

Mobile Governance for Small Island Developing States – Toolkit

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Executive Summary

This report is the second of three main deliverables produced by the project “Developing M-Governance Strategy for Vanuatu and Commonwealth m-Governance Toolkit”:

1. Mobile Governance for Small Island Developing States – Strategy Knowledge Base (Henning and Janowski, 2014)
2. Mobile Governance for Small Island Developing States – Toolkit (Estevez and Janowski, 2014)
3. Mobile Governance for Vanuatu – Strategy and Implementation Plan (Henning, Janowski, Zoughbi and Estevez, 2014)

Based on the findings of research reviews related to Mobile Governance (MGOV) and a policy review of the national development versus MGOV/ICT development contexts for Small Island Developing States (SIDS) documented by Henning and Janowski (2014), and on the experience gained developing the MGOV4D policy instrument for Vanuatu documented by Henning, Janowski, Zoughbi and Estevez (2014), the report presents a systematic and rigorous process to guide other SIDS in developing their own national MGOV4D policy instruments.

In particular, the report presents the nine-step process comprising:

1. Reviewing the national policy context for MGOV4D
2. Conducting field visits to capture MGOV4D conditions in the country
3. Identifying country-specific elements for MGOV4D:
 - 3.1. Aim – defining the overall objective for MGOV4D in the country
 - 3.2. Goals – defining the set of MGOV4D goals to fulfill the overall objective
 - 3.3. Strategies – extending the MGOV4D strategy knowledge base
 - 3.4. Approaches – constraining strategy implementation by addressing local conditions
4. Defining the entire extended strategy knowledge base as a strategy matrix:
 - 4.1. Strategies as rows
 - 4.2. Goals and approaches as columns
 - 4.3. Cells deciding for every strategy row which goals and approaches it fulfills
5. Assigning weights to goals to represent their relative importance, and calculating the rank value for every strategy based on its contributions to individual goals
6. Selecting the minimum rank value, and including all strategies with the rank above this value in the national MGOV4D strategy with a brief justification in relation to the goals
7. Identifying priority projects for the highest-ranked strategies
8. Organizing a workshop to present results and receive feedback from major stakeholders
9. Writing up the final strategy document based on the agreed upon content

The report also presents some guidelines for implementing MGOV4D strategies, including possible implementation roadmap, short-term wins, initial activities, investment plan, key performance indicators and sustainability plan, to be localized to particular national contexts.

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Abbreviations

COMSEC	Commonwealth Secretariat
CTO	Commonwealth Telecommunication Organization
EGOV	Electronic Governance
GOV4D	Governance for Development
ICT	Information and Communication Technology
MGOV	Mobile Governance
MGOV4D	Mobile Governance for Development
OGCIO	Office of the Government Chief Information Officer
SD	Sustainable Development
SIDS	Small Island Developing States
UN	United Nations
UNU	United Nations University

1. Introduction

This report constitutes the second deliverable of the “Developing M-Governance Strategy for Vanuatu and Commonwealth m-Governance Toolkit” project focused on the development of the Mobile Governance for Development (MGOV4D) toolkit for Small Island Developing States.

The project was established as follows:

- The Commonwealth Connects Steering Committee decided in January 2013 to develop a MGOV4D strategy for a Commonwealth small state, and based on this experience and the knowledge produced, to build a toolkit that could guide similar efforts in other Commonwealth small states.
- The Commonwealth Telecommunications Organization (CTO) was mandated to develop the project, with Vanuatu selected as the target state for strategy development, and Small Island Developing States (SIDS) as the target country group for the toolkit.
- CTO developed the Terms of Reference for the project (Commonwealth Telecommunications Organization, 2013) and in September 2013 contracted the United Nations University International Institute for Software Technology (UNU-IIST) in Macao to conduct the project through the Center for Electronic Governance at UNU-IIST.

This report documents the systematic and rigorous process of developing the national Mobile Governance for Development (MGOV4D) strategies particularly by the Small Island Developing States (SIDS). By applying this process and based on the MGOV4D strategy knowledge base, any SIDS could develop its own custom-made national MGOV4D strategy, while responding to country-specific development goals and implementation conditions. In addition to the process, the toolkit contains

This report is structured as follows: Section 2 introduces the MGOV4D toolkit; Section 3 details individual steps prescribed by the toolkit and illustrates them with examples from the MGOV4D strategy process for Vanuatu (Henning, Janowski, Zoughbi and Estevez, 2014); Section 4 provides some general, context-independent guidelines for implementing the strategy including implementation roadmap, short-term wins, initial activities, investment plan, key performance indicators and sustainability plan; and the final Section 5 provides some conclusions.

2. MGOV4D Toolkit

Documented in (Henning and Janowski, 2014), the MGOV4D strategy knowledge base provides the Small Island Developing States (SIDS) that are interested in developing their own custom-made MGOV4D policy instruments, a range of strategies to choose, while ensuring that such instruments are able to respond to locally-defined policy goals and implementation conditions.

The aim of this and subsequent section is to provide a systematic process to achieve this outcome, and to illustrate this process with examples drawn from the Vanuatu MGOV4D strategy development effort documented in (Henning et al., 2014). The illustrations also serve as the validation of the toolkit in the real-life setting of a concrete SIDS.

For a given country, the toolkit prescribes a series of steps to develop a national MGOV4D policy instrument, based on the underlying MGOV4D strategy knowledge base. The knowledge base draws from the pool of countries in similar conditions (peer group) or ideal conditions (aspiration group) for MGOV4D development compared to our country.

The nine steps prescribed by the MGOV4D toolkit are as follows:

1. Reviewing the national policy context for MGOV4D
2. Conducting field visits to capture MGOV4D conditions in the country
3. Identifying country-specific elements for MGOV4D:
 - 3.1. Aim – defining the overall objective for MGOV4D in the country
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5. Assigning weights to goals to represent their relative importance, and calculating the rank value for every strategy based on its contributions to individual goals
6. Selecting the minimum rank value, and including all strategies with the rank above this value in the national MGOV4D strategy with a brief justification in relation to the goals
7. Identifying priority projects for the highest-ranked strategies
8. Organizing a workshop to present results and receive feedback from major stakeholders
9. Writing up the final strategy document based on the agreed upon content

The toolkit also provides some guidelines to help implement MGOV4D strategies including possible implementation roadmap, short-term wins, initial activities, investment plan, key performance indicators and sustainability plan, all to be localized to specific national contexts.

In the case of Vanuatu, the MGOV4D strategy knowledge base draws from the national ICT/MGOV strategies of India, Mauritius, Micronesia, Singapore and Malta, two of which are small island developing states and thus comprise the peer group (Mauritius and Micronesia), two are small island developed states and comprise the aspiration group (Singapore and Malta), and one (India) is the owner of the only internationally-recognized standalone MGOV strategy. Applying these steps for Vanuatu resulted in the definition of the National MGOV4D Strategy instrument documented by Henning, Janowski, Zoughbi and Estevez (2014), together with all methodological information required to rerun these steps in order to respond to changing policy goals and implementation conditions in the country, and to apply the lessons learnt.

3. MGOV4D Toolkit Steps

The nine steps of the MGOV4D strategy development process outlined in Section 2 are presented in detail in Sections 3.1 through 3.9, all illustrated with examples from the Vanuatu MGOV4D strategy development effort in (Henning et al., 2014).

3.1. Step 1 – Review National Policy Context for MGOV4D

For the purpose of policy consistency and contextual relevance, the MGOV4D instrument should be tightly aligned with existing policies of the country. To this end, this steps comprises a review of the MGOV4D policy context including: 1) existing policy instruments relevant to the MGOV4D strategy context and 2) key objectives, priorities and goals set forth by these instruments, paraphrasing them but staying as identical as possible to their original wording.

In the case of Vanuatu, the review identified five MGOV4D-related national policy instruments:

1. Vanuatu Priorities and Action Agenda 2006-2015 (Government of Vanuatu, 2006)
2. Vanuatu Strategic e-Government Plan (Government of Vanuatu, 2011)
3. Vanuatu National ICT Policy 2013 (Government of Vanuatu, 2013a)
4. Vanuatu Cybersecurity Policy (Government of Vanuatu, 2012)
5. Vanuatu Universal Access Policy (Government of Vanuatu, 2013b)

Among them, the 2006 Vanuatu Priorities and Action Agenda sets forth the vision of

“A just, educated, healthy and wealthy Vanuatu”

It formulates three goals to pursue this vision:

1. *Achieving higher and sustainable economic growth to create jobs and raise incomes while conserving resources for future generations,*
2. *Ensuring macroeconomic stability to create a stable investment climate and*
3. *Raising standards of service delivery particularly in rural and outer regions to improve access to basic health and education services while lowering the cost of internal trade*

It also defines seven areas for strategy formulation:

1. *Private Sector Development and Employment Creation*
2. *Macroeconomic Stability and Equitable Growth*
3. *Good Governance and Public Sector Reform*
4. *Primary Sector Development (natural resources and the environment)*
5. *Provision of Better Basic Services, especially in rural areas*
6. *Education and Human Resource Development*
7. *Economic Infrastructure and Support Services*

In addition to exploring various policy instruments, the review should also determine the place for MGOV4D policy in relation to other instruments.

In the case of Vanuatu, the MGOV4D instrument is directly supporting the implementation of the National ICT Policy along with EGOV, Universal Access and Cyber Security strategies, which in turn responds to the development needs of the country captured in the Vanuatu Priorities and Action Agenda. The dependencies between different policy instruments and the relative position of MGOV4D are depicted in Figure 1.

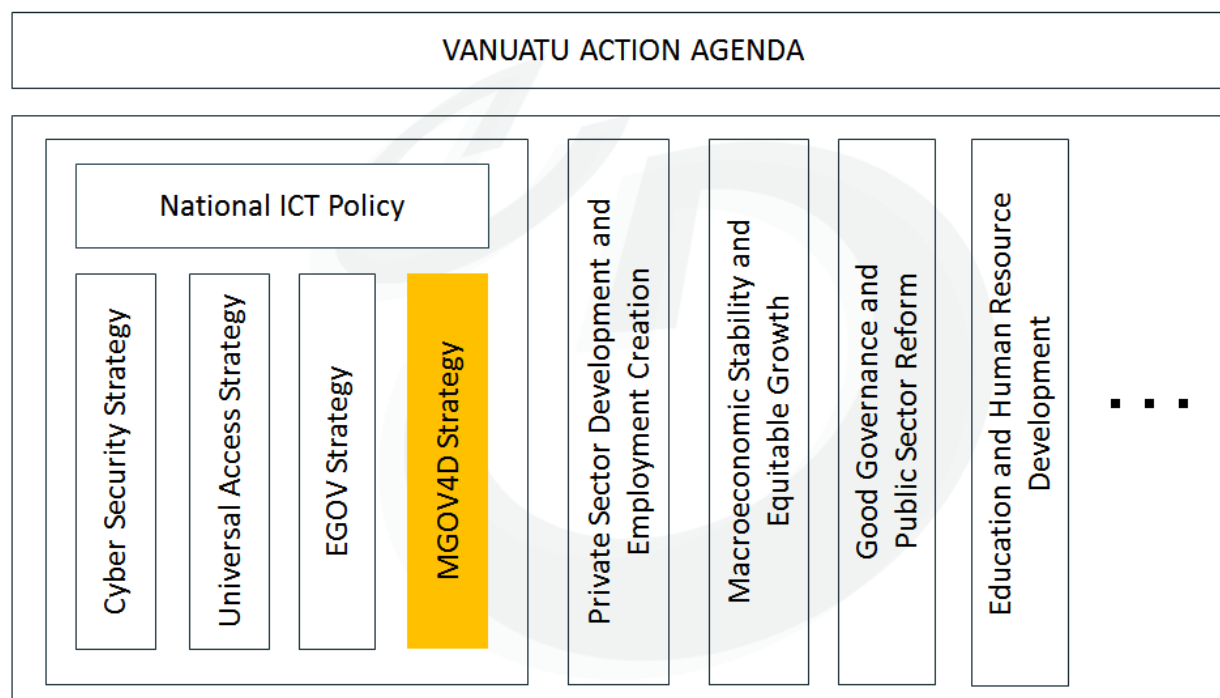


Figure 1: MGOV4D Policy Context for Vanuatu

3.2. Step 2 – Capture MGOV4D Conditions in the Country

While Step 1 focuses mainly on identifying relevant goals and incorporating them into the MGOV4D policy instrument, Step 2 observes the conditions in the country necessary to implement the recommended policy – problems, solutions, approaches, capabilities, achievements, etc. Step 2 also identifies additional goals of the recommended policy which were not captured by the policy review undertaken in Step 1.

This step should be carried out through interviews of key staff of institutions that have a major stake in MGOV4D development in the country including government agencies, financial and civil society organizations, businesses and others; these interviews could include one-on-one or group discussions. The interviews could include a Strengths-Weaknesses-Opportunities-Threats analysis along the four dimensions of the MGOV framework, and should identify high-impact

strategies and projects not included in the MGOV4D strategy knowledge base. Interview notes should be reviewed and analyzed after each interview, and aggregated and summarized at the end. A sample instrument to carry out such interviews is outlined in the Table 1 below.

Interview		Interviewee				
Time		Name				
Place		Organization				
Interviewer		Function				
Dimensions	Analysis				Synthesis	
	Strengths	Weaknesses	Opportunities	Threats	Strategies	Projects
Institutions						
○ Strategy and Policy Framework						
○ Human Capacity						
○ Leadership						
Innovation System						
○ External Stakeholders						
○ Absorptive Capacity and Adoption						
Infrastructure						
○ ICT Infrastructure						
○ Interoperability						
○ Security Safeguards						
Services and Applications						
○ Design and Development						
○ Delivery Mechanisms						

Table 1: MGOV4D interview instrument

In the case of Vanuatu, a series of 16 interviews were organized with various organizations which have an important stake in Vanuatu's MGOV4D development; key organizations consulted are 8 government, 3 financial, 2 non-government and 3 private sector institutions. The interviewed institutions were as follows:

1. Agricultural Research Centre, Ministry of Agriculture
2. Civil Registry Office, Ministry of Internal Affairs
3. Department of Strategic Planning and Aid Coordination, Office of the Prime Minister
4. Financial Intelligence Unit
5. Land Administration Unit, Ministry of Land Administration
6. Office of the Government Chief Information Officer, Office of the Prime Minister
7. Telecommunications and Radio Communication Regulator
8. Vanuatu Cultural Center

9. National Bank of Vanuatu
10. Reserve Bank of Vanuatu
11. Vanuatu National Provident Fund
12. Council of Women
13. Pacific Institute for Public Policy
14. Digicel Telecom Company
15. Interchange Ltd.
16. TelSat ISP

Additional interviewees, if time allows, could include the following:

17. Electricity provider and regulator
18. Other mobile providers
19. Distinguished professors of ICTs at local universities
20. Political leaders active in using or promoting ICTs
21. Chamber of Commerce or similar, especially any ICT sub-groups
22. Government ombudsman
23. Press representatives and op-ed columnists, especially those commenting on ICTs
24. Investors in ICTs
25. National Statistics Office or similar
26. Additional NGOs
27. National Disaster Planning Office or similar
28. Owners or operators of any ICT enterprise zones, cyber-cities or similar
29. Owners or operators of local Internet cafes
30. Transparency International or similar organizations
31. Council of Chiefs or equivalent if any
32. Head of communications workers union, if any
33. Head of education, health and other sector's labor unions or employee associations
34. Owners or operators of ICT sales shops, training facilities, consulting firms
35. Major law firms in the country that practice ICT or telecoms law, etc.

The outcomes of these interviews constitute part of the accompanying National MGOV4D Strategy instrument (Henning et al., 2014).

3.3. Step 3 – Identify Country-Specific MGOV4D Elements

Step 3 consists of defining four key elements which make up the national MGOV4D policy:

- the overall objective of the policy,
- the goals to be pursued by the policy in line with this objective,
- possible strategies to advance the achievements of various policy goals, and
- principles and approaches to underpin any implementation of the policy in line with conditions in the country.

These elements are organized into a pyramid depicted in Figure 2, and described in the remainder of this section as follows: objective in Section 3.3.1, goals in Section 3.3.2, approaches in Section 3.3.3, and strategies in Section 3.3.4.



Figure 2: MGOV4D Strategic Framework

3.3.1. Step 3.1 – Objective

One approach to defining the overall objective of the national MGOV4D policy is to directly adopt the objectives defined by other, higher-level policy instruments that constitute the immediate targets of interventions prescribed by the MGOV4D policy. The advantage of this approach is that it guarantees, if followed consistently down to individual goals and strategies, close alignment of the MGOV4D policy instrument with the larger policy context. It is important to note that this approach could be criticized for constraining the opportunities addressed by the MGOV4D instrument to those that only serve existing policies, rather than the country's socio-economic development at large. However, this approach is based on the assumption that the socio-economic needs of the country are accurately captured by the higher-level policy context, hence close alignment to these instruments should be a safe and effective approach. Clearly, the proposed approach is just one among others, and the choice will depend on the local circumstances and the application context, at the discretion of the users of the toolkit.

In the case of Vanuatu, it was decided to directly align the MGOV4D policy instrument to the National ICT Policy and indirectly (through the National ICT Policy) to align this instrument to the Vanuatu Priorities and Action Agenda. As a result, the overall objective of the Vanuatu National ICT Policy 2013 was adopted as the overall objective of the MGOV4D policy instrument, the only difference being the replacement of the phrase “information and communication technologies” with “mobile technologies”:

National ICT Policy 2013 Objective

To maximize the contribution, efficiency and effectiveness of information and communication technologies in achieving the National Vision of 'A Just, Educated, Healthy and Wealthy Vanuatu', thereby empowering and benefiting every citizen and resident of Vanuatu

National MGOV4D Policy Objective

To maximize the contribution, efficiency and effectiveness of mobile technologies in achieving the National Vision of 'A Just, Educated, Healthy and Wealthy Vanuatu', thereby empowering and benefiting every citizen and resident of Vanuatu

3.3.2. Step 3.2 – Goals

The consequence of directly aligning the MGOV4D policy instrument to the National ICT Policy is the possibility of directly adopting the goals set forth by this policy, and adding a number of MGOV4D-specific goals discovered in the course of the interviews, which represent the needs and aspirations of various MGOV4D stakeholders in the country. As noted above, the proposed approach is just one among others, and the choice will depend on the local circumstances and the application context, at the discretion of the users of the toolkit.

In the case of Vanuatu, it was decided that the MGOV4D policy be based on eight goals (priorities) set forth by the Vanuatu National ICT Policy 2013 by replacing ICT with mobile ICT in the titles and descriptions of the corresponding goals:

National ICT Policy 2013 Goals

- G1. Access to ICTs in Education
- G2. Access to ICT Infrastructure and Devices
- G3. E-Government
- G4. Integration of ICTs into Sectoral Policies
- G5. Building Trust (Mitigating Risks and Threats related to ICT Development)
- G6. Locally Relevant Content
- G7. Capacity Building
- G8. Platform for Multi-Stakeholder and Multi-Sector Coordination and Collaboration

National MGOV4D Policy Goals

- G1. *Access to Mobile ICT in Education* – Providing educational institutions with access to mobile ICT infrastructure and related services and equipment, adequate to support the educational process, provide students with access to mobile ICT devices, and provide appropriate mobile ICT-based educational content.

- G2. *Access to Mobile ICT Infrastructure and Devices* – Enhancing general access, availability and affordability of the reliable mobile ICT infrastructure and related mobile services and devices, with an emphasis on demand-side measures, enhancing the overall resilience of the national mobile ICT infrastructure, and lowering the costs of mobile services and devices as they are delivered to the end-users.
- G3. *M-Government* – Enhancing the effectiveness and cost-efficiency of the mobile ICT use in government operations, particularly in internal administration; and promoting mobile ICT-enabled interactions between the government and citizens and other stakeholders.
- G4. *Integration of Mobile ICT into Sectoral Policies* – Recognizing the enabling and transforming potential of mobile ICT for every sector and policy area, particularly for education, health, production, transport (especially maritime), trade and attraction of foreign investment, gender equality, social equity, democratic participation, preservation and promotion of local culture including arts, environmental protection disaster management; and achieving a strong direction towards realizing such potential through the development and implementation of the appropriate sectoral policies.
- G5. *Building Trust (Mitigating Risks and Threats related to Mobile ICT Development)* – Recognizing that alongside numerous benefits, mobile ICT also brings various dangers, including the exposure to harmful information; new avenues for criminal including fraudulent activities; new threats to protection of confidential information and important infrastructure; as well as new risks of disruption of social and economic life; and ensuring that those dangers are properly addressed and managed, in particular through the appropriate preparedness, education and awareness-building.
- G6. *Locally Relevant Mobile Content* – Increasing the availability of the locally-relevant and sustainably-supported mobile content, especially by making global content accessible in local languages.
- G7. *Capacity Building* – Enhancing the skills necessary for utilizing and developing mobile ICT, especially in public service delivery.
- G8. *Platform for Multi-Stakeholder and Multi-Sector Coordination and Collaboration* – Recognizing that any pre-established policy cannot foresee every initiative that could benefit from the development of the mobile ICT sector, neither any one central agency can envisage and direct all of them; and therefore setting up a platform for expertise, knowledge and skills to be shared among various stakeholders and sectors, duplications to be eliminated and potential synergies exploited, thereby enabling a substantially self-organizing (although enabled and coordinated) mobile ICT development process.

Eight more goals were added, representing country needs expressed during the interviews:

- G9. *Economic Growth through mobile ICT* – Enhancing the economic growth of Vanuatu through the deployment of mobile ICT to support and expand economic activities throughout the country, both as an enabler of existing activities and as a contribution to continuous innovation in various sectors of the economy and society.
- G10. *Participatory and Accountable Governance through Mobile ICT* – Achieving more interactive and participatory engagement between the government and citizens,

- businesses and other stakeholders by means of mobile ICT, particularly by using mobile ICT for public consultation; and using mobile ICT to increase the transparency and accountability of the institutions of public governance.
- G11. *Improved Public Records and Data Management through Mobile ICT* – Improving the integrity, coverage and quality of public records by applying mobile ICT to collect more timely, accurate and comprehensive data of public value; and improving the accessibility of public record by means of mobile ICT.
 - G12. *M-Economy, M-Commerce, M-Banking* – Facilitating the integration of mobile ICT and mobile services into the general and digital economy including trade, commerce and financial sectors, and develop m-economy, m-commerce and m-banking services.
 - G13. *Access to Mobile ICT in Health* – Providing health-related institutions with access to mobile ICT infrastructure and related services and equipment to support the provision and administration of health care.
 - G14. *Health through Mobile ICT* – Utilizing mobile ICT to improve the health of Vanuatu's citizens, in particular by using mobile ICT to facilitate access to health services and to disseminate health-related information.
 - G15. *Gender Equality through Mobile ICT* – Improving gender equality by leveraging mobile ICT to empower women in all sectors, in particular by increasing their participation in economic activities and safeguarding their personal safety and well-being.
 - G16. *Environmental Sustainability through Mobile ICT* – Protecting Vanuatu's environment and facilitating sustainable use of its natural resources by means of mobile ICT.
 - G17. *Public Safety through Mobile ICT* – Using mobile ICT to improve public safety, particularly from criminal activities at home and abroad, and from disasters.
 - G18. *Cultural Heritage Preservation through Mobile ICT* – Using mobile ICT to facilitate the preservation of the cultural heritage, both by collecting and archiving knowledge about local cultures through mobile devices, and by devising appropriate measures to protect local cultures from the potentially destructive impact of ICT and mobile ICT.

3.3.3. Step 3.3 – Approaches

This step entails identifying the approaches and principles to guide the implementation of the MGOV4D policy to address local needs and local implementation conditions. Close alignment with the target policy would be an opportunity to directly adopt such approaches from it. In the case of Vanuatu, the approaches and principles adopted for the national MGOV4D policy are directly adopted from the National ICT Policy:

- A1. Multi-Stakeholder and Multi-Sector Collaboration
- A2. Pragmatic Approach
- A3. Private, in particular Locally-Based, Sector Driven Development
- A4. Sustainable Best Practice ICT Sector Governance
- A5. Fair and Effective Competition and Enhancement of Economies of Scale
- A6. "Squeezing-the-Assets" and "Thinking-of-a-Greater-Good"
- A7. Kick-Starting Sustainable Development

- A8. Subsidiarity and Stakeholder Ownership and Drive
- A9. Policy as a Process
- A10. Integration into the Work as Usual
- A11. Socially Inclusive and Equitable Development
- A12. Being a Responsible Member of the International and Regional Community
- A13. Prioritizing the Priorities
- A14. Utilization of Appropriate Tools

3.3.4. Step 3.4 – Strategies

This step consists of extending the MGOV4D strategy knowledge base presented by Henning and Janowski (2014, Section 4) (which is based on the documented international efforts with MGOV4D and ICT4D development by the countries with similar or ideal conditions compared to the subject country) with country-specific strategies discovered during the field visits and interviews with major stakeholders of MGOV4D development in the country.

Similar to the strategy knowledge base, country-specific strategies should also be based on the four dimensions of the MGOV framework, i.e. MGOV Institutions, MGOV Innovation System, MGOV Infrastructure and MGOV Services and Applications introduced by Henning and Janowski (2014, Section 2). In addition, as the strategy knowledge base is structured into a multi-level hierarchy that comprises dimensions at the first level (e.g. MGOV Institutions), elements at the second level (e.g. Strategy and Policy Framework SP), strategies at the third level (e.g. SP6), sub-strategies at the fourth level (e.g. SP6.3), and concrete projects at the fifth level (e.g. SP6.3a), the additional strategies must fit into this hierarchy without altering existing elements. For more details refer to “Mobile Governance for Small Island Developing States – Strategy Knowledge Base” (Henning and Janowski, 2014, pp. 57-59).

In the case of Vanuatu, a good number of locally-defined strategies were identified by Henning et al. (2014, Section 3). As an illustration, Table 2 provides selected Vanuatu-specific strategies under the Design and Development (DD) element of the MGOV Services and Applications dimension. In particular, the illustrated strategies contribute to the sectoral applications of MGOV4D in the areas of public health, public safety and gender equality.

ID	STRATEGY	SOURCE
DD2	Develop specific MGOV services in education, health, public safety, environment and other sectors and lessen the cost of providing such services to remote and rural communities	Other
DD2.3	Develop MGOV applications in the health sector	Other
DD2.3b	Enabling mobile teleconferencing to access specialized doctor care	Vanuatu
DD2.3c	Develop SMS-based health consultation systems, e.g. services to answer health-related questions from the public through SMS blasts	Vanuatu

DD2.3d	Disseminate health information by public SMS announcements, e.g. nutrition information for women with infants	Vanuatu
DD2.3e	Gather health statistics from the field, sent through SMS codes, e.g. on the number of clients seen, diagnosis, etc.	Vanuatu
DD2.5	Develop MGOV services for public safety	Other
DD2.5a	Integrate mobile ICT in the national disaster management and recovery plans for monitoring risk reductions, early warning alert systems and for assisting in disaster recovery; implement SMS-based disaster alerting system, e.g. SMS blasts to all phones in a given district to warn the population about impending disasters	Vanuatu
DD2.5b	Sharing cases of judicial proceedings and settlements by local authorities, including chiefs, to a central point through SMS	Vanuatu
DD2.5c	Provide mobile-ICT enabled neighborhood watch mechanisms, e.g. SMS-based notifications of observed threats	Vanuatu
DD2.7	Develop MGOV applications for businesses and consumers	Other
DD2.17	Utilize mobile ICT to support gender equality	Vanuatu
DD2.17a	Report incidents of violence against women through mobile phones, e.g. SMS-based system or violence hotline	Vanuatu
DD2.17b	Facilitate woman-to-woman support networks based on mobile ICT	Vanuatu

Table 2: Vanuatu-specific MGOV4D strategies

3.4. Step 4 – Defining the National MGOV4D Strategy Matrix

The aim of this step is to integrate all elements of the MGOV4D policy instrument, collected in the preceding steps, into a framework called the MGOV4D Strategy Matrix, and making this matrix ready for decision-making in subsequent steps. The matrix comprises rows which represent strategies, of columns which represent goals and approaches, and the cells which represent contributions of individual strategies to individual goals (for goal-related columns) or applicability of individual approaches to individual strategies (for approach-related columns). This section details the construction of this matrix: the rows are defined in Section 3.4.1, the columns are defined in Section 3.4.2, and the cells are filled in Section 3.4.3.

3.4.1. Step 4.1 – Defining Rows

The rows of the MGOV4D strategy matrix are filled for every strategy included in the MGOV4D strategy knowledge base defined in Section 4, plus country-specific strategies identified during the field visits and interviews with stakeholders from the country, as outlined in Section 3.3.4. Every strategy is identified uniquely with its category label and a series of numbers depending on its position in the strategy hierarchy. Table 3 depicts a fragment of the strategy matrix rows for Vanuatu, comprising all strategies under the Strategy and Policy Framework category.

SP	Institutions - Strategy and Policy Framework
SP1	Develop and implement MGOV policy in line with the national ICT policy
SP1.1	Review current legislation and enact MGOV legislation
SP1.2	Mandate MGOV implementation across sectors and provide incentives to public officials to leverage MGOV services
SP1.3	Develop an implementation plan and update it in regular intervals
SP1.4	Conduct a feasibility study and an output proposal on MGOV
SP2	Deploy a economy-driven MGOV programme aimed at deriving financial benefits through revenue generation and cost-saving
SP2.1	Develop periodic multi-year MGOV investment plans to gradually replace and/or upgrade the incumbent strategic and legacy systems
SP2.2	Prepare guidelines and standards for procurement of mobile ICT systems in government
SP2.3	Develop mechanisms for funding MGOV development
SP2.4	Identify mechanisms to lower costs of mobile ICT
SP2.5	Establish national guidelines and incentives to promote mobile work
SP3	Determine a regulatory framework on the deployment of mobile broadband networks
SP3.1	Enact law to promote competition in mobile telecommunications markets
SP3.2	Create independent regulation of those markets, with powers for the regulator to ensure prompt and fair network interconnection and
SP3.3	Include suitable options for reducing the cost of such regulation whenever that can be done without jeopardizing competitive outcomes
SP3.4	Provide open access to international connectivity on a cost-based and non-discriminatory basis
SP3.5	Supply legislation and industry data required by ITU and other relevant organizations for regional performance surveys
SP4	Set in place non-discriminatory laws, mandates, policies and practices for equal and equitable access to MGOV infrastructure and services
SP4.1	Enact mobile accessibility legislation and publish national mobile accessibility standards
SP4.2	Adopt a universal access policy for MGOV throughout the whole country, to be administered by the regulator by means of mandatory
SP4.3	Develop and adopt laws to waive levy, customs duty and other taxes on mobile ICT equipment for rural and underserved communities
SP4.4	Mandate the shared use of public service telecommunication services across public service sectors
SP5	Formulate and implement an open source software policy
SP6	Develop targeted strategies and action plans for key MGOV sectors e.g. health, education and environment
SP6.1	Use MGOV as tool to reduce the impacts of government on the environment
SP6.1a	Develop and implement green MGOV guidelines
SP6.1b	Ensure energy-efficient MGOV; conduct energy use assessment for MGOV and develop sectoral energy reduction plans to encourage
SP6.1c	Use mobile ICT tools to communicate and work together effectively at a distance
SP6.1d	Develop a policy to ensure that all providers and agencies have a process in place for ICT-based waste removal and disposal, including
SP6.2	Establish policies, regulations and guiding principles for m-health services
SP6.2a	Provide a framework for information confidentiality related to the use of m-health services
SP7	Develop a policy framework for a national m-commerce supply chain
SP7.1	Establish fiscal incentives for m-commerce; address regulatory and fiscal issues in parallel to introducing the necessary infrastructure
SP7.2	Facilitate mobile payments by addressing regulatory and fiscal issues in parallel to introducing the necessary infrastructure for micro
SP7.3	Develop a Digital Assets Marketplace Programme where digital content can be traded seamlessly
SP8	Implement a Right to Information Act that incorporates citizen right to mobile access to information, mandating that public information
SP8.1	Implement an Open Government Data Strategy
SP9	Formulate and implement a social media policy
SP9.1	Showcase and promote MGOV solutions
SP10	Communicate and promote a strategy related to MGOV use in relation to local culture
SP10.1	Set up a national strategy on cultural heritage preservation through ICT; utilise UNESCO programs on language and culture preservation
SP10.2	Enact legislation to restrict abuse of mobile ICT, e.g. inappropriate content, that affect local culture and youth
SP11	Enact legislation to facilitate governmental information management and information sharing
SP11.1	Enact legislation to protect the civil registry system
SP11.2	Enact unified regulation regarding inter-ministerial information sharing e.g. on civil registration

Table 3: MGOV4D strategy matrix for Vanuatu – rows

3.4.2. Step 4.2 – Defining Columns

The columns of the MGOV4D strategy matrix are filled with selected goals, including those adopted from the target policy instrument plus the goals identified during the field visits and interviews with major MGOV4D stakeholders from the country, as outlined in Section 3.3.2. They also include adopted approaches to guide MGOV4D implementation, as outlined in Section 3.3.3.

Every goal is assigned numerical weight between 1 and 3 to determine its relative importance to the current stage of MGOV development in the country. In addition, the GENERIC column is assigned the highest weight of 3 to give importance to all strategies that while not contributing to specific goals, contribute to all goals and strategies.

In the case of Vanuatu, the MGOV4D strategy matrix comprises 33 columns: 19 columns represent 8 goals G1-G8 adopted from the Vanuatu National ICT Policy 2013 and 10 goals G9-G18 discovered during the interviews (Section 3.3.2) and one GENERIC column; and 14 columns represent different approaches A1-A14 adopted from the National ICT Policy (Section 3.3.3). See Table 4.

GENERIC	GOALS																		APPROACHES													
	NATIONAL ICT POLICY								OTHER GOALS																							
	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	G15	G16	G17	G18	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14
	Access to Mobile ICT in Education	Access to Mobile ICT Infrastructure/Devices	M-Government	Integrating Mobile ICT into Sectors	Mitigating Risks related to Mobile ICT	Locally Relevant Mobile Content	Capacity Building	Coordination/Collaboration Platform	Economic Growth	Participatory and accountable governance	Public records and data	M-Economy, M-Commerce, M-Banking	Access to ICT in Health	Health	Gender Equality	Environmental Sustainability	Public Safety	Cultural Heritage Preservation	Multi-Stakeholder and Multi-Sector Collaboration	Pragmatic Approach	Private, in particular Locally-Based, Sector Driven Development	Sustainable Best Practice ICT Sector Governance	Fair and Effective Competition and Enhancement of Ecosystem	"Squeezing-the-Assets" and "Thinking-of-a-Greater-Good"	Kick-Starting Sustainable Development	Subsidiarity and Stakeholder Ownership and Drive	Policy as a Process	Integration into the Work as Usual	Socially Inclusive and Equitable Development	Being a Responsible Member of the International and Regional Community	Prioritizing the Priorities	Utilization of Appropriate Tools
WEIGHTS																																
3	1	2	3	1	3	2	3	2	1	1	1	1	1	1	1	1	1	1														

Table 4: MGOV4D strategy matrix for Vanuatu – columns

3.4.3. Step 4.3 – Filling Cells

This step involves inserting the “x” marker in every cell of the matrix whenever a given strategy (row) was determined to contribute to a given goal (column), or a given approach (column) was determined as applicable to a given strategy (row). Table 5 below depicts a fragment of the strategy matrix for Vanuatu with a number of goal-related cells filled.

ID	STRATEGIES	GENERIC	GOALS																	
			NATIONAL ICT POLICY								OTHER GOALS									
			G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	G15	G16	G17	G18
			Access to Mobile ICT in Education	Access to Mobile ICT Infrastructure/Devices	M-Government	Integrating Mobile ICT into Sectors	Mitigating Risks related to Mobile ICT	Locally Relevant Mobile Content	Capacity Building	Coordination/Collaboration Platform	Economic Growth	Participatory and accountable governance	Public records and data	M-Economy, M-Commerce, M-Banking	Access to ICT in Health	Health	Gender Equality	Environmental Sustainability	Public Safety	Cultural Heritage Preservation
			WEIGHTS																	
3	1	2	3	1	3	2	3	2	1	1	1	1	1	1	1	1	1	1		
SP6	Develop targeted strategies and action plans for key MGOV sectors e.g. health			x	x	x		x	x		x	x					x	x		
SP6.1	Use MGOV as tool to reduce the impacts of government on the environment																			
SP6.1a	Develop and implement green MGOV guidelines			x	x	x		x	x								x			
SP6.1b	Ensure energy-efficient MGOV; conduct energy use assessment for MGOV and			x	x			x	x								x			
SP6.1c	Use mobile ICT tools to communicate and work together effectively at a distal				x												x			
SP6.1d	Develop a policy to ensure that all providers and agencies have a process in pla				x	x			x								x			
SP6.2	Establish policies, regulations and guiding principles for m-health services			x	x						x	x						x		
SP6.2a	Provide a framework for information confidentiality related to the use of m-he			x	x						x	x						x		
SP7	Develop a policy framework for a national m-commerce supply chain			x		x			x	x			x							
SP7.1	Establish fiscal incentives for m-commerce; address regulatory and fiscal issue			x		x				x			x							
SP7.2	Facilitate mobile payments by addressing regulatory and fiscal issues in paralle			x		x				x			x							
SP7.3	Develop a Digital Assets Marketplace Programme where digital content can be								x	x			x							

Table 5: MGOV4D strategy matrix for Vanuatu – filling goal-related cells

3.5. Step 5 – Calculating Rank Values for Strategies

This step involves calculating a score for every strategy (row) by adding the weights of all goals this strategy contributes to: if the cell corresponding to a goal is marked with “x”, the weight of this goal is added to the score, if there is no “x”, the weight is not added. The resulting value is included in the column SCORE. Table 6 depicts the scoring of selected strategies for Vanuatu. For example, the strategy SP1 is scored at half (15) of the maximum score of 30 obtained by adding the weights assigned to all goals.

ID	STRATEGIES	SCORE	GENERIC	GOALS																	
				NATIONAL ICT POLICY								OTHER GOALS									
				G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	G15	G16	G17	G18
				Access to Mobile ICT in Education	Access to Mobile ICT Infrastructure/Devices	M-Government	Integrating Mobile ICT into Sectors	Mitigating Risks related to Mobile ICT	Locally Relevant Mobile Content	Capacity Building	Coordination/Collaboration Platform	Economic Growth	Participatory and accountable governance	Public records and data	M-Economy, M-Commerce, M-Banking	Access to ICT in Health	Health	Gender Equality	Environmental Sustainability	Public Safety	Cultural Heritage Preservation
				WEIGHTS																	
		30	3	1	2	3	1	3	2	3	2	1	1	1	1	1	1	1	1	1	1
SP	Institutions - Strategy and Policy Framework	28	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x
SP1	Develop and implement MGOV policy in line with the national ICT policy	15	x			x	x	x		x	x										
SP1.1	Review current legislation and enact MGOV legislation	6	x			x															
SP1.2	Mandate MGOV implementation across sectors and provide incentives to publ	9	x			x	x				x										
SP1.3	Develop an implementation plan and update it in regular intervals	14	x			x		x		x	x										
SP1.4	Conduct a feasibility study and an output proposal on MGOV	8	x			x					x										
SP2	Deploy a economy-driven MGOV programme aimed at deriving financial benef	14	x		x	x				x	x	x									
SP2.1	Develop periodic multi-year MGOV investment plans to gradually replace and/	11	x			x				x	x										
SP2.2	Prepare guidelines and standards for procurement of mobile ICT systems in go	11	x			x				x	x										
SP2.3	Develop mechanisms for funding MGOV development	8	x			x					x										
SP2.4	Identify mechanisms to lower costs of mobile ICT	8	x		x						x	x									
SP2.5	Establish national guidelines and incentives to promote mobile work	3									x	x									

Table 6: MGOV4D strategy matrix for Vanuatu – strategy scoring

3.6. Step 6 – Selecting the Highest-Ranked Strategies

This step involves sorting the strategies on the value of the SCORE column to obtain a context-specific strategy ranking, calculating the percentage of scores with respect to the maximum possible, and deciding on the minimum score for a strategy to be included in the national MGOV4D policy instrument. In the case of Vanuatu, all strategies in the ranking that scored at least 33% of the total score were selected for possible inclusion in the policy. Table 7 depicts a fragment of the ranked strategy matrix for Vanuatu.

ID	STRATEGIES	SCORE	PERCENTAGE	GENERIC	GOALS																	
					NATIONAL ICT POLICY								OTHER GOALS									
					G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	G15	G16	G17	G18
					Access to Mobile ICT in Education	Access to Mobile ICT Infrastructure/Devices	M-Government	Integrating Mobile ICT into Sectors	Mitigating Risks related to Mobile ICT	Locally Relevant Mobile Content	Capacity Building	Coordination/Collaboration Platform	Economic Growth	Participatory and accountable governance	Public records and data	M-Economy, M-Commerce, M-Banking	Access to ICT in Health	Health	Gender Equality	Environmental Sustainability	Public Safety	Cultural Heritage Preservation
					WEIGHTS																	
		30	100%	3	1	2	3	1	3	2	3	2	1	1	1	1	1	1	1	1	1	1
DD	Services and Applications - Design and development	29	97%	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x
SP	Institutions - Strategy and Policy Framework	28	93%	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x
L	Institutions - Leadership	23	77%	x			x	x	x	x	x	x	x	x		x				x	x	x
INF	Infrastructure - ICT infrastructure	23	77%	x	x	x	x	x	x		x	x	x	x	x	x	x					
AC	Innovation System - Absorptive capacity/adoption	22	73%	x	x	x	x	x	x	x	x	x	x				x					
L3	Provide the necessary guidance and assistance to all government departments	18	60%	x			x	x		x	x	x		x		x				x		x
ES	Innovation System - External Stakeholders	18	60%	x	x		x	x		x	x	x	x	x		x						
DD1.2	Design new MGOV services according to the needs and lifestyles of various sta	18	60%	x		x	x		x	x	x	x										
DD2	Develop specific MGOV services in education, health, public safety, environme	17	57%		x		x	x		x			x	x	x	x	x	x	x	x	x	x
SP6	Develop targeted strategies and action plans for key MGOV sectors e.g. health	16	53%				x	x	x		x	x		x	x					x	x	
DM	Services and Applications - Delivery mechanisms	16	53%	x		x	x		x		x	x										
SP1	Develop and implement MGOV policy in line with the national ICT policy	15	50%	x			x	x	x		x	x										

Table 7: MGOV4D strategy matrix for Vanuatu – strategy ranking

3.7. Step 7 – Identifying Priority MGOV4D Projects

This step entails identifying priority MGOV4D projects. This could be done by exploring the hierarchical structure of the strategy knowledge base, from top-level dimension (e.g. Institutions), through categories (e.g. SP – Strategy and Policy Framework), to strategies (e.g. SP6 – Develop targeted strategies and action plans for key MGOV sectors e.g. health, education and environment), sub-strategies (e.g. SP6.1 – Use MGOV as tool to reduce the impacts of government on the environment) and individual initiatives (e.g. SP6.1a – Develop and implement green MGOV guidelines). Depending on the scoring of the initiative or sub-strategy elements, they could be treated as priority projects. Table 8 presents priority projects from the Vanuatu matrix, all with scores above 33%.

ID	STRATEGIES	SCORE	PERCENTAGE	GENERIC	GOALS																	
					NATIONAL ICT POLICY								OTHER GOALS									
					G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	G15	G16	G17	G18
					Access to Mobile ICT in Education	Access to Mobile ICT Infrastructure/Devices	M-Government	Integrating Mobile ICT into Sectors	Mitigating Risks related to Mobile ICT	Locally Relevant Mobile Content	Capacity Building	Coordination/Collaboration Platform	Economic Growth	Participatory and accountable governance	Public records and data	M-Economy, M-Commerce, M-Banking	Access to ICT in Health	Health	Gender Equality	Environmental Sustainability	Public Safety	Cultural Heritage Preservation
					WEIGHTS																	
		30	100%	3	1	2	3	1	3	2	3	2	1	1	1	1	1	1	1	1	1	
INF1.3a	Create a mobile applications (m-apps) store to facilitate the process of develo	15	50%	x		x	x	x	x			x		x								
ES3.3	Develop an MGOV workforce preparation programme	14	47%	x	x		x	x			x	x	x									
SP6.1a	Develop and implement green MGOV guidelines	13	43%				x	x	x		x	x							x			
INF2.4	Support the proliferation of free WIFI	13	43%	x		x	x	x			x		x									
DD2.7	Develop MGOV applications for businesses and consumers	13	43%				x	x	x	x			x	x			x					
INF1.1b	Set up mechanisms for proper infrastructure management, including regular m	12	40%	x		x			x		x		x									
INF1.3	Create a mobile services delivery gateway to put in place government-wide sh	12	40%	x		x	x	x				x			x							
INF1.4	Offer shared tools like data collection, helpdesk services, APIs, SDKs to the age	12	40%	x	x	x	x	x				x										
DD2.2c	Strengthen administrative functions of the educational system through the use	12	40%		x		x	x			x	x	x		x							
SP2.1	Develop periodic multi-year MGOV investment plans to gradually replace and/	11	37%	x			x				x	x										
SP2.2	Prepare guidelines and standards for procurement of mobile ICT systems in go	11	37%	x			x				x	x										

Table 8: MGOV4D strategy matrix for Vanuatu – priority projects

3.8. Step 8 – Organizing Stakeholder Workshop

This step aims to present the outcomes of the process achieved so far, particularly: 1) the overall objective of the policy, 2) the goals to be pursued by the policy in line with this objective; 3) priority strategies and projects to advance the achievements of various policy goals; to major stakeholders of MGOV4D development in the country, to receive feedback and ensure local acceptance and ownership of the policy instrument. The invited stakeholders should include representatives of government agencies, financial and civil society organizations, businesses and others interviewed in Step 2 of the process. The program of this workshop might include the presentations of the draft policy instrument, followed by consultations on the main elements of the policy like the overall objective, goals and priorities, followed by discussions within groups on selected strategies and projects. For example, each group could focus on one of the four dimensions of the MGOV framework, and confirm or revise the outcomes produced in this dimension.

3.9. Step 9 – Writing Up the Final Strategy Document

This final step of the process involves writing up the actual MGOV4D policy document based on the outcomes of the process, including the feedback obtained from the stakeholders in Step 8, to service publicity and dissemination purposes. Here is a possible structure of this document:

- Foreword
- Executive Summary
- 1. Background
 - 1.1. Policy Context
 - 1.2. Needs Assessment
- 2. Strategic Framework
 - 2.1. Objective
 - 2.2. Goals
 - 2.3. Approaches and Principles
- 3. Strategies
 - 3.1. Strategies – Institutions
 - 3.2. Strategies – Innovation System
 - 3.3. Strategies – Infrastructure
 - 3.4. Strategies – Services and Applications
- 4. Implementation Plan
 - 4.1. Governance
 - 4.2. Management
 - 4.3. Priority Initiative 1
 - 4.4. Priority Initiative 2
 - 4.5. Priority Initiative 3
- References
- Annex

Any subsequent changes to this document, for instance due to public consultation or periodic policy revision to account for changing priorities and implementation experience, should be accompanied by the corresponding updates to the MGOV4D strategy matrix. The matrix itself, rather than this document, should serve as the policy implementation tool.

4. MGOV4D Implementation Guidelines

This section presents some general, context-independent guidelines for implementing MGOV4D strategies. The guidelines refer to: possible implementation roadmap (Section 4.1), short-term wins (Section 4.2), initial activities (Section 4.3), investment plan (Section 4.4), key performance indicators (Section 4.5) and sustainability plan (Section 4.6).

4.1. Implementation Roadmap

The implementation of the strategy could encompass a period from 1 to 5 years, divided into three stages of Capacity Building, Scale Up and Impact as follows:

- *Stage 1: Capacity* – The aim of this stage is to showcase how mobile services can deliver public value and build capacity for developing and using such services. In particular, the projects implemented at this stage focus on establishing the foundations for strategy implementation including administrative structures, regulatory frameworks, investments plans, human capacity, and acceptance through short-term wins. SMS-based mobile services and simple mobile apps would be implemented at this stage.
- *Stage 2: Scale-Up* – The aim of this stage is to scale up the delivery of mobile services and ensure the diffusion of mobile technologies within the society and economy. To scale up the delivery of mobile services, efforts shall be dedicated to the delivery of more advanced mobile apps and to leveraging the presence of non-state actors in the provision of mobile public services. The latter can be achieved by promoting public-private partnerships and by entrepreneur-led innovations.
- *Stage 3: Impact* – The aim of this stage shall be to ensure that mobile services serve major policy goals and to ensure their infusion within and across different government sectors. The projects shall focus on the use of mobile services for achieving policy objectives in specific government sectors like health, education, justice, and others.

Figure 3 presents an outline of a possible roadmap for implementing MGOV4D strategy.

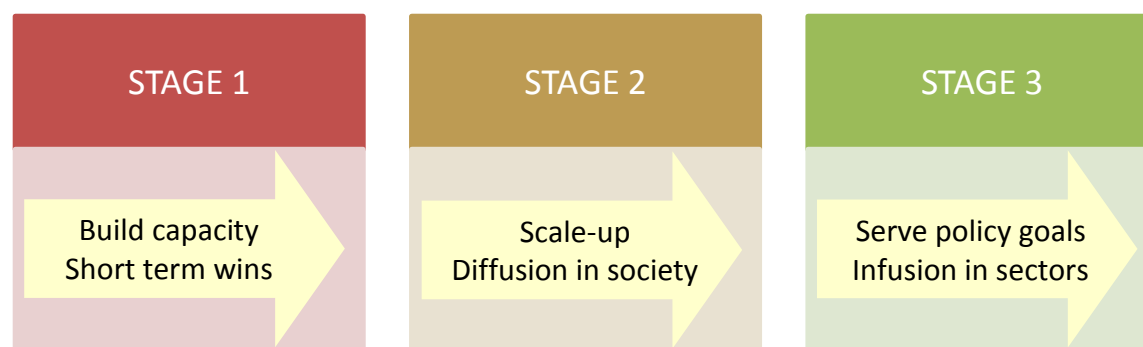


Figure 3: Possible roadmap for implementing MGOV4D strategy

4.2. Short-Term Wins

Short-term wins refer to small-scale projects that can deliver valuable outputs in early stages of strategy implementation. Short-term wins possess two main characteristics: 1) visibility – a large number of people can see by themselves that the results are real, 2) unambiguity – there is little argument over the win and 3) direct consequence – it is clearly related to change efforts (Kotter, 1996). Such projects must be planned, organized and implemented accordingly.

The importance of properly defining short-term wins rests on their role in implementing the strategy: 1) providing evidences that the sacrifices are worth – they help justify the short-term costs involved; 2) rewarding change agents – after hard work, a positive feedback builds the morale and motivation of the staff involved; 3) helping fine-tune vision and strategies – short-term wins give the guiding coalition concrete data on the viability of their ideas; 4) undermining critics – clear performance improvements shown by short-term wins make it difficult for people to block the required change; 5) keeping bosses on-board – providing high-level managers with the evidence that the transformation is on track; and 6) building momentum – contributing to turning neutrals into supporters, and reluctant supporters into active helpers (Kotter, 1996).

4.3. Initial Activities

Five activities involved in commencing any MGOV4D strategy implementation – establishing administrative structures, enabling technical development, building human capacity, mobilizing resources and strengthening partnerships, are depicted in Figure 4 and explained below:

- A1. *Establishing Administrative Structures* – Two types of administrative structures shall be established for guiding and monitoring the implementation of an MGOV4D strategy: Governance Committee and Technical Committee. The former will be responsible for leading the implementation, while the latter for managing the implementation. Members of the Governance Committee shall possess experience and expertise in the governance and community domains and will be responsible for ensuring the availability of resources, defining partnerships, and empowering actors. Members of the Technical Committee shall possess experience in the technical and business domains and will be responsible for defining technical standards and platforms, and redesigning business processes.



Figure 4: Initial activities for MGOV implementation

- A2. *Enabling Technical Development* – Successful deployment of mobile services requires initial set-up of the technical infrastructure including but not limited to the following three aspects: 1) development of government-wide standards including technical architectures, cross-platform tools for mobile service development, good practices, security policies, etc.; 2) creating MGOV leaders including a pool of high-level technical experts in MGOV service development to ensure the presence of local capacity to own and successfully implement the strategy; and 3) bridging the digital divide including efforts aimed at narrowing the divide through the implementation of the MGOV strategy, e.g. revising regulations that affect the adoption of mobile technologies by citizens, defining accessibility guidelines, etc.
- A3. *Building Human Capacity* – MGOV4D strategies usually include projects that aim at building human capacity. Table 9 outlines major stakeholder groups targeted by capacity building efforts together with the aims of such efforts.

STAKEHOLDERS	HUMAN CAPACITY BUILDING EFFORTS
Government Ministers Members of Parliament Senior Government Officials	<ul style="list-style-type: none"> ○ Awareness about mobile services and public value ○ Awareness about the role of leadership and support for the implementation of MGOV4D strategies
Government Managers	<ul style="list-style-type: none"> ○ Specialized training on organizational change and mobile service awareness and adoption ○ Awareness on managerial support for implementing and monitoring MGOV4D strategies
Technology Experts	<ul style="list-style-type: none"> ○ Specialized training on mobile technologies,

	communication, architectures and tools <ul style="list-style-type: none"> ○ Security training related to mobile services ○ Specialized training on technology, project and program management
Government Workforce	<ul style="list-style-type: none"> ○ Training on mobile service adoption and usage
Citizens	<ul style="list-style-type: none"> ○ Awareness of and capacity to use mobile technologies built through classroom education, community-driven training and other innovative approaches

Table 9: Building human capacity for MGOV

- A4. *Strengthening Partnerships* – Different types of partnerships could contribute to successful implementation of MGOV strategies. In particular, partnerships with the private sector through different models of public-private partnerships can contribute to providing the necessary funding as well as ensuring the sustainability of the initiatives (see Section 4.6). Also partnerships with academia can enable educational and tertiary institutions to define and deliver training programs that can contribute to human capacity building efforts. In addition, partnerships with international organizations can address lack of local capacity.
- A5. *Mobilizing Resources* – Resource mobilization refers to raising financial and non-financial resources including in-kind contributions like volunteer work, training materials, expert advice, etc. for the implementation of the MGOV4D strategy. Financial resources can be raised through several mechanisms including public-private partnerships and rely on a detailed investment plan (see Section 4.4). Non-financial resources are usually raised through institutional partnerships or personal networks.

4.4. Investment Plan

In practical terms, a sequence of activities of the investment management practice defined by the Val IT Framework (IT Governance Institute, 2007) includes: 1) develop a high-level definition of investment opportunities; 2) develop initial business case; 3) develop a clear understanding of the candidate program; 4) perform alternatives analysis; 5) develop program plan; 6) develop benefits realization plan; 7) identify full lifecycle costs and benefits; 8) develop detailed business case; 9) assign clear accountability and ownership; 10) initiate, plan and launch the program; 11) manage the program; 12) manage and track the benefits; 13) update the business case; 14) monitor and report program performance; and 15) retire the program. The activities of the investment management practice are depicted in Figure 5.

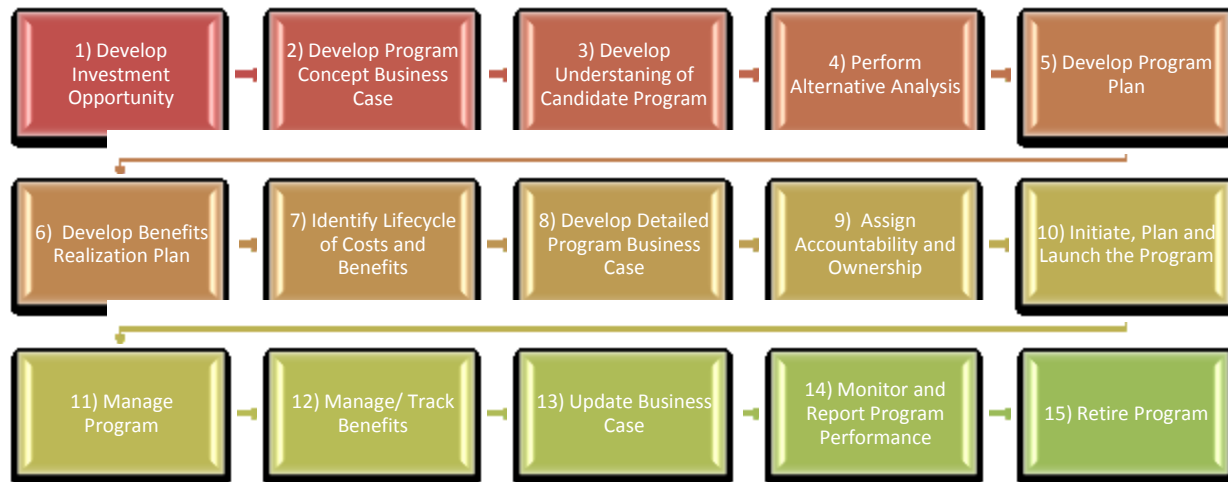


Figure 5: Val IT investment management practice

4.5. Key Performance Indicators

Another important component of the implementation of MGOV4D projects is measuring their execution, i.e. the value delivered by them to the stakeholders and how they contribute to the implementation of the overall MGOV4D strategy. In project management practice, such measurement is captured through Key Performance Indicators (KPIs): “a set of measures focusing on those aspects of organizational performance that are the most critical for the current and future success of the organization” (Parmenter, 2012).

Agreed upon by all parties when the project begins, KPIs are quantifiable measures that can be shared and analyzed by different project stakeholders at any time. The definition of KPIs contributes to the successful completion of projects, since they can be used to closely monitor the results of actions and contribute to unifying organizational efforts. However, not all performance measures should be considered as KPIs. KPIs are those performance measures that significantly affect project performance e.g. budget deviations.

As a quantifiable measures of effort, KPIs should be SMART: Specific; Measurable, Achievable, Result-oriented and Time-bound. According to Parmenter (2012), KPIs have seven main characteristics: 1) they are measured in non-financial, non-monetary terms; 2) they are measured frequently, e.g. weekly or daily; 3) they are acted upon by the senior management team, i.e. senior management can call relevant staff to enquire about the results obtained and the consequence of such results; 4) they clearly indicate what actions are required from staff, i.e. staff are aware of the measurement system and understand what actions to take to fulfill the set targets; 5) they tie responsibility down to a team, i.e. the team leader is required to take the necessary actions to improve the measures; 6) they have a significant impact, i.e. they affect one or more of the critical success factors and more than one strategy perspective; and 7) they encourage action in the right direction, i.e. they have been tested to have a significant impact on the performance if the indicated direction is taken.

For implementing KPIs, seven foundational principles have been defined by Parmenter (2012): 1) successful performance improvements require the establishment of effective partnerships among management, employees and their representatives, suppliers and other stakeholders; 2) improving performance and achieving performance goals require empowering employees, particularly those at the front-line; 3) an integrated framework is needed to measure and report performance in a way that results in positive actions and outcomes; 4) critical success factors should be the source of all KPIs; 5) an organization needs to recognize and abandon a process that does not work nor deliver value; 6) there is a need for all stakeholders to understand behavioral consequences of a given measure; and 7) unless an organization embraces KPIs and what they mean, performance improvement will be limited.

Two categories of qualitative and quantitative KPIs can be identified for measuring progress in EGOV and MGOV strategy implementation: 1) KPIs for measuring sector-independent implementation performance and 2) KPIs for measuring sector-specific implementation performance in social, economic, governance and other sectors. Tables 10 and 11 present examples of such KPIs in both categories respectively.

TIME	KPIs
By 2016	<ul style="list-style-type: none"> ○ Number of SMS-based mobile services provided ○ Number of civil servants trained in the use of mobile technologies
By 2018	<ul style="list-style-type: none"> ○ Number of government agencies offering SMS-based services ○ Number of mobile apps provided for service delivery
By 2020	<ul style="list-style-type: none"> ○ Number of government agencies offering mobile apps for service delivery ○ Number of mobile apps delivered by non-government actors

Table 10: Example KPIs for sector-independent MGOV implementation performance

SECTORS	OUTCOMES	KPIs
SOCIAL	Increased access to quality education	<ul style="list-style-type: none"> ○ e-Learning systems in place using mobile devices ○ Number of schools using mobile devices for educational purposes
	Better delivery of and access to health services	<ul style="list-style-type: none"> ○ Mobile health services in place
	Improved health management Capacity	<ul style="list-style-type: none"> ○ Number of medical doctors using health mobile services ○ Number of services on the health information systems platform using mobile devices

	Move to development-oriented and people-centered service delivery culture	<ul style="list-style-type: none"> Percentage of increase in customer satisfaction due to service delivery through mobile devices Percentage of increase in people using mobile services
ECONOMIC	Alternative, cost-effective service delivery	<ul style="list-style-type: none"> Percentage of reductions in face-to-face transactions Percentage of reductions in the overall operating costs Percentage of transactions performed through mobile devices
	Redeployment and rebalancing of the civil service	<ul style="list-style-type: none"> Number of staff trained in mobile technologies Increased number of staff with new required skills
	Promotion of internal and external investment	<ul style="list-style-type: none"> Percentage of increase in foreign direct investment due to mobile technologies Percentage of increase in internal investment due to mobile technologies
GOVERNANCE	Greater accountability and transparency in public administration	<ul style="list-style-type: none"> Availability of government budget, expenditure, contacts and other data on mobile devices Access to government reports and documents through mobile devices
	Improved communications and public relations	<ul style="list-style-type: none"> Percentage of people interacting with government through mobile devices Timely government response through mobile devices
	Enabling legal infrastructure	<ul style="list-style-type: none"> Legislation in place to deal with e-authentication, e-signature, etc. Through mobile devices Green practices in place for reducing, reusing, and recycling mobile devices

Table 11: Example KPIs for sector-specific MGOV implementation performance

4.6. Sustainability Plan

Here are some approaches for ensuring the sustainability of MGOV4D projects and their deliverables based on (Dzhusupova et al., 2011):

- *Stakeholder Engagement* – Bringing relevant partners as external stakeholders can ensure successful completion as well as sustainability of the project outputs and outcomes. Two among possible stakeholders include: 1) private sector representatives can contribute to software development and capacity-building activities, as well as to service operations through some kind of public-private partnerships and 2) international organizations can

provide good practices and promote South-to-South collaboration with countries with similar conditions and experiences.

- *Ownership* – Ensuring that the project is locally-owned. For example, OGCIIO as the project owner should coordinate project activities and manage communications with stakeholders.
- *Human Capacity and Awareness* – There is a need to build human capacity in the use of mobile technologies as well as in the need to create public value through the use of such technologies. Capacity and awareness-building programs targeting internal stakeholders should be carefully planned and implemented.
- *Institutional Capacity* – Deploying MGOV applications and services goes far beyond deploying ICT solutions. It also involves building institutional capacity in terms of legislative and regulatory frameworks, policies and guidelines on the use of such services, and possible transformations of government structures and processes to enhance efficiency and effectiveness, and ensure the delivery of public value. All dimensions, not only technology, must be addressed for deploying such applications and services.
- *Public Private Partnership (PPP)* – PPP is a cooperative venture between public and private sector entities, built on the expertise of each entity, which best meets clearly-defined public needs through the appropriate allocation of resources, risks and rewards (CCPPP, 2005). PPP can produce benefits to both public and private sector entities involved. Benefits to public sector entities include (Field et.al., 2003): 1) accessing specialized skills which may be difficult or uneconomical to maintain in government; 2) sharing of services and resources with private sector entities to benefit from the economies of scale; 3) obtaining private sector funding to develop and operate new public services; 4) engaging private sector entities to discover opportunities for innovation and efficiency gains in government; and 5) sharing project risks with private sector entities. In general, partnering with the private sector allows government to dedicate more attention and resources to core policy and governance issues. The benefits to private sector entities include (Field et.al., 2003)(PBC, 2003): 1) delivering public services through privately owned infrastructures and hence creating business opportunities; 2) learning about the government domain and the needs of public sector entities; 3) accessing secure, long-term investment opportunities; and 4) generating new businesses with the certainty and security guaranteed by a government contract. It is strongly recommended to seek the establishment of PPP for sustainability of MGOV initiatives. Moreover, PPP can be also treated as a funding mechanism for such initiatives. Many governments around the world define their own PPP models. Examples are the Government of Ireland (<http://ppp.gov.ie/>), the Government of Australia through Department of Treasury and Finances (<http://www.dtf.vic.gov.au/Infrastructure-Delivery/Public-private-partnerships/Resources/National-Public-Private-Partnerships>) and the Government of South Africa (<http://www.ppp.gov.za/Pages/default.aspx>).

- *International Collaboration* – Several international organizations are dedicated to building human and institutional capacity in various regions in need, e.g. the Commonwealth Telecommunications Organization collaborating with the Government of Vanuatu in the development of the MGOV strategy (the current report is a reference to this collaboration); the Australian Agency for International Development (AusAID) assisting developing countries in reducing poverty and achieving sustainable development, for example offering assistance to the Government of Vanuatu in conducting assessment studies on health management system in Vanuatu (On et al., 2009); the Center for Electronic Governance at UNU supporting governments in developing countries in strategic use of technology to transform the working of public organizations and their relationships with citizens, businesses, civil society, and with one another, including collaboration on the development of the Vanuatu MGOV strategy (this report is a reference); UNICEF providing assistance to building capacity of civil registries (UNICEF, 2013) which may be required for the development of mobile services related to the Civil Registry in Vanuatu; and many other. To bring the expertise that the Government of Vanuatu lacks, to assist the Government in building its own capacity, to facilitate South-South and regional collaboration on common problems, and generally to ensure the continuity and growth of MGOV initiatives, the Government of Vanuatu should leverage existing partnerships as well as develop new partnerships with international organizations and countries in the region.

5. Conclusions

This report presented a step by step process to assist countries in developing their own national Mobile Governance for Development (MGOV4D) policy instruments, and through such instruments to pursue the countries' development and public policy goals.

The development of the toolkit was based on the state-of-the-art research and policy reviews in the MGOV4D domain, resulting in the MGOV4D strategy knowledge base which targets the needs and circumstances of the Small Island Developing States (SIDS), all documented by Henning and Janowski (2014). The toolkit was presented as a series of steps to analyze the local context and develop, review and disseminate the context-specific MGOV4D policy instrument, plus a set of guidelines to help in strategy implementation.

The presented toolkit is systematic and precise – it prescribes a series of steps to be carried out under precise specifications; comprehensive – it describes analysis of local conditions, and the development of the policy instrument based on such analysis; replicable – the steps are well-documented and can be repeated under different parameters to produce different outcomes; and generic – the knowledge base underpinning the methodology could be rebuilt for a different set of countries resulting in the instrument that matches different national circumstance and conditions. Given limited resources present in many developing countries, and particularly among SIDS, the generic nature of the toolkit makes it available to the applications on the regional and inter-regional levels. This could be achieved through joint development, sharing and maintenance of the strategy knowledge bases among countries in a region, and by joint research, advisory and capacity building services on the use of the toolkit.

The toolkit was validated by developing the national MGOV4D policy for Vanuatu, which is contained in the accompanying project report (Henning et al., 2014); new country cases for applying the toolkit are being identified, and the toolkit is likely to evolve in the process.

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