

Conference Paper

Analysis and Implementation of Process Business Integration Systems in Consultant Service Companies

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Abstract

This paper discusses the Analysis and Implementation of Process Business Integration Systems at Consultant Service Companies. This study took the case of a consulting service company in Indonesia with qualitative research and the process of collecting data through observation, interviews and trials. The consulting company divides the work in the form of projects according to the number of clients. Business processes that are integrated into each project are very important to support project's implementation activities and decision making that is fast, precise, and accurate. The impact of a system that is not integrated will reduce effectiveness and efficiency in the decision making process in the business. In addition, the management must know the progress of project's activities in real time, detailed and timely, so that the management can make decisions quickly, precisely and accurately. Therefore, optimizing the company's business system processes needs to be considered, so that the company's business processes becomes effective and efficient. In this study, the author will optimize the system's procedures before obtaining a project, implementing a project and after a project is done, and then providing a recommendation regarding the preparation of systems related to the business process

Keywords: Integration Business Process, Added Value, System Application and Product in data processing (SAP), Process Business of service company

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1. Introduction

An increasingly competitive business environment makes the company has to pay attention to the efficiency and effectiveness of business processes carried out by the company. Romney and Steinbart (2018) states that business processes are a series of activities and tasks that are interrelated, coordinated, and structured carried out by a person, computer or machine, and that helps to achieve specific organizational goals.

One of the companies included in the service industry is a company of information technology consulting services. A company of Information technology consulting services is a company that sells professionalism and time to provide expertise services in

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the field of information technology to solve information technology problems. The activities of information technology consulting services are grouped into several projects. PT XYZ uses an internal system to store data and support its business activities. However, the company's internal system has several weaknesses. The weakness is that there are several business processes that are not integrated with the company's core system. Also, the reallocation and additional budget business processes are still done manually via email.

In this case, the effectiveness and efficiency of each process is needed by the company. In addition, the company's business processes that are integrated and have automated systems are needed by the management. This is needed to facilitate the management in carrying out internal controls and obtain fast and accurate data information so that the management can make decisions quickly and accurately.

Previous research on enterprise integration systems is Chapman and Khin (2009) by starting an analysis that focuses only on one aspect of information system's integration, is in terms of data architecture that includes a single data base concept. From the research, there is a difference with this study.

The difference is that the author will discuss more specifically about business processes in the service industry, by means, the consulting services. In addition, the business processes of each company have different uniqueness and complexity. The organizational structure and each company have different needs in implementing systems integration in the company's business processes.

2. Methods and Equipment

In the process of collecting data, this study uses these following methods:

2.1. Observation

Observation is done by observing the process' flow of business' activities from the tender until the project is done.

2.2. Interview

Interviews are conducted by asking number of questions to the parties concerned to get an explanation of the company's data.

2.3. Trial

Test the information's system for the implementation of the system proposed to the consulting service company.

2.4. Research Objects and Information Sources

The objection of this research is the business process of PT XYZ's service company that starts from the acquisition of the project until the project is completed. This research was conducted to provide solutions and evaluate problems in the business' process of acquiring projects until the project is completed.

The method used in this study is a qualitative approach. The source of data used in this research is primary data, which collected by conducting interviews to obtain more accurate information and using secondary data to be used as a trial system to be proposed.

2.5. Method of collecting data

In this study, the sample used is a service company engaged in information technology consulting and analysis units used in the form of multi analysis, where researchers will analyze business processes that begin with how to obtain a project until the project is completed by a consulting service company based on information that has been obtained.

2.6. Analysis Method

Analysis and design of information systems are divided into as follows:

Identifying the Project Business Process, which is based on data collection methods, the researcher observes the implementation project and conducts interviews with interested parties to understand the flow of the initial business process in order to obtain the project until the project is completed.

Analyzing and Formulating Solutions, namely researchers will conduct analysis and formulate solutions to meet the user's willingness (person in charge).

Creating interfaces, that is based on data collection methods, at this stage researchers will test the information system to provide a display interface system.

3. Results

PT XYZ is an information technology consulting company that classifies consultant services in the form of an implementation project. The PT XYZ implementation project is spread throughout the provinces in Indonesia and is a major activity at PT XYZ. PT XYZ has the experience and competence to be at the forefront of solutions, development and innovative information technology operations, as well as providing information technology benefits both at home and abroad.

PT. XYZ has several services offered to customers, one of which is implementation services. PT XYZ defines services provided to customers in the form of an implementation project. In the organizational structure, PT XYZ has several divisions that play a role in the business process activities of implementing implementation projects, namely the corporate business and support, presales, sales, solution, and implementor divisions. Each division has their respective roles and responsibilities to support the company's business activities. Every activity information in the division is related to activities in other divisions.

PT XYZ's business process starts from the acquisition of the project until the project is completed.

The business' project involves several parties participating in this business activity, namely; director, vice president, presales, sales, consulting services' company that divides business' activities into several sub-activities to support the services provided. In running the main process business, PT XYZ already uses the company's internal system. However, the internal system still having several processes that are carried out manually, which is when determining the budget before the tender and the process of proposing changes to the budget, as well as the existing system in some parts are not yet integrated with each other.

The initial process of the project, starting with planning proposals and tenders, in this process the sales and presales section creates a Project Opportunity which contains detailed prices and information technology solutions. This process aims to calculate the implementation price, details of the costs to be incurred and calculate the profit margin to be obtained. In the process of preparing the project budget, approval from stakeholders is needed. In addition, during the budget change process when the implementation project is running, the project's manager requires a rapid approval so that the project can continue to run.

In planning proposals and tenders, PT XYZ does not specify the costs incurred during the proposal and tender planning activities. Details of these expenditures are not

reported and specified in the system, which makes the cost calculation at the proposal and tender stage is done manually, not reported in detail and not inputted into the system. These costs should be reported in detail and will be charged to the project if the project wins. If the project is not successful, these costs can be charged to the central operational costs.

The next business' process is an implementation project. This activity has 5 stages of activities, namely; project preparation, business blueprint, realization, final preparation and go live and support. In each phase, the Project Manager is obligated to report the progress of project activities on internal management to the client and to collect the development of services that have been carried out. In addition, in every month, the project's admin reports the details of the use of the budget during the implementation of the project activities and the PMO will update the project's financial report and analyze the project cash's flow.

In the middle phase of project's implementation, there are several PT XYZ's project budgeting business processes that are still done manually and have not been connected with the company's internal system, which is; the top management approval regarding project budget's planning and top management's approval process regarding budget changes. However, regarding the process of controlling budget usage such as knowing information about the activities and actual use of the company's internal system budget, it has been maintained well.

The final process of project implementation's activities is support activities. Support activities are doing a maintenance by using the system after the implementation is complete. In this process, the project's manager will submit a handover report and the sales team will collect them. Furthermore, the accounting and finance department will record receipts for billing to clients. At the same time, the deliverable team will submit client's system maintenance to the team managing operation. The following flowchart regarding the overall business process of PT XYZ:

3.1. Analysis of Design and Internal Control of Project

PT XYZ divides business activities into several sub-activities to support the services provided. In this section, we will describe the flow of business' activities that are currently in effect and provide proposals for improving internal control of PT XYZ.

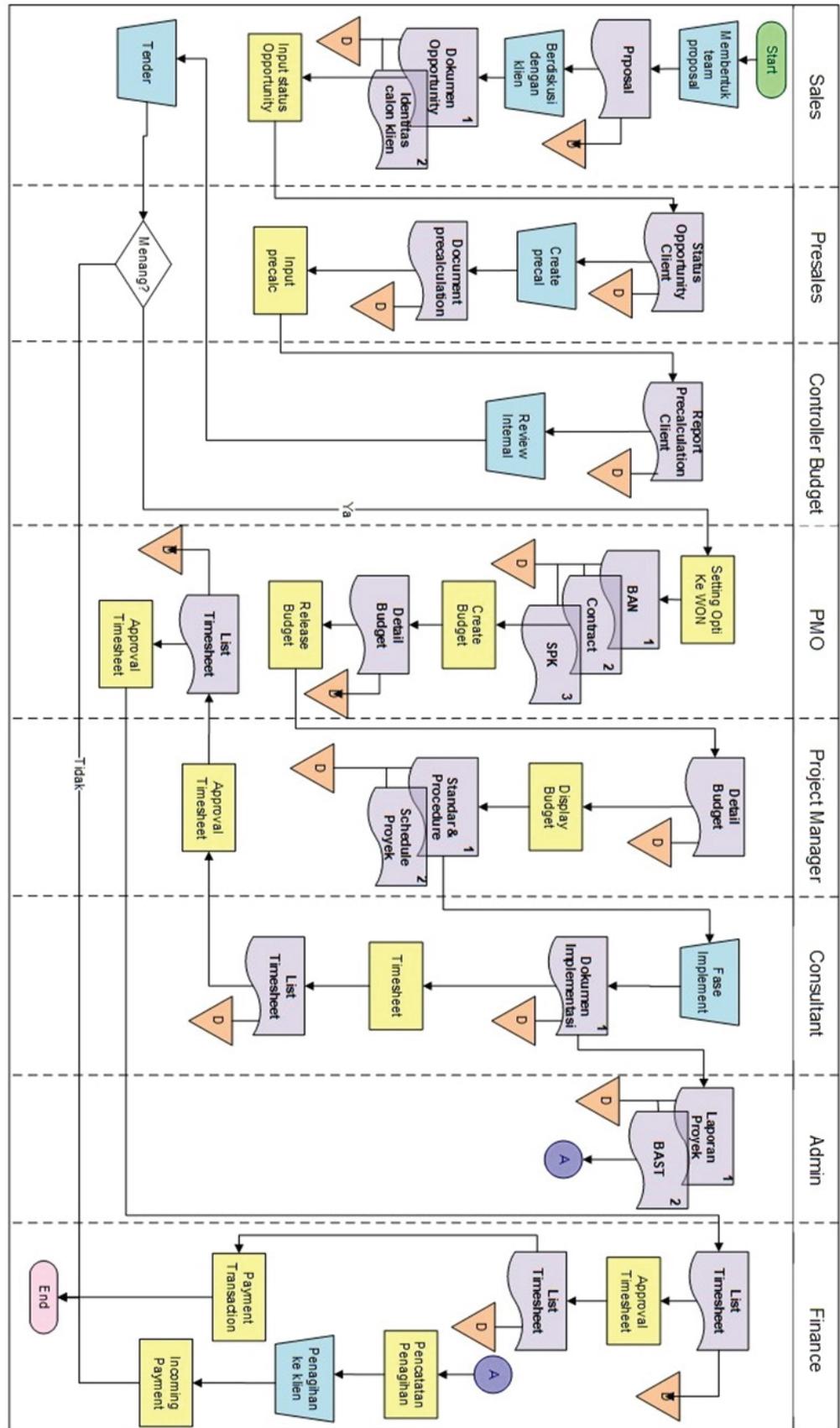


Figure 1: Flowchart Business Process PT. XYZ

3.2. Project Submission Proposal

The first business' process in the activity of compiling a project submission proposal is the sales and presales division will visit the client to obtain information needed to design the information technology solution that will be provided. In this process, the sales division will ask questions and listen to the client's explanation of the state of the system that the client is currently using, the client's needs and the results desired by the client after implementation. The final result of this stage is to produce tender value.

Based on the results of observations and interviews during the study, there were risks in the PT XYZ's control system. When planning proposals and tenders, the calculation of costs at the proposals and tenders are manually, unbudgeted, unreported in detail and not input into the system. Supposedly, these costs are reported in detail and entered into the system, so that all records of company's activities are reflected in the financial statements. Costs during the process of preparing proposals and tenders can be charged to the project if the project wins. Whereas if the project is not successful, these costs can be charged to the central operational costs.

Based on the proposed system, this system has a controlling module. The Controlling Module is one of the Finance sub-modules in the SAP system that includes an effective cost's accounting process. In this module, the system can manage an indirect costs and analyze profitability from each internal business unit responsibility center that can be used as an internal company report.

This controlling module can focus on monitoring and allocation of overhead's costs and analyze the overhead costs that occur and can be used to control overhead costs. Cost's control when planning proposals and tenders can be controlled in this system in the form of an internal order code. In the SAP system the internal order is categorized as a master data. The internal master data's order can accommodate the budget, recording budget usage. So that the report on the planning's budget and actual budget of the proposal planning's process will be sent to the tender in a detailed description.

When PT XYZ negotiates with prospective clients, PT XYZ can define internal orders as prospective clients of PT. XYZ. When creating an internal order master data, PT XYZ determines the budget for conducting proposal preparation activities until participating in the tender. Furthermore, PT XYZ can charge fees incurred to finance these activities on internal orders that have been made. So that the details of the proposal preparation activities until the tender activity can be described in this process and PT. XYZ can see the cost report on this activity. If the prospective client is successfully obtained, the cost

of acquiring client activities can be reclassified into the project costs, if the prospective client is not successful, then the activity costs can be charged as head office overhead.

3.3. Tender

Tender is one of the facilities of a service company to offer prices and facilities for services to be provided to prospective clients. In this tender, several service companies in the same sector were followed to provide the best and cheapest offers for prospective clients. The tender phase will be carried out by the sales and presales division.

Based on the results of observations and interviews during the study, there were risks in the PT XYZ's control system. When PMO releases its budget, there is no budget approval carried out by vice presidents or budget's controllers. This can pose a risk in the internal control system. From one of these activities, controlling every business activity needs to be analyzed to develop a system that is more effective and efficient.

Based on the proposed system, the SAP system has a sales and distribution module, this module can describe the business process when conducting tenders. In the sales and distribution module, this tender activity is called sales inquiry by covering business activities starting from identifying the client, recording the tender value, the time of tender implementation and the status of the tender. After the tender was declared win, the next process was the making of project code and project budget. The making of the project code is in the controlling module called the profit center, while the project budgeting is contained in the module project system called work breakdown structure (WBS).

At the contracting process, the contract value is the same as the project budget's value or work's breakdown structure (WBS) value. In this process, the sales and distribution, project system and controlling are integrated modules. In the sales and distribution module, the advance value of the contract can be formed and automatically posted to the finance and controlling module.

Completion of each phase of IT implementation is one of the requirements for PT XYZ to collect from clients. In the SAP system, the phase of IT implementation or the stages of project execution can be said to be milestones. Information on milestone data is managed by the system project module, then the billing plan for each phase can be done by making planning revenue in the sales and distribution module. So that the collection process for accounts receivable from predetermined billing plans to clients can be carried out in integrated sales and distribution modules. Recording of billing or

client accounts will automatically be posted to the finance and controlling module. The billing record can be converted to a percentage of the milestone.

3.4. Project Implementation

The third stage is the client project's implementation stage. This stage is carried out by the delivery team. Each project consists of Project manager, consultant and project's admin. In monitoring the activities of the project team, the company has a timesheet system. System will monitor the activities and calculate the details of transportation's costs and incentives for everyone in the project's team. The timesheet system can be monitored by the Project Manager, PMO and central finance. The system is separate from the project budgeting's system. During the implementation phase, the project's team runs 5 phases of implementation. Those 5 phases are; project preparation, business blueprint, realization, final preparation, go live and support.

Based on the results of observations and interviews during the study, there were risks in the PT XYZ's control system. Control of every business activity carried out needs to be analyzed in order to develop a system that is more effective and efficient. Based on the proposed system, this system has several modules to deal with these problems.

The first stage of project's activity is project preparation, one of the project preparation activities is to determine the members of the IT implementation project's team and organize the project organizational's structure. In the project there is a project organizational's structure that meant to coordinate and clarify the flow of project's activities as well as the duties, authorities and responsibilities of each project's team member. In the Project System's module, the structure of the project organization's members is defined as a network and the project budget's structure is defined as work's breakdown structure (WBS).

In the next stage of project preparation, the project manager must determine the project's schedule (Project Scheduling) so that project's activities can be arranged properly and the project can be completed on time. In the module project's system there is milestone trend analyst, which is an analysis facility that can be used to monitor project's schedules more efficiently. It can be used by project managers, operational project managers and directors to monitor project's activities and find out the percentage of project's completion.

When the project is successfully won, the predetermined budget will be managed in this project system module. In this module, the budget is based on a hierarchy of work breakdown structure (WBS) and then the WBS will be a reference for the project

manager to use project's costs. In this budget management's feature, management can determine the tolerance for the use of a predetermined budget. So that if the costs incurred are close to the tolerance limit, there is a warning in the system and if the expenditure has reached 100% then the project transaction cannot be carried out. The project manager must request reallocation or reclassify the budget in order to continue the project transaction.

When using internal consultants, the system has a timesheet facility that can be directly integrated into the payment system for services that have been carried out. Whereas when using external consultants, PT XYZ must make a contract (Outline Agreement). In SAP systems this process is called Request for Quotation (RFQ). The system will create a purchase request (PR) number automatically. The next stage will be a service purchase order that refers to the contract that has been made previously. PT XYZ's business process when an external consultant has joined the implementation project team. In the SAP system, this stage is called the process of receiving services or SES. If transactions with vendors are in the form of goods, such as hardware and licenses, the SAP system is called a good receipt (GR), followed by a good issue (GI) stage.

The payment's process for invoices can be done by making invoice verification by head of delivery. In this process the purchase order document will be a reference in the process of making invoice verification and is included with other supporting documents. The next business process can be paid through the finance module.

3.5. Reallocation of the Budget of Project

At the implementation, there are frequent changes to the budget that has been designed previously. This is because there are some adjustments to carry out project implementation's activities. Based on the results of observations and interviews during the research, there are weaknesses in this process, that is; PT XYZ project budgeting business process is still done manually (via email) and has not been connected with the company's internal system, which is at the top management approval regarding project budget's planning and approval processes top management regarding budget changes.

On the module project system, there is a feature of project execution, which are; making actual project transactions and confirming project progress. So that in this module there are verification facilities of stakeholders to carry out project budget planning approval and budget changes without e-mail.

In addition, the management of PT XYZ has the need to monitor and supervise the entry and exit of cash or bank transactions and financial project reports. In the proposed system, financial statements can be formed by multiledger, which means that the financial statements are separated based on commercial financial statements and financial statements based on tax in one system and updated in realtime. In addition, currency's differences can be made in this system and transaction's exchange rates can be calculated in real time income statement. In addition, PT XYZ can produce head office and project cash flow reports. This report can be used by the director and controller budget as an analysis of project cash flow and making decisions.

3.6. Support

At this stage, the Project manager will submit a handover report and the sales team will collect. Furthermore, the accounting and finance department will record receipts for billing to clients. At the same time, the deliverable team will submit client system maintenance to the team managing operation. The implementation project team will transfer knowledge and provide client a blueprint documentation and user manual as a business process reference on the client system.

Based on the results of observations and interviews during the study, there were risks in the PT XYZ's control system. When the project is finished carrying out implementation's activities, the top management has the need to analyze the project activities and see the key Performance of the project. Through the project system module, the company can calculate overhead costs, interest calculations, progress and result analysis and budget carry forward. From these facilities, companies can analyze the project by comparing the value of the project and the absorption of the budget carried out by the project.

3.7. Change Impact after Implementation of Information Technology Systems

Based on the analysis, the company integrates the system to support the company's business activities. PT XYZ is a SAP ERP consulting service provider, therefore PT XYZ has the potential to use the SAP system in integrating their internal activity processes so that the company can get a cheaper price if it uses the SAP system rather than designing its own system. So that this research will then synchronize the analysis with modules

on the SAP system. Following is the Change Impact table when using an Enterprise Resource Planning (ERP) system:

TABLE 1: Change Impact table when using an Enterprise Resource Planning (ERP) system.

As Is	To Be
The absence of budget's determination in pre-tender and tender activities.	Use internal order as an object to determine the budget for pre-tender and tender activities.
Project budget's approval is done manually.	Project budget's approvals are carried out in the system.
The proposal's form for submitting a budget's reallocation is made manually.	The proposed submission form for budget reallocation is made in the system.
Approval of the reallocation process of the project budget is done manually.	Approval of the process of reallocation of project budgets is carried out in the system.
The invoice file verification form is created manually.	The invoice file verification form is created in the system.
The payment process for claim timesheet is done through the finance department.	The payment process for claim timesheet is done through the payroll section.

4. Conclusion

In this study, the authors conducted a study of the analysis and implementation of a business process integration system at PT XYZ's consulting services' company. Based on the results of the study, there were several weaknesses in internal control in business processes at the top management approval for project budget planning and top management approval processes at the time of the project budget reallocation. The two processes are still carried out manually, which has an impact on the budget planning's approval process and budget's revisions that have a long timeline.

In addition, the information technology system used by PT XYZ has not been integrated with each other. Based on the proposed improvements resulting from this study, it was concluded that PT XYZ could use System Application and Product in data processing (SAP) to integrate their internal activity processes. Because they are SAP immigration management consultants, the cost of PT XYZ will be cheaper compared to creating a new system.

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