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Enterprise Architecture Model for Smart Government Implementation

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Abstract

This research aims to develop an enterprise architecture (EA) model to support the implementation of Smart Government that utilizes information and communication technology (ICT) to enhance efficiency, transparency, and public participation in governmental processes. The development of this EA model adopts a holistic approach, integrating various components of technology, organization, and business processes within the context of government to provide guidance for government agencies in planning, implementing, and managing the digital transformation required to achieve Smart Government. The findings of this study indicate that the proposed enterprise architecture model offers a clear and flexible structure to support the integration of government agencies, public service providers, and citizens. It is expected that by utilizing this EA model, governments can improve public services, operational efficiency, and create a more transparent and accountable environment. By leveraging this EA model, government agencies can streamline processes, enhance decision-making through data-driven insights, and foster greater inter-agency collaboration. It is expected that this model will improve public sector services by increasing accessibility, reducing administrative burdens, and optimizing resource utilization. Furthermore, the adoption of this model is anticipated to accelerate the digital transformation of the public sector, driving significant improvements in government service delivery, responsiveness, and citizen engagement.

Keywords: Enterprise Architecture Model, Smart Government, Information Technology, Digital Governance, Digital Transformation.

1. INTRODUCTION

In recent years, the concept of Smart Government has emerged as a critical element in the digital transformation of public administration. Smart Government refers to the use of advanced technologies, such as the Internet of Things (IoT), Artificial Intelligence (AI), Big Data, and cloud computing, to enhance the efficiency, transparency, and accessibility of public services [1][2]. However, despite the significant strides made in adopting digital technologies in the public sector, many governments continue to struggle with the lack of a structured and unified approach to implementing these technologies [3]. As governments face

growing demands for more effective, responsive, and user-centric services, there is an increasing need to rethink traditional models of governance and to adopt innovative approaches that can meet the evolving challenges of the digital age [4]. A fundamental aspect of this transformation is the development of an Enterprise Architecture (EA) model that can guide the integration of diverse technological solutions into a cohesive framework for Smart Government [5][6]. The development of such a model requires a deep understanding of both technological advancements and governmental requirements [7]. This gap highlights the need for a comprehensive EA model that aligns technological solutions with organizational goals and processes to ensure successful implementation of Smart Government initiatives.

Previous studies have highlighted the critical role of EA in ensuring that IT investments are aligned with business objectives, particularly in the private sector [8]. However, the application of EA in the public sector, especially in the context of Smart Government, remains underexplored. By focusing on the public sector, this research seeks to address a pressing gap in the literature and offer practical solutions to the challenges governments face in their digital transformation journeys. Many governments have failed to realize the full potential of their digital initiatives due to fragmented technological infrastructures and the absence of a cohesive architectural framework [9][10].

However, these initiatives often face challenges in integration, scalability, and sustainability [11][12]. A well-designed EA model can provide governments with a roadmap for addressing these challenges by helping them manage the complexity of integrating new technologies with existing systems. A comprehensive EA model can enable governments to better manage digital transformations by offering a structured approach to technology adoption, system interoperability, and data governance [13][14]. Moreover, the proposed EA model could foster greater collaboration between various government agencies, technology providers, and other stakeholders, ensuring that digital initiatives are not only technically sound but also aligned with the needs and expectations of citizens [15].

Several studies in Indonesia have focused on this topic, providing valuable insights into both theoretical foundations and practical applications. First, a study by Z. R. M. A. Kaiser., titled "Smart governance for smart cities and nations", explores that to ensure sustainability, a smart city employs cutting-edge technology and innovation to enhance urban life and efficiency, and a smart nation applies these ideas across geographical boundaries. Stakeholders specifically highlight the need for administrative reform, strong smart infrastructure, finance, uninterrupted electricity, strong data privacy and security, and effective big data management as essential to the country's vision, which the research identifies as the fourteen

primary challenges of smart governance that are essential for turning Bangladesh into a smart nation and building smart cities [16].

Second, N. N. Ahmat, B. A. Abdulla Ibrahim, S. Akmal, and H. Hakimi, in their paper "Impact of Digital Transformation on Smart Government in United Arab Emirates: A Review", focus on the influence of elements like security and privacy, digitalization infrastructure, public employees' digital skills, citizen-government interaction, digital awareness, and trustworthiness on the effective deployment and operation of smart government services in the United Arab Emirates are among the main conclusions. The study's conclusions will be helpful to stakeholders, government officials, and policymakers working on digital transformation projects in the United Arab Emirates. Decision-makers can create successful plans for the deployment of smart government services that will enhance service quality, citizen satisfaction, and overall operational efficiency in government by comprehending the importance parameters of digital transformation [17].

Lastly, R. Y. Maulana, U. Marjamat, D. Subekti, M. A. Rakhman, and A. Beriansyah., conducted a study entitled "Smart Governance Transformation in Indonesian Local Administration", This study explores how smart governance principles may improve local government performance and the critical role that digital government evolution plays in this regard. The report, which focuses on Indonesia's remarkable transformation, emphasizes the government's transition to the Electronic-based Government System (SPBE) in order to tackle corruption, bureaucratic obstacles, and inefficiencies. A particular case study is provided by Jambi City, which is a driving force behind the 100 Smart City Movement. The results highlight the value of a team effort in advancing digital transformation initiatives for efficient public service provision [18].

The theoretical foundation of the development of an Enterprise Architecture model for Smart Government is largely derived from the TOGAF (The Open Group Architecture Framework) and the Zachman Framework for Enterprise Architecture [19][20]. TOGAF provides a detailed methodology for designing, planning, implementing, and governing EA in various sectors, including the public sector [21][22]. This framework is particularly relevant in government contexts as it emphasizes alignment between business objectives and IT infrastructure, which is critical for the development of Smart Government initiatives.

Moreover, the Zachman Framework, widely used in EA design, offers a structured approach to categorizing the components of an enterprise architecture based on different perspectives such as planner, owner, designer, builder, and subcontractor [23]. The concept of Enterprise Architecture (EA) has emerged as a critical framework for aligning an organization's strategy, structure, and technology [24]. In the context of Smart Government, EA plays a pivotal role in the efficient

integration of IT resources to improve public sector services, governance, and decision-making processes [25]. According to TOGAF (The Open Group Architecture Framework), EA is a systematic approach for designing, planning, implementing, and governing an organization's information technology infrastructure [20][26]. Recent studies highlight that EA in smart governance can be crucial for promoting interoperability between various public sector systems and enhancing service delivery [27].

Moreover, Smart Government initiatives leverage modern technological advancements such as IoT (Internet of Things), AI (Artificial Intelligence), and big data analytics, all of which require a robust and adaptable EA to manage complexity and dynamic changes in government services [28][29]. In this context, EA models must not only address technical requirements but also consider the socio-political and regulatory environment, ensuring that smart government solutions are inclusive and sustainable [30]. The integration of digital platforms and the establishment of a unified, data-driven government ecosystem are essential for effective Smart Government [31].

A collaborative and open approach to designing the EA model, involving stakeholders from various governmental sectors and technology providers, is essential for ensuring its success [32][14][11]. The adoption of such a model will support governments in their digital transformation efforts, enhancing transparency, accountability, and citizen satisfaction.

The Federal Enterprise Architecture Framework (FEAF) has been instrumental in streamlining IT investments and improving interoperability across federal agencies. By providing a structured approach to integrating digital technologies within government operations, FEAF has helped agencies enhance data sharing, reduce redundancy, and optimize public services [33].

The novelty of this research will incorporate recent technological advancements, including the role of AI, blockchain, and IoT, in the context of Smart Government. By integrating these emerging technologies into the EA model, the study will offer a cutting-edge solution that not only addresses current challenges but also anticipates future needs in the public sector's digital transformation [34].
By proposing a novel EA model that integrates emerging technologies and public sector-specific considerations, this research aims to support governments in their journey toward becoming more efficient, transparent, and citizen-centric, ultimately contributing to the broader goal of achieving sustainable development through innovation in governance [35].

2. METHODS

2.1. Research Method

This research adopts a mixed-methods research approach that integrates both qualitative and quantitative methods to develop a comprehensive Enterprise Architecture (EA) model for Smart Government [5]. The development of the Enterprise Architecture (EA) model for Smart Government will incorporate stakeholder analysis as a fundamental component to ensure that the model aligns with the needs, expectations, and challenges faced by various governmental and non-governmental entities [27][30]. Stakeholder analysis will be conducted through qualitative methods such as interviews, focus groups, and expert consultations, allowing for an in-depth understanding of different perspectives and priorities [13]. These qualitative insights will then be complemented by quantitative methods, such as surveys and data analytics, to validate findings and measure the significance of identified factors across a broader audience [25]. By integrating stakeholder analysis into the model development process, the research ensures that the proposed EA framework is not only theoretically robust but also practical and responsive to real-world challenges. The mixed-methods approach is justified by its ability to bridge the gap between conceptual rigor and empirical validation, providing a holistic view of the Smart Government ecosystem.

2.2. Research Approach

The research follows an applied research approach, as the primary goal is to develop a usable framework for Smart Government implementation, focusing on improving the alignment between government structures, processes, information systems, and technological infrastructure. The study emphasizes practical solutions while contributing to the theoretical discourse on enterprise architecture and smart governance.

2.3. Research Stages

The research stages are as depicted in Figure 1.

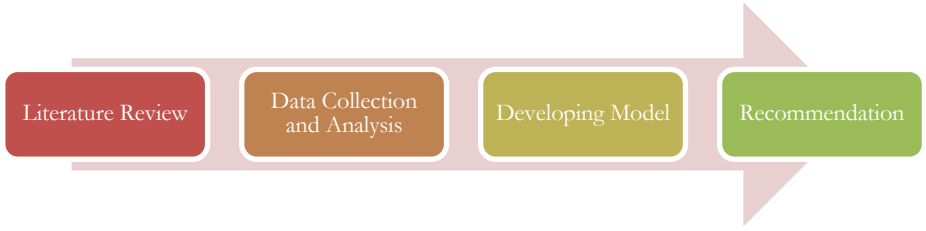

Figure 1. Research Stages

The research will be conducted in several key stages:

1. Literature Review:
   The first stage of the research process involves a comprehensive review of existing literature related to enterprise architecture (EA), smart government, and the integration of these concepts. In this phase, the researcher will examine previous studies, frameworks, methodologies, and best practices to understand the current state of the field. The literature review helps identify knowledge gaps, theoretical foundations, and existing models that can inform the development of a new enterprise architecture model specifically tailored for smart government. By synthesizing existing research, the researcher can establish a conceptual framework and provide justification for the proposed study.
2. Data Collection and Analysis:
   In this stage, data is gathered through a variety of methods such as surveys, interviews, document analysis, and case studies to understand the current challenges, requirements, and practices related to enterprise architecture in smart government contexts. The data collection focuses on both qualitative and quantitative aspects, including the needs of government agencies, technological infrastructure, organizational structures, and the use of information systems in public administration. After collecting the data, the researcher will analyze it to identify patterns, trends, and key insights that can inform the design of the enterprise architecture model. This analysis may involve qualitative coding, statistical analysis, or process modeling techniques, depending on the nature of the data.
3. Developing Model Design:
   Based on the findings from the literature review and data analysis, the researcher will develop a new enterprise architecture model specifically for smart government. This model will consider the unique needs of smart cities or smart governments, including the integration of advanced technologies like IoT, AI, and big data, as well as the need for efficient and scalable public service delivery. The model design phase involves defining the architectural components, their relationships, and the workflows required for seamless operation across various government departments. This model will aim to provide a strategic framework for aligning technology, processes, and organizational structures to achieve the goals of a smart government.
4. Recommendation:
   In the final phase, the researcher will provide recommendations based on the results of the study. These recommendations will focus on how the proposed enterprise architecture model can be effectively implemented within government organizations, how it can enhance service delivery, improve decision-making, and foster innovation in public administration. The researcher may also provide insights on overcoming potential challenges such as resistance to change, funding constraints, and technical limitations.

Additionally, the recommendations may suggest ways to refine or adapt the enterprise architecture model in the future as new technologies emerge and government needs evolve.

2.4. Research Design

This research employs a descriptive and exploratory research design. The descriptive aspect focuses on identifying and analyzing the components and interactions that constitute an Enterprise Architecture for Smart Government [5]. The exploratory component seeks to uncover novel insights into the application of EA in the public sector, especially in the context of technological innovation and governance transformation. By combining these designs, the research aims to propose a practical and adaptable EA model that can be implemented across different government contexts to support the realization of Smart Government.

2.5. TOGAF (The Open Group Architecture Framework) method

To develop an Enterprise Architecture (EA) model for a Smart Government, the TOGAF (The Open Group Architecture Framework) method is widely used due to its structured and iterative approach [36]. TOGAF's Architecture Development Method (ADM) provides a systematic process for designing, planning, implementing, and governing enterprise architectures [22][11]. It begins with establishing the architecture vision, which aligns with the government's strategic goals, digital transformation objectives, and smart initiatives. Next, the Business Architecture is developed to define government services, organizational structures, and operational processes [21]. The Data Architecture follows, ensuring seamless data exchange and interoperability across departments, while the Application Architecture maps digital platforms, software, and IT services to enhance efficiency. The Technology Architecture is then designed to integrate emerging technologies such as AI, IoT, and cloud computing [20]. Once these architectures are defined, a roadmap and implementation strategy are created, ensuring a phased transition while addressing security, compliance, and stakeholder needs. Continuous monitoring and governance are essential to adapt the model to evolving requirements and technological advancements [35]. This structured approach ensures that the Smart Government operates efficiently, enhances citizen services, and fosters digital innovation.

3. RESULTS AND DISCUSSION

Enterprise Architecture (EA) plays a crucial role in transforming the way governmental organizations structure their processes, manage resources, and deliver public services. It is an essential discipline for aligning the organization's IT infrastructure and strategic objectives with the overall goals of the government. In

the context of a smart government, EA becomes even more important, as it facilitates the integration of various digital technologies and data systems to improve decision-making, service delivery, and citizen engagement. The initial concept of EA for government focuses on creating a coherent and efficient structure that supports both administrative and operational functions across diverse governmental sectors. The concept of EA in government involves defining the architecture of business processes, information systems, technology, and governance structures. It ensures that these components are integrated and aligned with the overarching vision of the government, which is often driven by the need for better services, transparency, and efficiency in public administration. One of the most widely adopted frameworks for EA is The Open Group Architecture Framework (TOGAF). TOGAF provides a structured approach to designing, planning, implementing, and governing an enterprise architecture. The framework is composed of several components, including the Architecture Development Method (ADM), the Enterprise Continuum, and the TOGAF Resource Base, which can be adapted to suit the specific needs of governmental organizations.

The use of TOGAF for EA in government contexts enables the systematic development of an architecture that supports the digital transformation towards a smart government. The ADM cycle within TOGAF allows for iterative refinement of the architecture, ensuring that both short-term and long-term goals of a government's digital strategy are met. The main goal of implementing TOGAF in government is to establish a structured and transparent process for creating an integrated, scalable, and sustainable architecture that promotes the digitalization of public services and governance. TOGAF stages in Figure 2.

The development of an enterprise architecture model for smart government involves integrating the principles of EA with the evolving needs of digital governance. The key objective is to design a model that optimally supports smart city initiatives, e-government services, and data-driven decision-making.

A structured framework to define the essential elements of an Enterprise Architecture (EA) model specifically designed for smart government initiatives. Table 1 helps in systematically organizing and categorizing the fundamental components required to build an effective, efficient, and sustainable digital government. By providing a clear overview of key elements, such as governance, technology, data management, services, and interoperability, it ensures a holistic approach to smart government transformation. Furthermore, the table aids policymakers, IT architects, and decision-makers in aligning their strategies with best practices, reducing complexity, and enhancing integration across various government sectors. Ultimately, it supports the creation of a well-coordinated, citizen-centric, and technologically advanced public administration.

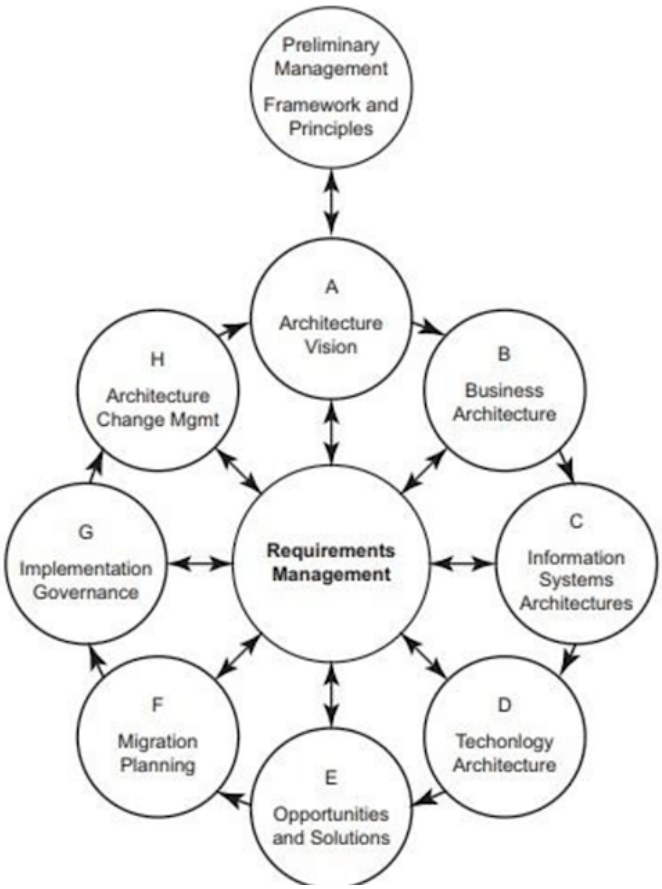

Figure 2. TOGAF Stages

A Smart Government EA model typically includes the following key components in Table 1.

Table 1. A Smart Government EA Model Key Components

No.	Components	Descriptions
1.	Digital Transformation Framework	A strategic approach for transitioning from traditional government models to data-driven, digital-first systems. This includes leveraging cloud computing, IoT (Internet of Things), and AI (Artificial Intelligence) to enhance service

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No.	Components	Descriptions
		delivery and governance efficiency.
2.	Interoperability Layer	Ensures seamless data sharing between different government agencies and departments. This layer supports common data standards, APIs, and communication protocols, which are critical for creating integrated public services that improve citizen experiences.
3.	Security and Privacy Architecture	Given the sensitive nature of governmental data, a strong emphasis on cybersecurity is critical. The model integrates robust encryption, authentication protocols, and compliance with data protection laws to ensure the safety of public information.
4.	Citizen-Centric Services	A focus on designing services that are accessible, transparent, and user-friendly. This includes developing online platforms for citizens to access government services, participate in decision-making processes, and track service delivery performance.
5.	Governance and Compliance	The architecture model must ensure that all activities are in compliance with governmental policies, regulations, and standards. A governance framework is implemented to monitor the performance, effectiveness, and legal compliance of the digital initiatives.
6.	Data and Analytics Layer	A system for managing large volumes of data collected from various government functions and citizen interactions. This layer facilitates data-driven decision-

No.	Components	Descriptions
		making, predictive analytics for urban planning, and real-time monitoring of government services.
7.	Cloud and Infrastructure Layer	The backbone of the smart government, this layer involves using scalable cloud-based services and distributed computing to support the growing demands of digital governance.

In the new model, therefore Bolı´var and Meijer in Ahmat et al (2024), added "organizational action" to the implementation strategies to emphasize on the importance of the needed activities to transform the organization into Smart governance. Some empirical researches (like Bolı´var, & Meijer) typically establishes the significance of the dimensions, categories, and values in the literature. These actions provided interesting insights into the prominence of certain values. Also, innovation was identified as an important element in smart cities but was not considered as a constitutive element of Smart governance in early literature. The major reason for this addition was informed by the frequency of usage by practitioners to the definition of Smart governance [17]. Based on these few arguments, a new smart governance model was developed (Figure 3).

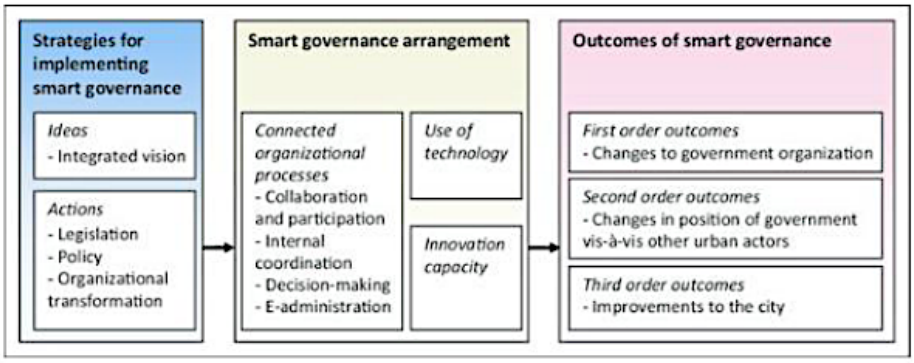

Figure 3. A Smart Governance Model [17]

Smart governance has numerous benefits, but it also has potential drawbacks. For instance, it is crucial to ensure the privacy and security of government data to protect individual privacy and prevent any infringements. Citizen participation is essential, but it is often limited due to the digital divide, which marginalizes certain demographics, and a general lack of interest in civic engagement. Furthermore, as we know, using technology effectively in smart governance is essential. This

involves using digital tools to enable one-way and two-way communication, e-participation, policy support, data collection and management, and collaboration. However, an excessive reliance on complex technological projects can reduce understanding and participation, highlighting the importance of maintaining face-to-face interactions for effective collaboration be- tween citizens and the government. Data security and privacy are of utmost importance in today's technologically advanced society. Decentralized e-government systems that use blockchain and artificial intelligence (AI) are recommended to improve privacy and maintain data integrity. Conversely, an excessive reliance on technology-driven solutions is often considered to hinder the provision of services to the broader public. This presents challenges such as cyberattack security risks, the need for initial funding and ongoing maintenance, and dependence on foreign expertise and technology to operate governmental services. To address these challenges, future endeavors should prioritize improving security protocols and incorporating AI capabilities, such as automated registration, to strengthen system security and privacy. Collaborative efforts in smart governance aim to establish partnerships and alliances that utilize shared expertise to promote innovation and enhance service delivery, resulting in a strong and flexible governance model. Therefore, participatory governance theories emphasize direct citizen inclusion in decision-making processes rather than relying predominantly on technological solutions. With the advancement of urbanization and the growing participation of citizens in governance, technology has become a crucial element in contemporary cities and nations. To achieve efficient smart governance, it is crucial to establish comprehensive frameworks and protocols that seamlessly incorporate technology, citizens, and governments while surpassing existing limitations. The subsequent subsection will present an elaborate overview of the smart governance model [16]. Figure 4 shows several components of smart governance.

Outlining the strategic goals that guide the development and implementation of an Enterprise Architecture (EA) using Architecture Driven Objectives. Table 2 helps in clearly defining the objectives that architecture-driven initiatives aim to achieve, such as enhancing interoperability, improving efficiency, ensuring scalability, and supporting innovation. By providing a structured overview, it enables organizations, especially in the public sector to align their technological and operational strategies with their broader mission and vision. Additionally, the table serves as a reference for decision-makers to ensure that architectural decisions contribute to long-term sustainability, cost-effectiveness, and seamless integration of digital services. Ultimately, it acts as a roadmap for achieving a well-structured, future-proof, and citizen-centric smart government ecosystem.

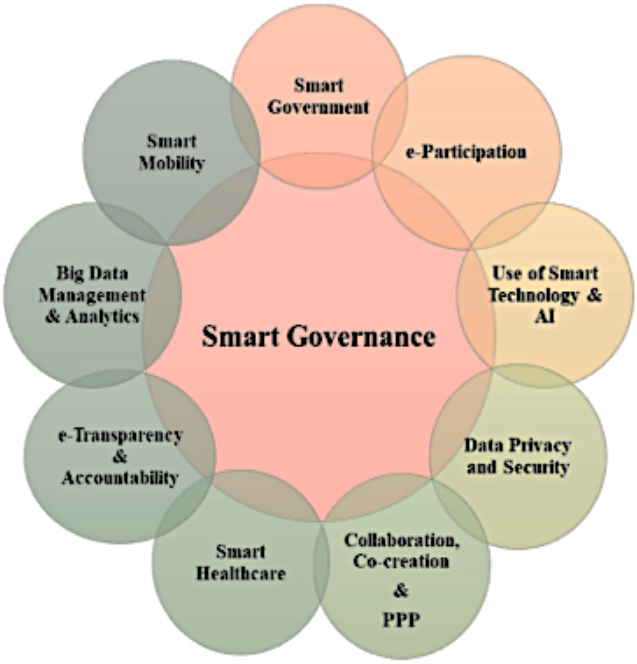

Figure 4. Components of Smart Governance [16]

The Smart Government Architecture Model combines various architectural layers that work cohesively to facilitate the realization of a connected, transparent, and efficient government. The architecture is driven by innovation in technology, data, and processes to achieve the following objectives in Table 2.

Table 2. The Architecture Driven Objectives

No.	Objectives	Descriptions
1.	Improved service delivery	Citizens benefit from efficient, accessible, and responsive public services.
2.	Transparency	Increased accountability and openness in governmental operations and decision-making.
3.	Cost-effectiveness	By adopting cloud infrastructure, data-sharing, and automation, the government can reduce operational costs and improve resource allocation.
4.	Sustainability	The smart government model prioritizes environmental sustainability by utilizing energy-efficient technologies and promoting green policies.

In developing a model for Smart Government EA, several challenges need to be addressed in Table 3.

Table 3. Smart Government EA Challenges

No.	Challenges	Descriptions
1.	Cultural Resistance to Change	Government institutions may face resistance to the adoption of new technologies and digital systems. Overcoming this requires strong leadership, training, and stakeholder engagement.
2.	Data Privacy and Security	With the increased reliance on data, the security and privacy of citizen information become paramount. Governments must implement robust security measures and ensure compliance with privacy regulations.
3.	Interoperability Issues	Government agencies often work with legacy systems that may not easily integrate with new technologies. The design of the EA model should prioritize seamless interoperability to ensure effective communication and data sharing.
4.	Funding and Resource Constraints	The financial resources required to develop and maintain a smart government architecture can be significant. Governments need to find sustainable funding models and prioritize investments that yield long-term benefits.

Despite these challenges, the potential benefits of implementing an EA model for smart government are substantial. By improving service delivery, enhancing transparency, and enabling data-driven governance, governments can create a more efficient, responsive, and citizen-friendly environment. The key to success lies in careful planning, adoption of best practices, and ongoing refinement of the architecture to meet evolving demands. The development of an Enterprise Architecture (EA) for Smart Government, based on the TOGAF framework, is a crucial step in ensuring that public administration meets the demands of modern governance. By creating an integrated, interoperable, and efficient architecture,

governments can enhance their service delivery, improve citizen satisfaction, and ensure transparency in decision-making processes. The proposed EA model addresses the unique challenges of governmental environments while harnessing the potential of emerging technologies for the betterment of society.

3.1. Discussion

EA model can be adapted to various levels of government, from local municipalities to national administrations, by tailoring its framework to meet specific governance needs. At the local level, the model can focus on improving service delivery, citizen engagement, and operational efficiency through digital platforms, smart infrastructure, and data-driven decision-making. Municipalities may require a more decentralized and agile approach, emphasizing interoperability between agencies and integration with community-based services. At the regional level, the model must address coordination among multiple jurisdictions, ensuring seamless data exchange and policy alignment while maintaining compliance with regulatory standards.

When applied at the national level, the EA model must encompass a broader strategic vision, incorporating large-scale digital transformation initiatives, cybersecurity frameworks, and intergovernmental collaboration mechanisms. Diverse governance structures, such as federal, unitary, or hybrid systems, necessitate additional considerations, including legal frameworks, data sovereignty, and administrative autonomy. Furthermore, cultural, political, and socio-economic factors must be accounted for to ensure the model remains inclusive and adaptable to local contexts. By incorporating scalability, modularity, and interoperability, the EA model can effectively support Smart Government initiatives across different governance structures, fostering innovation and improving public sector efficiency at all levels.

The proposed Smart Government EA Model offers a structured framework for digital transformation, but it also comes with several limitations and challenges that governments might face when adopting this architecture: First, government employees and stakeholders may be reluctant to adopt new technologies due to fear of job displacement, lack of digital literacy, or hesitation in changing long-standing bureaucratic processes. Second, implementing a comprehensive Enterprise Architecture requires significant financial investment in infrastructure, software, training, and ongoing maintenance, which may not always be feasible due to limited public funds. Third, many governments still rely on outdated IT systems that are not easily compatible with modern smart government solutions, making integration complex and costly. Fourth, handling large volumes of sensitive citizen data requires robust cybersecurity measures, which can be challenging to implement and maintain against evolving cyber threats. Fifth, ensuring seamless

communication between different government agencies and systems requires standardized protocols, which may not always be in place or easy to enforce.

5. CONCLUSION

This research explores the development of an enterprise architecture (EA) model tailored for the concept of smart government. The research highlights the importance of aligning technology, processes, and organizational structures to enhance public sector services through digital transformation. The authors propose a comprehensive framework that integrates modern technologies such as IoT, big data, and artificial intelligence, aiming to improve efficiency, transparency, and citizen engagement. The model emphasizes the need for a unified approach that supports the interoperability of various governmental systems and ensures scalable, flexible, and sustainable implementation. Through a systematic methodology, the study outlines key components and stages in developing an effective EA for smart government, considering both technical and managerial perspectives. The conclusion underscores the potential of this model to serve as a guideline for governments looking to adopt smart solutions, ultimately fostering better governance and improved public services. The rapid evolution of emerging technologies presents new opportunities for enhancing Smart Government models. Future research should explore the following key areas: Blockchain for transparent and secure governance, advanced AI and Machine Learning in public services, integration of Internet of Things (IoT) and Big Data, interoperability and Digital Ecosystem development, regulatory and ethical considerations.

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