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SAMBUTAN EDITOR

Alhamdulillah, mulai tahun 2020, Jurnal RESTI (Rekayasa Sistem dan Teknologi Informasi) akan terbit 6x dalam setahun, yaitu pada bulan Februari, April, Juni, Agustus, Oktober dan Desember, hal ini menyikapi tingginya minat untuk mempublikasikan artikel di Jurnal RESTI, tentunya hal ini menjadi perhatian serius bagi kami dalam meningkatkan kualitas publikasi.

Vol. 4 No. 2 April 2020 merupakan edisi kedua di tahun 2020 yang dapat kami publish berkat usaha yang sungguh-sungguh dari segenap tim redaksi, mitra bestari dan atas bantuan banyak pihak. Akhirnya Jurnal ini dapat hadir tepat waktu dan memberikan kontribusi ilmiah di dalam bidang informatika.

Volume ini terdiri atas 22 artikel dengan 66 penulis yang berasal dari 19 Perguruan Tinggi di Indonesia, yaitu Universitas Amikom Purwokerto, Universitas Bina Sarana Informatika, STMIK Nusa Mandiri, Politeknik Negeri Cilacap, Universitas Mercu Buana, Universitas Udayana, Universitas Dharma Andalas, Institut Teknologi Telkom Purwokerto, Universitas Budi Luhur, Universitas Sriwijaya, Universitas Widyagama Malang, Universitas Pelita Bangsa, Universitas Kristen Surakarta, UPN "Veteran" Yogyakarta, Politeknik Negeri Bali, Institut Teknologi Sepuluh Nopember, Universitas Islam Indonesia, Universitas Ahmad Dahlan, Universitas Negeri Medan, Universitas Katolik Santo Thomas Medan dan Universitas Brawijaya.

Artikel yang publish dalam edisi ini telah terakreditasi SINTA Peringkat 2 sesuai keputusan Dirjen Penguatan Riset dan Pengembangan Kemenristekdikti No. 10/E/KPT/2019.

Penerbitan Jurnal ini tidak terlepas dari bantuan banyak pihak, terutama ucapan terima kasih kami sampaikan kepada mitra bestari yang sudah rela bekerja keras dalam mereview manuskrip hingga layak publish di Jurnal ini dan segenap tim editor. Kami juga mengapresiasi para peneliti yang sudah menjadikan Jurnal RESTI sebagai media untuk publikasi hasil penelitiannya.

Terakhir, kami berharap semoga manuskrip di Jurnal RESTI dapat menambah khazanah keilmuan dan wawasan ilmiah, khususnya dalam bidang informatika. Kritik dan saran membangun tetap kami harapkan untuk perbaikan Jurnal ini.



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Evaluation of E-Government Maturity Models in Sub-District Public Services in Indonesia Using the SPBE Framework

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Abstract

The administration of Indonesian public services has entered the era of Industrial Revolution 4.0, which is a collaborative phase, requiring that every public service implement a service system base on digitization and integrated. The public service that has always been an open discussion is the PATEN Sub-District service. PATEN is a public service system that facilitates community access to get assistance related to population and licensing issues through the Sub-District. Based on PANRB Ministerial Regulation No. 5 of 2018 concerning SPBE Guidelines. SPBE is the framework of the Indonesian Government's Maturity Model, which assesses the level of maturity index in Local Government services. SPBE implementation only stops at the District level and has not touched the Sub-District level, so the SPBE research conducted on public services in the Sub-District. SPBE maturity evaluation has been re-mapped in public services so that not all domains and indicators used. Based on the SPBE mapping results, it produces two domains and four indicators that will use as an assessment of maturity. The data collection method used was a questionnaire. The results showed the evaluation of the maturity of the SPBE in public services in the Sub-District obtained a "Poor" category with a total index value of 1.47. Accordingly, it was necessary to provide recommendations and improvement strategies to increase the value of the SPBE index.

Keywords: E-Government Maturity Model, SPBE, Sub-District, Public Service, Maturity Level

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1. Introduction

Nowadays, the organization of public services in Indonesia has entered a new era called the Industrial Revolution 4.0 [1], [2]. The industrial revolution 4.0 is a collaborative phase which requires that the entire service process has been carried out digitally and integrated [3]. The priority development in the current Indonesian Government is the public service sector [4]. Public services play an important role in activities organized by the Central, Regional, and Environmental Governments to meet the basic needs of every citizen [5], [6]. Referring to Law Number 25, the Year 2009 regarding Public Services is a series of public service activities organized by the Government to fulfill the function to realize the benefit and needs of the community as a benchmark for the implementation of good governance [7].

In following up on public services, the Ministry of Home Affairs of the Republic of Indonesia issued Regulation of the Minister of Home Affairs Number 4 of 2010 regarding PATEN to manage public services at the Sub-District level [8].

The implementation of PATEN aims to facilitate open access to services related to population and licensing issues. The application of PATEN services is currently still experiencing problems, found several critical points, such as limited human resource competence, slow service access, and poor business processes [9]. This problem has led to public dissatisfaction with public services provided by the Sub-District.

Based on the critical point found in the public service sector of the Sub-District. The Central Government issued a new standard to strengthen public services as stipulated in the Regulation of the Minister of Administrative Reform and Bureaucratic Reform of the

Republic of Indonesia Number 5 of 2018 concerning SPBE Guidelines. SPBE is the framework of the Indonesian Government's Maturity Model. SPBE evaluation aims to assess the level of maturity index.

SPBE assessments in Indonesia are only done at the District level and have not touched the Sub-District level. Therefore, conducting research related to the evaluation of best practices and alignment of SPBE implementation at the Sub-District level and the application of PATEN services, which serve as the basis for controlling public services in the Sub-District.

2. Research Method

Research methodology is the stages and procedures to ensure that the research process can be carried out regularly, systematically, controlled and directed [10]. The steps of the research carried out refer to the SPBE Guidelines for Regulation of the Minister of Administrative Reform and Republic of Indonesia Number 5 Year 2018 [11].

2.1. Survey of Existing Public Service Conditions

Survey of existing public service conditions is the initial stage of research conducted to collect data. The conditions for implementing a bureaucratic public service Sub-District can be in the form of business processes, service integration, critical points, and service quality standards.

2.2. Literature Research

Literature research is a stage that is performed to explore the problems found during the SPBE research. Survey data collection can be in the form of tracking critical points of service, collecting applicable policies and regulations as well as related literature studies.

Literature research in this study can consist of Survey of Existing Public Service Conditions, Literature study, SPBE Framework Development, Map of Existing Business Process to SPBE, Data Collection in the form of General Questionnaire and Maturity Questionnaire, Data Analysis, Recommendations and Improvement Strategies.

2.3. SPBE Framework Development

Based on Presidential Regulation of the Republic of Indonesia Number 95 of 2018 concerning Electronic-Based Government Systems, or called SPBE, is a government organization that uses information and communication technology to provide services for SPBE users [12]. SPBE is a framework for measuring the level of maturity at the Central and Local Government Agencies used explicitly in Indonesia. The assessment structure of the SPBE consists of domains, aspects, and indicators. The SPBE assessment structure chart in Figure 2.

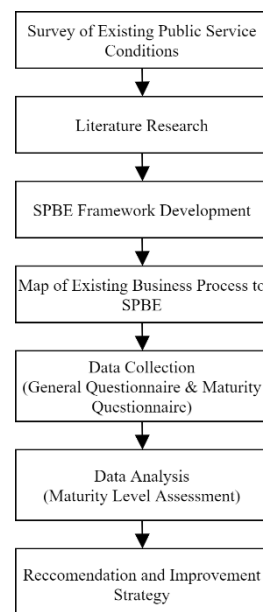


Figure 1. Research Methodology

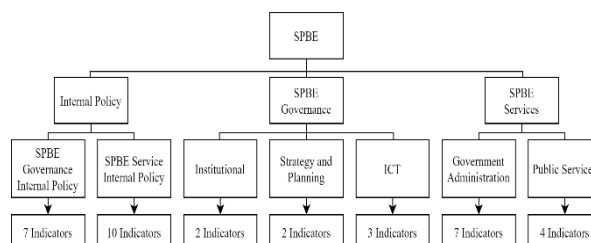


Figure 2. SPBE Assessment Structure

The SPBE assessment structure divided into three parts, namely domains, aspects, and indicators [13]. The explanation of the three assessment structures is as follows.

Domain is the area of assessed SPBE. The SPBE has three main domains, namely, Internal Policy, SPBE Governance, and SPBE Services.

Aspect is the specific areas of SPBE implementation assessed. SPBE has 7 aspects in the evaluation process, namely Internal Governance Policy, Internal Services Policy, Institutions, Strategy and Planning, Information and Communication Technology, Government Administration, and Public Services.

Indicators is specific information regarding aspects of the SPBE being assessed. SPBE has 35 overall indicators in the SPBE Evaluation.

2.4. Map of Existing Business Process to SPBE

Map of existing business process to SPBE is the selection of 35 SPBE maturity indicators that correspond to the public service business process at the Sub-District level. Indicators of the level of maturity can be in the form of an SPBE maturity questionnaire obtained after the SPBE mapping process. A maturity

questionnaire will be given to employees and staff in the Sub-District public services.

2.5. Data Collection

Data collection is done by interviews, observations, documentation, and questionnaires. Interview is a method of data collection that is done by giving several questions directly to the interviewees. The interview process was conducted with employees, officials, and staff at the Sub-District level. The purpose of the interview is to obtain an existing data set and business process services that are operating at the government agency.

Observation is a method of collecting data by making direct observations to the Sub-District service level to determine business processes and the structure of the Sub-District public service operation units.

Documentation is a method of collecting data by collecting several documents that are used as research material such as service standards, standard operational procedures, policies that operate in government agencies, as well as other documents related to SPBE.

The questionnaire is a method of data collection by giving several questions that have concluded in writing to respondents. The dissemination process completed by determining the respondents to whom the questionnaire will given. Respondents who participated in this questionnaire were Officers, Civil Servants, and Staff in the Sub-District.

The design of the questionnaire used was a standardized questionnaire that had been adjusted to the SPBE Evaluation Guidelines for Central Institutions and Local Governments by the Ministry of Administrative Reform and Bureaucracy Reform. The stages of questionnaire distribution divided into two phases.

The first questionnaire was a general questionnaire that used to find out the general condition of SPBE implementation at the District level. The respondent from the general questionnaire was the Head of the Communication System Deployment Section in the E-Government Sector at the District Communication and Information Office as the center of information technology management in the Badung Regency Government. An example of a general questionnaire provided can explain in the following table.

Table 1. General Questionnaire

General Questionnaire
Make a list of applications that are use to implement internal management of the bureaucracy and public services in their respective Central / Regional Government Agencies.

The second questionnaire was an SPBE maturity level questionnaire at the Sub-District level. This questionnaire was selected based on the results of the

mapping between the SPBE indicators and PATEN. An example of a maturity questionnaire provided can explain in the following table.

Table 2. Maturity Questionnaire

Indicators	Questionnaire
Indicators 24 Use of General Applications Sharing	Does your Central / Local Government Agency use the common sharing application?
Indicators 32 Public Complaints Service	Does your Central / Local Government Agency have a public complaints service system?
Indicators 34 Whistle Blowing System Service (WBS)	Does your Central / Local Government Agency have a Whistle-Blowing System (WBS)?
Indicators 35 Public Service Government Agencies	Does your Central / Local Government Agency have a public service system that supports the main tasks of the agency?

2.6. Data Analysis

Data analysis is the process of recapitulating the results of the SPBE maturity index value generated through the SPBE business process maturity questionnaire distributed previously.

SPBE maturity level assessment divided into two, namely process capability maturity level and function capability maturity level. The explanation of each level of maturity will discuss as follows.

Table 3. Process Capability Maturity Level

Level	Characteristics
1 – Stub	Internal policies are not yet available or are still in conceptual form. Governance is carried out at any time and is not well organized without monitoring and unpredictable results.
2 – Managed	Internal policies have been legalized, but the arrangements are partial or sectoral. Governance is carried out on the basis of management that has been defined and documented, it is implemented according to the standards of each organizational unit.
3 – Standardized	Internal policy has set the standard governance process for all organizational units, but has not yet set the alignment between governance processes. Governance is fully implemented by standardization by all relevant organizational units.
4 – Integrated and Measured	Internal policies have arranged integration between governance processes and mechanisms for measuring the performance of governance processes. Governance is integrated with other governance processes and measuring performance quantitatively.
5 – Optimum	Internal policies have set the mechanism for continuous evaluation and change management. Governance is carried out with continuous quality improvement.

Process capability maturity level is a guideline for determining the level of maturity in Domain Internal Policy and Domain SPBE Governance. There are five levels of maturity in the process capability maturity level, namely the stub, managed, standardized, integrated and measured, and optimum. The level of maturity in the function capability maturity level can be seen in Table 4.

Table 4. Function Capability Maturity Level

Level	Criteria
1 – Information	SPBE services are provided in the form of one-way information
2 – Interaction	SPBE services are provided in the form of two-way interactions
3 – Transaction	SPBE services are provided through the exchange of information and services
4 – Collaboration	SPBE services are provided through integration with other SPBE services
5 – Optimization	SPBE services can adapt to changing needs in the internal and external environment

Function capability maturity level is a guideline for admitting the level of maturity in the SPBE service domain. There are five levels of maturity in the function capability maturity level, namely the level of information, interaction, transaction, collaboration and optimization.

SPBE maturity index predicate is a value that represents the maturity level of the implementation of SPBE which is grouped based on the predicate that can be explained in Table 5.

Table 5. SPBE Maturity Index Predicate

Maturity Index	Predicate
4.2 – 5.0	Excellent
3.5 – < 4.2	Very Good
2.6 – < 3.5	Good
1.8 – < 2.6	Average
< 1.8	Poor

2.7. Recommendation and Improvement Strategy

Recommendations and improvement strategies are the final stages to provide improvement recommendations to improve the quality of governance and public service standards.

3. Result and Discussion

This chapter describes the results and discussion of the research about the SPBE to find out the scope of the SPBE implementation conditions at the Sub-District level. SPBE Analysis can consist of Service Integration Portrait, General Questionnaire Results, Map of Existing Business Process to SPBE, Maturity Level Assessment, Recommendations and Improvement Strategies.

3.1. Potrait Service Integration

The portrait of service integration is the level of business implementation of the Sub-District public service process. The business process is carried out through several levels starting from Hamlet, Village, Sub-District and District. Explanation of each business public service process can be seen in the following table.

Table 6. Potrait Service Integration

No	Public Services	Service Integration Level (Location)
1	Electronic Identity Card	Hamlet, Village, Sub-District, District
2	New Family Card for Indonesian Citizens	Hamlet, Village, Sub-District, District
3	Renewal of Family Card Data for Indonesian Citizens	Hamlet, Village, Sub-District, District
4	Family card lost and corrupted for Indonesian Citizens	Hamlet, Sub-District
5	Certificate of Transference of the Inter-District / Inter-Province	Hamlet, Village, Sub-District
6	Certificate of Transference Appearing of the Inter-District / Province	Village, Sub-District
7	Certificate of Transference between Sub-District in the District	Hamlet, Village, Sub-District
8	Certificate of Transference Appearing of the Village / Village Office in one District	Hamlet, Village, Sub-District
9	Certificate of Transference Appearing of the Village / Village Office in one Sub-District	Village, Sub-District
10	Population Administration for Foreign Citizens	Sub-District, District
11	Certificate of Population Problems	Hamlet, Village, Sub-District
12	Comparative Building Construction Permit, Business Place Certificate	Hamlet, Village, Sub-District, District
13	Land Heritage Service for Confirmation of Rights / Issuance of SPPT	Hamlet, Village, Sub-District, District
14	Social Assistance Proposal Services and other Recommendations	Hamlet, Village, Sub-District

Table 6 shows the level of integration of fourteen business processes in the Sub-District PATEN service. The level of the business process in the subject process that the community goes through starting from the preparation of a covering letter that complete at the hamlet and village level, then finishing the requirements file at the Sub-District level. The community give optional, which to wait for the procedure in the Sub-District or directly come to the District.

3.2. Summary General Questionnaires

The general questionnaire is a method used to collect data related to general SPBE implementation conditions at the Sub-District level. General

questionnaires can be in the form of a list of general application practices that are used by the Regional Organizations of the Central Government. A list of general applications can explain in Table 7.

Table 7. Application List

Functional Application	Application Name
Asset Information System and Regional Goods	Simda Barang
Financial Information System (e-Budgeting)	Simda Keuangan
Supervision Information System	LAPOR SP4N, Whistle Blowing System
Personnel Information System	SIMPEG, BKPSDM
Population Information System	SIAK
Recording System	BEEnroller
Printing System	BCardManagement

Table 7 explains the result of list general application services available at the Government at the Regency level based on the general questionnaire that has been filled out by respondents. The list of services reveals that there are six applications managed by the Sub-District. In addition, there are some internal public services operated by the work unit on PATEN public services. The applications are SIAK, BEEnroller, BcardManagement.

3.3. Map of Existing Business Process to SPBE

The map of existing business process to SPBE is performed in accordance with the SPBE evaluation guidelines. The evaluations are performed based on the SPBE assessment structure. The mapping process was performed in order to obtain the existing SPBE indicators in the PATEN service at the Sub-District level. Sign (x) shows the indicators that are not related to PATEN and signs (y) shows the indicators that are related to PATEN. The mapping process can be explained in Table 8.

Table 8. Map Existing Business Process to SPBE

Indicators SPBE	PATEN
Domain 1 Internal Policy	
Aspect 1 SPBE Governance Internal Policy	
Indicators 1 Internal Policy of the Government Agency SPBE Steering Team	x
Indicators 2 Internal Policy Integrated Business Process Innovations	x
Indicators 3 Internal Policy of the Government Agency SPBE Master Plan	x
Indicators 4 ICT Internal Budgeting and Expenditure Policy	x
Indicators 5 Internal Data Operations Policy	x
Indicators 6 Internal Application System Integration Policy	x
Indicators 7 Internal Policy on Use of General Applications for Sharing	x
Aspect 2 SPBE Service Internal Policy	
Indicators 8 Internal Policy of Manuscript Services	x
Indicators 9 Internal Staffing Management Services Policy	x
Indicators 10 Internal Policy of Planning and Budgeting Management Services	x

Indicators SPBE	PATEN
Indicators 11 Internal Policy of Financial Management Services	x
Indicators 12 Internal Policy of Performance Management Services	x
Indicators 13 Internal Procurement Services Policy	x
Indicators 14 Internal Public Service Complaints Policy	x
Indicators 15 Internal Policy Documentation and Legal Information Services	x
Indicators 16 Internal Policy of the Whistle Blowing System Service	x
Indicators 17 Internal Policy of Public Services of Government Agencies	x
Domain 2 SPBE Governance	
Aspect 3 Institutional	
Indicators 18 Government Agency SPBE Steering Team	x
Indicators 19 Integrated Business Process Innovations Aspect 4 Strategy and Planning	x
Indicators 20 SPBE Master Plan for Government Agencies	x
Indicators 21 ICT Budget and Expenditures Aspect 5 ICT	x
Indicators 22 Data Center Operations	x
Indicators 23 Application System Integration	x
Indicators 24 Use of General Applications Sharing	y
Domain 3 SPBE Services	
Aspect 6 Government Administration	
Indicators 25 Service Manuscript Services	x
Indicators 26 Staffing Management Services	x
Indicators 27 Planning Management Services	x
Indicators 28 Budgeting Management Services	x
Indicators 29 Financial Management Services	x
Indicators 30 Performance Management Services	x
Indicators 31 Procurement Services	x
Aspect 7 Public Services	
Indicators 32 Public Complaints Service	y
Indicators 33 Legal Documentation and Information Services	x
Indicators 34 Whistle Blowing System service	y
Indicators 35 Public Service	y

Table 8 explains the mapping process for all SPBE indicator items included in the PATEN Sub-District public services. The mapping results obtained by four indicators formed through two different domains, namely Domain 2 SPBE Governance and Domain 3 SPBE Services. The description of the results of the four indicators can be seen in Table 9.

Table 9. SPBE Indicator Mapping Result

Domain 2	SPBE Governance
Indicators 24	Use of General Applications Sharing
Domain 3	SPBE Services
Indicators 32	Public Complaints Service
Indicators 34	Whistle Blowing System Service
Indicators 35	Public Service Government Agencies

3.4. Maturity Level Assessment

Maturity level assessment is a framework that measures the level of SPBE development. Based on the results of the mapping of SPBE business processes in the previous stage, two objective domains produced,

namely SPBE Governance and SPBE Services. Maturity level measurements carried out using a maturity questionnaire, the questionnaire given to the Head of the PATEN services section in the Sub-District and staff. The measurement process implemented according to the SPBE maturity assessment structure. The results of the index values in each domain are summed and averaged to produce domain values and SPBE values.

The domain of SPBE Governance is a framework that manages, directs, and controls the implementation of an integrated SPBE. The results of the SPBE Governance domain index can be seen in the following table.

Table 10. SPBE Governance Index

Indicators	Index
Indicators 24 Use of General Applications Sharing	2
Domain SPBE Governance	2.00

Table 10 shows the index value of the SPBE Governance Domain, which only has one indicator related to the PATEN service. The index value of the SPBE Governance domain obtained is 2.00, with the predicate “Average”.

Domain 3 SPBE Services is a function domain of the SPBE application system that provides benefits to SPBE users. SPBE Services has 11 indicators following the SPBE assessment structure, after mapping the indicators that correspond to the PATEN, three indicators from the service domain obtained to assess the level of public service in the Sub-District PATEN. Based on the Service Integration Portrait, the Sub-District has 14 public services, where public services will independently evaluate using the indicator 35. The results of the SPBE Services domain index can describe in the following table.

Table 11. SPBE Services Index

Indicators	Index
Indicators 32 Public Complaints Service	2
Indicators 34 Whistle Blowing System Service	3
Indicators 35 Public Services (PATEN)	
Indicators 35 Public Service 1 (Electronic Identity Card)	1
Indicators 35 Public Service 2 (New Family Card for Indonesian Citizens)	1
Indicators 35 Public Service 3 (Renewal of Family Card Data for Indonesian Citizens)	1
Indicators 35 Public Service 4 (Family card lost and corrupted for Indonesian Citizens)	1
Indicators 35 Public Service 5 (Certificate of Transference of the Inter-District / Inter-Province)	1
Indicators 35 Public Service 6 (Certificate of Transference Appearing of the Inter-District / Province)	1
Indicators 35 Public Service 7 (Certificate of Transference between Sub-District in the District)	1
Indicators 35 Public Service 8 (Certificate of Transference Appearing of the Village / Village Office in one District)	1
Indicators 35 Public Service 9 (Certificate of Transference Appearing of the Village / Village Office in one Sub-District)	1

Indicators	Index
Indicators 35 Public Service 10 (Population Administration for Foreign Citizens)	0
Indicators 35 Public Service 11 (Certificate of Population Problems)	0
Indicators 35 Public Service 12 (Comparative Building Construction Permit, Business Place Certificate)	0
Indicators 35 Public Service 13 (Land Heritage Service for Confirmation of Rights / Issuance of SPPT)	0
Indicators 35 Public Service 14 (Social Assistance Proposal Services and other Recommendations)	0
Domain SPBE Services	0.93

Table 11 shows the index value of the SPBE Services Domain. Based on the average of the indicator index value, the value obtained from the SPBE Services Domain is 0.93 with the predicate “Poor”.

SPBE index is the result of calculating the average domain index value that represents the level of SPBE implementation. Based on the results obtained between domain SPBE Governance and domain SPBE Services, the quantity is done and produces an average that can be seen in the table as follows.

Table 12. SPBE Index

Domain	Index
SPBE Governance	2.00
SPBE Services	0.93
SPBE	1.47

Table 12 shows the results of the SPBE index value that has been implemented in the Sub-District with a value of 1.47 and the predicate “Poor”.

3.5. Recommendations and Improvement Strategies

Recommendations for improvement are the strategies provided to improve business processes that experience a lack of index categories so that improvements produced to develop the quality of public services. The recommendations divided into several sections, which will be explained as follows.

3.5.1 Improvement of SPBE Indicators

The improvement of the SPBE indicator is a process to increase the index value of the SPBE indicator generated through the assessment of the maturity of the PATEN Sub-District public services.

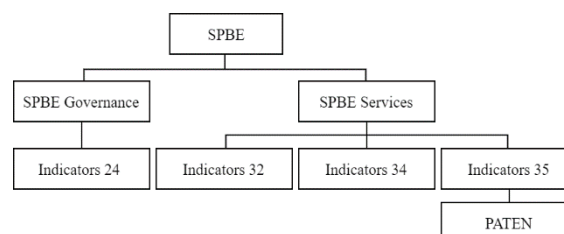


Figure 3. Improvement Indicators SPBE

Figure 3 shows the indicators of improvements created to achieve the expected level of objectives. The

following is an explanation of the increase in each SPBE domain.

Table 13. Improvement SPBE Governance Index

Indicators	Current	Expected
Indicators 24 Use of General Applications Sharing	2	3
Index Domain SPBE Governance	2.00	3.00

Table 13 shows an improvement in the value of indicators in the Domain SPBE Governance. The current condition in the SPBE Domain Governance has an index value of 2.00, which is indicator 24 Use of General Applications Sharing, the situation is still at level two, which means that the implementation process even at the basic level. Increasing the expectation level, which is the third level standardized, so the process of implementing governance must be regulated, requiring all service units to apply detailed standard procedures. The expected index value in the SPBE Governance Domain is 3.00.

Table 14. Improvement SPBE Services Index

Indicators	Current	Expected
Indicators 32 Public Complaints Service	3	4
Indicators 34 Whistle Blowing System Service	3	4
Indicators 35 Public Service 1	1	2
Indicators 35 Public Service 2	1	2
Indicators 35 Public Service 3	1	2
Indicators 35 Public Service 4	1	2
Indicators 35 Public Service 5	1	2
Indicators 35 Public Service 6	1	2
Indicators 35 Public Service 7	1	2
Indicators 35 Public Service 8	1	2
Indicators 35 Public Service 9	1	2
Indicators 35 Public Service 10	0	1
Indicators 35 Public Service 11	0	1
Indicators 35 Public Service 12	0	1
Indicators 35 Public Service 13	0	1
Indicators 35 Public Service 14	0	1
Index Domain SPBE Services	0.93	1.93

Table 14 shows an improvement in the intended expectations of the previous level in the SPBE Services Domain. The current SPBE Services domain value has an index value of 0.93, with 16 indicators, including Indicators 32 Public Complaints Service and Indicators 34 Whistle Blowing System Service is currently at the third level of transactions. The third level means that the service system process is carried out through information and service exchanges. So to improve to the fourth level, namely collaboration, the service system must create innovations by accompanying a collaboration between the current SPBE service system and other SPBE service systems.

Indicators 35 Public Service expectations on each public service touch on level 1 information and level 2 interaction, which means there is already a one-way and two-way access to public service systems. The

expected value of the SPBE Services Domain index is 1.93.

Table 15. Result Improvement SPBE Index

Domain	Current	Expected
SPBE Governance	2.00	3.00
SPBE Services	0.93	1.93
Index SPBE	1.47	2.47

Table 15 shows the total SPBE index results. The current condition of the SPBE index is at an index value of 1.47. Including an improvement in the level of each indicator, the expectation of the SPBE index value is 2.47. Developing the level of each indicator is done by implementing recommendations and improvement strategies in each domain, which will be explained as follows.

3.5.2 Recommendation SPBE Governance

The second improvement suggestion is the recommendation for improvement in Domain SPBE Governance. Suggestions for improvement are made to improve the governance of PATEN service in Sub-District. The service provided for improvement suggestions is governance of services such as business processes, human resources, performance control evaluations, which can be explained in Table 14.

Table 14. Recommendation SPBE Governance

No	Recommendations
1	Organizing SPBE PATEN Steering Team
2	Suggesting PATEN Team Decree for each Service
3	Create a Standard Procedure using General Sharing Applications
4	Business Process Improvement
5	Building Interactions and Communication Networks
6	Strengthening SPBE Human Resources Services
7	Evaluation of Performance Control
8	Reengineering Business Process towards Best Practice

3.5.2.1 Organizing SPBE PATEN Steering Team

The SPBE Steering Team is a team that gives the task of controlling, directing, and evaluating SPBE, including the formulation of policies and the application of SPBE. The formation of the steering team at the Sub-District level aims to ensure that the SPBE implementation process from the Sub-District to the central government can operate well. The improvement suggestions given are to create an SPBE Steering Team, which consists of the Sub-District Secretary with the Section Chief, to build an effective collaboration.

3.5.2.2 Suggesting PATEN Team Decree for each Service

The application of existing business processes must have a written internal policy. The improvement suggestions given are making decisions from each of the 14 public service business processes. The Decree

states the main tasks, functions, and responsibilities of the PATEN officer.

3.5.2.3 Create a Standard Procedure using General Sharing Applications

General sharing application is a regular application used by local governments in carrying out their business processes. Still, there is not yet a standard that is used as a reference. Improvements made are making standard general application procedures so that the process of using general applications can operate effectively.

3.5.2.4 Business Process Improvement

Standard Operating Procedure is a procedure that used as a guideline in conducting business processes, both for the Sub-District as a service provider and the community as a service recipient. An improvement in SOP needs to be done, and it can be more detailed and provide best practice online PATEN services.

There are recommendations for improving SOP [14]. Such as in the form of simplifying community mobility by using the system. The system can access the sub-village head level to the Village Head. Therefore, the community does not need to sign the relevant agency to request a signature. They only need to upload supporting documents for submission of requests and wait for the notification of file retrieval. The document validation can be done by using an Electronic Signature to speed up the validation process.

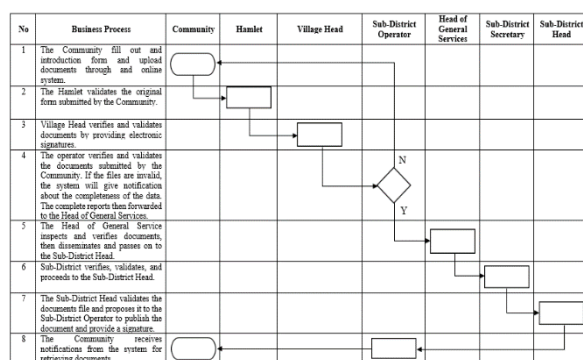


Figure 4. Business Process Improvement

The current condition that happens inside the PATEN service in the Sub-District is still doing the process manually, which means that the community must come to the location to process documents, this is very ineffective because in the digitalization era everything has been done online. Recommendations were made on the PATEN business process service by implementing an online service system. The community does not need to be complicated to look for a letter of introduction to the hamlet head and village head but only needs to submit documents through the system. The system will direct the process of document recognition validation

through the Village Head, and validation using an electronic signature made by the Village Head. The next document process will be verified by the PATEN Officer until confirmed by the Head of the Sub-District Head. The process is finally published, and the system will bring up notifications to members that the document has been completed.

3.5.2.5 Building Interactions and Communication Networks

The implementation of PATEN services needs to build active interaction with the community, not only through dissemination services but also productive and open through sharing media platforms such as social media. The purpose of strengthening this communication is that the implementation of the PATEN public service can provide useful feedback to the community, such as the relationship of spreading information with the public can be well-received, and the submission of complaints can be resolved with the right solution.

3.5.2.6 Strengthening SPBE Human Resources Services

HR Development (Human Resources) is a framework to help employees to develop the skills, abilities, cohesiveness, and knowledge of each individual. Increasing the potential of SPBE HR in the Sub-District environment can be done through improving the experience, applying SPBE best practices, developing a work culture based on SPBE, developing functional positions in Civil Servants, and implementing partnerships with multiple companies.

3.5.2.7 Evaluation of Performance Control

Performance control evaluation is on carrying out internal controls and external controls by receiving input from the community. Internal control can be done by checking the service application log. The application log will show how long the application from the community is processed. Agencies can also implement reward and punishment (remuneration system) for employees in providing services.

External control can be done by receiving input from the community. Agencies can provide a platform for the public to report if the services offered are not following the standards. Data collection from the community carried out by distributing questionnaires regularly to the community.

3.5.2.8 Reengineering Business Process towards Best Practice

The simplification of the business process here is to facilitate the community in submitting applications, such as filling out forms and other requirements. The resident records of each community have collected in the District data warehouse. Therefore, it makes the community more comfortable to apply. They only need

to show their ID Number, and then the officers can immediately search for their data following the ID Number provided by the applicant.

3.5.3 Recommendation SPBE Services

Optimizing the implementation of PATEN public services needs to be done to improve the quality of public services. Services provided for improvement advice are public services that interact directly with the community. This improvement aims to improve the quality of service standards regulated for the SPBE Services Domain described in Table 15.

Table 15. Recommendation SPBE Services

No	Recommendations
1	Strengthening Existing Applications
2	Creating an Online Queue Application System
3	Simplification of Validation System Services
4	Maintenance of the System (Hardware and Software)
5	Improving the Online Complaints System
6	Development of a Public Service Website System
7	Evaluation of Information Dissemination

3.5.3.1 Strengthening Existing Applications

Existing application services received in PATEN bureaucracy services are at the information level. Improving to the next level, and it is required to strengthen the application of each service by building platforms that are more interactive and innovative. One of them is by building public service portals and government administration service portals, SPBE service integration, and applying service management and service technology that is relevant and targeted.

3.5.3.2 Creating an Online Queue Application System

The queue system implemented in the Sub-District is still done manually, where the community must come to the location for queuing. Based on comments received through online media, the community complained about the unordered queuing system, where people who arrived earlier received service later.

The improvements that can be done to overcome these problems is by implementing innovations in the form of an Online Queue Application System. The application is a system used to manage public service queues online. This mobile-based system makes the people unnecessary to take the queue number at the location, but rather by ordering the queue number through the application. The Online Queue System can also overcome the problem of unordered queue numbers because the people can monitor the queue through the app.

3.5.3.3 Simplification of Validation System Services

The implementation of the validation process still uses a manual system, which means that the community must go to the relevant institutions to make the validation process, such as arranging a cover letter from

the village, matching permits for a Building Establishment, and others. The output from validation is to obtain disposition letters of each institution, such as the Head of the Environment, Head of the Village, to the Head of the Sub-District.

The improvements given is to start making changes to IT services by implementing the Online Validation Application System. This system will integrate with each institution, such as the Village and Sub-District. This application provides official cover letters that equipped with electronic signatures from each related institution.

3.5.3.4 Maintenance of the System (Hardware and Software)

The maintenance system is an ICT activity to keep the service system running at its prime. Based on interviews with PATEN staff, it discovered that systems such as hardware, software, and networks sometimes experienced an interruption. Therefore the service process could not operate properly. The suggestions for improvement is to do system maintenance in the Sub-District twice in a month.

3.5.3.5 Improving the Online Complaints System

The online complaint is an online system that accommodates public complaints/reports. The Government of the Republic of Indonesia has published an online complaint application system called (LAPOR!). This system will receive community reports which will be forwarded to the relevant government agencies. The problem that is happening right now is the lack of access rights and system integration given at the Sub-District level, so that community complaint reports are not properly delivered, and the public also does not know much about the complaint system (LAPOR!).

The solution for improvement is to increase data integration, communication, and information between the Central Government and the Regencies and Sub-Districts. The Sub-District Internal Party can also use the online media platform to receive complaints/reports from the public. Furthermore, the Sub-District also needs to conduct socialization and notification through online media related to online complaint system services, and this aims to provide feedback that supports regular public services in the Sub-District.

3.5.3.6 Development of a Public Service Website System

E-PATEN online service system is a website-based public service system that used to give information about the results of the issuance of licensing letters, disposition letters, identity cards, family cards, and other recommendations. The development of an online service system aims to make it easier for the public to

know the status of the results, and the system can provide notification of the state of the application submitted, whether it is processed, pending, or ready to be taken.

3.5.3.7 Evaluation of Information Dissemination

Information dissemination on the Sub-District Public Service Portal has been done through websites, leaflets, and social media. Based on the results of the information dissemination survey, the official website of the Sub-District has provided information on profiles, service procedures, announcements, and the latest news. While in the department, the Sub-District has provided leaflets and notice boards on the service process device. Social media platforms like Facebook and Instagram used to share information about daily activities in the Sub-District.

The problem discovered in the Sub-District is that the social media platform rarely updates and posts about the mechanism and procedure for PATEN service requirements. Given the role of social media in the Industrial 4.0 and ICT era plays a vital role in the dissemination of information. Social media can also use as a medium of communication and interaction with the community.

The solution for improvement is to design a social media army team to be active in managing the Sub-District social media platform. His team has the responsibility to always update information, news, and be active in building interactions with the community, such as replying to comments about community complaints. Posts regarding the PATEN service flow mechanism must accomplish. The purpose is to make it easier for the public to know the current process flow and conditions on public services and also to minimize errors in the department in preparing files.

4. Conclusion

Electronic-based government system evaluation or called SPBE in the Sub-District public services conducted in this study performed pretty well. The assessment process by mapping the SPBE framework to get the SPBE indicators applied at the Sub-District level. The results of the mapping of all SPBE assessment indicators, there are four indicators from two domains that correspond to the PATEN service used in SPBE assessment in the District. Data collection using a general questionnaire and a maturity level questionnaire.

The results showed that the implementation of an electronic-based government system in the public service PATEN Sub-District produced a level of SPBE maturity that obtained a total index value of 1.47 with the predicate "Poor". Based on the calculation of the results of the questionnaire, the level of maturity of the

assessed domains, namely governance, and services. The governance domain gets an index value of 2.00 with the predicate "Average", where the governance of the use of general applications has implemented in part from the Sub-District. Service Domain gets an index value of 0.93 with the predicate "Poor", and there are still five public services that are not yet supported by the application system. The output of this research prioritizes recommendations for improving the level of SPBE maturity in the form of improved indicators, governance recommendations, and SPBE service recommendations.

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