   | DSAI                 |                               |
|   |      |   | Conduct Data Science and AI Workshop        | The data science workshop will be organized to provide participants with hands-on experience and instructions in various aspects of data science and share tools and techniques used in data analysis, machine learning, and other related disciplines.                    | DSAI                 |                               |
|   |      |   | Develop National AI Strategy/Policy         | The AI strategy/policy will be a comprehensive plan or framework to guide the adoption, deployment, and utilization of artificial intelligence (AI) technologies to achieve specific objectives.   | DSAI                 |                               |
|   |      | Strengthen data infrastructure (AI and data sharing protocols and open data platform) | Institute data warehouse/lakehouse platform | Through this activity, the Division will develop data warehouse/data lakehouse that involves creating a centralized repository for storing and managing large volumes of structured and unstructured data, to support analytics, reporting, and decision-making processes. | DSAI                 |                               |
|   |      |   | Develop Business Intelligence platform      | The Business Intelligence (BI) activity refers to the development of dashboards/visualizations to analyze and present business information. The main goal of BI is to support better business decision-making by providing actionable insights based on data.              | DSAI                 |                               |
|   |      |   | Development of ML and AI models             | The Division plans to develop one ML/AI model each year on a need basis depending on its criticality and requirement. As part of this activity, the process involves deploying the model, monitoring its performance, and iteratively improving it based on feedback.      | DSAI                 |                               |

| Project 1: Strengthening the Digital Governance |   |   |   |   |                      |                               |
|---|---|---|---|---|----------------------|-------------------------------|
| Goals   | KPIs  | Key activities  | Sub-activities  | Description of activities   | Lead Agency/Division | Collaborating Agency/division |
|   |   |   | Establish data sharing protocols                                      | To institute the open data-sharing platform, the Division will assess the key data requirements of the general public and the government sector. This activity will entail the classification of data sensitivity, preparation of meta-data and other data sharing protocols and agreements within the agencies.  | DSAI                 |                               |
|   |   |   | Institute open data sharing platform                                  | An open data-sharing platform will be developed to facilitate the sharing and dissemination of data openly and transparently thereby democratizing access to information, promoting innovation, and empowering individuals, organizations, and communities to leverage data for various purposes, including research, decision-making, and civic engagement. This is unified open data sharing platform that supports various data formats and types (structured, semi structured and unstructured data). | DSAI                 |                               |
|   | 4. Doctors and HAS treat 100% of patients through ePIS by 2029. | Develop eHealth Strategy and strengthen ePIS as the/one health system | Develop eHealth Strategy and Strengthen ePIS as the/one health system | <ol style="list-style-type: none"> <li>1. System SOP &amp; BCP</li> <li>2. Reduce health systems</li> <li>3. Integrate health systems</li> <li>4. Decommission old systems</li> <li>5. AI in healthcare</li> <li>6. Health data analytics</li> <li>7. IoT in healthcare</li> <li>8. drone in health care</li> <li>9. Rollout ePIS 100% in all facilities</li> </ol>   | MoH & NMS            | GovTech Agency                |

| Project 2: Digital Economy |  | Key activities   | Sub-activities   | Description of activities   | Lead Agency/Division | Collaborating Agency/division                                    |
|----------------------------|--|--|--|---|----------------------|--|
| Goals                      | KPIs   |  |  |   |                      |  |
| Digital Economy            | 1. Digital Economy contribution of USD 300 million by 2029 and USD 600 million by 2034 | Integrate/Facilitate end-to-end licensing and trade service as part of the NSW project | Facilitate end-to-end licensing and trade service as part of the NSW project | 1. Develop Blueprint for NSW<br>2. Automate individual Trade Systems (13 systems) including integration with NDI<br>3. Develop and Deploy NSW (include issuance of hardware)  | DoT, MoICE           | GovTech Agency and Other Agencies involved in trade              |
|                            | 2. 5000 quality jobs by 2029   | Adoption of automative technologies for commercial timber harvesting                   | Explore Technologies that will help automate commercial Harvesting (Forest)  | 1. drone<br>2. IoT<br>3. AI   | DoFP                 | GovTech Agency   |
|                            |  | Conduct national resource mapping system study and resource mapping of five sectors    | Consolidate the national resource mapping & inventory of Bhutan              | Spatial Decision Support System for (National Resource Mapping)   | NLC                  | GovTech Agency and Other Agencies developing Resource management |
|                            |  |  |  | Resource Mapping for :<br>1. Mining and Minerals (1170 + 60+10+10+7+13 m for 50% area)<br>2. Construction (Utility)<br>3. Forest resource<br>4. Water Resources<br>5. Transport   | Resources Agency     | GovTech Agency   |
|                            |  | Adoption of sustainable agri tech (IoT, drone, AI etc) for commercial farming          | Sustainable agri tech for commercial farming                                 | Introducing ET in the large scale commercial farms (2 Chirup Farm at Gangtokha Dagana, Phuntshothang-SJ)  | DoA, MoAL            | GovTech Agency   |
|                            |  | Develop digital tourism products using digital techonologies                           | Develop digital tourism products using digital techonologies                 | Digital Tourism is going beyond the traditional physical travel experience using digital technologies<br><br>1. Toursim Resources Mapping<br>2. Toursim Enterprise System Development with Mobile App (TCB Hub)<br>3. personalised experience and virtual tours using VR (Taksang and Snowmant trek) - Proposed as PPP Model<br>4. personalised experience Metaverse (DOT Office )<br>5. Personalised experience and virtual tours using AR (Paro from Ta Dzong, Thimphu City from Kuesnel Phodrang)<br>6. Gamefication (TransBhutan Trail and Merak Sakten Trek) | Dept. of Toursim     | GovTech Agency   |

| Project 2: Digital Economy |   | Key activities   | Sub-activities  | Description of activities  | Lead Agency/Division | Collaborating Agency/division |
|----------------------------|---|--|---|--|----------------------|-------------------------------|
| Goals                      | KPIs  |  |   |  |                      |                               |
|                            |   | Develop transport system that is sustainable, intelligent, and resilient     | Develop sustainable, smart and resilient transport system   | 1. Reliable, efficient & convenient public transport service by bus<br>2. Develop online Passenger Bus Services system (Bus Information, Route Approval, automated fare revision and enhancement of GPS Tracking System) (15m)<br>3. improve fare payment (NDI & Smartcard)  | MoIT                 | GovTech Agency                |
|                            | 3. Data Economy established by 2029 (Health, Climate & Agriculture) | Strengthen data ecosystem for health, Agriculture and Climate Digital Health | Strengthen data ecosystem for health, Agriculture and Climate Digital Health (JICA support,2023-2027) | <p>The project is aimed to create valuable data using NDI for Evidence Based Decision Making (EBDM) through integrated management of health data to help to raise the public's awareness of their own health management with the concept of "Data enabled GNH/Well-being" as a project goal for the project duration of four year (2023-2027) using the four data banks (medical,health,household and biobank). Analyses of data will be utilized for clinical/public health purposes such as "early detection and intervention of diseases", "prevention of illness", "personalized medicine", etc.</p> <p>The Medical Bank , which will have records of clinical data, the Health Bank (PHR) will have data related to personal health, socio economic indicators data in the household bank and genomes data for the Biobank integrated through National Digital Identity (NDI).</p> <p>The three envisioned outcome for the project is EBPM/EBDM (for RGoB), health and GNH/Well-being (for citizens) and economic development (for the Academic and Private industries through digital health industries and data economy for the researchers and pharmaceuticals companies) which will be achieved through the Digital Health Platform (DHP consisting of Application, Platform and the Data).</p> | GovTech              | MoH, MoiCE, MoAL and NSB      |

| Project 2: Digital Economy |  | Key activities   | Sub-activities   | Description of activities  | Lead Agency/Division | Collaborating Agency/division |
|----------------------------|--|--|--|--|----------------------|-------------------------------|
| Goals                      | KPIs   |  |  |  |                      |                               |
|                            | 1. Digital Economy contribution of USD 300 million by 2029 and USD 600 million by 2034<br><br>2. 5000 quality jobs by 2029 | Adoption of IT tools/products by non-ICT industries (private sector) | Transformation of non-ICT industries (Private sector) leveraging IT tools/products through:<br>1. Platform such as exhibition to showcase IT tools/products that non-ICT companies can explore and adopt<br>2. Leverage such platforms to also conduct B2B meetings<br>3. Developing a market place for such product promotion for easy access and awareness | The activities aim to digitalize other industries through adoption of local tech product and services. This will be done through:<br>1. Collaboration with identified national stakeholders<br>2. Conduct national tech conference and expo event targeting other industries in the country<br>3. Study the development of digital marketplace for other industries<br>4. Develop and operationalize digital marketplace for other industries<br>5. Create and maintain database of ICT products and services offered by the ICT industry for other industries | TIDD                 | Private sector, MOICE         |
|                            |  | Strengthen digital ecosystem for tech startups and digital market    | Establish e-commerce platform onboarding every cottage, S&M industries (Leverage NDI as detailed under foundation and Robust multi-channel digital payment will be covered under infrastructure enabler )  | 1. Design and develop e-commerce platform for local and global Market that can be used by every cottage, S&M industries to find demand and also enable onboarding and e-commerce in country and for export. Potential for PPP  | MoICE                | GovTech Agency                |
|                            |  |  | Establish secure supply chain & logistic system  | 1. Mapping of Supply Chain all SMEs including farm produce<br>2. Develop a Supply chain and Logistic System for SMEs including farm produce  | GovTech Agency       | MoAL, DoF, DGM                |
|                            |  |  | Create digital hub for integrating potential emerging technologies in the sectors  | New technologies for public to adopt by<br>1. portal and online sessions<br>2. Set up Tech Lab (AI, Block chain, drones etc..) for look and feel new tech<br>(a. Set up knowledge center for AI<br>b. Set up knowledge center for Drones<br>c. Setup knowledge center for AR<br>d. Set up knowledge center for VR<br>e. Set up knowledge center for IoT<br>f. Set up knowledge center for Robotic<br>g. Set up knowledge center for other ETs)   | ETD                  | TIDD                          |

| Project 2: Digital Economy |      | Key activities                    | Sub-activities   | Description of activities   | Lead Agency/Division | Collaborating Agency/division |
|----------------------------|------|-----------------------------------|--|---|----------------------|-------------------------------|
| Goals                      | KPIs |                                   |  |   |                      |                               |
|                            |      |                                   | Strengthen ecosystem for tech startups including funding model & digital jobs (Freelancer, Remote work and Digital nomads)<br><br>(Robust multi-channel digital payment is critical and will be covered under infrastructure enabler ) | 1. Study & address tech startup ecosystem requirement<br>2. Initiate work on establishment of partnership with international startup communities<br>3. Develop funding models for tech startups<br>4. Develop value proposition to attract global tech startups<br>5. Promotion of Bhutan as a potential hub for international startups, digital nomads, freelancers<br>6. Enhance the BITC services and facilities to attract tech startups<br>7. Study ecosystem for esport industry        | TIDD                 | MOICE, Private Sector, MOESD  |
|                            |      | Globalization of ICT Industry     | Establishment of 100 acres IT park (Robust multi-channel digital payment will be covered under infrastructure enabler, Connectivity will be covered under infrastructure enabler )   | 1. Identify land for establishment of Science, Technology and Innovation (STI) park<br>2. Collaborate on the development of masterplan for STI park<br>3. Develop value proposition for STI park developer and conduct roadshow to select the developer<br>4. Identification and initiation of work by the developer for STI park<br>5. Develop value proposition to attract FDI investment in the STI park<br>6. Conduct roadshow to generate leads as well as FDI to set up in the STI park | TIDD                 | MOIT, DHI, MoFET, MoICE       |
|                            |      |                                   | Globalise the ICT industry (Robust multi-channel digital payment will be covered under infrastructure enabler )  | The activity will facilitate the local tech industry to make entry in the global market. It will build capability of ICT companies to position in the global market by:<br>1. Building capability of ICT companies to position in the global market<br>2. Conducting international tech conferences & expos / roadshows as access to market platform<br>3. Operational support to ICT Association   | TIDD                 | MoICE, Private Sector, MoFET  |
|                            |      | Accelerate growth of ICT industry | Establish enterprise/s to drive the ICT business in the global market  | Study options on formation of enterprise/s with main target to go global:<br>1. Develop few models for formation with investment requirement<br>2. Formed enterprise will drive the strategy for global market/ government will support initially<br>3. Other strategies running parallelly will be to promote entrepreneurs/businesses to venture in Data Center services/Cloud services and also to tap on potential of global big data analytics and processing industry.                  | TIDD                 | MoICE,DHI/Private sector      |



| Project 2: Digital Economy |      | Key activities   | Sub-activities   | Description of activities  | Lead Agency/Division   | Collaborating Agency/division |
|----------------------------|------|--|--|--|------------------------|-------------------------------|
| Goals                      | KPIs |  |  |  |                        |                               |
|                            |      |  | Develop ICT Industry Strategy  | 1. Select consultant to develop the strategy<br>2. Consultation with National and Global stakeholders<br>3. Identify niche technology areas for investment<br>4. Develop ICT industry strategy   | TIDD                   | Private Sector                |
|                            |      |  | Support and provide access to Bhutan NDI ecosystem to create innovative products for both domestic and international markets | Provide access to competency development resources - Will work closely with "Digital hub (digital marketplace) developed for ICT products and services offered by the ICT industry "   | WoG, GovTech           |                               |
|                            |      | Develop satellite ecosystem/ image source and repository               | Develop and launch national remote sensing satellites  | 1. Develop in-house remote sensing satellites for sustained satellite image sources<br>2. Explore use of free satellite images publicly available<br>3. Explore acquisition of satellite images through diplomatic channels  | DoTS                   |                               |
|                            |      | Construction of Satellite Development Facility (GoI)                   | Establish satellite development and testing facilities   | 1. Establish satellite ground stations for tracking and operations<br>2. Build satellite development facilities like labs and clean rooms<br>3. Set up satellite environmental testing facilities like anechoic chambers, vibration table, thermovac chambers                                      | DoTS                   |                               |
|                            |      | Build remote sensing capacity in government/ non-governmental Agencies | Prepare remote sensing strategic plan and action items for the whole country   | 1. Assess remote sensing capacity requirements in government and non-governmental agencies<br>2. Provide basic remote sensing/GIS training<br>3. Implement pilot projects with agencies to develop use cases<br>4. explore intermediate to advanced training on remote sensing specific to sectors | DoTS                   | RS WG                         |
|                            |      |  | Conduct advocacy/awareness programs on various ICT/STEM subjects   | Conduct outreach program to youth in promoting space activities  |                        |                               |
|                            |      | Support Bhutan NDI operationalization                                  | Provide Support to NDI company   | To kick-start the company, total of Nu.160 million to be paid for Maintain and Operation Credentials Exchange Platform   | WoG/Bhutan NDI Company | WoG, GovTech Agency           |

| Project 2: Digital Economy |      | Key activities  | Sub-activities   | Description of activities   | Lead Agency/Division | Collaborating Agency/division |
|----------------------------|------|---|--|---|----------------------|-------------------------------|
| Goals                      | KPIs |   |  |   |                      |                               |
|                            |      |   | Implement Digital/electronic signature solution              | Digital/electronic signature platform to be developed and implemented for signing digitally   | Bhutan NDI Company   | WoG, GovTech Agency           |
|                            |      |   | Certify Bhutan NDI Wallet (product)                          | The certification from eIDAS 2.0 and Canadian Government  | Bhutan NDI Company   | WoG, GovTech Agency           |
|                            |      | Strengthen international and domestic ePayment system | Participate in stakeholder consultation for e-Payment system | Since RMA leads this initiative, GovTech will support in implementation of technological solutions, product selection and implementation for ePayment ecosystem | WoG/RMA              | WoG, GovTech Agency           |

| Digital Society |  | Key activities  | Sub-activities   | Description of activities   | Lead Agency/Division | Collaborating Agency/division   |
|-----------------|--|---|--|---|----------------------|---|
| Goals           | KPIs   |   |  |   |                      |   |
| Digital Society | 1. 100,000 citizens know how to productively and safely use digital services by 2029 | Strengthening Digital Skilling program                                | Organize foundational Digital literacy trainings in Gewogs                 | 1. Review digital skilling curriculum for foundational program<br>2. Define and implement a standard process for delivery of foundation DL program<br>3. Identify vendor/partner to deliver foundation digital skilling training<br>4. Pilot the program and roll it out in all Gewogs                | TIDD                 | All division & delivery partners (potential BDBL, NFE/MoESD)  |
|                 |  |   | Organize Intermediate Digital literacy trainings in Dzongkhag/Thromdes     | 1. Review digital skilling curriculum for Intermediate Program<br>2. Identify vendor/partner to deliver Intermediate digital skilling training<br>3. Pilot digital skilling curriculum for intermediate program<br>4. Review and implement a standard process for delivery of intermediate DL program | TIDD                 | All division & delivery partners (potential training institutes, TVET/MoESD, Employment Center/MoICE) |
|                 |  |   | Upgrade the school ICT curriculum  | 1. Review & upgrade the ICT curriculum<br>2. Pilot the curriculum<br>3. Implement in all schools  | TIDD                 | All division under GovTech and MoESD including private school   |
|                 |  |   | Enhance STEM curriculum in schools and colleges                            | 1. Review and enhance Space/STEM curriculum in schools<br>2. Assess and introduce Space/STEM curriculum in RUB colleges   | DoTS                 | MoESD, RUB  |
|                 |  | Develop Citizen engagement plan for preparation towards digital world | Develop platform for self learning, info dissemination and self-assessment | 1. Study and develop tool/platform for intermediate digital skilling program<br>2. Identify partners to develop online digital literacy courses   | TIDD                 | Private sector and content developer  |
|                 |  |   | Conduct advocacy/awareness programs on various ICT/STEM subjects           | 1. Identify, develop and broadcast digital content for citizen services<br>2. Bhutan space week and other Stem advocacy   | TIDD/DOTS            | All the divisions   |
|                 | 100,000 citizens know how to productively and safely use digital                     | Develop online Platform for sharing Bhutanese knowledge and culture   | Develop a <b>social credit application</b>                                 | Social credit system which will capture scores of volunteers and donations contributed as citizens. Link social score to credit ranking.  | DST, GovTech Agency  | MOHA, MoESD, RUB, DSD (GovTech Agency)  |

| Digital Society |   | Key activities   | Sub-activities  | Description of activities   | Lead Agency/Division           | Collaborating Agency/division   |
|-----------------|---|--|---|---|--------------------------------|---|
| Goals           | KPIs  |  |   |   |                                |   |
|                 | services by 2029  |  | Build /enhance Dessup App   | Enhance the Dessung app to track volunteer scores for recognition and rewards   | DST, GovTech Agency            | Deesung Office/Gyalsung Office, DSD (GovTech Agency)                          |
|                 |   |  | Develop online platforms to promote knowledge on culture and heritage   | Promote the preservation of spiritual and cultural traditions by implementing QR code integration with geo coordinates across monasteries, schools, and institutes, allowing users to utilize the NDI scan feature and engage in interactive games. Each monastery would feature a unique QR code providing information on the site and nearby landmarks. | DST, GovTech Agency            | MOHA, MoESD, RUB, DSD (GovTech Agency)  |
|                 |   |  | Provide technical assistance for gamifications for Culture and tradition  | Encourage learning about culture and traditions through social games. Effort to be combined with digital tourism  | DST, GovTech Agency            | MoESD, RUB, MOHA, DSD (GovTech Agency)  |
|                 |   | Secure online transaction locally and nationally using NDI | Leverage NDI for securing any online interaction for eKCY for development of social credit scoring                    | Establish secure online transactions leveraging the NDI platform for authentication, PII data Exchange. For example social credit system scoring is based on NDI authentication   | WoG, GovTech Agency            | RMA, BoB, BNB, TB,PNB, BT, Tashicell, MoF, MFAET, MoH, MoHA, MOICE, MOIT, MoA |
|                 |   |  | Integrate NDI for authentication and sharing credentials uniquely for community services                              | Issue credentials specific to community where user belongs to uniquely authenticate (claim Identity) to interact online.  | WoG, GovTech Agency            | DLG   |
|                 |   |  | Integrate with innovative products to verify online content and owner for authenticity                                | Using electronic and digital signature in the NDI platform provides a mechanism for verification and authentication of the user to ascertain authenticity of documents and content  | WoG, GovTech Agency            | DLG   |
|                 | 2. Improve cyber security maturity level from Level 1: start-up to level 4: strategic by 2029 | Improve Justice Sector systems and M&E systems             | Enhance the judiciary system by introducing online services and develop systems for coordinated case management, etc. | Enabling a swift justice delivery system by improving efficiency in case management   | Judiciary, DST, GovTech Agency | DSD, GovTech Agency   |
|                 |   |  | Improve the monitoring of public places using CCTVs and IOT tools   | Installation of CCTVs in all major cities   | MOHA                           | GovNet, GovTech Agency  |

| Digital Society |      | Key activities   | Sub-activities   | Description of activities   | Lead Agency/Division   | Collaborating Agency/division                            |
|-----------------|------|--|--|---|------------------------|--|
| Goals           | KPIs |  |  |   |                        |  |
|                 |      | Improve threats detection systems  | 1. Formation of Governmental SOC (GovSOC)  | Develop and Operationalize Tier 1 SOC capability (Configure security tools such as SIEM (Security Information and Event Management), IDS/IPS (Intrusion Detection System/Intrusion Prevention System), endpoint detection and response (EDR) solutions, and threat intelligence feeds, forensic tools). Expertise will be contracted for implementing and operationalizing the SOC.         | BtCIRT, GovTech Agency | Cloud Service, DSoM                                      |
|                 |      |  | 2. Improve incident handling by instituting an Information Sharing Mechanism and tool                            | Explore and deploy a secure threat information sharing platform for all the stakeholders  | BtCIRT, GovTech Agency | Cloud Service, DSoM and Security Cluster                 |
|                 |      |  | 3. Produce National Cyber Threats Landscape report   | National Cyber Threats Landscape report will include identification and ranking of actual threats in the country, based on information from the national Risk Assessment exercise on cybersecurity threats and issues. Activity includes analysis and dissemination with publication of one report each year. Will also align cybersecurity crisis with national crisis management process. | BtCIRT, GovTech Agency | Cloud Service, DSoM and CII Operators & Security Cluster |
|                 |      | Improve Critical Information Infrastructure (CII) regulations and guidelines | 1. Identify and designate CII organizations  | The identification and designation of the CII will take place following the CII identification and Designation process  | BtCIRT, GovTech Agency | All CII operators  |
|                 |      |  | 2. Develop CII regulatory Framework and CIIP guidelines  | Develop regulatory framework and guidelines for CII operators to abide by and conduct compliance checks. Also ensure CII capacity to comply with CII requirements.  | BtCIRT, GovTech Agency | Security cluster, RMA, BICMA, ERA, CII operators         |
|                 |      |  | 3. Capacity building for CII organizations   | Organize training on the CII guidelines and cyber mock drills, tabletop simulation or other related exercises   | BtCIRT, GovTech Agency | Security cluster, RMA, BICMA, ERA, CII operators         |
|                 |      |  | 4. Ensuring compliance with CII requirements   | Develop regulatory framework and guidelines which will take another 2 years after designation of CIIs. The actual audit to check the compliance will happen only in the fourth year year.   | BtCIRT, GovTech Agency | Security cluster, RMA, BICMA, ERA, CII operators         |
|                 |      | Conduct security assessments of all online services                          | 1. Advocate and conduct cybersecurity awareness programs and publish relevant content on various media platforms | Continuously enhance and update training content through advocacy efforts, incorporating cybersecurity awareness measures testing.  | BtCIRT, GovTech Agency | ALL stakeholders   |
|                 |      |  |  |   |                        |  |
|                 |      |  |  |   |                        |  |

| Digital Society |      | Key activities   | Sub-activities  | Description of activities   | Lead Agency/Division  | Collaborating Agency/division   |
|-----------------|------|--|---|---|-----------------------|---|
| Goals           | KPIs |  |   |   |                       |   |
|                 |      |  | 2. Conduct security assessments of all online services                              | Compile inventory of the online public services to conduct a baseline survey to set the target using the updated Baseline Security for Network and Application checklist. Another assessment will include public survey to assess trust and confidence (security, safety) in online services.   | BtCIRT,GovTech Agency |   |
|                 |      |  | 3. Conduct data privacy and security awareness workshops in collaboration with DSAI | The awareness workshops will be complemented conducting yearly survey to assess citizens understanding of personal information protection.  | BtCIRT,GovTech Agency | DSAI,GovTech Agency   |
|                 |      | Improve Compliance to Incident Reporting mechanisms                        | 1. Define and implement clear SOPs  | Define and implement clear SOPs on reporting PII violation with DSAI, online frauds with RMA and CCAA, and cybercrime such as Defamation, Identify theft , Child exploitations, Cyber bullying with RBP and NCWC. Also implement Coordinated incident reporting framework and conduct assessment of online services to check implementation of protection of PII's guidelines and to check the improvement of ease of reporting incidents. Also will initiate at least 3 operational MoUs /legally binding document for incident handling coordination between BtCIRT and other entities. | BtCIRT,GovTech Agency | DSAI,GovTech Agency<br>RBP,NCWC, RMA & CCAA                                   |
|                 |      |  | 2. Prepare capacity building plan   | Capacity building plan for incident response and investigation in BtCIRT and other established CIRT/SOCs and CII organizations. Include definition and development of incident handling processes, information sharing procedures, and resources and budget required for procurement and skills development for 5Y period of the National Cybersecurity strategy.   |                       |   |
|                 |      |  | 3. Conduct workshop for Journalists and Media houses                                | Engage the media to provide advocacy to public about proactive and actionable cybersecurity measures (including-economic and social impacts) through various media platforms. They will be provided awareness on threat trends, ethics, security and privacy.   | BtCIRT,GovTech Agency | Media houses  |
|                 |      | Create cybersecurity awareness to both government and private institutions | 1. Observe Annual National Cybersecurity Week                                       | Annual national-level cybersecurity awareness program for maximum reach; includes technical workshops and a conference/seminar involving all stakeholders. In collaboration with Private bodies, Corporations, Civil society, Academia, Financial Institutions  | BtCIRT,GovTech Agency | Private bodies, Corporations, Civil society, Academia, Financial Institutions |

| Digital Society |      | Key activities                          | Sub-activities  | Description of activities   | Lead Agency/Division  | Collaborating Agency/division     |
|-----------------|------|---|---|---|-----------------------|-----------------------------------|
| Goals           | KPIs |   |   |   |                       |                                   |
|                 |      |   | 2. Continuous training and workshops for different target groups      | Through these trainings and workshops, the target groups will learn about proactive measures to safeguard their digital presence and protect information, and learn about cyber threats prevalent in Bhutan and globally. Target groups will include Executives, Parliamentarians, and small & medium-sized businesses.   | BtCIRT,GovTech Agency | C4CS, NA and NC Secretariat, BCCI |
|                 |      |   | 3. Engage industry experts as guest lecturers and promote internships | Engage industry experts for facilitating and support delivery of Cybersecurity modules besides guest lecture program. Internships in cybersecurity will also be explored In addition, will study introduction of Bachelors Degree in Cybersecurity within Bhutan and support National Service training planning with integration of cybersecurity curriculum. For tertiary education, basic cybersecurity Hygiene in every discipline will be incorporated. | BtCIRT,GovTech Agency | RUB Colleges                      |
|                 |      | Build cybersecurity HR capabilities     | 1. Build Cybersecurity HR Capabilities                                | Provide Certified trainings for building SOC Tier-1 capabilities and Incident Handling capabilities for both SOC including SOC analyst, Security Analyst, Ethical Hacking, Network Security, Malware Analyst, Digital Forensic Analyst. The trainings will be for BtCIRT and Governmental SOC   | BtCIRT,GovTech Agency |                                   |
|                 |      |   | 2.Introduce upskilling programs for ICT personnels                    | Provide opportunities for ICT personnels to upskill to join the cybersecurity workforce.  | BtCIRT,GovTech Agency | TIDD                              |
|                 |      |   | 3. Partner with RUB colleges for joint research projects              | The research projects will focus on solving cybersecurity challenges in Bhutan's context  | BtCIRT,GovTech Agency | RUB Colleges                      |
|                 |      | Develop Legal and regulatory Provisions | 1. Review ICM Gap Assessment recommendations on Cybersecurity         | Address the legal gaps identified in the ICM Act 2018 gap analysis and review Penal Code of Bhutan 2021   | BtCIRT,GovTech Agency | BICMA,OAG, RMA,ERA                |
|                 |      |   | 2.Propose cybersecurity legislation                                   | Analyse how the cybersecurity institutional framework and CII Regulatory framework can be adopted into legislation.   | BtCIRT,GovTech Agency | OAG, Cabinet                      |

| Digital Society |      | Key activities  | Sub-activities  | Description of activities   | Lead Agency/Division  | Collaborating Agency/division                       |
|-----------------|------|---|---|---|-----------------------|---|
| Goals           | KPIs |   |   |   |                       |   |
|                 |      |   | 3.Establishing coordinated vulnerability disclosure policy                | Analyse best practices, prepare and develop coordinated vulnerability disclosure policy for organizations. Include incident reporting framework to foster transparent mode of reporting vulnerabilities, malpractices and whistle blowing.  | BtCIRT,GovTech Agency | OAG, RBG, Cabinet                                   |
|                 |      |   | 4. Define national cybersecurity institutional framework.                 | This activity requires formation of Working groups who will then define clear roles and responsibilities of each level of bodies in the national cybersecurity institutional framework. The working group will define processes.  | BtCIRT,GovTech Agency | Cabinet,GovTech Commission, BICMA,ERA, RMA,RBP,CCAA |
|                 |      | Conduct public sensitization and capacity building on legal and regulatory frameworks | 1. Develop COP strategy and conduct sensitization programs                | Sensitize the various stakeholders on COP guidelines to equip the stakeholders (parents, educators, policy makers, industry) with knowledge about online threats children face and strategies to safeguard them through the COP guidelines. The strategy is proposed in order to identify specific plans and programs to put the guidelines into practice by each agency/organization among the stakeholders.   | BtCIRT,GovTech Agency | MoESD,NCWC, RBP,ISPs                                |
|                 |      |   | 2. Capacity development on cyber threat investigation for LEAs            | Build capacity for cyber threat investigation for Law Enforcement Agencies (LEA) and include presentation to and discussion with stakeholders on SOP for incident communication channel for discussion and adoption of SOP  | BtCIRT,GovTech Agency | OAG,RBP   |
|                 |      |   | 3. Develop regional partnerships and strengthen international cooperation | The cybercrime framework will explore joining Budapest Convention in collaboration with OAG. Judiciary and RBP, while bilateral agreement with other National CERTs in collaboration with Foreign Ministry will be explored. Locally, strengthening cooperation with IT private firms and corporations related to cybersecurity will also include discussion with stakeholders on SOP for incident communication channel to streamline the communications for faster resolve of cyber threat. | BtCIRT,GovTech Agency | OAG, Justice, RBP, legislators                      |



| Digital Society |      | Key activities                                   | Sub-activities  | Description of activities   | Lead Agency/Division   | Collaborating Agency/division |
|-----------------|------|--|---|---|------------------------|-------------------------------|
| Goals           | KPIs |  |   |   |                        |                               |
|                 |      | Improve Cybersecurity Standards and technologies | 1. Implement up-to-date technological security controls | Besides implementation of the security controls (including patching and backups, firewalls, encryption protocols, Intrusion Detection System, etc.), quarterly assessment of the security controls and review the deployment of cryptographic techniques in protection of data at rest, in transit, & meet international standards and guidelines, will be carried out. | BtCIRT, GovTech Agency | DSD, DST, DSoM, Cloud Service |
|                 |      |  | 2. Implement security assessment tools                  | Security Assessment tools for static and application security testing will be procured to conduct the security assessment of applications.  | BtCIRT, GovTech Agency | DSD, DST, DSoM, Cloud Service |
|                 |      |  | 3. Upgrade BTCIRT server infrastructure                 | Procurement of Server Hardware to replace obsolete and end-of-support hardware and firewall of BTCIRT   | BtCIRT, GovTech Agency | GovNet, Cloud Service         |

| Project 4: Strengthening Enablers |   | Key activities  | Sub-activities   | Description of activities   | Lead Agency/Division    | Collaborating Agency/division |
|-----------------------------------|---|---|--|---|-------------------------|-------------------------------|
| Goals                             | KPIs  |   |  |   |                         |                               |
| Infrastructure                    | All KPIs<br><br>Uptime stability of online public service delivery 99.9%. | Build secure and resilient connectivity                                   | Improve reliability of last-mile connectivity  | 1. Build fiber redundancy rings at Dzongkhags and Thromdes( 5- 7 Km): 25.5M<br>2. Replacement of ADSS Fibers with Anti-Rodent Cables in southern Dzongkhags (150 km for 10 Dzongkhags): 39M<br>Total: 64.50M  | GovNets                 | Dzongkhag/Agencies            |
|                                   |   |   | Enhance security at core network level   | Supply, installation and configuration of firewall at core network level  | GovNets                 | Dzongkhag/Agencies            |
|                                   |   |   | Enhance agency's internal network  | Revamp Agency Network (Switch/Router/APs/Adapter/structured cabling for RRCO, BFDA, Industrial State)   | GovNets                 | Dzongkhag/Agencies            |
|                                   |   |   | Improve physical security of core network infrastructures in dzongkhags and thromdes   | Build common Network Shelter (For 20 dzongkhag/4 MDP/Thromdes/ICP/Gelephu Mindfulness city/Samtse Industrial Park/Airports)   | GovNets                 | Dzongkhag/Agencies            |
|                                   |   |   | Extend Government Initiated Network  | Connect new agencies to GIN (New connection to GIN for 25 agencies every year with an average of Nu. 0.3 M per agency)  | GovNets                 | Dzongkhag/Agencies            |
|                                   |   |   | Outsource operation and maintenance of non-nationalised last mile connectivity to ISPs | Outsource O&M of GIN fiber(Non nationalized) to ISPs (2.5% of total asset value)  | GovNets                 | Dzongkhag/Agencies            |
|                                   |   |   | Enhance and upgrade network infrastructure   | 1. Procurement of Routers and Switches (GovNET Tech Refresh): 85.11M<br>2. Procurement of Fiber Optical Components and Accessories (Mux/DeMux, Optics, Cables, etc) for DrukREN Core and Access: 10M<br>3. Procurement of core routers and switches for DrukREN: 30M<br>4. Replacement of DWDM Active Infrastructure: 35M<br>5. Replacement of DrukREN Access routers for agencies: 43M<br>Total: 203.11M | GovNets                 | Dzongkhag/Agencies            |
|                                   |   | Build secure and resilient data center with active disaster recovery site | Enhance and upgrade GDC primary and backup site  | 1. Upgradation of resources (Storage,Memory and Compute) at GDC primary (TTPL,Thimphu) and Backup site (BT,Bumthang)<br>2. Replacement of hardwares (tech refresh) at GDC primary and backup site<br>3. Renewal and additional software licenses  | Cloud Services Division | GovNets Division              |
|                                   |   |   | Establishment of GDC Active-Active Data Recovery Site at Bumthang                      | 1. Carry out feasibility study<br>2. Review of data centre requirements and planning<br>3. Procurement of hardwares/software<br>4. Operationalise DR  | Cloud Services Division | GovNets Division              |

| Project 4: Strengthening Enablers |      | Key activities   | Sub-activities   | Description of activities  | Lead Agency/Division | Collaborating Agency/division |
|-----------------------------------|------|--|--|--|----------------------|-------------------------------|
| Goals                             | KPIs |  |  |  |                      |                               |
|                                   |      | Establishment of 3rd International Internet Gateway (3IIG) GoI | Improve international link redundancy avoiding Siliguri corridor         | 1. Establish International Internet Gateway via Bangladesh<br>2. Explore other International Internet gateway like Satellite Communications  | DoTS                 | BTL                           |
|                                   |      | Improve fiber redundancy and national telecom infrastructure   | Enhance Domestic fiber Redundancy of the national fiber backbone network | 1. Identify locations (Dzongkhags, economics areas, densely populated areas, etc.) where redundancy will be critical<br>2. Implement network redundancy at backbone level for identified sites                 | DoTS                 | BPC                           |
|                                   |      |  | Improve management and operations of the national telecom infrastructure | Study establishment of an ILD company for telecom infrastructure like fiber optic network and cell towers  | DoTS                 | BPC, Telcos, BICMA            |
|                                   |      |  | Enhance network monitoring capabilities                                  | 1. Strengthen network monitoring capabilities of BICMA<br>2. Establish simple and effective complaint mechanism  | BICMA/DoTS           | BICMA                         |
|                                   |      | Provide affordable connectivity                                | Implement strategies to enhance domestic content access                  | Explore and study domestic and international bandwidth disaggregation and differential pricing implementation on domestic and international content so that prices are minimum for domestically hosted content | DoTS                 | BICMA, Teclos/ISPs            |
|                                   |      |  | Increase domestic bandwidth consumption                                  | 1. Increase bandwidth for GovNet and DrukREN<br>2. Explore CDN services and increase domestic content  | DoTS                 | GovNet, BICMA                 |
|                                   |      |  | Increase international bandwidth through IRU mechanism                   | Bulk procurement of bandwidth to reduce the unit cost  | DoTS                 | Telcos, GovNet                |
|                                   |      | Improve accessibility  | Prepare FTTx/FWA implementation plan for urban areas                     | Assess fixed internet network in urban areas and encourage operators to expand the network for better access   | DoTS                 | Teclos, BICMA, BPC            |
|                                   |      |  | Prepare USF utilization plan for universal connectivity                  | Forecast the expected USF contributions from the telcos over the 13FYP and develop strategic plan to utilize the funds to enhance universal and affordable access  | DoTS                 | BICMA                         |

| Project 4: Strengthening Enablers |   | Key activities  | Sub-activities   | Description of activities  | Lead Agency/Division | Collaborating Agency/division          |
|-----------------------------------|---|---|--|--|----------------------|--|
| Goals                             | KPIs  |   |  |  |                      |  |
| Regulations                       | All KPIs  | Modernize legislations and regulatory framework                     | Identify and review legislations that need to change       | 1. Conduct regulatory review, necessary for improving and streamlining services.<br>2. explore opportunity to harmonize business rules/procedures, wherever necessary.<br>3. Update ICM Act<br>4. Update data protection and Cybersecurity Legislation<br>5. e-Gov Policy 2021<br>6. Telecom and Broadband Policy 2014<br>7. Develop SatCOM policy<br>8. Revise and improve the existing procurement process, specifically tailored for ICT Projects.<br>9. Development of eWaste management framework | GovTech Agency       | OCASC/ Agencies                        |
| Research & development            | 1. Digital Economy contribution of USD 300 million by 2029 and USD 600 million by 2034<br><br>2. 5000 quality jobs by 2029                          | Conduct research and development in Emerging Technologies           | 1. Strengthen Industry Academia linkage                    | The activity will focus on enhancing collaboration with the Industry and Academic institution. :R&D initiatives with tech colleges, industry guest lecture program in colleges   | TIDD                 | Tech Colleges, InnoTech Drive and TTPL |
|                                   |   |   | 2. Testbeds leveraging Bhutan's strength and opportunities | POC in IoT, AI, Drone, Robotic, AR, VR, Blockchain, etc; Awareness on ET   | ETD                  | SSS, DSAI, TIDD, DSD & DST             |
| Talent                            | 1. Digital Economy contribution of USD 300 million by 2029 and USD 600 million by 2034<br><br>2. 5000 quality jobs by 2029<br><br>3. 400 K citizens | Develop highly skilled technology talent pool                       | Develop highly skilled technology talent pool              | Training:<br>1. Conduct market assessment on skills, update the database for ICT professionals and IT/ITES companies<br>2. Identify current and future(deep) tech skill requirements annually<br>3. Develop and implement plan for training delivery<br>4. Periodic assessment on impact of the training<br>Certification:<br>1. Identify internationally accredited certification areas relevant for the industry<br>2. Select and implement certification program with the vendor                    | TIDD                 | Training Institute                     |
| Adoption                          | 1. 10% government operating cost reduced by 2029<br><br>2. Public satisfaction rating of >4.5 by 2029   | Develop important GovStack building Blocks (GovStack/GovDMS/GoVCMS) | Develop Messaging Block                                    | Develop common messaging block that will be used by all government services to decimate messages(SMS, email and Mobile App Notification)   | DSD                  | DST,DSOM                               |
|                                   |   |   | Develop Scheduling Block,                                  | As most of the agencies and systems requires a Scheduling to provide services efficiently and timely, this scheduling block would facilitate this for all agencies and systems.  | DSD                  | DST,DSOM                               |

| Project 4: Strengthening Enablers                         |                                       | Key activities  | Sub-activities   | Description of activities  | Lead Agency/Division | Collaborating Agency/division |
|---|---------------------------------------|---|--|--|----------------------|-------------------------------|
| Goals   | KPIs                                  |   |  |  |                      |                               |
|   |                                       |   | Develop Workflow Engine  | As we have many systems that has been already developed or under development this block would facilitate the reuse of existing and upcoming systems to integrate and streamline the workflow while providing service.  | DSD                  | DST,DSOM                      |
|   |                                       |   | Develop Consent Block  | With regards to maintaining confidentiality and transparency while providing service, the citizens are required to consent to the terms and condition required to avail services, this block would also notify individuals when their record is being accessed by others with or without permission. | DSD                  | DST,DSOM                      |
|   |                                       |   | Develop Whitelist Block  | This block is very important to provide fast service to citizens, as this list would facilitate auto approval for service providing without the citizen having to process security clearance or any other clearance as long as whitelist is maintained.  | DST                  | DSOM,DSD                      |
|   |                                       |   | Develop Document Management System   | This system would reduce the number of uploads that needs to be made to avail service as long as the verified document is available in GovDMS  | DST                  | DSOM,DSD                      |
|   |                                       |   | Develop Common Govt CMS  | This GovCMS would standardise website and ensure security, consistency and availability of the all the government website, Procurement of common and useful plugins.   | DSOM                 | DST,DSD                       |
| Education as foundational for digital transformation      | All KPIs                              | Digitalizing Education to build resilient, agile and future ready talent in the digital era | Develop digital strategy for education   | A digital strategy for education will be developed to guide the education sector on the digital transformation journey so that a streamlined and appropriate intervention and investment are made.   | MoESD                | GovTech Agency                |
|   |                                       |   | Strengthen digital education ecosystem   | Digital strategy will be a guide to address and strengthen the ecosystem. Ecosystem refers to:<br>1. Digital Competency<br>2. Digital Content<br>3. Infrastructure/Facilities  | MoESD                | GovTech Agency                |
| NDI Strategy: NDI as foundation of digital transformation | Accelerate Growth of the ICT Industry | Accelerate the adoption of NDI  | Support and provide access to Bhutan NDI ecosystem to create innovative products for both domestic and international markets | Provide access to competency development resources   | WoG, GovTech Agency  | WoG, GovTech Agency           |

| Project 4: Strengthening Enablers |      | Key activities | Sub-activities                               | Description of activities   | Lead Agency/Division | Collaborating Agency/division |
|-----------------------------------|------|----------------|--|---|----------------------|-------------------------------|
| Goals                             | KPIs |                |  |   |                      |                               |
|                                   |      |                | Train Citizens on usage of Bhutan NDI wallet | User friendly content creation of NDI Wallet : One of content in Futuristic digital literacy program/ Enhanced digital literacy and skilling of citizens outcome  | WoG, GovTech Agency  | WoG, GovTech Agency           |
|                                   |      |                | Conduct awareness on Bhutan NDI Wallet       | The effort will be focus on its benefits, safe usage, keep pin securely & privately and in implications<br>Develop awareness materials and publish on print, social medias and other mainstream media like TV and Radio | WoG, GovTech Agency  |                               |