

# Business Intelligence Applications In Government: Executive Information System At Civil Servant Agency (NCSA) In Indonesia

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**Abstract:** Business Intelligence (BI) is a subject in Information Communication and Technology (ICT) that focuses on the process of how to present data in various tables, charts and graphs. This subject supports higher level management in making decisions in an organization or company. One part of BI that relates to how data is presented on dashboards or through the Internet, is called Executive Information Systems (EIS). As long as the world is changing due to the development of information systems, technologies and the Internet, people in every country realize that information is very important. The National Civil Servant Agency (NCSA) is an Indonesian federal institution that focuses on the management of Indonesian civil servants and the NCSA participates in the national RB Project. To accomplish the purpose of the RB Project, NCSA has begun to use business intelligence by creating EIS dashboards from civil servant databases based on the demands of Indonesian citizens. The function of EIS is to help people to understand NCSA assignments. This function is not only to help people understand the terms of information disclosure but also for NCSA EIS to help the Indonesian government analyze the civil servant annual budget and to predict the needs of new civil servant candidates.

**Keywords:** business intelligence, public service, reformation bureaucracy, NCSA.

## 1. Introduction

Government bureaucracy and transparency are currently an important issue for public services in many countries of the world. People need to be served better by government because citizens are the center of government activities and services. In many developing countries, government bureaucracy and transparency are a big problem since they are related to paradigms, education levels, cultures and people's customs of a particular country. They tend to have old paradigms, low levels of education and corrupt cultures which destroy country order. Moreover, technology is becoming more and more a tool in helping the bureaucratic process. This is even more true in developing countries. Developing countries require greater effort and energy to be able to catch up in the field of services through technology.

To achieve the challenge of good governance, government needs to consider various mechanisms and strive to transform related public services from manual to digital. Many countries in the world adopt technologies and government systems from other developed countries which are successful in Information Communication and Technology (ICT) in order to reach their bureaucratic goals. Because public service is one part of CPI measurements, the main point of government bureaucratic performance is public services including business analysis and database technology as its background. For instance, many institutions and local governments in Indonesia reform their bureaucratic systems from manual to digital as part of

the Indonesian National Reformation Bureaucracy Project (RB Project) with its focus on best public services. Examples of institutions and local government which have succeeded in bringing ICT as a public service in Indonesia are the National Civil servant Agency (NCSA) of Indonesia at the national level and Bandung City local government in West Java at the local level.

To support good public services, government needs a good system of service including solid database systems and good Business Intelligence (BI). Database systems, as a foundation of BI, have the function to collect, store, manipulate, process data/information in databases which are connected by middleware software and SQL relationships. BI is a subject to process and represent data in various tables, charts or graphics in a way that people can understand in a report by an institution. BI is a tool to explain information that is presented in such a way that people are able to read and understand tables, graphics, charts and reports. One of the final processes in information preparation and information usage is the Executive Information Systems (EIS). Besides Reporting and Visualization, and Advanced Analytics, these systems have functions for top management both in private sector and in government institutions to make informed strategic decisions.

The main focus of this paper is EIS at a government institution as a function of Business Intelligence. The institution in Indonesian government which has an EIS application is the National Civil servant Agency (NCSA). NCSA is an institution of the federal governments and it has the function of managing all processes of all Indonesian civil servants from the date of hire until pension. NCSA is a major Indonesian civil servant human resource institution. The hypothesis of this paper is "Has Executive Information Systems (EIS) of North Sumatera Regional Office of National Civil servant Agency (NCSA) of the Republic of Indonesia contributed and given enough information to Indonesian stakeholder for the reformation of bureaucracy and transparency in Indonesia?".

## **2. Research Method**

CSAS is important NCSA application because it is the door for civil servant, operators to update civil servant databases. Civil servant database is recorded in NCSA headquarters server in Jakarta with various type of database, for example, history of promotions, family data, history of positions, educations, paid of leave, move to another institution, etc. In this method, research on database is directly from the National Civil servant Agency (NCSA) website and through download from server CSAS of NCSA. The total number of Indonesian civil servants is 4,538,154 people. The data is grouped by categories such as by Group of age and sex, group of age and education, level of position and sex, and by local government from more than 500 institutions and local governments in 34 provinces in Indonesia.

CSA publishes Indonesian civil servant statistics as part of the transparency of reformation bureaucracy. Since the government has given more freedom and open access information to publishing publicity the civil servant database is needed because Indonesian citizens now are being more critical to the government policies. Hence, as a government institution, NCSA must be responsible to the public and publish the civil servant database as part of NCSA obligations to the public. In addition, NCSA must also provide data to other federal governments institutions and local governments. We strongly encourage authors to use this document for the preparation of the camera-ready. Please follow the instructions closely in order to make the volume look as uniform as possible.

**Table 1.** The total number of Indonesian Civil Servant by Age and Sex.

Group of age	Sex				Total	
	Male		Female			
18-20	1,176.0	0.03	703	0.02	1,879	0.04
21-25	20,753,0	0.46	17,485	0.39	38,238	0.84
26-30	93,818,0	2.07	136,166	3.00	229,984	5.07
31-35	257,871,0	5.68	336,951	7.42	594,822	13.11
36-40	303,391,0	6.69	341,349	7.52	644,740	14.21
41-45	315,039,0	6.94	308,911	6.81	623,950	13.75
46-50	445,602,0	9.82	404,531	8.91	850,133	18.73
51-55	512,725,0	11.30	411,387	9.07	924,112	20.36
56-60	333,613,0	7.35	236,192	5.20	569,805	12.56
61-65	33,724,0	0.74	24,614	0.54	58,338	1.29
>65	1,6222,0	0.04	531	0.01	2,153	0.05
Total	2,319,334,0	51.11	2,218,820	48.89	4,538,154	1.00

Another example of Executive Information Systems of civil servants is in Medan Regional Office North Sumatera, Indonesia. The capital city of North Sumatera Province, which located in Northeastern coast of Sumatera Island where Medan Office is the 6th regional

NCSA based on the order of the establishment of regional offices in Indonesia. In 1998, when the Medan NCSA office was built, it supported by 4 provinces work areas including Aceh, North Sumatera, West Sumatera and Riau. In 2006, West Sumatera and Riau had their own Regional Office in Pekanbaru and in 2014 Aceh Province had its own regional office in Banda Aceh. Now, Regional NCSA Medan office covers the work area for only North Sumatera Province which has 33 districts and institutions. In 2015, total civil servants in North Sumatera is 212,807 which reported at The Indonesian National Statistics Bureau. They spread at various local government, districts and institutions. Policies and Rules of public service in North Sumatera Regional Office is determined from the headquarters of NCSA in Jakarta but for implementation based on ability of managers at Regional Offices.

NCSA Medan Regional office has its own server and data mirroring to NCSA headquarters office in Jakarta. Data transaction from Regional office, local government and other institution are saved to the headquarters server. Regional NCSA office receives updated civil servant data after synchronize between regional and headquarters daily. Data synchronization is performed every day at the end of the day.

### 3. Result And Discussions

According to (Al-khouri, 2013), the modern government is citizen centric. NCSA has changed its goal to service people especially Civil servants more intensively. In NCSA, the change of bureaucracy is not only service through real services day to day at headquarters office and regional offices but also through EIS on internet. Furthermore, Ali M Khouri said that the public service should be in the single agency. It means that a government institution needs to make a simple customer service procedure and locate to one place or one door, so customers will not be confused with complicated services in an office like in the previous service before reformation bureaucracy in Indonesia. NCSA has done so with the terms of service of only one stop service. One-stop service is a service which is all of this types

of product service processes of NCSA and customers gives that services in a service door. Hence, customer feel comfortable and satisfied with one stop NCSA services because in the past Indonesian citizens had to interface with several different sub-departments within a government institution to obtain a government service. For example, one might have to deal with 3 different sub-departments when applying for a SSN. As you can imagine, this is very frustrating for Indonesian citizens. As a result, the notion of one-stop service was created so Indonesian citizens can obtain government services with a single touchpoint, for example, getting the SSN by interacting with a single point of contact rather than 3 sub-departments.

Meanwhile, according to BI or EIS, in this case, the most important goal in BI is provide tools and methods to make an excellent decision. People who has a lot of experiences after working for more than decades, usually they have a good reasoning and own judgement. The making decision has become a scientifically process based on rational and logic. The NCSA EIS website can be accessed by human resources and or decision maker of local governments and institutions based on privileges and NCSA Rules. Of course, NCSA itself uses EIS to report it to the Indonesian President and Senate directly. National civil servant reports are sensitive issues and people pay attention to this problem because it is related to country budget and spending. (Wowczko, 2016) BI is a data warehouse that is implemented into an information so easily accessible by anyone as a material in making decisions.

Administrators and operators of NCSA web application from all institutions can download raw data from headquarters server and they can generate a graphics according to some criteria, for example, based on education, sex, hierarchy, type of job or even based on department in local government and institutions. The advantages of using EIS are:

- a. It is easier for the heads of local governments and institutions to make decisions and analyze the needs of new civil servants based on summary graphics. Local and national government entities hire many civil service candidates every year. Government executives at every level can make decisions regarding how many new civil service positions and what education levels and competencies are needed by using graphics and tables about the civil service created from the (EIS). The needs of new government employees are usually based on calculations developed from local or sub-department requests. For example, local government Z needs a number of teachers for a rural area, some of require bachelors' degrees and some masters' degrees. Local government Z posts job listings for teacher and the recruitment process is based on the education levels for the various teacher competencies sought.
- b. Total number of civil servants from NCSA is related to planning, budgeting event, and salary. With the total number of civil servants from EIS, Government institutions and local governments can make decisions and plans for civil servant activities and budgets for an entire year, for example, a yearly budget for seminar expenses, workshop expenses, and other activity-related expenses. Budgets for civil servant salaries are based on the total number of civil servants in a unit/institution or local government. The calculation of civil servant salaries is based on the exact total number of civil servants in a department, for example, if in Z district has a total of 200,000 civil servants, the Z local government will pay for only 200,000 employees. It is common in Indonesia that the government pays more because of some "ghost" or fraudulent civil servants. This happened in some districts, and the Indonesian government has improved the systems to calculate the total number of civil servant exactly and periodically.
- c. Total and composition of civil servant is related to civil servant competences, development of human resources, civil servant training and education, and skills development. Developing civil servant skills in certain field is a government obligation

- to improve public services. In modern government every civil servant is required to do the job based on educational background, interests and competencies. Hence, development of human resources in Indonesian government now focuses based on competencies and development of technology and knowledges. For example, a civil servant who has computer background and holds a bachelor degree can pursue higher education to get Master's degree.
- d. The Indonesian people want public disclosure since the reform of the bureaucracy starting in 1998 when President Soeharto regime was fallen down. NCSA EIS is one format to deliver information from NCSA office in the term report of Indonesian civil servant reports to public. Thus people are expected to be satisfied with the services provided by NCSA.

Unlike the old CSAS, the new CSAS using Java programming language is less critics and has fewer better feedback and it was starting in 2011. The administration process of civil servant is very simple and direct, and focused on customer needs. Even now all processes in NCSA are moving to paperless. It means that, NCSA participates to support social welfare and economic growth. As Izabella Wowzcko said that potential of BI in facilitating of decision making cannot be overestimated. Because the public sector is the pillar of social welfare and economic growth, result of accountability and specific requirement for transparency so government institution needs open to public information. Compliance and disclosure generate public trust; therefore, NCSA has improved the transparency of all processes as responsibility to Indonesian people. Some people might be pessimistic about the NCSA EIS project and argue the NCSE will still have civil servant management problems in some local governments. They cannot imagine the bureaucracy changing as a result of the Reformation Bureaucracy Project because the stigma of corruption, collusion, and nepotism is such a persistent stereotype of the old Indonesian government bureaucracy. For example, at the process of hire civil servants, local government Z announcing that eligible candidates will become civil servants based on their ranking on a scale of 1 to 5 representing education and competency. The relative ranking of a candidate might be changed by an official without documentation. In such a case, local government Z should be responsible and report the discrepancy to the head of the Ministry of Home Affairs. Corruption, collusion, and nepotism were common maladies in the old Indonesian government culture. To become a government employee, an Indonesian citizen could pay a million Rupiah, essentially a bribe, to highly placed officials within a government institution. It might still have happened in local governments in rural area with lower levels of education in recent years because they do not yet understand the importance of the system of EIS. NCSA attempts to transform the old system to a new culture paradigm with technology and systems.

#### **4. Conclusion**

EIS in an office application system which helps countries in the world to make a dashboard from their database summary and explain it to society. Nowadays the Indonesian government is in the process of reformation of bureaucracy in response the world changing because of information disclosure and internet developments. Indonesian people are learning from world's experience that the government need to become transparent and improve public services.

NCSA is an Indonesian federal institution which has responsibility to manage Indonesian civil servants. Along Indonesian people realize as impact of development internet

and world information, the information disclosure from government is very important. Therefore, NCSA committed to build the information for Indonesian public. Using EIS is the best decision to deliver information from government, NCSA in this case, to reach and support the goal of Indonesian Reformation Bureaucracy, including information transparency to public.

On the other hand, EIS is not only about the impact to the society in term of information disclosure but also its effects to federal institutions and local governments decisions. It means that the exact civil servant database is excellent support for federal and local governments to create annual budgets for civil servant for example salary, daily activities budgets like training, operations and other budgets. Even, they also can make plans to hire candidate of civil servant base on skills, education level and backgrounds or sex diversity. Another effect is the creation of harmony between the welfare of civil servants and satisfaction of Indonesian society over the government Information.

Al kouri promotes the of national IDCard as his problem solution(Al Khouri, 2011). However, it is recommended for civil servants to use IDCard which is interregional with the bank so it is more efficient and does not use many cards, it is enough to have one card but can be used many things.

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