Conference Paper

Reward Information System: Integrated Strategy to Control Program Effectiveness

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Abstract

This research is motivated from the transparency of universities to conduct a controlled and measured bureaucracy reform. One of the efforts to achieve it is by realizing the concept of reward and punishment for employees in State Universities. This form of reward and punishment is done through remuneration. The concept of remuneration can be implemented properly if it is supported by an integrated Management Information System. This study aims at building an information system of remuneration model in state universities, in the form of Public Service Agency in Indonesia that can represent strengths from each university. Thus, improvement of accessibility and transparency of remuneration calculation, which based on principles of fairness and professional achievement of employee performance, can be achieved. This research implements qualitative design through an interview study on some informants who are members of remuneration team from some universities who have learned the practice of remuneration in UNNES. This study are able to create a system containing the recapitulation data of the state universities which imposed remuneration, updated remuneration data, it also collects the types of remuneration rules made in each state university, recapitulation of job prices and recapitulation of the amount of remuneration. Any data collected in this system will be a supporting reference for the Ministry of Finance to monitor and make decisions regarding the successful implementation of remuneration in Indonesia.

Keywords: Reward Information System, Remuneration, Integrated System, Program Effectiveness.

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1. Background

Improving the performance of government apparatus can be done by implementing remuneration policy. Remuneration, as part of a reward-based financial reward system, is a part of the government's bureaucratic reform effort. Rewards can be

in the form of extrinsic and intrinsic (Eshak, Jamian, Jidi, & Zakaria, 2016). Tangible extrinsic reward can be in the form of salary, bonus, promotion and job security. While intangible intrinsic rewards can be embodied in an appreciation, recognition and task delegation. Remuneration is a work compensation that may be in the form of salary, fixed allowance, honorarium, incentive, bonus on performance, severance pay and / or pension that can be given to Management Officer, Supervisory Board, and BLU employee based on professional responsibility and demands level. Remuneration is stipulated by Decree of the Minister of Finance on the proposal of Minister / Head of Institution (Article 36 PP No. 23 of 2005).

The enforcement of remuneration in State Universities environment varies according to the characteristics, calculation model, and ability of each State Universities. The identification of remuneration implementation on BLU State Universities needs to be done to see the basis and process of remuneration calculation. It starts from position analysis, job evaluation, ranking, benchmarking, to the method of calculating the position price used. Second, it is noteworthy to mention that the system or application used to calculate remuneration integrates to academic, personnel, financial, performance, and employee duties data. Third, it is also necessary to keep in mind how budgeting is allocated, financial management, complaint management, and administration that support the implementation of remuneration. By knowing these three things along with the obstacles, the implementation of remuneration will be mapped, especially at BLU State Universities. Thus, it will become the best practice database for BLU State Universities that will implement remuneration, and at the same time facilitate the PPK BLU Ministry of Finance to monitor and direct BLU State Universities in the implementation of remuneration. With this information technology based database, it will be very easy to update the system in accordance with the current state of each BLU. Unnes with two years experience in managing remuneration and also become a national reference has great potential to initiate and become the host of this project. The success of the "up-to-date database" remuneration project is expected to strengthen Unnes' image as a pioneer of State Universities' remuneration management, so when speaking State Universities remuneration, Unnes must act as State Universities referral remeneration model.

2. Literature Review

2.1. Reward system

In general, the reward system provided by the organization will be adjusted from several perspectives, such as the organization itself or from the individual point of view. The reward system that is often used in college is the remuneration system. Remuneration refers to various things received by employees in return for the contributions they have given to their work [7]. Furthermore, Surya (2004) stated that there are 3 basic principles of remuneration system. First, the principle of individual equity or individual justice, i.e. everything that an employee receives must be equal to that given to the organization. Second, internal equity, i.e. fairness between the weight of work and the reward received. Third, external equity or external justice, i.e. the remuneration received by an employee from his workplace will be equal to the remuneration given by another equivalent organization.

2.2. Information system planning

Business planning and information system planning are two things that play an important role in business continuity but they are not always planned systematically and integrated. King (1978) is one of the few researchers proposing the need to integrate business planning and information system planning (SI) by introducing the SI Planning Methodology. This method emphasizes the importance of deriving the SI strategy-consisting of: system objectives, system limitations, and strategies for designing systems, from business strategies-consisting of: mission, goals, strategies and other strategic organizational attributes [8].

King's idea of one-way sequential integration, developed by King and Zmud (1981), became a two-way reciprocal integration between business planning and the broad-based SI planning not only supporting but also influencing business strategy. Using an evolutionary perspective, Teo and King (1981, 1996) divided the SI form of planning into four, starting from a simple form-separating planning with administrative integration, to complex planning forms that integrate across business resources. Furthermore, by adopting the contingency perspective of Lawrence and Lorch (1967), Teo and King (1997) combined evolutionary and contingent perspectives to benefit both and use the combination to examine the evolutionary contingency perspective of 80 business organizations (Table 1).

In the 1990s, Segars et.al. (1998) formulated the characteristics of strategic planning, namely: 1) SISP supports and influences the direction of corporate strategy through

Table 1: Combination of the Evolutionary and Contingency Perspectives.

Characteristics	Evolutionary perspective	Contingency perspective	Evolutionary-contingency perspectives
Paths of evolution	Single path	"No best way"	Multiple paths Bypassed phases
Reverse evolution	Unlikely	Possible	Possible, but infrequent
Contingency variables	Correlated with levels of growth	Correlated with extent of integration	Correlated with extent (levels) of integration

the identification of value added use of computerized SI; 2) SISP integrates and coordinates various technologies within the organization through the design of a holistic information architecture; 3) SISP provides strategies for successful implementation of SI. In addition, SISP also enables the implementation of corporate strategy in a dynamic business environment, and achieves long-term growth and strategic flexibility.

In the era of 2000s, SISP more closely with the information system strategy (information system strategy- ISS). Chen et.al., (2010) conducted a meta-analysis of 64 articles published in 15 leading journals, such as MIS Quaterly to Strategic Management Journal. In the various literatures, ISS deals with various terms, such as: information plan, that is, the tangible output of the SISP process (Brown, 2004; Lederer & Salmela, 1996); long-range IS planning document- as a process that considers three years or more of future conditions and involves EDP / MIS to achieve its objectives (Conrath, et.al., 1992). Table 2 shows the three conceptions of ISS and its application in supporting the business strategy.

Table 2: Three Conceptions and Their Application.

	ISS supports business strategy	ISS as SI master plan	ISS as the shared view
Porter 7Ps (Based on 7Ps' Porter, those three conceptions have different consequences in its implementation.)	**Position:** on the chosen strategy, how IS can support business strategy, achieve and maintain competitive advantage	**Plan:** Asset SI (staff, process, infrastructure, application, budget) what is needed and how to efficiently allocate it	**Perspective:** how organizations view the existence of SI
Starting point	Selected business strategy selected	SI function in a particular business unit, but not necessarily in another unit	Managerial attitude towards SI
Standpoint	*Business-centric*	*IS-centric*	*Organization-centric*

2.3. Information system planning as coordination process

Coordination is a central concept in the theory of organizational design involving intra- and interorganizational relationships, both formal (steering committees, task forces, rules / procedures) and informal. Companies will always be exposed to a variety of relationships involving coordination, such as on project management, implementation of an IT outsourcing project, or an interorganisational network. Various research on different levels of coordination of the parties are summarized by Williams and Karahanna (2013), among others: various combinations of coordination mechanisms (Brown and Ross 1996; Brown and Sambamurthy 2001; DeSanctis and Jackson 1994; Gittell and Weiss 2004; Kellogg et al. 2006).

The inferential results conclude that there are two coordination mechanisms, consensus and aligning units to link the four elements of coordination structure: operating mode, composition, coordinating climate, and engagement logic. The multilevel macro-micro-macro model shows how mechanisms, coordination structures, and contexts interact between levels of analysis by mutually reinforcing or debilitating. This finding reinforces an understanding of the coordination mechanisms that affect processes and outcomes.

2.4. Information system development

The development of Information Systems Development (ISD) system is the preparation of a new system to improve the existing system or replace the old system as a whole. In connection with ISD, Wade and Hulland (2004) conducted research studies to identify resource requirements for SI development, including: technical innovation (Bharadwaj, 2000), new technological experiments (Jarvenpaa & Leidner, 1989), capacity to build services by utilizing interactive multimedia (Lopes & Galletta, 1997) and alerts (Zaheer & Zaheer, 1997). The success of ISD is influenced by the type of information system development that is selected, among others: system development life cycle, prototyping, outsourcing or end user. One form of outsourcing is business process outsourcing (BPO) which refers to the delegation of one or more information technology on business processes to external parties, e.g. service providers.

This delegation can be both physical and informational. BPOs are different from IT Outsourcing (ITO), where ITO focuses more on core competencies to reduce costs, while BPOs have broader scope to business transformation. Mani, Barua, & Whinston (2010) tested the performance of BPOs using the required information constructs on

the relationships within the ODS-which are relatively rarely studied, i.e. task complexity and inter-dependence of task environments. The research generally concludes that outsourcing has become a collaborative network paradigm that has increased its strategic impact, so more attention should be paid to the design and coordination process.

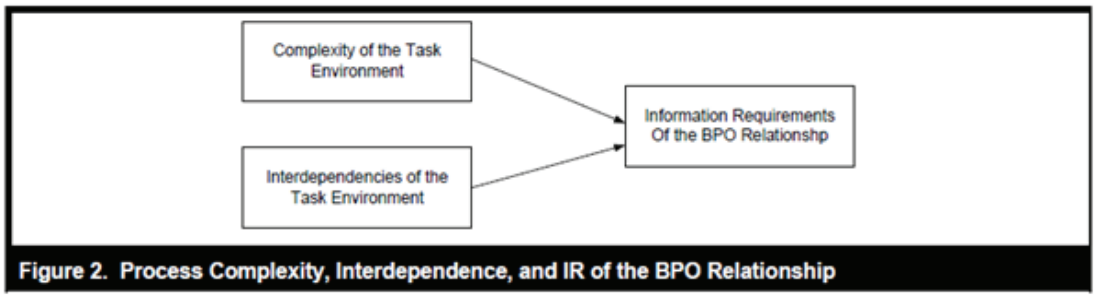


Figure 1: Technology Acceptance Model (Davis, Bagozzi, & Warshaw, 1989).

3. Research Methods

This type of research is a qualitative research. Establishing a web-based remuneration information system is to integrate information on remuneration at state universities in Indonesia. The research procedure performed as in Figure 2.

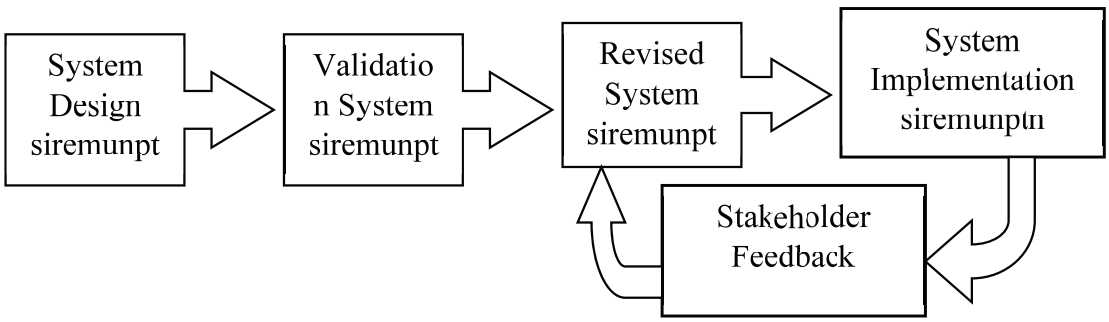


Figure 2: Chart of Research Procedure.

To create a web-based application program (website) is interesting and interactive. It must be designed in advance so that the results achieved will be in accordance with the goals set previously. In the making process of the program, there are several things that must be implemented as follows: (a) Programming interface (view or home page) web, and (b) Database design.

Design validation is done by some experts. Each expert is asked to assess the design, so the weaknesses and advantages of the program can be noticed. Once the product design is validated, the researcher improves the shortcomings, adds less valuable

facilities and reduces the facilities that are considered unnecessary, thus, the product gets better. After that, the system is implemented, an evaluation is based on feedback from stakeholders. This feedback is done by using questionnaires while the data are collected from students, alumni, lecturers and other stakeholder components that utilize this alumni system to improve the system.

4. Results and Discussion

4.1. Preparation of information systems Siremunptn.unnes.ac.id

The limited study of good university governance issues, especially in the field of remuneration in Indonesia has motivated researchers to contribute to the design of strategic planning of information systems as an important part of the university's strategic planning. This study seeks to build information connectivity between Indonesian public higher education institutions, and the government through an inter-organizational information system that can be useful for integrating all forms of information related to remuneration systems in Indonesian universities. This information system is called siremunptn.unnes.ac.id.

The information system of siremunptn.unnes.ac.id enables government and state universities in Indonesia to obtain information on remuneration system, enabling state universities to prepare a remuneration database that can be up-dated as needed, to develop academic management information system, staffing, finance, employee performance, reviewing and analyzing the budgeting system, financial management, complaints management, audit and performance evaluation of employees, for the government the system can be utilized to develop new remuneration policies.

4.2. System requirement analysis SIREMUNPTN.UNNES.AC.ID

System requirement analysis is needed to support system performance, whether the system made has been in accordance with the needs or not because the system needs will support the achievement of the goals of universities and government. System requirements analysis is the first step to be taken when creating a new system. System requirements analysis is divided into two types, namely:

1. Functional Needs

The type of functional needs contains what processes will be done by siremunptn.unnes.ac.id information system and what information should be and produced by the system. These needs consist of:

(a) **Processing user / user page (public college)**

i. After creating an account on the siremunptn.unnes.ac.id system, the user can enter and view any form of information related to the remuneration system in the related college.
ii. Users can update any form of remuneration information anytime and anywhere, because the system is done by online.
iii. Users can manage remuneration system in college by online.

(b) **Admin page processing**

i. Admin siremunptn.unnes.ac.id system can see the data of each college that has an account or user on the system.
ii. Admin can see any information about remuneration from state university in graphic form.

2. Non-functional requirements are a type of requirement that contains behavioral attributes owned by the system.

(a) Analysis of hardware requirements (hardware)

The hardware required in the development of this system are:

i. Laptop intel core or the same class
ii. At least 1024 MB of RAM
iii. 320 GB hard drive
iv. Mouse and keyboard
v. LAN Card
vi. Printer
vii. Hub / Switch
viii. UTP cable

(b) Analysis of software requirements (software)

The software is also very important in data processing because the software contains programs whose commands are used to run the computer system. Software used in making website siremunptn.unnes.ac.id are as follows:

i. Macromedia Dreamwever MX 2004

ii. Xampp 1.6.8 which includes apache 2.2.9 as a web server, MySql 5.0.67 as database server, and php 5.2.6.

iii. Photoshop CS2

iv. Web browser (Mozilla Firefox, Google Chrome, Internet Explorer)

v. Windows 7/8 operating system

(c) Human Resources Analysis Needed (Brainware)

Humans as creators and users of the system, so this system can be used in accordance with the functions and benefits. Regarding this demand, it is expected to keep the website up to date to keep the quick delivery of information to consumers and visitors. To meet this notion, it is needed:

i. Systems Analyst, to analyze the needs and further development of the system.

ii. Programmer, to arrange the system from the analysis until the system is online.

iii. Administrator from a college (UNNES) to operate and update the content from the system

iv. User, siremunptn.unnes.ac.id website user is a state university employee who operate and update the content from the data remuneration menu.

4.3. System implementation

Implementation is the stage of putting a new system developed so that the system will be ready to operate as expected. The purpose of the implementation is to prepare all the activities of the system in accordance with the design that has been built.

Based on the planning that has been done, siremunptn.unnes.ac.id system has display as follows:

5. Conclusions and Suggestions

5.1. Conclusion

The information system of siremunptn.unnes.ac.id allows the study program to track the existence of alumni and to develop an automated system to determine the absorption of alumni in the labor market and to get input from the user as the curriculum evaluation material. More, this information system also eases companies, which need new

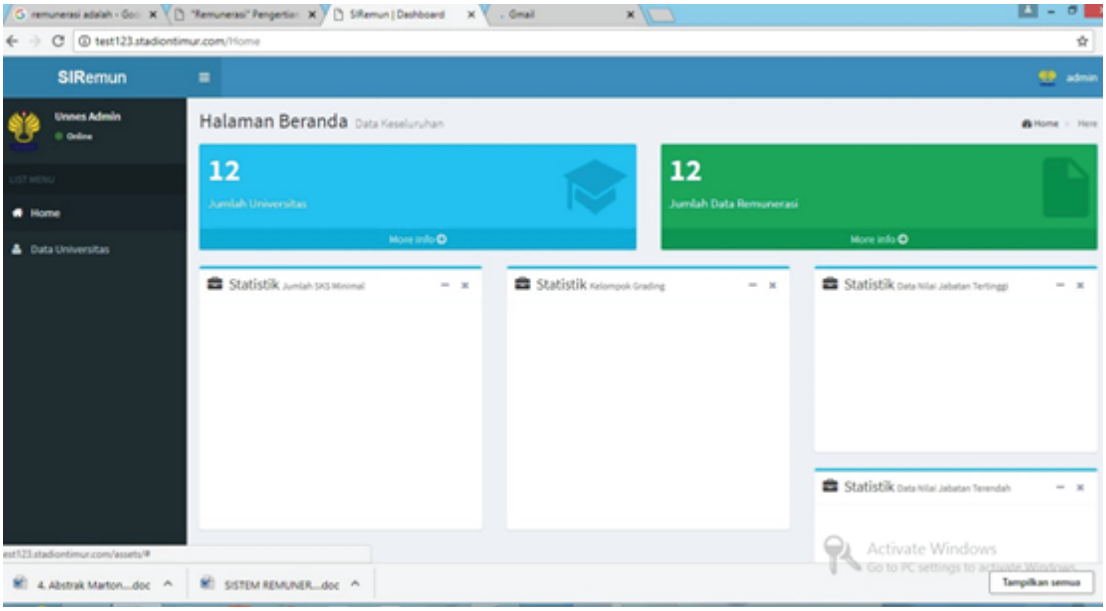
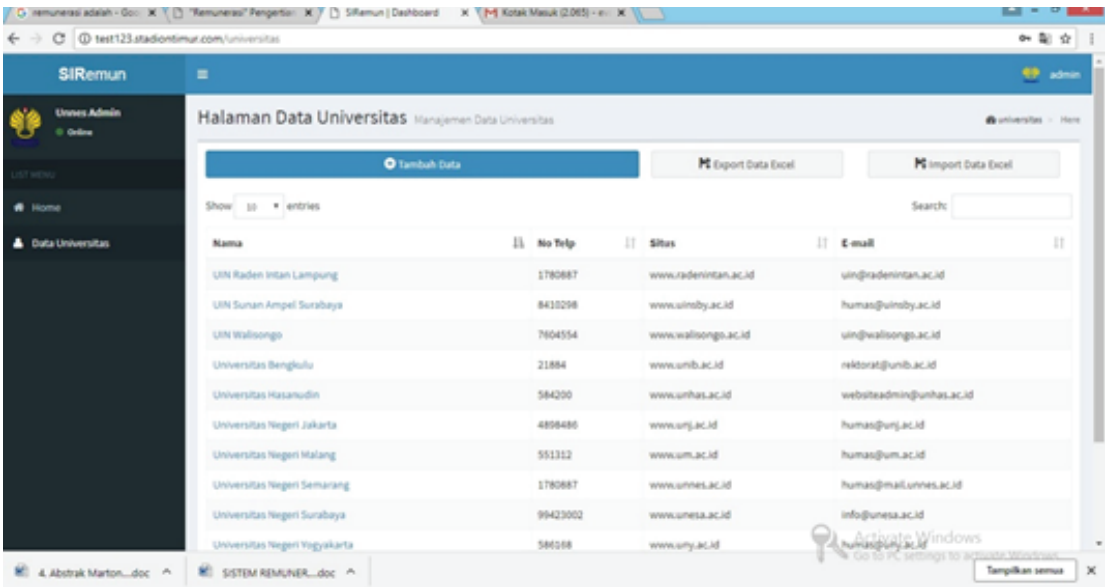


Figure 3: Homepage siremunptn.unnes.ac.id system.



workers, more effectively and efficiently in the delivery of information to job seekers, who are graduates of the company's partner colleges. In addition, with the information system siremunptn.unnes.ac.id job seekers will be easier to obtain information about job vacancies and register as job applicants to companies that open job vacancies. Siremunptn.unnes.ac.id information system also allows the communication between the world of work with the world of education. So that the gap between them can be reduced.

5.2. Suggestions

Suggestions that researchers can provide for the process of implementation and development of information systems siremunptn.unnes.ac.id in the future are:

1. This system is still in the internal trial stage and has not been yet established, so it requires future expert testing.
2. Interviews with other users and external testing need to be done to get feedback on system development.

Acknowledgement

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