

Research article

The Implementation of an Integrated Learning Management System: Challenges in the Indonesian Bureaucratic Organizational Structure

Ladiatno Samsara, Benedicta Retna Cahyarini*, and Harditya Bayu Kusuma

National Institute of Public Administration Republic of Indonesia, Jakarta - Indonesia

Abstract.

The rapid changes in technology have impacted civil servant competency development, from training to learning aspects. From the learning perspective, public sector employees can measure their skills and abilities (self-assessment) to make sure that competency development is carried out according to their needs. An integrated learning management system (integrated LMS) can help support this competency development of government employees. However, integrated LMS development faces challenges related to the public sector organizational structure that is built uniformly using Mintzberg's approach. In fact, each government institution has its unique needs in terms of organizational structure. Therefore, this paper analyzed the challenges in implementing an integrated LMS, employing Mintzberg's organization framework. A literature search was conducted of books, news articles, academic literature and reports to evaluate the impact of integrated LMS implementation on the effectiveness of bureaucracy organizational structure and civil servant competency development. In conclusion, the article showed that the organizational structure of the Indonesian bureaucracy is treated and built similarly in every level and sector which leads to overlapping authority, programs and activities, and results in obstacles in the implementation of an integrated LMS.

Keywords: integrated LMS, organizational structure, competency development

Corresponding Author:

Benedicta Retna Cahyarini;

email:

benedicta.retna@gmail.com

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1. Introduction

Nowadays, the world has entered the modern era, where information technology influences every part of human life. The existence of information technology helps people to carry out their daily activities. Technology also dominated the critical sector, for instance, the health sector, economic sector and socio-cultural sector. Thus, the improvement of information technology creates an effective, efficient and transparent way of life. It is also indicated that information technology creates a new world and new life perspective.

The digital world in the information technology improvement era has provided luxurious facilities for our life in terms of convenience and agility. High-speed process

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and time efficiency are the benefits of technology development. As a result, traditional methods are more likely left behind and creates the transition from old school to a modern way of life. The utilization of information technology has proven that new and modern methods can improve human quality of life. Consequently, the learning sector has to follow the digital world influences. Various learning tools have been introduced in the learning sector in order to improve learning process quality in both formal and informal education. E-learning is one of the information technology improvements in the learning method. E-learning is defined as an online learning method that offers easy access so we can save time and money. As the e-learning method support system, Learning Management System (LMS) is needed.

LMS is a software platform that use to deliver online learning materials. LMS is an important system in terms of supporting high quality learning through e-learning methods, and will increase employees' awareness of skill development [1]. It makes sense because as mentioned before e-learning offer an easier and cheaper learning platform. So, the chance to improve employees' skills is wide open, easier and simpler. LMS is learning software that is used to manage online learning including learning materials, learning participant placement, class management and grading [2]. The learning process we discussed here is not only the learning process in the formal institution (school, university, etc.) but also the public sector's learning system. The utilization of LMS in the bureaucratic sector is to fulfil the agenda of the improvement in the government employee competency development. Thus, the competency improvement is expected to be more effective, efficient, modern and transparent. Therefore, LMS should be delivered with its usability factors that are intuitive, easy to learn and less ambiguity [1].

In the public sector, LMS is a new and interesting development in the competency improvement field. For example, Civil Service College in Singapore develops LMS to improve their civil service competency in the public service or another specific field that is relevant to employees' learning needs in terms of topics, learning delivery methods and learning experience [3]. LMS is seen as a system tool that will help to make some improvement in the employees' competency development. Thus, with the online learning (e-learning) method, LMS provides convenience in learning management, because the learning program can be carried out in a wider scope and reach more numbers of learning participants. LMS is a software package used to administer one or more courses to one or more learners. An LMS is typically a web-based system that allows learners to authenticate themselves, register for courses, complete courses and take assessments" [4]. Bailey (1992) presents general characteristics of LMS in education

that include: tying instructional objectives to individual lessons, incorporating lessons into the standardized curriculum, extending courseware several grade levels consistently, providing a management system, collecting the results of learner performance, providing lessons based on the individual learner's learning progress [5].

In Indonesia, many private companies develop LMS for their employees' competency development programs, for example, banks and manufacturing factories. The efficiency and effectiveness of LMS to support employee's performance is the key factor. An employee is able to learn and do the job tasks at the same time. Thus, integrated and comprehensive workplace learning is not impossible to create with the preferential factors regarding contents (selection and clarity), process (learning feedback, control, motivation and sharing of information) are the important keys [6].

Does not want to feel left behind, the Indonesian government has begun to develop LMS. A government organization in both central and regional levels are competing with each other in developing LMS as a tool to improve employees' competency, for example, ASN Unggul developed by NIPA starting in 2019, Kemenkeu Learning Center by the Ministry of Finance, e-Learning Kemenkumham from the Ministry of Law and Human Rights, e-Learning Center Pusdiklatwas BPKP owned by Indonesian state finance and development surveillance committee/BPKP, and DKI Province with its Ubiquitos Learning.

In the Indonesian bureaucratic sector context, LMS is the biggest function in the competency development department in each organization. However, there are some interesting cases in terms of how each organization develops and manages this system compared to how the Indonesian government builds the organization structure. On the one hand, the government organization structure is built using Mintzberg's five (5) key parts of the organization. These five keys' parts are the strategic apex, middle line, operating core, technostructure and supporting staff [7]. In every organization or department in the government body, we will find the division of work using the Mintzberg (1979) concept. For example, in the competency development department, the strategic apex running by the head of the department, the department secretary is responsible for the middle line function, head of line division is handling the operating core duties, in the technostructure, we have a teaching instructor and curriculum creator, whereas the head of supporting division is responsible in the supporting area.

On the other hand, LMS is developed differently in each organization and is highly dependent on the organization's resources in terms of both human resources and budgetary resources. However, the most interesting part is the LMS governance and work procedures. Each organization has its own procedures to manage and run the

LMS. In fact, as mentioned before, LMS is the biggest part of the competency development organization/department. Since the Indonesian government organizations are developed with the same organization structure concept (Mintzberg's five keys part organization), in the authors' logic, working procedures are the organizational structure's derivatives. So, in the authors' opinion, if some organizations are built with the same structure concept, the work procedures that break down from the structure are also similar.

Mintzberg's organizational model is flexible and can be useful as an organizational improvement's tool [8]. Various organizations utilize Mintzberg organizational structure in the organization development. Poland railway company using the Mintzberg structure in order to improve the organization output [8]. Moreover, Morton & Hu [9] said that an adequate organization is needed to implement Enterprise Resources Planning (ERP) as the IT infrastructure backbone. They analyze whether Mintzberg organization structure fits with ERP systems [9]. From their research they found that in the dynamic aspect every part of Mintzberg structure will lead to different directions: (1) strategic apex leads to retain control over decision making; (2) techno structure pull to standardization; (3) the operating core leads to professionalize; (4) middle line leads to structure division units; and (5) supporting staff that leads to collaboration in decision making [9].

However, in the Indonesian bureaucracy sector's context, the uniformity in the organization structure development creates both positive and negative impacts on the government administration. On the positive side, government administration that is built with the same organizational structure concept makes the organizational arrangement easier to manage in both organizational size and organizational management. However, every government agency is unique and it will affect the needs of the organization body and the uniform organizational structure concept will also increase the lack of organizational goal achievement. For instance, each competency development department has its uniqueness in the context of the material, management, possession etc. In this case, the organization must adapt to the existing organizational structure in order to fulfil their specific needs without interfering with the organization's achievement. In order to adapt with their own needs in the existing structure, the organization applied different work procedures in the development of LMS. On the one hand, Indonesian government policy nowadays is emphasizing integration in every sector, especially in the budgetary aspect. On the other hand, the LMS development phenomenon in every government agency is against the government policy in terms of integration. Moreover, the competency development attached in every government organization structure will lead to the possibility of LMS development in every government agency. Considering the

integration framework and uniform interpretation of Mintzberg organizational structure concept in every government agency, the LMS development certainly will experience big challenges. Therefore, in this article, the authors would like to analyze the challenge of the LMS integration in the context of uniform organizational structure in the Indonesian government organization.

2. method

The descriptive qualitative method was utilized in this research. Theoretically, the chosen method helped researchers to understand and to analyze the phenomenon in detail. In the context of this article, a descriptive qualitative methodology helps the authors to understand how the implementation of a learning management system as the competency development tool for Indonesian government employees and its context with Indonesian bureaucracy organization that was built using Mintzberg's organizational theory.

A desk study was carried out in the data gathering and writing process using secondary data. The secondary data was gathered from various books, articles, journals and news on the theme of LMS implementation in both public and private sectors. Moreover, the authors also gathered and analyzed the implementation of Mintzberg's organization structure approach in both public and private sectors. The analysis was important to get a comprehensive understanding of LMS implementation and its challenge in terms of the Indonesian bureaucracy uniformity using the Mintzberg concept.

3. Results and Discussion

3.1. Uniformly interpretation of Mintzberg's organization Structure Concept

Mintzberg's organization structure concept is still applicable in today's environment. Both the private and public sectors applied this concept in structuring or even restructuring their organization. For example, in 2010 a railway company from Poland experienced a breakdown because of insufficient employees, lack of rolling stock and bad weather conditions [8]. As mentioned the railway company is not ready to change in both organizational and in the production key factors [8]. As a result, Mintzberg's organizational concept that was applied in the railway company provides a practical solution in, such as clear division tasks competence and board management hierarchy; marketing

department establishment; separation of strategic management processes; changes in the coordination mechanism; unit grouping; and redefining outsourcing [8].

Basically, Mintzberg's organization structure concept is divided into five parts, which are: strategic apex, middle line, operating core, technostructure and supporting staff [7]. Those parts are adopted nowadays as the part of the organization namely division, line division or supporting division with specific job tasks. The division of Mintzberg's organizational structure concept looks simple with only five parts. However, in the public sector organization, the implementation is not as simple as that. The Indonesian public sector organization followed Mintzberg's organizational structure concept. However, since the public sector is a large organization, somehow the implementation and the interpretation of the organization function is biased.

In the Indonesian government context, at the top government level or central government, the organizational function division has followed Mintzberg's concept. The first, strategic apex is held by the head of government, President and Vice President. The second part is the middle line with the task of coordinating ministry that coordinates the specific issues and synchronizing government programs in their area of expertise, for example Coordinating Ministry for Economic Affairs, Coordinating Ministry for Maritime and Investment Affairs, and Coordinating Ministry for Political, Legal and Security Affairs. Third is the operating core with its role based on the division of affairs. The operating core function is carried out by ministry who in charge of agriculture affairs (Ministry of Agriculture), manpower affairs (Ministry of Manpower and Transmigration), transportation affairs (Ministry of Transportation), health affair (Ministry of Health) and public works affairs (Public Work and Housing Ministry), etc. Next is the technostructure which is responsible for the research and development function run by NIPA and National Research and Innovation Agency. The last part is supporting staff, with the responsibility to support the whole government affairs such as the National Civil Service Agency and National Archive of Republic Indonesia.

At the local government level, at both provincial and city level, the organization distribution using Mintzberg's organizational structure concept is also similar. Strategic apex is the responsibility of the local government head (governor, regent, mayor). The middle line is run by the regional secretary and organization unit with the region planning function. While the operating core is held by the regional department office related to the affairs. Whereas technostructure executes by the organization unit with research and development function and supporting staff is responsible in the civil servant administration and competency development.

From the explanation above, it can be seen that both Indonesian central and regional government organizations have similar functions and tasks divisions. Moreover, in the lower organizational level (technical unit organization), there is almost no difference in the unit organization division. The comparison of tasks and function division in both central and local governments can be seen in the table below.

TABLE 1: The Comparison of Task and Function Division. (Central and Local Government).

No	Mintzberg's Five Parts of organization	Central Government	Local Government
1	Strategic apex	Minister /Head of Agency	Local Government head (governor, regent, mayor)
2	Middle line	Secretary General	Regional Secretary
3	Operating core	Director General, Deputy	Regional Department
4	Technostructure	R&D Department	R& D Department
5	Support Staf	Supporting bureau	Supporting bureau

Source: processed by authors

At the lower organization level, equivalent to echelon one work unit in the central government and echelon two in the local government, the organization division can be seen as follow:

TABLE 2: The Comparison of Task and Function Division. (Echelon 1 in the central government and echelon 2 in the local government).

No	Mintzberg's Five Parts of organization	Ministry/Agency	Local Department
1	Strategic apex	Director General, Deputy	Head of Regional Department
2	Middle line	Deputy/General Secretary Director	Department Secretary
3	Operating core	Director /Head of Center	Division
4	Technostructure	organizational functions are not defined in the organization structure	organizational functions are not defined in the organization structure
5	Support Staff	Supporting division	Supporting division

Source: processed by authors

From the tables above, it can be interpreted that there is no significant difference between large medium and even small organizations in both central and local government. This also indicates that each level in the organization performs the same function.

3.2. LMS Development Phenomenon in the organizational Level

Indonesian Civil Servant is required to master three competencies, there are managerial, socio-cultural and technical competencies [10]. Each civil servant is required to master every competency related to the job position and job level. In order to boost the civil servant mastery in each competency, the National Institute of Public Administration (NIPA) is mandated to develop the managerial and socio-cultural competencies. While technical competence is the area of expertise in the sectoral agencies/ministries. In this regard, all government organizations are able to create a competency development curriculum based on their area of expertise. For example, the Ministry of Finance will develop a curriculum related to the government budget. However, in terms of learning implementation Government Regulation No 11/2017 mentioned that competency development can be executed independently or collaboratively with an accredited government agency or another independent institution.

The Government Regulation 11/2017 stated that the civil servant competency development is wide open because there is an equal opportunity for every government organization to provide training in competency development for both internal and external participants. In relation to the implementation of Mintzberg's organizational structure concept, technical competence can be carried out in every government organization at any level. Regardless of the similar opportunity to operate competency development, there is no pattern in the competency development system, in terms of curriculum quality nor another technical aspect. Moreover, the opportunity itself is not enough to improve competence development. However the selection contents, clarity and learning process regarding feedback, control, motivation and sharing information are the keys in workplace learning [6].

To discuss equal opportunity in the government organization regarding competency development, we have to look into the competency development function that translated as one of the unit structures in the organization. The unit organization provides a learning center for the employees' competency development specifically in the technical competencies. In fact, the learning center unit organization also be able to organize managerial competency development with permission from NIPA as the competency development supervisor agency. Consequently, many learning centers at the organizational level arrange managerial competency development in various levels such as supervisor, administrator and also for the top leaders. The competency development implementation at the organizational level shifted from technical competency for the internal employees' competency development to the managerial

and technical competency and open for both internal and external employees. Thus every unit organization develop the same infrastructure development in the competency improvement, namely LMS.

LMS as a technology-based learning platform is very popular among civil servants. However, the content in the LMS is more likely similar especially for managerial competency, ironically LMS develops and manages in different ways. Based on the google search engine with LMS as the keywords, the authors found several LMS owned by Indonesian government organizations that as NIPA, Ministry of Communication and Informatics and Ministry of Education, Culture, Research and Technology. At the local government level, a few local governments have developed LMS. The LMS that develop independently tend to be an obstacle in the integrated competency development. LMS is developed at the organizational level with competency development authority. As a consequence, there is a gap among government organizations in terms of learning quality, learning program, budgetary, human resources, etc.

3.3. The Challenges of Integrated LMS:

3.3.1. Uniformly organizational Structure leads to the identical organization's tasks and function

The uniform organizational structure we discussed above, leads to identical organizations' tasks and functions. For example, almost every ministry/government agency has a competency development function that is handled by the department of human resource development. The scope in the competency development is the only thing that distinguishes one department from another. NIPA is the institution with the national mandate in managerial and socio-cultural competency [10] responsible in a wider scope than any other organization. However, there is also the department of human resource development that arrange both managerial and technical competency development.

Moreover, with the similar organization's task and function, the organization also tend to have a similar business process. Therefore, there is a higher chance of learning program and infrastructure development duplication among the human resource development department. Especially in the local government, since there is no connecting line in the program development from one to another.

Thus, in order to develop adequate integrated LMS, the Indonesian government must regulate and appoint one government agency that will responsible for the development and implementation of integrated LMS. This regulation is expected to disrupt the whole

existing system, and start brand new integrated LMS for civil servants all over the country. With this new arrangement, competency development will be managed centrally. The department of human resource development at the organizational level, organize the competency development program in a coordinative manner with the supervisor agency.

3.3.2. Resources availability in the integrated LMS development

The availability of resources is the biggest challenge in the development of integrated information systems. Many integrated developments cannot be done because of the lack of the resources such as funds, human resources and infrastructure. Since it is a mega project, the budgetary fund is the most important factor in the integrated development.

However, it is not an easy project to spare that much budget for this mega project, especially with the classic problem in the budgetary fund. In the existing budgetary structure, the competency development fund is different in every government agency. The competency development budgetary fund is dependent on the budget at the organizational level. Thus, with the same organizational function in the competency development, the budgetary fund may differ from one human resource development department to another. This condition creates a gap among the human resource development department particularly in information technology development. It means that Indonesian government commitment in the budgetary refocusing is something that needs to be done, in order to minimize the possibility of LMS development at the organizational level.

In addition, human resource is the next important factor in the integrated LMS development. The underlying problem in the human resource is in the employees' numbers. The human resources need is in line with the size of the organization. The bigger organization such as ministry offices have more employees number than a smaller government agency. In the information system development, the bigger employee number gives some advantage in the development, in terms of the number of the IT specialists among employees. However, in the smaller organization with smaller employee numbers, the lack of IT specialists can be fulfilled with the contract-based government employee (PPPK) with strict supervision to ensure high achievement in the system development. The PPPK recruitment argued as "buying" concept, is able to help government organization's achievement [11] [12].

Last but not least infrastructure development is also an important support factor in the integrated LMS development. The infrastructure is including an internet network, hardware and servers.

4. Conclusions

Developing integrated LMS in the government organization is challenging. Many obstacles must be faced in order to achieve integrated LMS goals. Mintzberg's organizational structure concept which was adopted uniformly in the organizational structure becomes one of the obstacles. The organization division based on Mintzberg's organizational concept is applied uniformly in both central government and local government levels without any significant differentiation. Since every government organization have similar function especially in the competency development program, in the LMS development most of the government organization in both central and local level like to develop their own LMS according to their specific needs. As a result, it also creates an obstacle in the integrated LSM development as an Indonesian civil servant competency development tool.

Moreover, in the article analysis, the authors argue that the lack of resources in terms of funds, human resources and infrastructure are often faced by the government in the integrated LMS development. However, the authors offer a few solutions for the Indonesian government to be able to implement integrated LMS. First is the regulation regarding integrated LMS and assign one of the government agencies to responsible for the development and implementation of integrated LMS. Secondly is to do the budgetary refocusing in the competency development program. Both solutions are important to minimize the LMS development and competency development overlapping among government organizations.

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