Streamlining Business Process: a Case Study of optimizing a business process to issue a letter of assignment for a lecturer in the University of Surabaya

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Abstract. This paper focused on revealing how a business process can be streamlined by thoroughly examined a case study of a project to optimize a business process to issue a letter of assignment in the University of Surabaya (Ubaya). The case study shows evidences on how the university could successfully deliver significant benefits by utilizing IT to optimize a business process. It shows how Trkman's success factor framework can be used as a guideline to implement a business process improvement project in a higher education institution.

Keywords: Business process · improvement · success factor

1. Introduction

Business process is a system which consists of activities performed by various employees from a set of diverse units in an organization [1]. It represents how an organization works and thus, determines the organization's affectivity and efficiency. Efforts made to streamline business process, which has also been known as business process reengineering (BPR) and business process management (BPM), can be considered as "the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical measures of performance such as cost, quality, service, and speed" [2][3].

Such potential has lured most firms to conduct BPR [4]. Unfortunately, streamlining business process is not an easy task, various researches suggest that BPR project are an extremely high risk project where only 30% of those initiatives are able to successfully deliver the expected results [5][6][7]. Such facts suggest that despite the tempting advantages, BPR is a complex project which should be engaged carefully to harvest the expected outcomes.

This paper attempts to reveal how a business process can be streamlined by thoroughly examines a case study of a project done by the University of Surabaya to optimize a business process to issue a letter of assignment. Other than attempting to optimize the business process, the project is also a pilot project to measure the organization's readiness towards a computer based approval system.

2. Literature Review

2.1 Measuring Success

Prior thoroughly analyzing the case study, it is important to firstly measure the project's success since a success story offers different kind of lessons than a disastrous story. This paper will use the four dimensions model of process redesign effects as proposed by Brand and Van der Kolk [9] to measure the success level of the case study. The model compares the business process' performance before and after the improvement on four dimensions: cost, quality, time, and flexibility. Achieving maximum results on all dimensions is unlikely as each dimension might contradict other dimensions and thus often lead to trade-off that has to be made when streamlining a business process.

2.1 Success Factors of Business Process Improvement Project

One way to reveals lessons behind the success story is by confirming the case with literatures regarding key success factors of business improvement project. For this purpose, Trkman [8] proposed a framework which classified the success factors into three distinct groups: contingency theory, dynamic capabilities and task-technology fit.

The contingency theory focuses on fitness between the business process and the business environment. Secondly, dynamic capabilities refer to continuous improvement to assure sustained benefits from streamlining the business process. Lastly, task-technology fit focuses on fitness between IT and the business process.

3. The Case Study

The case study is an initiative from Ubaya to streamline the process to issue letter of assignment to lecturer who wants to present his/her paper in a conference. Although, this process is not a major process in the university, it plays a critical role as paper publishing is an important task that needs to be done by every lecturer in a university. The number of publication produced by a lecturer directly affects performance appraisal of the lecturer, the lecturer's department and the university.

3.1 Analysis of the Previous Process

Legacy process to issue the letter of assignment in Ubaya involve the use of traditional paper based procedures with no suffice documentation procedure. The use of paper forms has caused many redundant processes needs to be done by various stakeholders. The redundancy and the nature of paper based systems contribute to the lengthy time required to issue the letter of assignment. Figure 1 shows flows of the legacy process using the BPMN (i.e. Business Process Mapping Notation).

Further, the biggest problem with the legacy system occurred after the lecturer accomplishes the given assignment. Although data about published papers is required by various units, there was no clear decision towards who and how should the published paper be documented. Therefore, whenever data about publication is required, unit which requires the data will conduct survey to all lecturers to gather information about their publications. On top of that, important evidences regarding the publications often went missing with no possible way to recover it.

3.2 Implementation of the new process

The new process is designed to overcome the many issues in the legacy process. By utilizing the integrated information systems owned by the University of Surabaya, the new process is expected to be able to solve problems regarding documentation and publication data query.

The process optimization project is initiated by the Vice Rector of academic by gathering all stakeholders who often require the publication data and the IT department which is expected to deliver the required systems. One of the most important decisions produced in the gathering is decision regarding authority of the publication data which will be held by the center of research. Another important decision is decision to streamline the business process using IT as a catalyst to solve various issues of the old process. Figure 2 shows the new business process mapping.

All tasks in the new system were designed to be done using the university's portal including the generation of the signed letter of assignment. Signatures and stamps of all deans and the vice rector were collected, scanned, and stored in the server to be used to generate the letter of assignment. Approvals could review and decide to accept or reject the proposed assignment via internet at their convenient time and location. Further, the system also stores all necessary documentation regarding the publications. Thus, publication data along with the related documentation can be easily accessed by any authorized stakeholders.

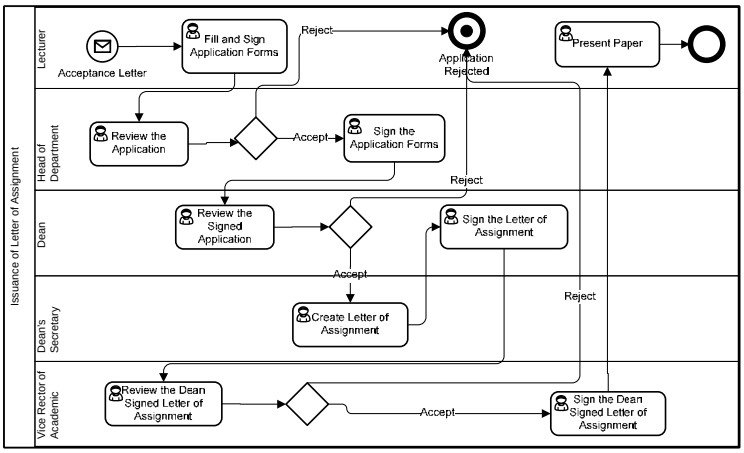

Figure 1. The legacy business process

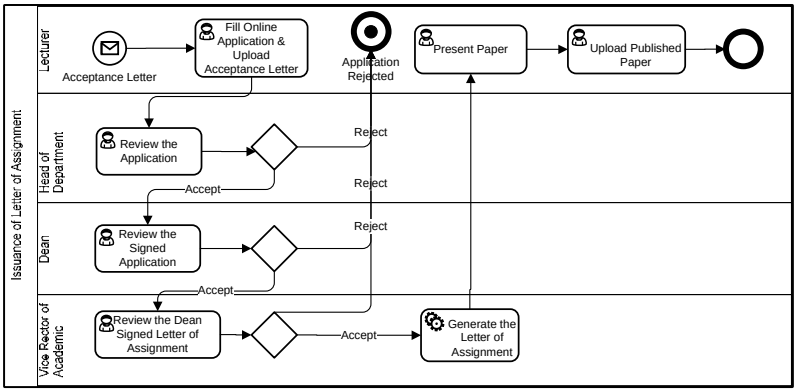

Figure 2. The new business process

4. Results and Discussion

This section seeks to justify the case's success using the four dimensions as described in the literature review. Comparison of the old and new processes on each dimension is described in Table 1.

Table 1. Comparison of the old and new processes

	Old Process	New Process
Cost	Requires application forms, requires Dean's secretary to write letter of assignment, requires effort to collect publication data	No application forms, letter of assignment is generated by the system, easy and instant access to publication data

Quality	No clear documentation procedures, no publication database, frequent redundant questionnaires about publication irritates lecturers	Centralized publication database available conveniently for any authorized stakeholders, no publication questionnaires
Time	Days to get the letter of assignment approved, weeks to collect publication data from lecturers, hours to collect publication documentation	Head of department, Dean, and Vice Rector could approve immediately even when they are out of office, instant access to publication data
Flexibility	Require physical contacts for approval, required to reach all lecturers to collect publication data	Instant approval via internet, publication data stored in server available for authorized users at any time

Table 1 evidently shows that the new process is superior to the old process on all four dimensions. The new system is proven to be more cost effective, able to deliver better stakeholders' experience, able to provide a better quality of publication data, more cost effective and more flexible than the old processes. Therefore, the project to optimize the business process to issue the letter of assignment can be considered as successful.

After confirming the case's success, the Trkman's framework of key success factors in business process improvement will now be used to reveal how Ubaya could successfully streamline the business process (see Table 2)

Table 2. Evidence of key success factors in the case

Contingency Theory	**Strategic alignment:** Publication is critical for lecturers to leverage their carrier. The publication data is also required as a major indicator in the university's and department's accreditation.
	Level of IT investment: Business owner in Ubaya should prepare a suffice amount of investment based on the Directorate of Information System advise to ensure appropriate level of IT investment.
	Performance measurement: as described in Table 1.
	Level of employee's specialization: The new system eliminates the existence of staff that specializes in writing letter of assignment and collecting publication data.
Dynamic Capabilities	**Organizational changes:** The new system does not change existing organizational structure but confirming the authority of publication data to the center of research department.
	Appointment of process owners: All stakeholders were gathered to gain consensus on how the new process ideally works. Progresses are reported to gain feedback from all stakeholders.
	Implementation of proposed changes: The University preferred to deliver quick wins by deploying several small projects. Project in this paper's case is the pilot project with several other sequencing projects.
	Use of a continuous improvement systems: Ubaya held regular cross sec-

	tional meetings to ensure any units are aware of the latest regulations and improvements
Task-Technology Fit	**Processes standardization:** Business process is agreed at the university level which applied consistently across all faculties.
	Informatization: The new system used less paper but still allow user to print any necessary documents when needed.
	Automation: The new system automatically generates the letter of assignment after the Vice Rector approval.
	Training and employee's empowerment: The new system is introduced and trained to all representatives from faculty before officially launched.

Table 2 shows that all success factors of business process improvement as suggested by Trkman have occurred in the implementation of the new business process as described in the case. This might answer how Ubaya could successfully deliver the expected benefits from changing the business process to issue the letter of assignment. Important remark to be learnt from this case is that although IT has an essential role in business process improvement, investing in IT does not automatically means guarantee performance improvements [10]. The key is to find a proper level of IT investment to support the organization's strategy.

5. Significance and further study

The case shows how Trkman's success factor framework can be used as a guideline to implement a business process improvement project in a higher education institution. It is hoped that such success story could provide insight to other institutions who wish to leverage their performance.

Interesting direction for further study is measuring the necessity level of each success factor. It is likely that some factors are more important than others. Such ranking is crucial especially when it is not possible to satisfy all success factors and thus need to sacrifice some less important success factors in order to satisfy the more critical success factors.

6. Conclusions

The project done in the case is considered successful as the new process able to produce significant improvements in all four dimensions: cost, quality, time, and flexibility. Further analysis shows that the business process implementation in the University of Surabaya satisfies all success factors in Trkman's framework. Compliance to all success factors in the framework explained how the University of Surabaya able to successfully completed the business process improvement project. Unfortunately, there is no indication on level of each factor's influence toward the project's

success. Identification of each factor's necessity is a good direction for further study as it is important especially when the organization unable to satisfy all factors and thus need to select the most important factors to be prioritized.

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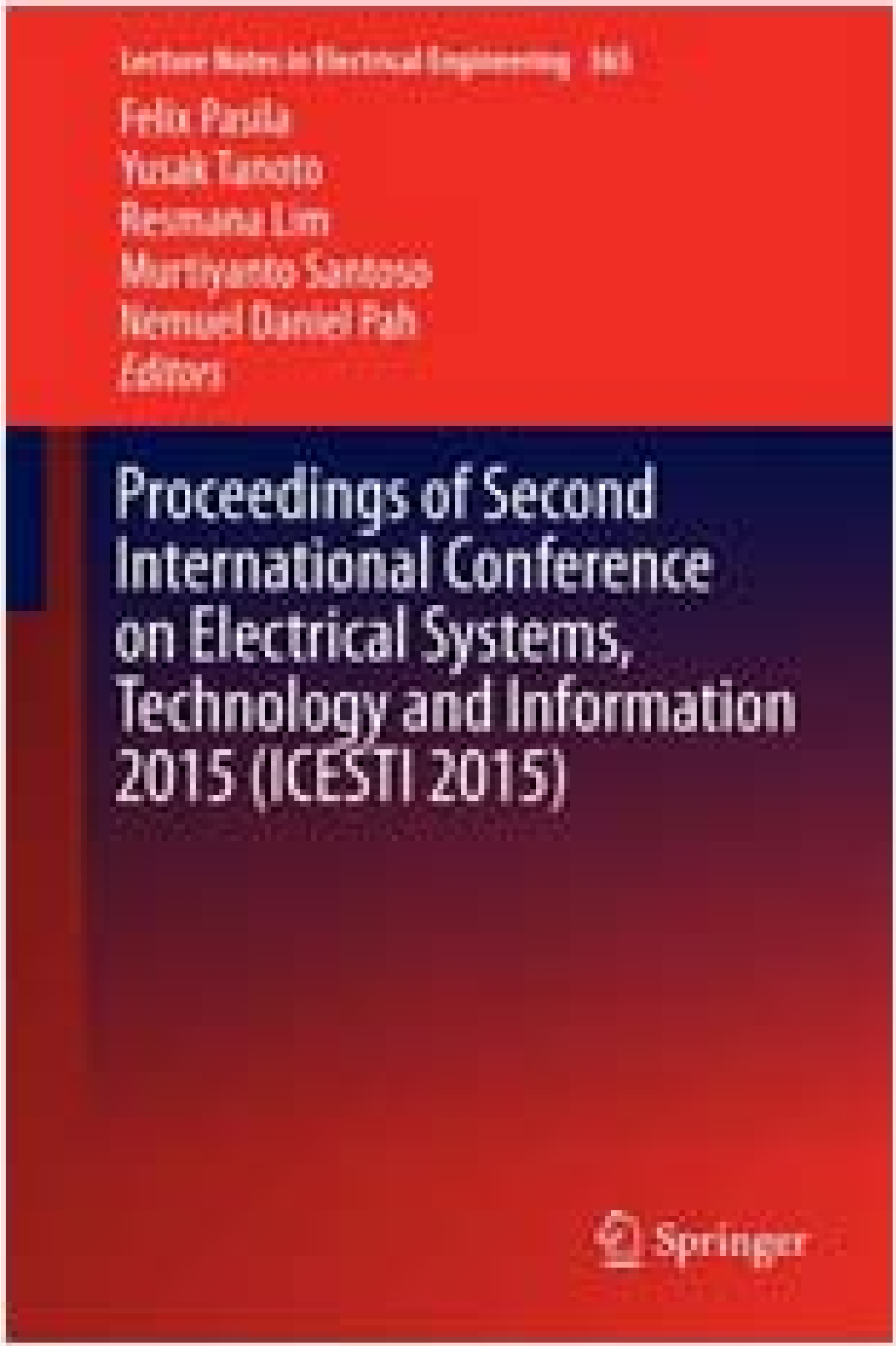
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