

EVALUATION OF THE INFORMATION QUALITY OF E-GOVERNMENT WEBSITES OF THE PROVINCIAL GOVERNMENTS OF EASTERN INDONESIA (CASE STUDY: NTT PROVINCE, MALUKU, NORTH MALUKU, WEST PAPUA AND PAPUA)

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Abstract—Provincial Governments in Eastern Indonesia have long had e-Government Websites, but in their implementation there are still various problems, one of which is the lack of information quality presented in e-Government Websites, although the quality of information is one of the important indicators in information services. Therefore, a study was conducted to evaluate the quality of information on e-Government Websites of Provincial Governments in Eastern Indonesia, namely: East Nusa Tenggara (NTT), Maluku, North Maluku, West Papua and Papua. Each of these Websites is measured using 10 (ten) dimensions of information quality, i.e. Accuracy, Consistency, Timeliness, Completeness, Reliability, Availability, Relevancy, Believability, Efficiency and Value-Added. Based on the results of the evaluation, it was found that all e-Government Websites in the Eastern Indonesia Region were not enough to provide quality information to the public. Therefore, a number of things are recommended, namely: Provincial Governments must always improve the accuracy of the presentation of information; they must be consistent in presenting information and make sure that data is always updated and completed; they must ensure that data is always available; they must increase the added value in public services and make their websites as the main media for public information services.

Keywords—Information Quality, e-Government, Websites

I. INTRODUCTION

In this era of globalization and modernization, the use of communication and information technology in government (e-Government) is necessarily utilized to improve efficiency, effectiveness, transparency and accountability in government administration[1]. The

purpose of implementing e-Government is not only to meet the demand of regulation, but also to meet a demand for needs that must be met by the Government to serve the public and manage government administration. Because now we are in an age where the use of information technology can be juxtaposed with primary needs, government organizations must adapt to these developments by constantly be creative and make innovation to provide excellent services to the public. Nowadays, demands for public needs are demands for more effective and efficient services, and thus the application of e-Government is absolutely necessary at every level of government organizations. Implementing e-Government will create Good Governance and Clean Governance in governmental administration, because its implementation is proven to enable effectiveness, efficiency, transparency, accountability, responsibility and public participation.

The implementation of e-Government in Indonesia initially began at the beginning of reformation era in 1998, started by the issuance of Presidential Decree No. 3 of 2003 concerning national policies and strategies on e-Government development. Since then, government organizations from the central level to the regional level are required to implement e-Government. Thus, on average all governmental levels have implemented e-Government, both in the context of the relationship between government and government (G2G), government with business (G2B), government with civil servant (G2E) and government with society (G2C). One of the most important e-Government services to connect government with community is Website. Almost all levels of Government already have websites, but in their implementation there are still various problems and there is gap among West, Central and Eastern Indonesia. For example, the development gap in social, economic, political and infrastructure dimensions is indicated by development in Java that is far better than development in Eastern Indonesia. In the aspect of information technology infrastructure and implementation of e-Government,

there is also a considerable gap as indicated by the results of PeGi's evaluation in 2012-2014 (the released data in the end of 2015) which show that the ranking of e-Government Websites owned by the regional governments in Indonesia dominated by government in Java, while Eastern Indonesia was not included in the nomination [2]. Therefore, it is considered important to evaluate the e-Government Website owned by regional governments in Eastern Indonesia, namely the Provinces of East Nusa Tenggara (NTT), Maluku, North Maluku, West Papua and Papua.

All of the Provinces in Eastern Indonesia have long had their websites, but based on observations, there are various problems especially in terms of the quality of information on those websites. The quality of information is considered important because in various literatures of information system, information quality is the main dimension used to assess the success of information system [3]. It is also as the important aspect that influences the users' satisfaction of information services [4]. Therefore, this study evaluates the quality of information. The East Nusa Tenggara, Maluku, North Maluku, West Papua and Papua Provincial Governments in their websites use 10 (ten) dimensions of information quality, namely: Accuracy, Consistency, Timeliness, Completeness, Reliability, Availability, Relevancy, Believability, Efficiency and Value-Added [5]. By using these dimensions, it is expected that they can identify weaknesses, explore solutions and recommendations for improving the quality of information on e-Government Websites owned by Provincial Governments in Eastern Indonesia.

II. LITERATURE REVIEW

A. Previous research

Research on evaluating the information quality of e-Government is not a new thing, so that this article describes several relevant previous studies, both from abroad and from Indonesia. First, several previous studies from abroad, namely from Thailand, China and Pakistan, are presented as follows:

Research on the quality of e-Government information was also made in Thailand [6]. Based on the results of the survey on 19 Ministerial Websites, it was concluded that in the implementation of e-Government there are various problems which some of those problems came from the government and some came from the community. One of the main problems on the part of the government is that the information provided in e-Government was not in accordance with the desires or needs of citizens. The problems also occurred in the accuracy and timeliness of information provided on the government's websites. Therefore, this study recommended five indicators of information quality that must be provided by the government for their citizens, namely Availability, Objectivity, Utility, Integrity and Confidentiality.

A research on the information quality on e-Government websites in Pakistan [7] found that e-government websites were not only important but also had become the main means for providing and accessing e-Government services. Therefore, the quality of information is important to be assessed. Based on the evaluation results of a survey concerning e-Government websites that was conducted towards 152 people show that three indicators of information quality that are very important, namely: added value, accessibility and objectivity.

The research on the effect of service quality on the e-Government Web portals in China [4] emphasizes that the quality of e-government web portal services is an important factor in the adoption of information technology in the government. One of the most important aspects in the quality of web portal services is the quality of information. In addition, other important aspects are design/function, reliability, security and privacy, and system response. Based on the results of a survey towards 630 users of e-Government web portals in China, it show that the quality of Web portal services influences user adoption and intention to develop e-Government on an ongoing basis.

In addition to references from abroad, the following are several articles that discuss the evaluation of e-Government websites in Indonesia that are used as references in this study:

The research on exploring the quality dimension of information of government information services through social media at the Ministry of Education and Culture [8] emphasizes that one of the important aspects that affect the users' satisfaction of information service is the quality of information. A survey conducted on 150 respondents classified several information qualities which are the qualities of intrinsic information, namely: accuracy, trust, reputation and objectivity. In terms of representational quality, ease of understanding and interpretation are considered as important while in contextual information quality; completeness, timeliness, value of information, and added value are considered as important.

The research on the information quality of Bengkalis Regency Websites in Riau Province [9] confirms that the information contained on their website should have good quality values so that the information delivered can be useful. In this research, therefore, the quality of information on the Bengkalis Regency Government websites was measured based on 5 dimensions of information quality, i.e. accuracy, completeness, renewal, relevance, and availability. Observation of the research was carried out on 4 (four) websites in Regency Government indicating that the information available on the websites of the Bengkalis Regency Government had met good quality

information, even though there were some shortcomings.

The research on evaluating the implementation of e-Government on the Websites owned by municipal government in Surabaya, Medan, Banjarmasin, Makassar and Jayapura [2] evaluated e-Government Websites in advanced cities representing large islands in Indonesia. Some indicators are used, namely: transparency, service, efficiency, economy, aspiration, appearance, update and stages of achieving e-government goals according to the World Bank Group. The results of the study concluded that the Surabaya city was far better than other cities. This result is similar to PeGi's evaluation from 2012-2014 that in the ranking of e-Government Websites dominated by regional governments in Java. Although in terms of quantity, the development of websites that owned by regional governments have increased rapidly, but in terms of quality they are still not optimal because some governments often make their websites solely to fulfill the requirement of public information disclosure without the transformation of electronic-based governance.

B. Theoretical basis

In the literatures of Information System, information quality and user satisfaction are the two main dimensions used to assess the success of information systems [10]. The theoretical foundation for the model of success of the Information System was first proposed by DeLone & McLean. Their study emphasizes that the quality of system and the quality of information are both the main factors that determine user satisfaction and the success of information systems. These are factors that directly influence the users' response and benefits for users. The updated model shows that Information Quality, System Quality and Service Quality jointly affect the users' satisfaction on information systems and provide major benefits [11]. Specifically for the quality of data and information, it is generally considered as a multi-dimensional concept [12] and relative in nature because data and information deemed appropriate for one usage may not be considered appropriate for other usages [13]. Therefore, assessing the level of quality of information is contextual which the meaning of information quality lies on how the information is felt and used by its customers [14]. The quality of information is meaningful if the information provides value to its users [15].

The quality of information in general is a multi-dimensional concept consisting of various attributes and characteristics. To measure the quality and value of information, there are a number of assessment indicators used by experts, so that there are several characteristics of information that determine the value of information itself [16]. According to Wang & Strong information quality is measured by 4 (four)

categories, namely: Intrinsic, Accessibility, Contextual and Representational [17]. According to Zeist & Hendriks there are 6 (six) information quality characteristics, namely: Functionality, Reliability Efficiency, Usability, Maintainability and Portability [18]. While according to Alexander & Tate, there are 6 (six) information quality characteristics, namely: Authority, Accuracy, Objectivity, Currency, Orientation and Navigation [19]. There are many characteristics and dimensions of information quality presented by experts, and in this study several dimensions are selected according to Wang & Strong and updated by Knight and Janice Burn, namely: Accuracy, Consistency, Timeliness, Completeness, Reliability, Accessibility, Availability, Relevancy, Amount of data, Believability, Useful, Efficiency and Value-added [5]. Those dimensions of the quality of information consider context of the quality of information on e-Government Websites in Indonesia.

The definition of e-Government is often expressed by experts and various organizations, but in this study only definition according to the World Bank (2012) that frequently used by various researchers which states: e-Government refer to the use by government agencies of information technologies (such as Wide Area Network, the internet and mobile computing) that have the ability to transform relation with citizens, business, and other arms of government. The definition emphasizes that e-Government refers to the use of information technology such as WAN networks, the internet and mobile computing by the government to transform relation with community (G2C), with business (G2B), with apparatus (G2E) and intergovernmental (G2G). The benefits of implementing e-Government are (1) Improving the quality of government services to stakeholders (communities, business and industry) especially in terms of performance effectiveness and efficiency in various fields of life. (2) Increasing transparency, control, and accountability in administering government in the context of applying the concept of good corporate governance. (3) Reducing significantly the total costs of administration, relation and interaction that are issued by the government and stakeholders for the purposes of daily activities. (4) Providing opportunities for the government to obtain new sources of income through its interactions with interested parties. (5) Creating a new community environment that can accurately and precisely answer various problems faced in line with various global changes and trends. (6) Empowering the public and other parties as government partners in the process of making various public policies fairly and democratically [20].

III. RESEARCH METHODOLOGY

This study uses descriptive-qualitative method. The qualitative research is a type of research that is used to understand the phenomena experienced by research subjects, such as behavior, perception, motivation and action holistically, and they are described in words and languages, in a specific natural context by utilizing various scientific methods [21]. While descriptive research means collecting information about the status of symptoms, which is not intended to measure a particular hypothesis, but only describes variables, symptoms, and circumstances [22]. In the context of this study, this study describes the quality of information on the e-Government websites owned by Provincial Governments in Eastern Indonesia. The analyzed data taken from secondary data sources, i.e. study of literatures, articles, journals and in-depth searches for the quality of information on e-Government websites in 5 (five) Provinces of Eastern Indonesia, namely: East Nusa Tenggara (NTT), Maluku, North Maluku, West Papua and Papua. The retrieval of data on those websites was carried out on 1 January to 7 March 2019. The collected data was assessed using 10 (ten) dimensions of information quality for each e-Government website. These dimensions can be explained in the table below.

TABLE 1. DIMENSIONS OF INFORMATION QUALITY

No	Information Quality	Definition
1	Accuracy	Information is free from mistakes
2	Consistency	Information is not contradictory with previous one
3	Timeliness	Information is available on time
4	Completeness	There is no loss of information
5	Reliability	Information is reliable
6	Availability	Information can be accessed at anytime
7	Relevancy	Information is useful and can be used for certain times
8	Believability	Information is trustworthy and credible
9	Efficiency	Information makes tasks easy to do
10	Value-Added	Information gives more benefits

A. Analysis and Discussion

This section evaluates the quality of information on each e-Government website of Provincial Governments in East Nusa Tenggara (NTT), Maluku, North Maluku, Papua and West Papua using 10 (ten) dimensions, namely: Accuracy, Consistency, Timeliness, Completeness, Reliability, Availability, Relevancy, Believability, Efficiency and Value-Added. Following are the results of the evaluation.

TABLE 2. EVALUATION OF THE INFORMATION QUALITY OF WEBSITES OWNED by East Nusa Tenggara Provincial Government

No	Indicator	Evaluation	Recommendation
1	Accuracy	Generally, there is no mistakes in presenting information and it is presented by citing sources	Always maintain accuracy in presenting of information
2	Consistency	The information is presented inconsistently since some parts of pages no information available. Besides, the available information is only the new one and not the old one.	Presentation of information should always be consistent and up-to-date at all times.
3	Timeliness	Generally, the presented information is only information of 2019. In addition, news is frequently updated but only limited in quantity.	Always maintain a consistent presentation of information, but it is recommended not to delete old information for it can be used as a comparison for further development.
4	Completeness	The presented information is incomplete, e.g. few pages contains no information in profile menu (topology, climate, border profile, flora and fauna), governmental menu (administration region, regional secretary, executive, legislative, regent/mayor), regional potency menu (food plants) and tourism menu (natural tourism, wild life, regional traditional music instrument, traditional woven cloth, regional song, regional dance), etc.	Add data and information on presented pages. In addition, add other important information, such as education, health, religion, culture, regional income report, policy document, regulation etc.
5	Reliability	The available information is unreliable for it is still limited and not up-to-date.	Always update information and socialization to the public so that websites can be used as a main means for public information services.
6	Availability	The available information can be accessed at all times except when technical problems occur.	Make sure that data is always available.
7	Relevancy	The presented information is somewhat relevant with the needs of public services.	Provide information that is relevant with the need of society, such as policy in education, health, permission, etc.
8	Believability	Information is trustworthy and	Always provide information that is

No	Indicator	Evaluation	Recommendation
		credible since it is presented accompanied with credible sources.	relevant with the needs of public. By this way, people will have trust on websites.
9	<i>Efficiency</i>	The existence of governmental websites cannot be used effectively for public services since the available information is not relevant with the needs of public services. However, they are effective for academic circles/practitioners/internal circles for they provide the up-to-date data/information to be used for the needs of research/policy making.	Always make sure that the websites can give benefit for public.
10	<i>Added Value</i>	The available information is insufficient to give added value for public. It is indicated by web visitors reaching under 44209 visitors (on 2 March 2019)	Websites must give added value for public, e.g. by providing advertisement, aspiration, etc.

(source: <http://ntprov.go.id/ntt/>)

TABLE 3. EVALUATION OF THE INFORMATION QUALITY OF WEBSITES OWNED BY MALUKU PROVINCIAL GOVERNMENT

No	Indicator	Evaluation	Recommendation
1	<i>Accuracy</i>	Generally, there are no mistakes in presenting of information and it is presented by citing its sources.	Always maintain the accuracy in information presentation.
2	<i>Consistency</i>	The presented information is inconsistent since it is incomplete and out-of-date and some part of pages contains no information.	Presentation of information must be consistent, completed and up-to-date.
3	<i>Timeliness</i>	The presented information has not been updated, except for national and regional news. For instance, data of budget management transparency only for data of 2016 and 2017, and information about governance and regional potency has not been updated for 2016 up to March 2019. Besides, pages of announcement and	The presented information must be updated at all times.

No	Indicator	Evaluation	Recommendation
		information have not been updated since 2017.	
4	<i>Completeness</i>	The presented information is incomplete. Some pages contain no information, such as: menu of Governance (Biros, Agencies and Offices) that most of them contain no information. Besides, menu of regional potency (agriculture, finance and region, trade and tourism) contain no information.	Equip data and information for the aforementioned pages. In addition, add other important information, such as education, health, religion, culture, regional income report, policy, regulation, etc.
5	<i>Reliability</i>	The available information still unreliable since it is still limited and out-of-date.	Always up-to-date information and socialize it to the public so that governmental websites can be used as a main medium for public services information.
6	<i>Availability</i>	The available information can be accessed at all times, except when technical problems occur.	Make sure that data is always available.
7	<i>Relevancy</i>	The presented information is somewhat relevant with the needs of public services, mainly the availability of public services advertisement facility.	Improve quality and quantity of public services information by utilizing facility of public services advertisement.
8	<i>Believability</i>	The available information is trustworthy since it comes from government sources, however, it is incomplete and out-of-date that causes public is not too enthusiastic accessing data and information in the websites.	The availability of information that is relevant with the needs of public will improve public's trust.
9	<i>Efficiency</i>	The available information has not made easy for people, especially for circles of academia/practitioners for accessing needs of research and real data concerning regional conditions and potentials.	Make sure that all websites always can give benefits for public.
10	<i>Value-Added</i>	The facility of public services advertisement somewhat gives added value for the websites.	Always improve the information of public services. In addition to

No	Indicator	Evaluation	Recommendation
		However, generally, it seems that it has not given a full benefit for public. It can be seen from the number of news readers from January to February 2019 that reaches only under 300 people (dated on 3 March 2019). The data shows that the websites have not given added values for public.	improving quality and quantity of the existing public services advertisement, other data and information on the websites must be completed and up-to-date.

(source: <http://www.malukuprov.go.id/>)

TABLE 4. EVALUATION OF THE INFORMATION QUALITY OF WEBSITES OWNED BY NORTH MALUKU PROVINCIAL GOVERNMENT

No	Indicator	Evaluation	Recommendation
1	<i>Accuracy</i>	There are a lot of errors in the available information, such as information that is irrelevant to regional government. These errors occur in the menu of popular article. Besides, there are errors in the link of available websites (web links of Regional Representative, Bureau of Goods & Services Procurement, Regional Secretary, etc).	Make sure that the provided news is relevant and contain no errors.
2	<i>Consistency</i>	The presented information is still inconsistent since the information is incomplete and out-of-date and some parts of pages contain no information.	Presentation of information must be consistent and complete and up-to-date at all times.
3	<i>Timeliness</i>	The presented information, generally, has not been updated since 2016. The last news in the website was December 2017 but it is no longer relevant with regional condition.	The presented information must be updated at all times and have to be relevant with regional condition.
4	<i>Completeness</i>	The presented information is incomplete, such as no information in the menu of RKPD (regional development plan), changes of KAUPPAS/KUPA PPAS, Governor LKPJ, Renstra and Renja (Strategic and Position	Equip data and information according to standard of Regional Government Websites.

No	Indicator	Evaluation	Recommendation
		Planning) of Regional Apparatus, Regional Budget Planning and Presentation Archives. Besides, there is no information available on Regional Profile (Vision/Mission, Regional Symbol, geographical condition, physical border, etc.), Governance (SKPD), General Condition (religion, education, health, economy, infrastructure), Regional Potency (agriculture, plantation, tourism, mining, etc.) and Information of Public Services.	
5	<i>Reliability</i>	The available information is still unreliable for it is limited in quantity.	Always update information and socialize it to public so that websites can be relied upon as a main medium of public services information.
6	<i>Availability</i>	The available information can be accessed at all times, except when technical problems occur.	Make sure that information is always available.
7	<i>Relevancy</i>	The presented information is not relevant with the needs of public services.	Always provide information that is relevant with the need of public services.
8	<i>Believability</i>	The available information is trustworthy since it comes from government sources, however, it is incomplete and out-of-date that causes public are not too enthusiastic accessing data and information in the websites.	The availability of information that is relevant with the needs of public will improve public's trust.
9	<i>Efficiency</i>	The current available information has not given a full benefit for public.	Make sure that websites can always give benefits to public.
10	<i>Added Value</i>	The available information has not yet given an added value for public. It can be reflected from the visitors who read last news of December 2017 for 603 times (data of 3 March 2019).	The websites must give an added value for public, such as by providing facility of public services advertisement, aspiration, etc.

(source: <http://www.malutprov.go.id/front>)

TABLE 5. EVALUATION OF THE INFORMATION QUALITY OF WEBSITES OWNED BY WEST PAPUA PROVINCIAL GOVERNMENT

No	Indicator	Evaluation	Recommendation
1	<i>Accuracy</i>	Generally, only a few errors in presentation of information. However, some data are incomplete, for example: on the page of West Papua symbol, there is an explanation about it but it contains no picture. Besides, on the page of regional apparatus, there is a list of regional apparatus but it does not provide any explanation or link that can connect each of organization units.	Make sure that the presented information is accurate and contains no errors in the presentation.
2	<i>Consistency</i>	The presented information is still inconsistent because it is incomplete and rarely updated and some parts of websites contain no information.	Presentation of information must be consistent and it must be complete and updated at all times.
3	<i>Timeliness</i>	Generally, the presented information has not been up-to-date, such as budget report, development planning, and development policy and so on. However, news mostly updated but only limited in quantity.	The presented information needs to be updated at all times.
4	<i>Completeness</i>	The presented information is incomplete, such as there is no information/data on menus/pages of Profile (Position and Address, Regional House Representative, History, Picture of Symbol, Law Product), PPID menu, Regional Potency, Services, Tourism (Archeological Site of Fakfak Tapurarang, National Park of Teluk Cendrawasih, Mansinam Island, Sapta Ratna Pagoda and Pegunungan Arfak) and Gallery.	Equip data and information on the aforementioned pages. Besides, equip other important information about General Condition (religion, education, health, economy, plantation, mining, etc.). if the information exist in each of SKPD, it needs only links to make easy for the access.
5	<i>Reliability</i>	The available information has not	Always update information and

No	Indicator	Evaluation	Recommendation
		been reliable since they are only limited in number.	socialize it to public so that the websites can be relied upon as the main means of public services information.
6	<i>Availability</i>	The available information can be accessed at all times, except when technical problems occur.	Make sure that data is always available.
7	<i>Relevancy</i>	The presented information is somewhat relevant with the needs of public services, except for information about tourism potency of Raja Ampat.	Improve quality and quantity of public services information.
8	<i>Believability</i>	the available information can be trusted since it comes from official governmental sources, however, the incomplete and out-of-date information causes people not too enthusiastic in accessing data and information on the websites.	The availability of information that is relevant with the needs of public will improve public's trust.
9	<i>Efficiency</i>	The available information has not made easy for public or government apparatus for the facility in websites cannot be used as the medium of information and promotion of regional potency.	Make sure that websites can always give benefits to public.
10	<i>Added Value</i>	The available information has not yet given an added value for public.	The websites must give an added value for public, such as by providing facility of public services advertisement, aspiration, etc.

(source: <http://papuabaratprov.go.id/>)

TABLE 6. EVALUATION OF THE INFORMATION QUALITY OF WEBSITES OWNED BY PAPUA PROVINCIAL GOVERNMENT

No	Indicator	Evaluation	Recommendation
1	<i>Accuracy</i>	Generally, there is no many errors in presentation of information, except that data and information have not been updated.	Make sure that the provided news is accurate and contain no errors.
2	<i>Consistency</i>	Presentation of information has not been done consistently (out-of-date), but the display has been regarded as good.	Presentation of information must be consistent and complete and up-to-date at all times.
3	<i>Timeliness</i>	The presented data and information on the websites have not been updated, such as Vision and Mission is data for 2013-2018 period, the map of airport infrastructure is data for 2003-2005 period, data of population is data of 2010, data of cooperatives and small businesses is data of 2006, data of small industry development is data of 2005-2006. Besides, profile of regent for all regency is the old data, such as Regent data of Jayawijaya Regency is for the period of 2008-2013 and Pegunungan Bintang of 2004-2009, and so on. It indicates that some of data on the websites have not been updated, except for news that always been updated.	The presented information must be updated at all times
4	<i>Completeness</i>	The amount of data and information are sufficiently available, however, they are out-of-date. In addition, some sub-pages contain no data, such as potential data of Food Plant and Horticulture (sub-pages of food commodities) contain no data and the link of PPID is unworkable.	Equip data and information on ill-equipped pages. Besides, equip other important information concerning General Condition (religion, education, health, economy, infrastructure), Regional Potency (agriculture, plantation, mining, and so on). If those information are available on each SKPD, it needs only a link for an easy access.
5	<i>Reliability</i>	The available information is still unreliable for they are	Always update information and socialize it to

No	Indicator	Evaluation	Recommendation
		old data, except for news about the latest development that is still reliable.	public so that websites can be relied upon as a main medium of public services information
6	<i>Availability</i>	The available information can be accessed at all times, except when technical problems occur.	Make sure that information is always available.
7	<i>Relevancy</i>	The presented information is somewhat relevant with the needs of public services, especially when related to application of e-Government.	Improve quality and quantity of public services information.
8	<i>Believability</i>	The available information is trustworthy since it comes from government sources, out-of-date information causes public are not too enthusiastic accessing data and information in the websites.	The availability of information that is relevant with the needs of public will improve public's trust.
9	<i>Efficiency</i>	The current available information has not made easy for public of internal government apparatus in public services.	Make sure that websites can always give benefits to public.
10	<i>Added Value</i>	The available information has given an added value for public, mainly in the existence of links of e-Government application that are easy to be accessed.	The websites must give an added value for public, such as by providing facility of public services advertisement, aspiration, etc.

(source: <http://www.papua.go.id/>)

There are several points of conclusion that can be taken from the evaluation results of information quality of websites owned by the Government of the Eastern Indonesia which are presented in Table 2 to Table 6: (1) Accuracy dimension – information in the websites of the East Nusa Tenggara and Maluku Provincial Governments in general has no errors, but there are many errors in North Maluku and there are a few mistakes in Papua and West Papua Provinces. (2) Consistency dimension – all provinces have not been consistent in presenting information. (3) Timeliness dimension – in general, most provinces are not up to date in informing information, but Papua Province often has special news updates, while Maluku and North Maluku Provinces rarely update their news. (4) Completeness dimension – all websites are incomplete, except for Papua Province which almost all data is available but not the latest update. (5) Reliability dimension – all websites cannot be relied on because they are not up to date, except East Nusa Tenggara Province that can still be relied on to access the latest data and information in certain cases, for example

information about the benefit of research data or policy formulation. (6) Availability dimension – information that is available on all websites can be accessed at any time except when technical problems occur, such as internet network problems. (7) Relevancy dimension – the information presented on the NTT, Maluku and West Papua websites is slightly relevant to public service needs, while North Maluku website is irrelevant and Papua website is quite relevant. (8) Believability dimension – information that is available on all government websites can be trusted because they come from the government sources, however, the incomplete information and updates resulting people are not enthusiastic about accessing data and information on those websites which this can be seen from the very small number of web visitors. (9) Efficiency dimension – all government websites have not been sufficient to facilitate the community. (10) Value-Added dimension – the NTT, North Maluku and West Papua websites have no added value for the public, while the Maluku Websites provide little added value from the availability of advertising facility for public services while Papua websites have little added value from a complete link of all e-Government services.

Thus, from the evaluation results show that the websites of the provincial governments in Eastern Indonesia are not sufficient enough to provide quality information to the public. This is evident from the very little enthusiasm of visitors to the websites. Therefore, the existence of the websites of the provincial governments of Eastern Indonesia does not have a positive impact on the public. This assessment is relevant to the results of the overall Indonesian e-Government Rating (PeGI) evaluation conducted by the Ministry of Communication and Information in 2012-2014 (data released in the end of 2015) which are assessed from the dimensions of policy, institutions, infrastructure, applications and planning. The evaluation shows that the implementation of e-Government of Regional Government in Indonesia is dominated by government in Java, while the Eastern Indonesia region has not succeeded in applying e-Government.

However, this study does not describe the implementation of e-Government in general because evaluation is only limited to aspects of the quality of information on e-Government websites. If thoroughly studied on the implementation of e-Government in Eastern Indonesia, the results will certainly be different because in recent years the Government has continued to promote the implementation of e-Government. For example, the Papua Provincial Government has implemented several e-Government applications, namely: Presence and TPP Information System, IS of Legal Documentation and Information Networks, e-Planning, Office Travel Order Information System, Spatial Management Information Systems, e-

Budgeting, IS of Data Center and Development Analysis, Information System for Monitoring and Control of Regional Budget, Geoportal, LPSE, and so on. Similarly, other provinces also apply various kinds of e-Government applications, including building various websites for Regional Apparatus Organizations.

The lack of optimal availability of quality information on websites owned by regional governments in Eastern Indonesia is not solely due to lack of updated information from the authorities, but it is also a complex problem so that an explanation for the problem must also be holistic and beyond the focus of this study. The evaluation research of e-Government in Riau Province found several factors inhibiting e-Government implementation, i.e. leadership, human resources, information management, and organizational culture. The leadership factor contributes most inhibiting the implementation of e-Government in the Riau provincial government.

Considering that the provincial governments in the Eastern Indonesia has various obstacles, this section discusses some obstacles that can affect the quality of e-Government, especially the information quality on the websites of those governments which as follows: (1) Leadership aspect – the lack of leadership in e-Government implementation. In this case, the Governor's lack of attention, lack of commitment from the technical organization (Diskominfo) and the lack of data and information distribution support from all organizational units which impact the quality of information on the websites. Besides, the lack of complete and updated information in real-time manner on the websites illustrates the lack of commitment from leaders. (2) Information network infrastructure – in general, the infrastructure has not been built evenly in Indonesia, especially in Eastern Indonesia. Therefore, during the leadership of President Ir. Joko Widodo, the government continues to promote the development of information technology throughout Indonesia, such as the construction of fiber optic broadband (Palapa Ring) and refarming technology for 4G access and the Nusantara Satu Satellite launched on February 21, 2019. Infrastructure development aims to improve connectivity and equitable development of information technology throughout the archipelago in order to welcome the 4.0 industrial era. With the construction of adequate infrastructure, it will have a positive impact on improving the life quality of the community. One of the benefits is that people can use information technology facilities to access public services and improve their economy. (3) Information management – the quality and security of information management is not optimal because it is not supported by reliable infrastructure and human resources. In this case, the lack of reliable human resources at the Ministry of Communication and Information Technology has resulted suboptimal usage of facilities. There are many mistakes in websites, e.g. many web

links that don't work; a lot of irrelevant information; some pages don't have data and information, and so on. These problems indicate that the management of information is still not optimal and is not supported by the quality and quantity of reliable human resources. 4) Business environment – the market condition, trade, and regulations that shape the development of information technology business are growing rapidly, unfortunately, they are not accompanied by the efforts from government and society in implementing e-Government. The people in the Eastern Indonesia especially in the social aspect are still struggling various social issues, and for that reason government is working hard to build social, economic and basic infrastructure aspects rather than building access to e-Government services. On one hand, the government builds a complete information technology infrastructure but the other hand it is done without the readiness of the community as users, and certainly this effort will become useless. The following are data on the dimensions of the social life of the people of Eastern Indonesia which seem to influence the success of e-Government. According to data of Human Development Index (HDI) in 2017, the people in the five provinces of Eastern Indonesia are still below the national average of 70.81, i.e. East Nusa Tenggara 63.73, Maluku 68.19, North Maluku 67.20, West Papua 62.99 and Papua 59.09 [23]. In addition, according to data of Statistics Central Bureau, in September 2018 the poverty rate was above the national average of 9.66%, namely NTT 21.03%, Maluku 17.85%, North Maluku 6.62%, West Papua 22.66% and Papua 27.43% [24]. With such low condition of the society's social life, it certainly influences the access of information on public services. (5) Society and Human Resources –government generally rarely has reliable human resources in the field of information technology. Therefore, almost all technological infrastructure development and the provision of e-Government applications are usually from third parties, including maintenance. Likewise, many people do not master information technology so they rarely access information on public services provided by the government. According to the Communication and Information Info graphic data, only 20.1% of households living in Maluku and Papua have access to ICT equipment, while the remaining 79.9% do not have access to ICT equipment. This shows that the proportion of households living in Java who have access to ICT devices is much higher than households living in Maluku & Papua. The main constraint for households to access Internet is that there is no sufficient network with a percentage 35.9% [25]. Meanwhile, the detailed data released by the Statistics Agency in 2018 shows the use of information technology in the Eastern Indonesia which the percentage of population aged 5 years and over who use computers (2015-2017) in East Nusa Tenggara Province 12.90%, Maluku 17.18%, North Maluku

13.65%, West Papua 17.27% and Papua 10.93%. While, the percentage of households that have accessed the internet in the last 3 months (2014-2017), i.e. East Nusa Tenggara 36.18%, Maluku 47.81%, North Maluku 39.23%, West Papua 49.18% and Papua 27.33% [26]. These figures are still above the national average. Thus, it appears that the people in Eastern Indonesia on average have not mastered information technology and as a result this condition also influences the access to e-Government services. However, the public's unpreparedness should not be the reason for the government to exclude public service facilities. The handling of fundamental socio-economic problems suffered by the people of Eastern Indonesia, such as poverty, isolation, fallen behind in development, backwardness, injustice and other issues must be supported by the availability of quality data and information in real time to support policy making quickly, precisely and measurably. It is because, so far the provincial governments in the eastern Indonesia have often been too slow and less measurable in their policy making because of the lack of available data and information that can be accessed in real time. Therefore, with the evaluation of information quality on the e-Government websites that owned by the Provincial Governments in Eastern Indonesia, it is expected that it can provide a motivational support for policy makers to constantly improve the quality of e-Government services in general and specifically improve the quality of information by referring to some points are recommended in Table 2 to Table 6.

IV. CONCLUSIONS AND SUGGESTIONS

Based on the evaluation of information quality on the e-Government websites of the East Nusa Tenggara, Maluku, North Maluku, West Papua and Papua Provincial Governments using 10 (ten) dimensions, namely: Accuracy, Consistency, Timeliness, Completeness, Reliability, Availability, Relevancy, Believability Efficiency and Value-Added, it can be concluded that all websites do not provide enough quality information for the public. For this reason, several things are recommended for those websites: the provincial government must always improve the accuracy of the presentation of information; be consistent in presenting information; make sure that data is always updated and complete; ensure data is always available; increase added value in public services and make their websites as the main medium of public information services. Meanwhile, the suggestion for future research is to examine the analysis of public satisfaction from aspects of system quality and Service quantity of websites for all provinces. The future research needs to perform an analysis in corporation with other provincial governments in Western Indonesia that have the best quality in their e-Government websites. Thus, a gap in the quality of e-Government websites between

Western Indonesia and Eastern Indonesia can be shown.

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