

EGOV strategy formulation taking into account international rankings: Application of a method in an African Country

ABSTRACT

Abstract: The formulation of the EGOV Strategy of São Tomé e Príncipe has been done using a method to formulate EGOV strategies taking into account international rankings. During the strategy formulation process, government agencies and designated focal points applied the five stages of the method: 1 – Diagnosis and Context Analysis; 2 – Definition of Vision and Principles; 3 – Choice of Thematic Areas and Initiatives; 4 – Identification of Structuring Pillars; and 5 – Definition of Implementation and Evaluation Plans. The method was developed to be flexible and adaptable to the country's context, including selecting international rankings by the team involved. In that case, it was selected the World Bank Worldwide Governance Index (WB/WGI), the United Nations eGovernment Development Index (UN/EGDI), the World Bank Ease of Doing Business Report (WB/DB), and the United Nations World Happiness Report (UN/WHR). The method application resulted in an official document approved by the Council of Ministers for 2020 to 2024.

CCS CONCEPTS

• **Applied computing** → Computers in other domains; Computing in government; E-government.

KEYWORDS

Digital Governance Strategy, Digital Governance Strategy Formulation, Strategy Formulation Framework, Electronic Governance Strategy

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1 INTRODUCTION

São Tomé e Príncipe, the "island in the middle of the world", is an archipelago formed by two islands and some islets under the Equator line in the Guinea Gulf, approximately 300 kilometres from the African occidental coast. It has a predominantly young population, totalising 220,000 people in 2020. The country has a natural vocation in tourism and produces quality cocoa, making the country also known as the "chocolate island". The EGOV development started in 2002 but never reached high-level standards, mainly because of a lack of planning and periods of political instability. Since

then, many efforts have been conducted, mainly to digitalise the back office, usually in silos-projects, without a holistic vision or a citizen-centric approach. This approach limited EGOV development in the archipelago, impacting the country's performance in international rankings indexes such as the United Nations eGovernment Development Index (UN/EGDI) for years.

The African country, however, achieved strong milestones such as the institutionalisation of the Government Chief Information Officer, the Personal Data Protection Agency, and a centralised citizen database. To enhance these results, the government decided to formulate, after a complete diagnosis, a national EGOV strategy. This effort has been made under a partnership involving the public sector and academia, resulting in a formal document approved by the Council of Ministers in July 2020. This process will be depicted in this article. Following this introduction, the content includes a brief description of the research design, the results, and the conclusion.

2 RESEARCH DESIGN

A team was formed by three researchers and two public officials from São Tomé e Príncipe, represented by the government Chief Information Officer and the INIC – Instituto de Informação e Conhecimento. The researchers were responsible for using a method to formulate EGOV strategies taking into account international rankings. This method has been developed under a scientific project following the Design Science Research (DSR) approach. It seeks to extend the boundaries of human and organisational capabilities by creating new and innovative artefacts [4]. As the method could be helpful for many countries, the approach is convenient because of its generalisable characteristic [5]. The validation of the artefact followed Action Research (AR) principles, as there was an opportunity to use the method's current version to formulate a real EGOV strategy. The choice occurred given that this methodology synergistically and holistically associates research and practice [2] and can produce highly relevant research results because it is grounded in practical action to solve an immediate problem situation while carefully informing theory [3]. In short, while the design and development of the method followed the DSR approach, AR was used to evaluate it. The evaluation has been used to feed the research project in a new DSR cycle to produce a new method version, potentially useful for other countries developing their EGOV strategies.

3 RESULTS

The activity was initiated in August 2019, and a strategy release candidate was delivered in December of the same year. INIC officials joined the University office on two different occasions, one at the end of August and the second at the beginning of October and joined the team of researchers to develop the strategy. The used method comprises five stages: Diagnosis and Context Analysis; Definition of Vision and Principles; Choice of Thematic Areas and

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Initiatives; Identification of Structuring Pillars; and Definition of Implementation and Evaluation Plans.

The kick-off meeting started **Stage 1 – Diagnosis and Context Analysis**. This stage will use several sources of information to produce outputs for the next stages. The occasion was useful to harmonise core concepts and familiarise the set of EGOV purposes within the group. They have been set as improving governance performance, increasing the effectiveness of public service delivery, mitigating information asymmetry in society, strengthening government interaction with stakeholders, enhancing citizen participation in the decision-making process, and promoting an open, transparent, and accountable government [1]. After that, it identified relevant international rankings for the country and unveiled in addition to the UN/EGDI, the World Bank Worldwide Governance Index (WB/WGI), the World Bank Ease of Doing Business Report (WB/DB), and the United Nations World Happiness Report (UN/WHR). The group defined the EGOV history, the population pyramid, the country's national programs and plans, and an inventory of existing EGOV structuring pillars as the initial inputs for the stage. Although not fully explored by the country, tourism was identified as the economic vocation. Cabo Verde and Mauritius have been suggested as countries of reference. ICT silos within the public administration have been identified as a risk to the strategy's sustainability. Two questionnaires have been applied to 80 EGOV focal points in the country. Virtual meetings with selected representatives of the following government units occurred: the Ministry of Education, the Ministry of Health, the Ministry of Finance – Fiscal Area, the Ministry of Finance – Customs Area, the Ministry of Labour, the Ministry of Agriculture, the Social Security National Institute, the Directorate of Notary Registers, the Directorate of Tourism, and the Directorate of Economic Activities Control. These meetings were organised to gather information according to the guidelines of Stage 1. These meetings allowed the team to raise information about relevant public services according to citizens' perceptions, such as those related to the health system, social security, and education. Priorities for digital transformation and new public services opportunities have also been explored. Besides, possibilities for automatise the medical records, online scheduling of medical appointments, proof-of-life for continuing payment of social security pensions, grant of maternity allowance, online issue of birth/death certificates, and the issue of the new student card with associated benefits, such as public transport support.

Opportunities to enhance the maturity of IT governance in the public sector and the capacity building of IT employees was identified. Transparency and accountability initiatives were unveiled, like the possibility of launching a Transparency Portal and an Electronic Participation Portal. Exploring official documents and international reports allows the team to understand the country's EGOV history. The diagnosis unveiled the predominance of informal services provision, the risks associated with public policies, and the government financial situation related to international funding dependency. The following rankings have been selected according to the key actors: the UN/EGDI; the WB/WGI; the WB/DB; and the UN/WHR. Strong points of the country context related to EGOV like the existence of an agency for personal data protection, the informatisation level of social security data, and the ICT level of the Central Bank and the Ministry of Finance were informed. Finally, to conclude the

collection of data and information, INIC public officials' members of the strategy formulation team acted as a source. All this data and information will feed the next stages.

Following **Stage 2 – Definition of Vision and Principles**, the strategic vision has been set as "Articulate the goals of public policies across different governance sectors for the digital transformation of the public administration and mobilising the material and human resources necessary for its implementation". Although this vision doesn't directly use the term EGOV, it is compatible with a context in which the government still needs to assure ICT units' governance, articulate their goals, and orchestrate resources to reach the digital transformation of public administration. Stage 2 also resulted in the set of strategic principles: Clear institutional commitment; Robust and cohesive leadership; Sustainable investment plan; Favourable international partnerships; Shared resources and services; Public services digital by default. These principles will guide the subsequent stages of the formulation process, framing the strategic initiatives that will contribute to achieving the strategic vision. For example, once a "robust leadership" is expected, no independent initiatives sponsored by a government agency should proceed. Initiatives in partnership with international institutions should have their benefits to the country pre-checked in terms of sustainability. Independent datacentres, for example, should be avoided concerning the principle of shared technological resources. Finally, all initiatives should be sponsored by a robust and cohesive leadership, not necessarily in a single institution, but as a representative committee concerted by all political forces.

The execution of **Stage 3 – Choice of Thematic Areas and Initiatives** allowed the definition of 74 strategic initiatives in 9 thematic areas: Health; Education; Fiscal and tax area; Social security; Environment; Tourism; Justice and citizenship; Work and employment; and Agriculture, livestock, and fishing. Thematic areas have been chosen based on the initiatives corresponding to the current government administrative structure. These initiatives were inspired by the information gathered in Stage 1, including dimensions and measurements of selected international rankings such as the UN/EGDI, WB/WGI, WB/DB, and UN/WHR. These ranking components were associated with EGOV purposes.

These correlations support identifying strategic initiatives, such as online tax services and online customer services, inspired by the WB/WGI's dimension of Government Effectiveness. These services were also inspired by the UN/EGDI's dimension Online Services Index and the EGOV purpose of "Improving Government Performance". Another strategic initiative steamed from this process was the online publication of social security costs and benefits, inspired by the WGI's dimension Control of Corruption. This initiative was also inspired by the UN/WHR's dimension of Perception of Corruption; the UN/EGDI's dimension of On-line Services Index; and, in the EGOV purpose, "Promoting an open, transparent, and accountable government".

Stage 4 – Identification of Structuring Pillars supports the definition of structuring pillars organised into three classes, Administrative, Legislative, and Technological. They act as enablers of the initiatives produced in Stage 3. The Service Simplification Team is an example of an Administrative Structuring Pillar dedicated to supporting the digital transformation in the public sector in the dematerialisation, simplification, and digitalisation of working

processes. A legal and regulatory framework for the institution of the digital signature is an example of the Legislative Structuring Pillar. Finally, an Interoperability Platform that will support the requirements for integrating existing or new digital services is an instance of a Technological Structuring Pillar.

Stage 5 – Definition of Implementation and Evaluation Plans supported the definition of the implementation and the evaluation plans, comprising a timeline for the execution of the 74 initiatives along the strategy period, 2020 to 2024. The Structuring Pillars have been prioritised according to the number of supported initiatives. An evaluation plan has also been set for the period, designed to be compatible with international rankings measurements and evaluation windows.

After the strategy formulation, the document was appreciated by the advisory board of the Council of Ministers in December 2019. A round of validation procedures followed, including its presentation in January 2019 by the strategy formulation team. A period for collecting critics and contributions from public officials and society occurred until March 2020. The document received the final adjustments from April to June. In June 2020, the Council of Ministers approved the final version during an official session with the presence of the strategy formulation team.

4 CONCLUSION

This paper described the application of a method to formulate EGOV strategies taking into account international rankings in an African

country, Sao Tome e Principe. Besides other sources, dimensions and measurements of the following international rankings were used to generate the strategy content: UN/EGDI, WB/WGI, WB/DB, and UN/WHR. The method has five stages, each with guidelines, and is applied under a research and action partnership involving academia and government. The process resulted in the Sao Tome e Principe EGOV strategy for 2020-2024, approved by the Council of Ministers through Resolution n.35 in July 2020. The method is potentially useful for other countries developing their EGOV strategies.

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