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E-Government Implementation (South Sulawesi Province, Informatics, Communications Office of Statistics and Coding)

Sennahati, Muh. Farid, Sudirman Karnay, Andi Alimuddin Unde

Department of Communication Science, Hasanuddin University, Indonesia
Email: nana.fikom.ucm@gmail.com

The development of technology has an impact on today's life. Digital transformation has touched almost all lines including the government system. The study aims to describe the implementation of e-government (electronic-based government system) in South Sulawesi Province, especially in the Communication, Informatics, Statistics and Cryptography Service of South Sulawesi Province. The research method used is a qualitative approach with data reduction analysis, presentation and drawing conclusions. The informants in this study were the Head of the Communication, Informatics, Statistics and Cryptography Service of South Sulawesi Province, Head of Public Communication, Head of Informatics, Head of Sectoral Statistics, Head of Cryptography, Head of e-government and Data Manager. Head of Section of the Communication, Informatics, Statistics and Cryptography Service of South Sulawesi Province, the Community as users and several other people who can provide information. The results of the study indicate that the implementation of e-government (electronic-based government system) has been implemented as evidenced by the presence of various supporting applications in the implementation of work such as E-Kinerja, E-Sakip, E-Sign, Smart Office and so on. The basic thing in creating an electronic-based government system (SPBE) is to know the SPBE architecture which consists of SPBE references and SPBE domains.

Keywords: e-government, implementation.

1. Introduction

The development of technology in the era of the industrial revolution 4.0 greatly affects all activities that support the sustainability of life. Almost all lines have been able to feel the development of technology. One of them is the implementation of a digital-based system in government or what is known as e-government. The application of data integration is carried out from a manual system to a digital system. The Communication, Informatics, Statistics and Cryptography Service of South Sulawesi Province is a provincial regional apparatus that carries out the function of organizing government affairs in the fields of communication, informatics, statistics and cryptography. Based on Presidential Instruction No. 3 of 2003 concerning National Policy and Strategy, e-government development is undeniably a strategic policy for the application of communication and information technology in government. In line with that, the implementation of e-Government in South Sulawesi is supported by the Vision and Mission, ICT Master Plan and Strategic Plan/Roadmap for e-Government development, as well as the issuance of Regional Regulations and Governor Regulations. The implementation of information and communication technology is needed starting from the planning, implementation and supervision stages of development programs in all fields. This is in line with Weerakkody's opinion that digital information systems can provide significant benefits to government in terms of operational efficiency, cost savings, and better public service delivery. He also highlighted the importance of involving all relevant stakeholders in the planning, development, and implementation of digital information systems (Weerakkody, Irani, Lee, Hindi, & Osman, 2016). A digital-based government system can provide convenience and efficiency of performance, especially in the field of administration. Government is closely related to the function of serving the community. The presence of this digital-based government system can change the service system to be more efficient.

The Communication, Informatics, Statistics and Cryptography Service of South Sulawesi Province has implemented several e-government systems to facilitate and support the improvement of organizational performance. Therefore, the author is interested in studying further the implementation of a digital-based government system at the Communication, Informatics, Statistics and Cryptography Service of South Sulawesi Province. Previous studies have not explained the environmental governance capabilities of the new media environment, which are mainly concentrated on traditional media such as newspapers to explore the impact of media on corporate governance, information disclosure and implementation of social responsibility (Dyck et al., 2008; Baloria & Heese, 2018; Blankespoor et al., 2020).Chierici, Tortora, Del Giudice, and Quacquarelli (2021)examines whether and how digital transformation, in terms of digital collaboration, joint efforts with internal/external partners to achieve common goals, and the adoption of digital tools that support these practices, influences social innovation capital in the context ofcompanysmall innovative. Dengler and Matthes (2018) analyzing the impact of digital transformation onlabor market, particularly examining the potential for job substitution in Germany. Based oncase studyin-depth study of the digital transformation completed by China's largest construction machinery manufacturer. In their study,Forcadell, Aracil, and Ubeda (2020) found that the combination of corporate sustainability and digitalization facilitates the transformation of the organizational nature of banks by simultaneously narrowing their boundaries and expanding their scope.Gfrerer, Hutter, Fuller, and Strohle (2021)examines how digital knowledge and skills are distributed

among managers and employees, developing a change readiness framework towards digital readiness.Fischer, Imgrund, Janiesch, and Winkelmann (2019); Fischer, Imgrund, Janiesch, and Winkelmann (2020) examines how companies use business process management to implement digital transformation.

2. Literature Review

New Media

The use of new media to improve the visual and creative quality of cinema and television works can also provide new means for the general public to create and distribute these works, thereby increasing the ease of film and television production and distribution (Zhang. B and Shao. L 2025). This definition reflects that new media relies heavily on modern media technology, such as digital and network technology, in terms of technology utilization. On the dissemination platform, more emphasis is placed on dissemination via the Internet, wireless communication networks, and satellites. Its communication terminals, such as computers, mobile phones, or other electronic devices, are more diversified and have become terminals that provide video products and services to customers (Koc, M. 2016)

New media has provided a new sensory experience to the wider audience, and uses new transmission technology to achieve sensory expansion for each individual. This extension provides a situational and emotional experience that is close to real, allowing people to experience film and television works with almost immersive feelings (Hennig-Thurau, T et al 2010). Y. Hou, S. Kenderdine, D. Picca, et al. 2022. New media is a form of artistic creation and display characterized by digital technology, interactivity, and real-time features. Previous studies have not explained the environmental governance capabilities of the new media environment, which mainly concentrated on traditional media such as newspapers to explore the impact of media on corporate governance, information disclosure and the implementation of social responsibility (Dyck et al., 2008; Baloria & Heese, 2018; Blankespoor et al., 2020). New media has become a general trend, gradually becoming an important place for people to obtain information sources and information media (Dan Shan. 2023). Digital new media provides extensive application scenarios and platforms for information development (Yanmei Geng. 2025).

Digital Transformation

Digital transformation (DT) has evolved from a technological opportunity to a pure necessity to manage the needs and expectations of the world's growing population (Kraus et al., 2021). This development has led to major changes in many organizations, with DT introducing new processes and mechanisms that can affect the very fabric of how companies do business. According to Heavin and Power (2018) , the main goal of DT is to solve challenges related to efficiency and effectiveness, while Hess, Benlian, Matt, and Wiesbock (2016) state that companies that do not develop and implement DT strategies quickly will likely not be able to keep up and compete in the new digital reality. The transition to this new reality, however, should not be underestimated because, like every change process, it carries some risks and challenges (Andriole, 2017 , Horvath and Szabo, 2019 , Vial, 2019).

According to Gartner IT Glossary, digitalization is the process of changing from analog to digital. Hess et al. (2016) , and Horváth and Szabó (2019) also see process automation through information technology as digitalization. According to Kane et al. (2015) , this needs to happen quickly. Kane et al. (2015) also emphasize that DT requires changes in leadership, culture and mindset, attitudes towards risk, as well as new ways of working, new technologies, and a willingness to accept ambiguity and constant change. Heavin and Power (2018) highlight that DT brings technologies such as machine learning and analytics, which in turn can mean endless opportunities for organizational solutions and increased internal efficiency.

Chierici, Tortora, Del Giudice, and Quacquarelli (2021) examine whether and how digital transformation, in terms of digital collaboration, joint efforts with internal/external partners to achieve common goals, and the adoption of digital tools that support these practices, affects social innovation capital in the context of small innovative firms. Dengler and Matthes (2018) analyze the impact of digital transformation on the labor market, specifically examining the potential for job substitution in Germany. Based on an in-depth case study of the digital transformation completed by China's largest construction machinery manufacturer, In their study, Forcadell, Aracil, and Ubeda (2020) find that the combination of corporate sustainability and digitalization facilitates the transformation of the organizational nature of banks by simultaneously narrowing their boundaries and expanding their scope. Gfrerer, Hutter, Fuller, and Strohle (2021) examine how digital knowledge and skills are distributed among managers and employees, developing a framework for change readiness towards digital readiness. Fischer, Imgrund, Janiesch, and Winkelmann (2019) ; Fischer, Imgrund, Janiesch, and Winkelmann (2020) examine how companies use business process management to implement digital transformation. Using a case study from the healthcare industry, Gray, El Sawy, Asper, and Thordarson (2013) analyze how IT is used to create new value for both the company and the entire ecosystem. Hanelt et al. (2021) clarify the boundary conditions for investigating the DT phenomenon from an organizational change perspective. Gerth and Peppard (2016) examine why CIO leaders fail, and what they and CEOs can do to avoid it. Bienhaus and Haddud (2018) analyze the role of digitalization in procurement, and its role in the field of supply chain management, exploring potential barriers to digitizing procurement and supply chains, and ways to overcome them. Bjorkdahl (2020) discusses the digitalization efforts of a series of leading manufacturing companies, the challenges they face, and how they can be addressed.

Crupi et al. (2020) aimed to investigate whether and how European digital innovation hubs that fill the role of knowledge brokers can support the digital transformation of small and medium-sized enterprises by triggering open innovation practices. Rahrovani (2020) showed that digitalization exhibits continuous adjustments within and across three elements of digital work: embracing the use of new platforms at the user level, redesigning governance policies, and adapting usage to the platform logic underlying digital work. while Wang, Mahmood, Sismeiro, and Vulkan (2019) analyzed whether DT strategies can improve organizational performance, providing a comprehensive analysis of the need to implement digital transformation in companies. Wiesboeck and Hess (2020) combined the prevailing work on digital innovation into a technology-based bridging framework of digital innovation and its implementation in organizations.

E-government

E-Government, a critical component of digital governance, encompasses a range of online services and platforms offered by government organizations to facilitate interactions with citizens, businesses, and other stakeholders. A. Al-Besher, K. Kumar. (2022). E-Government is a concept traditionally used by scholars to denote the progression of public sector organizations through incremental stages of e-Government development (Klievink & Janssen, 2009). However, recent theories point to an equilibrium model of e-Government development, with sudden bursts of change altering the trajectory of e-Government development either progressively or regressively (Iannacci et al., 2019, Pittaway and Montazemi, 2020). E-Government has taken a prominent place in political and economic debates. While there is a wealth of non-consensual literature on the impact of natural resources, very little is known about the impact of these resources on e-Government development. (Imelda FS et al 2024).

E-Government refers to the use of information and communication technologies (ICT) in public administration to improve efficiency, transparency, and service delivery. It has been widely implemented in the real world (Yigitcanlar et al., 2023; Senadheera et al., 2024). This is achieved through convenient alternatives such as e-tax filing and virtual consultations, which result in significant reductions in transportation-related emissions (Zhao et al., 2023). The implementation of e-Government encourages remote working and digital platforms for citizen engagement and public services, effectively reducing the need for office energy consumption and physical travel. (Fang Li and Jiale Yan. 2024). Despite the many efforts made in the implementation of e-Government, there is a significant gap in synthesizing the various factors that influence initial adoption and sustained engagement. such as citizen trust, satisfaction, and engagement, towards the adoption and use of e-Government (Aladwani and Dwivedi, 2018, Aleisa, 2024, Alzahrani et al., 2018).

3. Methodology

This study uses a qualitative approach while the type of research uses descriptive to create a systematic, factual and accurate description of the facts and characteristics of a particular population or object. Data collection techniques are carried out by summarizing data that comes from or is in direct contact with people, events and situations at the research location (Idrus, 2009). Based on empirical benefits, the most independent qualitative data collection method of all data collection methods is the observation method, in-depth interviews and documentaries. The informants in this study were the Head of the Communication Informatics Statistics Office of South Sulawesi Province, Head of Public Communication, Head of Informatics, Head of Sectoral Statistics, Head of Cryptography, Head of e-government and Data Manager. Head of Section of the Communication Informatics Statistics Office of South Sulawesi Province, the Community as users and several other people who can provide information to support the data in this study. Data analysis techniques in this study can be divided into 3 types, namely data reduction, data presentation and drawing conclusions and verification. The following is a description of the data analysis framework using the Miles and Huberman interactive model:

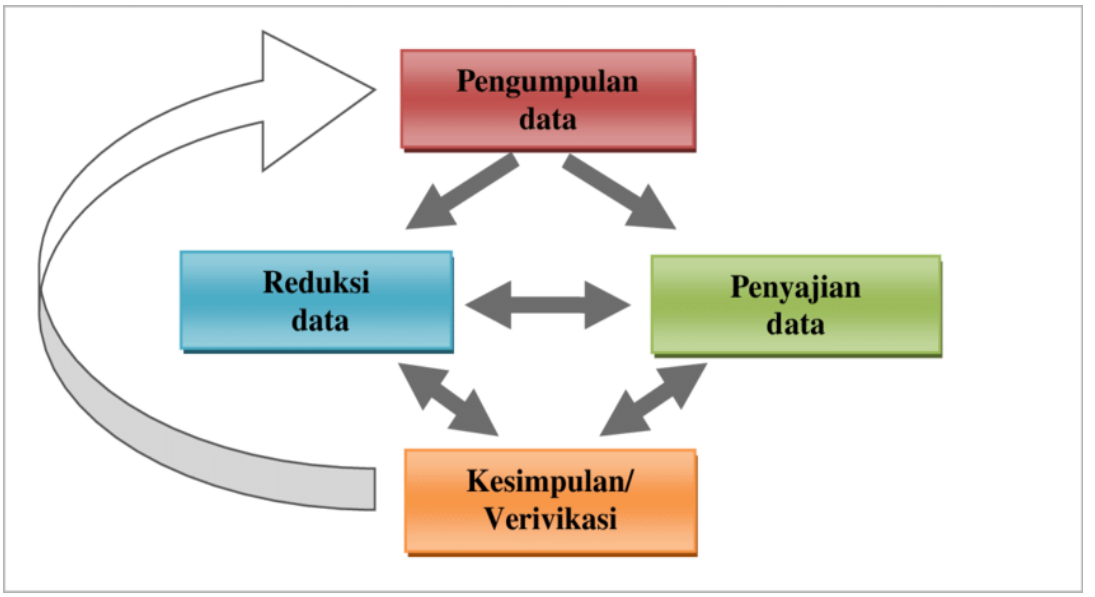

Figure 1.1 Data Analysis Framework

4. Results

SPBE Architecture

One of the main components in SPBE, namely the SPBE architecture which is a guideline in the implementation of government. Where in the implementation of government, integrated and comprehensive monitoring and evaluation can also be carried out in the implementation of government activities to all areas and levels.

The preparation of the Electronic-Based Government System Architecture or abbreviated as SPBE must contain 2 things, namely architectural references and architectural domains. The National SPBE Architecture is an SPBE architecture that is applied nationally. The integration of all government administration electronically provides convenience in increasing the expected efficiency and effectiveness. SPBE Monitoring and Evaluation is the level of maturity of the SPBE architecture. An illustration related to the composition of the SPBE framework is presented in the following figure:

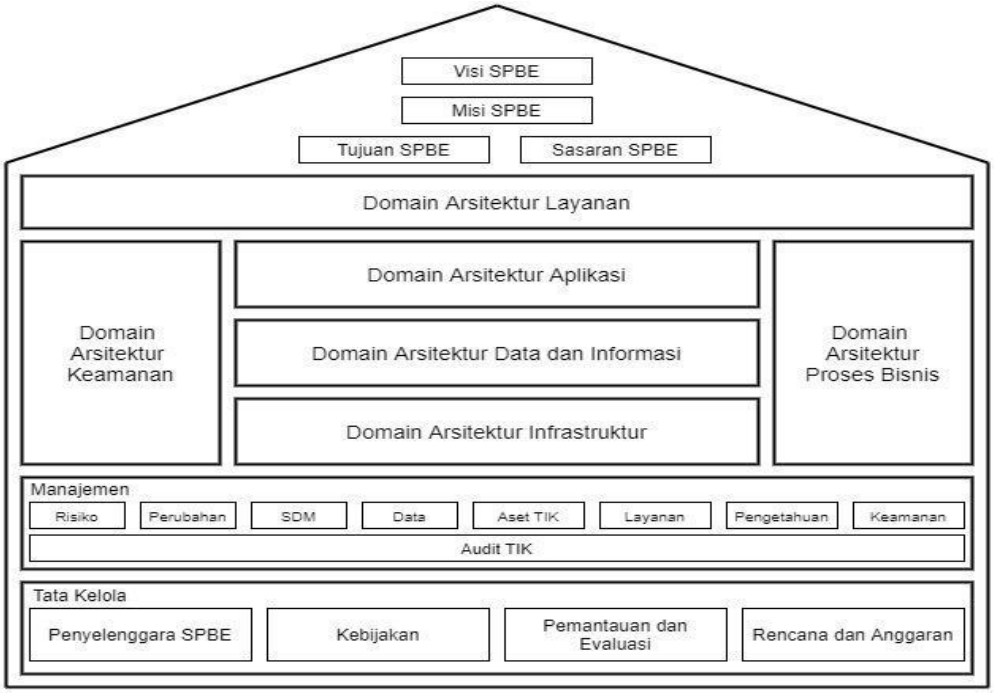

Figure 1.2 SPBE Framework

From Figure 1.2, the master plan for the electronic-based government system, hereinafter abbreviated as SPBE, the points included are the SPBE architecture, SPBE plan map, containing the SPBE plan regarding the implementation of governance, management, services, infrastructure, applications, security, and ICT audits, SPBE plans and budgets, business processes, data and information, SPBE infrastructure, applications contained in SPBE, SPBE security systems, and SPBE services.

SPBE Goals and Objectives.

Based on the SPBE vision and mission, the goals and targets of the SPBE of the South Sulawesi Provincial Government for 2023-2027 are:

a. Realizing good, clean, effective, efficient, transparent and accountable governance.

b. Improving Regional Infrastructure Equity.

c. Improving public welfare evenly with the support of an integrated electronic-based government system.

d. Improving the quality of competitive, inclusive and characterful human resources.

e. Increasing the productivity of added value growth of superior regional products.

f. Realizing quality and reliable public services to improve environmental quality in a sustainable manner.

Availability of SPBE Services in the South Sulawesi Provincial Government

By introducing and promoting South Sulawesi through e-government, local governments can build a positive image of their region. By presenting accurate, transparent, and up-to-date information through the e-government platform, local governments can strengthen public and private sector trust in their potential and seriousness in regional development. This can help improve South Sulawesi's reputation as an innovative, progressive, and competitive region. Based on data obtained from the Communication, Informatics, Statistics and Cryptography Service of South Sulawesi Province, it is known that all Regional Apparatus in the South Sulawesi Provincial Government already have services. From the data collected, it is known that there are 479 services spread across 45 Regional Apparatus of the South Sulawesi Provincial Government. This shows that all 45 Regional Apparatus or 100% of the South Sulawesi Provincial Government already have services. The Regional Apparatus with the most services is the Trade Service, which has 39 services, followed by the Culture and Tourism Service, which has 37 services, and the Population and Civil Registration Service which has 21 services. The regional apparatus with the fewest services is the Industry Service and the Labuang Baji Regional Public Hospital, namely 1 (one) service.

Service Access Status at the South Sulawesi Provincial Government is divided into 3 (three), the Access status is as follows:

a. Manual, where the service is still carried out using conventional methods without the assistance of an application.

b. Online, where the implementation of services has been supported by application tools so that services can be carried out effectively and efficiently.

c. Manual and Online, where PD provides services online but there are still manual services received to address communities that have not been properly socialized.

The image below is a diagram that explains the distribution of SPBE Service Status in the South Sulawesi Provincial Government.

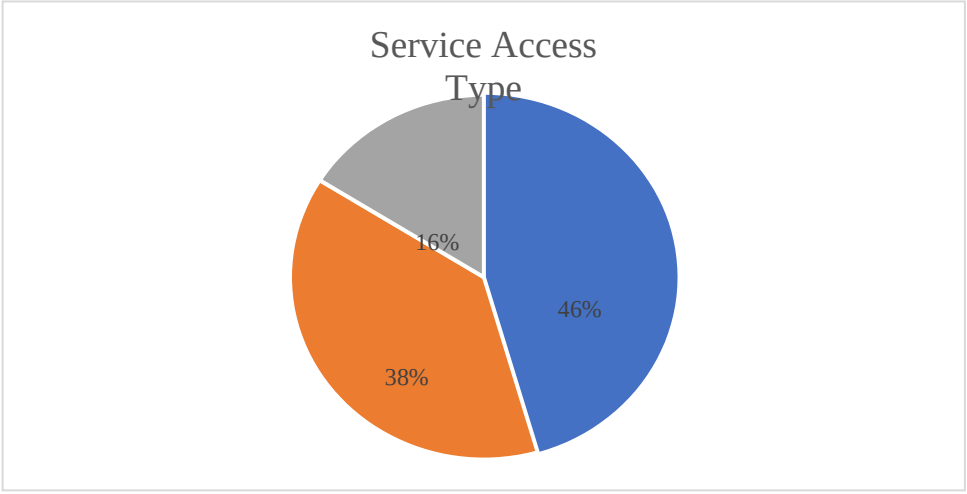

Figure 1.3 Types of Service Access in the South Sulawesi Provincial Government

From the image above, it is known that the percentage of Manual service status in the South

Sulawesi Provincial Government is 46% or 218 total services. While the Online service status is 38% or 184 total services and for Manual and Online services it is 16% or 77 services. Reviewed from the survey data that has been collected, there is a distribution of regional devices that have the most offline or manual services compared to other regional devices, namely the Trade Service which has 35 services that are still offline or manual and the Culture and Tourism Service which has 30 services that are still offline or manual.

SPBE Based Administration Services

Electronic-Based Administrative Services based on Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems are SPBE Services that support internal bureaucratic governance in order to improve the performance and accountability of the Government in Central Agencies and Regional Governments. The following are the existing conditions of SPBE services in the South Sulawesi Provincial Government:

Table 1. Existing Condition of SPBE Services in the South Sulawesi Provincial Government

No	Type of Service	Reference CodeService	Service NameExisting	NameExisting Applications	PDService Owner
1	Planning	RAL 02.01 Domestic	Planning Services	SIPD	Regional Development Planning Research and Development Agency
			Planning Services	E-Planning	Regional Development Planning Research and Development Agency
			Planning Services	KRISNA (Budget Performance Planning and Information Collaboration)	Regional Development Planning Research and Development Agency
			Regional Planning and Budgeting Services	E-SAVE(Planning and Budgeting Information System)	Regional Development Planning Research and Development Agency
2	Budgeting	RAL 02.02 Finance	Budgeting Services	SIPD	Regional Development Planning Research and Development Agency
			Budgeting Services	KRISNA (Budget Performance Planning and Information Collaboration)	Regional Finance and Asset Agency
			Budgeting Services	E-BUDGETING	Regional Finance and Asset Agency
			Regional Budget and Financial Management Services	SIMAKDA (Regional Budget Management & Financial Accounting Information System)	Regional Finance and Asset Agency
					South Sulawesi

			Regional Planning and Budgeting Services	E-SAVE(Planning and Budgeting Information System)	Province Development Planning Research and Development Agency
			Budget Disbursement Administration Services	SP2D ONLINE	Regional Finance and Asset Agency of South Sulawesi Province
3	Finance	RAL 02.02 Finance	Regional Financial Services	SIADINDA(Regional Office Accounting Information System)	Regional Finance and Asset Agency
			Fund Disbursement Order Service (SP2D)	SP2D ONLINE	Regional Finance and Asset Agency
			Regional Financial Services	SIMKEUDA (Regional Financial Management Information System)	Regional Finance and Asset Agency
			Regional Financial Services	SIMKEUDA (Regional Financial Management Information System)	Regional Finance and Asset Agency
			Financial Assistance Services	SIM HELP (Financial Aid Information System)	Regional Finance and Asset Agency
			Development Monitoring and Evaluation Services	SISMONDAK	Bureau of Economics and Development Administration
			Development Monitoring and Evaluation Services	SIARFACT	Bureau of Economics and Development Administration
			Regional Budget and Financial Management Services	SIMAKDA (Regional Budget Management & Financial Accounting Information System)	Regional Finance and Asset Agency of South Sulawesi Province
4	Procurement of goods and services	RAL 02.08 Organization and Governance	National Procurement of Goods and Services Service	SYRUP	Bureau of Procurement of Goods/Services
			Electronic Procurement of Goods and Services Services	LPSE	Bureau of Procurement of Goods/Services
			Local Government Goods Shopping Services	E-CATALOG	Bureau of Procurement of Goods/Services

			Government Goods/Services Procurement Marketplace Services	BAJUBODO	Bureau of Procurement of Goods/Services
5	Staffing	RAL 02.04 State Apparatus	Personnel Services	E-PINISI (Integrated Personnel Management)	Regional Personnel Agency
			Employee Attendance Service	E-SIAP (Employee Attendance Information System)	Regional Personnel Agency
			Study Permit and Wife/Husband Card Making Services	E-OFFICE	Regional Personnel Agency
			Automatic Promotion Service	E-RANK	Regional Personnel Agency
			Central Personnel Services	My SAPK BKN	Regional Personnel Agency
			Retirement Employee Services	Retirement	Regional Personnel Agency
			Periodic Salary Increase Service	KGB (Periodic Salary Increase System)	Regional Personnel Agency
			Employee Mutation Information Service	Mutation Info infomutasi.sulselprov.go.id	Regional Personnel Agency
			Civil Servant Award Service	e-Satya Badge	Regional Personnel Agency
			Personnel Services	DPRD Secretariat Personnel Database Administration System	DPRD Secretariat
			Retirement Employee Services	Retirement	Regional Personnel Agency
6	Archives	RAL 02.06 Organizational Operational Support	Dynamic Archiving Services	SRIKANDI (Integrated Dynamic Archiving Information System)	Library and Archives Service
			Office Administration Services	SMART OFFICE	Department of Communication, Informatics, Statistics and Cryptography
			Electronic Signature Services	e-SIGN	Department of Communication and Information
			Manuscript/Official Letter Administration Services	Sisminkada and e-Letters	General Bureau
			State Property	SIMAK-BMN	

		Management Services	(State Property Management and Accounting Information System)	Regional Finance and Asset Agency
		Regional Property Needs Planning Services	E-RKBMD (Regional Asset Needs Plan)	Regional Finance and Asset Agency
		Regional Property Management Services	SIMBAKDA (Regional Asset Management Information System)	Regional Finance and Asset Agency
		Mentoring and Assistance Services	Go Clean (Governance Clinic)	Regional Inspectorate
		Supervision Services for Specific Purposes	SIM-HP	Regional Inspectorate
		Data Management Services Monitoring Follow-up Services Central Inspection Services	SIPTL	Regional Inspectorate
		Central Inspection Service	eAuditee	Regional Inspectorate
		Governance Oversight Services	e-TLHP	Regional Inspectorate
		Organizational Performance Accountability Services	E-SAKIP	Organization Bureau
		Regional Property Needs Planning Services	E-RKBMD (Regional Asset Needs Plan)	Regional Finance and Asset Agency
		Organizational Performance Accountability Services	E-LAKIP	Organization Bureau
		Regional Innovation Services	JIPP (Public Service Innovation Network)	Organization Bureau
7	Employee Performance State Apparatus	RAL 02.04	Employee Performance Services	E-PERFORMANCE	Regional Personnel Agency
		Strengthening Services for Governance and Bureaucratic Reform	E-RB	Organization Bureau

Source: South Sulawesi Province Communication, Informatics, Statistics and Cryptography Service

Based on the table above, it is known that all services in South Sulawesi Province have

represented 10 administrative services and have been supported by electronic-based applications that have been described in Presidential Decree 95 of 2018. Overall, the South Sulawesi Provincial Government in Administrative Services has Central applications and regional applications. Of the 48 administrative services, there are 14 central administrative applications, for example SIPD and 29 regional administrative applications, for example E-PINISI and Smart Office. The PD that has the most administrative services is the Regional Finance and Asset Agency, which has 12 (twelve) administrative services and the Regional Personnel Agency which has 10 (ten) administrative services.

5. Conclusions

The implementation of a digital-based government system or known as e-government has been implemented by the Communication, Informatics, Statistics and Cryptography Service of South Sulawesi Province. Various digital-based digital systems such as data integration of each government division. Implementation of applications to facilitate data access, streamline work and improve service quality. Things that need to be considered in an electronic-based government system (SPBE) such as the SPBE architecture. The preparation of the Electronic-Based Government System Architecture or abbreviated as SPBE must contain 2 things, namely architectural references and architectural domains. architectural references describe the basic components of the standard architecture used as a reference for the preparation of each architectural domain, while the architectural domain is a framework that describes the integration of various SPBE components, namely the business process architecture domain, data and information architecture domain, service architecture domain, application architecture domain, SPBE infrastructure architecture domain, and SPBE security architecture domain.

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