

STANDARDIZATION OF PROJECT MANAGEMENT SOFTWARE USING CHANGE MANAGEMENT

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Abstract

There is nothing in this world that do not change unless the change itself. Almost every aspect of the world, particularly the world of IT, can be changed. In project management software, for instance, people have to work on software that frequently subject to change. That is why the greatest challenge faced by the company within today's competitive world is how to deal with those changes. In relation with the previous explanation, the objective of this research is to standardize project management in software development by using change management. Objective will finally help project developer to ensure that the management of project has a need of standardization that essential for reflecting the current business needs. To achieve the objectives, this research will also attempt to show why does the standardization using the change management is essential task, which is almost inevitable. This research directed for discussing about the management of change as a common way to reduce risks, costs and maximizing the benefit from major changes in business and information technology. The result showed that the project can be determined as success because it delivered on time, on budget and have a standardized quality.

Keywords: *standardized project, change management, IT development, IT management, development quality*

Abstrak

Tidak ada di dunia ini yang tidak berubah kecuali perubahan itu sendiri. Hampir setiap aspek dunia, khususnya dunia IT, dapat berubah. Dalam perangkat lunak manajemen proyek, misalnya, orang harus bekerja pada perangkat lunak yang sering mengalami perubahan. Itu sebabnya tantangan terbesar yang dihadapi perusahaan dalam dunia yang kompetitif saat ini adalah bagaimana menghadapi perubahan tersebut. Sehubungan dengan penjelasan sebelumnya, tujuan dari penelitian ini adalah untuk standarisasi manajemen proyek dalam pengembangan perangkat lunak dengan menggunakan manajemen perubahan. Tujuan akhirnya akan membantu pengembang proyek untuk memastikan bahwa manajemen proyek memiliki kebutuhan standarisasi yang penting untuk mencerminkan kebutuhan bisnis saat ini. Untuk mencapai tujuan tersebut, penelitian ini juga akan mencoba menunjukkan mengapa standarisasi menggunakan manajemen perubahan adalah tugas penting yang tidak dapat dihindari. Penelitian ini diarahkan untuk membahas tentang manajemen perubahan sebagai cara umum untuk mengurangi risiko, biaya dan memaksimalkan manfaat dari perubahan besar dalam bisnis teknologi dan informasi. Hasil penelitian menunjukkan bahwa proyek tersebut dapat dinyatakan sukses karena disampaikan tepat waktu, sesuai *budget* dan memiliki kualitas standar.

Kata Kunci: *standarisasi proyek, manajemen perubahan, pengembangan TI, manajemen TI, pengembangan kualitas*

1. Introduction

The early of the 21st century has brought with it a wave of unprecedented change. In a software development environment, change is inevitable especially when the software development process is still currently running. By becoming a trend, to become agents of change has

become a universal competence for almost all professional.

According to that change, the field of management has suffered some degree of dislocation Collins [1]. The problem is, in software project management, business processes supported by IT. In terms of change, IT must ensure to synchronize with the business processes,

which in this publication called as standardization using change management.

Standardization using change management is a vital aspect of almost any project. It must be as a discrete and specialized work stream because the project management team commonly has to do their best to ensure that technological changes successfully implanted into the business. In the worst-case scenario, project leaders do not see this as part of their responsibility and blame both line management organizations primarily when their technically awesome new solutions are not entirely successful.

In connection with the case described before, software development is an activity carried out more intensively by humans so it cannot treat as purely mechanistic. Despite of there are other difficulties such as, changing of technology, but it is harder to standardize human rather than to machine. In short, almost all population agrees that standardizing human is not a complex job to proceed Hughes [2].

However, just see that as a challenge. According to the challenge, this journal aims to standardize project management software by using change management. In which, the final objective is to help project managers/heads/leaders and the developer to implant the standardized business process to their project software development using change management.

2. Methodology

To make it more provable, this publication use some proven reference that have researched before. As example, research by Levinson [3], by his research has shown that one of the main reason that causing failure in project implementation is the lack of implementation of change management process. Jick dan Peiperl also conclude that project manager need to implement change initiative to make the project runs successfully Jick [4].

The fact indicates that most of the IT organization's management board in particular software development project management are too familiar with pain constantly identify the root cause of uncertainty in the relationship. For example between producing and maintaining auditable, between verifying records relating to all financial controls and maintaining the processes, and between synchronizing the applications with the business process and developing the infrastructure in line with the company vision.

According to Gartner research, most IT organizations are not ready to manage the change necessary by the company. Gartner IT Service

Management Maturity Model describes that there are five levels measure the maturity of the IT management organizational, as shown in table I.

TABLE I
GARTNER IT SERVICE MANAGEMENT RESEARCH

Level	Description
Level 0 - Chaotic	Use no problem tracking, have ad hoc response methods with heavy reliance on employee knowledge/skill and informal communication
Level 1 - Reactive	Have a service desk and some form of problem tracking (often using help desk tool); employ root cause an analysis
Level 2 - Proactive	Enter into service level agreements and use some form of change and configuration management
Level 3 - Service	Employ service level management and event correlation. Negotiate, define, and manage the levels of IT services provided to the enterprise
Level 4 - Value	Act as a strategic contributor to business opportunity by leveraging IT resources.

This step will take to evaluation phase, the phase to identify the company. How standardize it is. There are some condition.

Company stand in level 0 – Chaotic: It suggested to start a problem tracking application like service deck to provide ad hoc response at heavy reliance on employee knowledge or skill, especially informal communication. For guidance of standardization, this formula is useful.

$$HD = \frac{\sum(\sum(a/b))}{c} \times 100\% \tag{1}$$

Where:

a, is total of change trouble that happened in one month.

b, is Index of day that used for handling request for change problem

c, comes from index unit that show how frequent this division facing the change.

Company stand in level 1 – Reactive: It suggested to find out the root of problem and make analysis and research for standardization. This publication completely suggested.

Company stand in level 2 – Proactive: It suggested to ensure the Service Level Agreement (SLA) in line with the business process, use some form of change, and remember to implement configuration management better.

Company stand in level 3 – Service: It suggested to find out the correlation between SLA and the event that can change the management of software development. Persuade the board of management using this publication, manage the level of IT Service, and evaluate it.

Company stand in level 4 – Value: Just keep maintain and act as strategic contributor to business opportunity by leveraging IT resources. Keep in mind the standardization and evaluate annually or monthly.

3. Result and Analysis

Adventure of change management begins with a Request For Change (RFC) [5]. A requested usually comes from customer via Service Desk. At basic level, a service request does not influence the business process but only making a change in environment.

After a Request For Change occurred, RFC analysis is performed. This step designed for evaluation about completeness and feasibility. This phase is required for ensuring the change still in line with the policy and in place.

The third step of change management is how to change the priority. In this step, integration with configuration management through the scenario of "what if" is essential. That scenario can allows us to determine how much the impact of changes in technology on business service is.

Next step that is actually essential to do in change management is to categorize the change request. Categorization involves evaluating the size of the change as well as the priority. After that essential activity performed, the decision about that change processes step will follow.

After categorization, The Change Advisory Board (CAB) must make up from all the parties that concerned for the active change. After that, the CAB should create a meeting. The result of the meeting than will be reviewed in case of all proposed and implemented changes (Post Implementation Review). For minor change, it suggested to be focus on change that have higher risk and associated cost.

After all, of the approvals given from the CAB, change management will continued to schedule the change, build and test the change, and finally implement it.

There are four basic change management strategies based on Change Management 101 module, empirical-rational strategy, normative-reeducative, Environmental-Adaptive, and Power-Coercive.

Empirical-rational strategy: This strategy should implant in people that are rational minded and will follow only their self-interest. Once it revealed to them. Change only based on the communication of information and the proffering of incentives.

Normative-Reeducative: This strategy should implant in people that are social beings and will adhere to cultural norms and values.

Change in this organization is based on redefining and reinterpreting existing norms and values, and developing commitments to new ones.

Power-Coercive: This strategy should implant in people that commonly compliant and will generally do what they have told or made to do. Change occurred based on the exercise of authority and the imposition of sanctions.

Environmental-Adaptive: This strategy should implant in people that commonly oppose loss and disruption but they adapt readily to new circumstances. Change is based on building a new organization and gradually transferring people from the old one to the new one.

The secret to create a standardization using change management is all about board management's mindset. For the most part, it is a fact that changes and the problem of the change are problem of adaptation. That is the main resolution that can be explaining the question why it not more than just adjusting a set of changing circumstances.

Persuasion is important here. In the standardization by of using change management there are ten persuasion that could be useful. First, persuade a budget committee to invest in new equipment or computer technology. In this phase, we encourage budget committee to invest for company development in IT. Therefore, IT section in company can be growing.

Second, persuade members of a professional organization to get more involved in growing and expanding the organization. This step can encourage us to form a teammate spirit in software development environment. It is very essential because teamwork is affecting the result of development in project management. Third, persuade a group of potential capital for organization business venture. This step is sponsorship or founding area for our project. Fourth, persuade a group of concerned citizens to approve an environmental waste incinerator in their community. This is important to make sure our company/software development does not creating bad effect to the environment. Because of if it happened, it would affect the process of development too.

Fifth, Persuade a group of elderly community residents and increase of school taxes. This step is long time investment because the reason of this step is creating more skillful human resources later for further software development. Many companies did it, such as Microsoft, IBM, and Nokia. Sixth, persuade a group of business colleagues to volunteer their time for a community project. This step shows that a right hand helping a community project is essential.

Seventh, persuade local corporations and business owners to give money to charity. Giving is a gift for company. Charity is all about company social responsibility for environment and government development. Eighth, persuade the school board to require high school students to volunteer 100 hours of public service before Graduation. This step is to give them chance about software development in real area because frequently what they have learnt (basic skill) does not not capable to handle the real project.

Ninth, persuade the human resource department to include a gym membership as a company benefit. This step to create a better health condition because doing project in healthy condition is better.

Tenth, persuade city council members to prevent the destruction of a 100-year-old landmark. This is about art. In addition, in common situation, 100-year-old landmark founded mostly better constructed (especially in Indonesia).

Persuasion-persuasion above is not a necessity. That just an example that could be used and be content that thought at excellent training by excellent trainer. When we participate in change management training by them, these persuade standard would presented.

If the persuasion implemented in accordance with the business processes, and consistently conducted. Standardization of project management in software development will be accomplish especially in sponsorship/founding, social responsibility, and human resources.

There are four basic change management Strategies. The process model that supports the standardization is Anderson and Anderson Nine Phase Change Process Model. Each stage consists of several activities and tasks that may followed for planning, designing, and implementing change [6].

First, prepare to lead the change. In this step, leader will be determined. The identification step for leaders has an objective to prepare the leaders who will control the change.

Second, create organizational vision, commitment, and capacity. This step objective is to develop understanding, commitment, momentum and capacity to change.

Third, assess the situation to determine design requirements. This step objective is to look at the situations that are in place of the organization to make more realistic design changes.

Fourth, design the desired state. This step objective is to helps organization to design state of the desired changes.

Fifth, analyze the impact. This step objective

is to assess the impact of changes in the behavior of the people, the people themselves, and the company.

Sixth, plan and organize for implementation. This step objective is to identify what steps needed to implement according to the business process.

Seventh, implement the change. This step objective is to implements change within the organization according to the business process.

Eighth, celebrate and integrate the new state. This step objective is to celebrate victory over the results gathered from changes in the new circumstances. It is essential to groove the nerve.

Ninth, learn and course correct. This phase creates a mechanism to continue for improving the situation that have changed and make it permanent.

After understanding the board management, the environment, and planning for standardization. When tools needed to ensure the standardization work permanently, ChangeGear™ [7] can provide. Many tools help standardization using change management. The tools mentioned above just an example. This tool recommended because it has unique architecture tracks, manages, and measures all changes to the IT infrastructure. There are nine key point that this software provide.

Robust workflow reinforces the best practices framework by routing each Request for Change (RFC) through a process designed to manage the entire change lifecycle: request, screen, authorize, implement, release, and review. ChangeGear Change Management's workflow is customizable to meet the differing environmental needs of various companies.

Configurable roles allow IT decision makers to define responsibilities and access levels, ensuring that team members focus on tasks appropriate to a defined scope and avoid operating at cross purposes—or beyond their authority.

Resource management functions enable IT organizations to forecast change risks for interdependent resources and identify users potentially impacted by a proposed change.

Workflow enforces notification of relevant decision makers and team members at each step in the change lifecycle and promotes communication before, during, and after change, as opposed to under-communicated or after-the-fact discussions typical of unauthorized/unplanned change activities.

A change log tracks all significant events in the change lifecycle, creating a historical document that referenced during the change lifecycle, post-release review, rollback, or for compliance with regulatory legislation such as the

Sarbanes-Oxley Act, the Health Insurance Portability and Accountability Act (HIPAA), or the Payment Card Industry (PCI) Data Security Standard.

Change management metrics aid IT accountability and visibility by providing detailed measurement of factors such as the number of changes managed; success vs. failure rates; and cost of change.

Change Gear Change Management's detailed reporting capabilities allow for quick response to requests for insight into change activities by focusing attention on change status, cost, impacted resources, priority/category of change, and change by user or department.

Change Gear's Dashboard provides a detailed overview of the entire change management process, highlighting past and ongoing change activities.

A simple interface enables any user capable of operating an e-mail client to navigate routine to complex task.

There are four basic change management strategies. The common problem published in this paper taken from research of Fiona MacLeod [8], the president of BP Convenience Retail USA & Latin America. In this publication, it delivered also with the troubleshooter. In this case will review about the Anderson method which it so good to implement it, but need more awareness.

In first step of Anderson, It is essential to find a new leader. However, beware; keep in mind that new leaders are often more concerned with "making a big splash" than with following through on a long-term plan to monitor change and keep the program on track. That is why to prevent this problem happening. Make sure how deep the candidate have known about our long-term plan.

In next step of Anderson, it is essential to find or create organizational vision, commitment, and capacity. However, beware; keep in mind that Organizations often revert to old habits because employees do not understand why change needed, or they lack the tools and training required to sustain the new approach. That is why to solve or prevent this problem happening. Make sure they know the benefit of the change and make sure the tools are ready.

Furthermore, in Anderson, it is essential to assess the situation to determine design requirements and design the desire state. However, beware; keep in mind that nothing changes because ownership of the change rests with an external team or consultants, rather than with the leaders responsible for running the business. If that happen in case, the way to solve and prevent this problem is make sure that

business leaders have their own change agenda and take responsibility for following through on implementing every step in the plan and tracking results to ensure that change continues over time. Keep in mind that it is essential to get commitment of the leaders. That is the top point of the design requirements and keep remind the persuasion described before.

After that in Anderson, it is essential to analyze the impact of the implementation of change management. However, beware; keep in mind that crucially, all of this has to must be accomplishing in the spirit of open communication and respect. If [people are] uncertain and they do not feel respected, the change will never stick. It means we just get an assumption of the impact.

Next, in Anderson, it is essential to plan and organize the implementation. This step is truly essential. To prevent the problem come, wise plan is necessary. Make sure the development of the project management in software development can be move on standardized based of the change management strategies that have already provided before. This can be big problem when it related of successes from a specific project.

Furthermore, many IT Project expert agree that project categorized as successful only if on time, on budget and high quality [7]. The problem is all of have that conditions have a dependency on the planning and organizing factor. So to prevent, make sure the plan is in line with the business process and standardize wisely with the change management procedure.

After that in Anderson, it is essential to implement the change. In this case, the only troubleshooter strategist at implementation section is experience. Nevertheless, keep in mind that the progress should delivered by the committee/leader. That strategy is important to make sure there is no backsliding, and to cheer up people so they are very motivated to make sure the business continued to run in a very healthy way. To make it more fun, like what MacLeod did, give them bonuses that paid at the time the company stand up with strong financial controls and safety records. It is just like concept of arcade gaming. They do their best and it makes a sense toward company? Give them a surprise.

It is optional state instead, but essential. The next step of Anderson is celebrating and integrating the new state. However, beware; keep in mind that celebrating success, recognizing achievement and making people feel good about the business were important tools for sustaining momentum. Yet, just make sure that they do not thing this celebration as only or not more about

“financial-awards”. Because of money is not everything.

Finally, in the Anderson strategies, learn and course correct is essential for future prevention. This step is essential when you have entered level two until four from Gatner Research. If forgotten, please check figure I. When you have entered this level, you should study your own business process, do some research, and evaluate it.

4. Conclusion

Our research objective is to standardize software project development by using change management. First, change management is necessary to ensure the standardization of project development to in line with the business process. Second, change management ensures that any commonly undesirable side effect of the change, which can affect the organization greatly, fade away. Third, the most important point that we can take is, change management can provides strategies to standardize the development process.

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