

Change Management Development in Effort to Increase Effectiveness of Enterprise Resource Planning (ERP) Implementation

(Case study in PT ABC)

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Abstract—Enterprise Resource Planning (ERP) is an integrated information system technology. It is a large and complex information system because it relates to the entire business process of the company. But there are many companies that have failed in implementing the ERP. Upgrading software may lead to the resistance of employees because they are afraid and threatened of being mutated. Stagnant employees are downsizing and even dismissal. Therefore, it is necessary to change the management in effort to change the attitude of users that use the ERP system. The aim of this research is to know the strength that encourage and discourage the effectiveness of ERP implementation from human being aspect. The results of this research are expected as an input in the changing program at PT. ABC. This research uses qualitative methods and uses ADKAR's change management model from Jeffrey M. Hiatt. It also uses the McKinsey 7S Framework to put the changing value to be better and become a culture in the company. According to the group forum discussions and in-depth interviews with key informants, it was concluded that ERP implementation at PT ABC was less effective due to lack of awareness of employees that change has become a priority for the company.

Keywords—*ERP implementation; changing management; ADKAR's change management model; 7S McKinsey framework*

I. INTRODUCTION

In this globalization era, business competition becomes tighter that requires every company to review their business practice and strategy. Thus, they can maintain to compete and continue their companies. Nowadays, the implementation of integrated information technology is needed as a tool in the company's efforts to win the competition. Enterprise Resources Planning (ERP) is an integrated information system technology that is widely used by world-class companies in improving their performance. ERP has evolved as a tool capable of integrating all of the company's business processes or core business activities including marketing and sales, maintenance, production, logistics, human resource, finance and accounting into a data storage center (server), then, easily accessible by all needed employees.

Yet, in the field, the ERP implementation process is not as easy as expected. ERP implementation projects are large and complex which require a lot of resources, times, human resources and funds. ERP implementation projects are business projects, not a technology project [1]. The company must continually communicate the important value of this project regarding to the company's improvement, as well as the management encourage of various changes needed, especially in the aspect of human data sources. The effectiveness of ERP implementation depends on the success of balancing conflicts between technology, organization and the interests of employee needs [2].

PT. ABC is one of the state-owned enterprises that engaged in manufacturing. It is running a transformation program including information systems technology. PT. ABC has compiled a comprehensive business plan for transformation and revitalization and has been approved by shareholders. This transformation is made to fulfill the funding and to complete various orders, or contracted projects (project financing) through a transformation and revitalization scheme. Some targets to be achieved are working capital restructuring, commercial collaboration with world-class well-known companies to increase new orders, increase operating performance by increasing capacity and replacing old information system software by implementing new software, Enterprise Resource Planning (ERP).

As stated above, the implementation process of ERP is not as easy as expected. Chaos Manifesto, Standish Group, a world-class research institute, reported that almost 61% of IT implementation projects (including ERP) failed. When planning and implementing an ERP system, management team often faces unexpected attitudes from both the IT implementation team and the user (employees) [3]. Some of them show an attitude of rejection of ERP implementation for one or another reason. So this is where changing the management is needed to analyze the causes and propose solutions to overcome resistance to employee implementation of this new technology.

II. THEORETICAL FOUNDATION

The implementation and utilization of ERP systems will impact on process of changing, ways of working and even the changing in company structure to rationalization of human resources. Employees as human beings naturally have feelings like fear, discomfort, and shock that appear on the surface to reject the development of new technologies in the company (ERP implementation).

Changes that affect job security, motivation, challenges, and advancement opportunities occur at the individual level [4].

Change is not an option; it is a necessity. Change in the context of ERP implementation can only be successful, if it is effectively managed by management of changing. Managing these changes should begin with encouraging factors for changing, by mapping and involving areas that most affected by change to gain acceptance of change and vice versa to reduce the resistance from employees and stakeholders involved in changing [5].

This research examines how PT. ABC runs the impact of employee's rejection related to ERP implementation, and how PT. ABC offers to make the change management to be more effective in implementing ERP. In making this research easier, the systematic working schemes are made through the structured steps. Thus, the problems can be analyzed and the solutions will be discussed.

In order to provide a clearer picture, the Framework of Thought below is presented at the application level or implementation of changes management in accordance with the research focus.

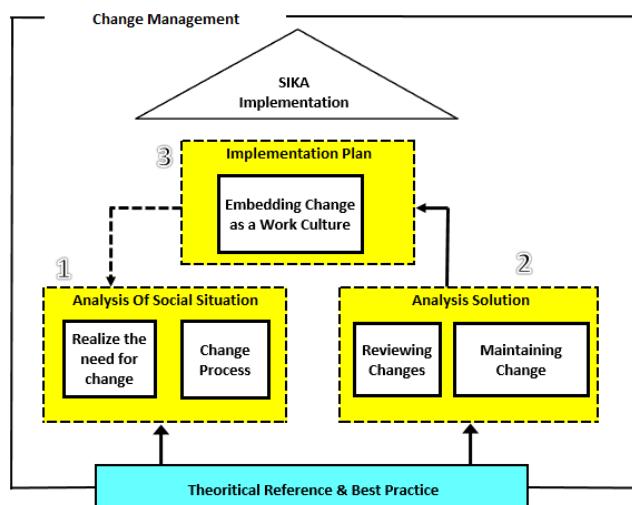


Fig. 1. Theoretical research diagram.

Picture 1 above illustrates this research framework. The **first** step is to analyze the social situation in the company's work environment when the ERP implementation consists of; the awareness analysis that the need to change from the current social working conditions to the future desired working social condition has become urgent and analyzes the ongoing process of change. PT. ABC realizes that the working capital condition in the company is decreasing. In effort to rescue the company,

it is necessary to initiate a fundamental change by transforming and revitalizing the company with shareholder approval and analysis of the ongoing process of change. The process of change always requires the support of all stakeholders in the company especially from the top management. In addition, the change program requires a change team that is a group of employees directly involved in designing the change process and applying it. These change team act as role models. Therefore, the management has formed a team consisting of employees who have the ability and high dedication and allocate tasks for the steps of change. The **second** step is to analyze business solution consisting of reviewing the change model by understanding current circumstances, identifying the future desired conditions and sustaining changes through the change program strategies. The **final** step is to implement a change plan based on a change strategy from the business solution analysis results and how a new change values can be embedded as a working culture. All stages of the analysis are supported by theories, assumptions and experiences. Below are the steps of the thinking framework, the tools used and the purpose of data analysis.

TABLE I. THEORETICAL RESEARCH STEPS

No	Step of Activities	Tools	Purposes
1	Conducting a centered-Focus Group Discussions (FGD) and In-depth Interviews to determine the level of awareness for the need of change.	Strength field analysis	<ul style="list-style-type: none"> Identifying the strengths that support and reject the change program. Identifying the gap between the situation and the desired situation. Identifying the factors leading to ineffectiveness of ERP implementation. Finding the root cause of the lack of effective ERP implementation.
2	Changes Process	Strength field analysis ADKAR management change model	<ul style="list-style-type: none"> Identifying the existing change model. Identifying the steps that are inconsistent with the ADKAR Change Management model. Projecting the effectiveness changes steps.
2	Review of Changes	ADKAR management change model	<ul style="list-style-type: none"> Preparing the change steps. Identifying the need for necessary improvements in change programs that impact on the effectiveness of ERP Implementation.

Table 1. Cont.

	Maintaining the changes	ADKAR management change model (Reinforcement step)	Steps and proposes a change program that reduces the influence of rejection
3	Embedding into a Working Culture	ADKAR management change model (Reinforcement step)	Applying a new change values can be embedded as a working culture.

III. METHOD

This research uses qualitative method. Sugiyono defines that qualitative method as a research method based on post positivism philosophy, it is used to analyze the scientific object (as the opposite to experiment) where the researcher stands as the key instrument [6]. The source of data sample in this research is taken and done in purposive and snowball way, a triangulation technique, the analysis of the data is inductively/qualitatively done. The result of this qualitative research is more to find the meaning than to generalize the result.

This research is a case study at PT. ABC Bandung in early 2018 by conducting a study on the development of change management in an effort to implement an Enterprise Resource Planning (ERP).

IV. RESULTS AND DISCUSSION

A. Social Situation Analysis - Identification of Field Strength

In the introduction chapter, it has been explained that PT. ABC is running a transformation program where one key strategy of this phase is to improve the reliability of information systems.

Based on the document submission of the company's transformation plan, three conditions of employees are needed that need immediate attention and improvement, namely bureaucratic work behavior, weak entrepreneurial skills and lack of communication. Employees tend to lack initiative in working so that they are categorized as having bureaucrat work behavior. This condition is caused also because there is no system of reward, punishment and performance evaluation. The existing culture has shaped employees to become passive and has no sense of sensitivity in the face of changes that occur in external business environments. Due to the lack of entrepreneurial skills, the conditions lead to a lack of creativity, a sense of ownership and no mindset of business orientation. From the observation of researchers some employees are reluctant to change. Now, like it or not, surprising conditions have become very challenging for PT. ABC through the transformation program especially the implementation of a new ERP system which requires the company to turn into a customer centric company.

Palmer, Dunford and Akin define force field analysis (force field analysis) as a powerful technique to obtain a comprehensive picture of various forces that both encourage and weaken or hold back the main issues of a policy and also estimate the source and level of strength [7].

Group forum discussion, argues that the first step in a force field analysis is to identify and agree on the forces that drive and the forces that resist the initiative of change. All the forces that drive change are written in the column to the right (Driving Forces, encouraging change), while all the restraining force changes are written in the column on the left (Restraining Forces, change inhibitors). The driving force and restraining power are then scored according to their respective strength scales, ranging from scores one (weak) and so on with a stronger score. The results appear in the following picture:

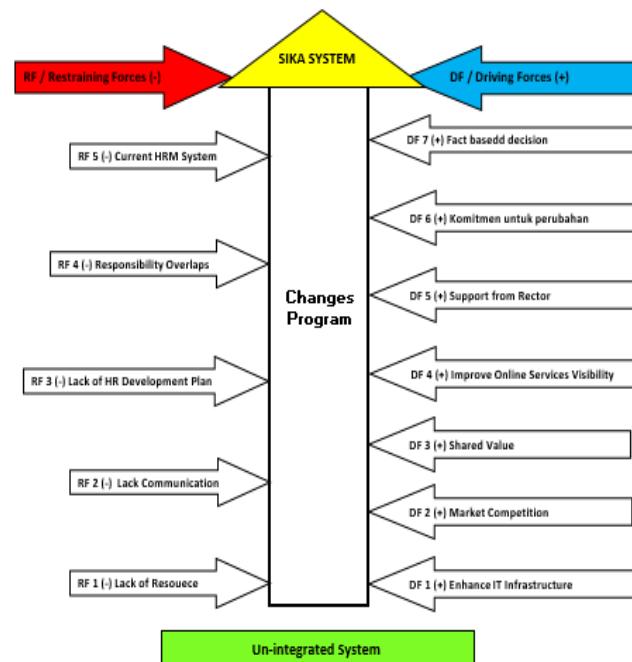


Fig. 2. Field strength analysis.

The next step is to define what can be done against the field of strength. Significant results will be obtained by increasing the driving force and at the same time reducing the forces that resist change. The result (see picture 3) shows that the driving force is higher than the forces holding back the change. This indicates the acceptance of employees for the change program in the context of ERP implementation. Nevertheless, there are some things that keep the change from observation in the field there is a sense of worry and even suspicious of some employees due to the trauma of being fired in the past.

Participants of forum discussion forums agree that the strength of the change holders remains a concern especially those exposed to the immediate implications of ERP implementation users.

B. Change Process - Current Changes Model

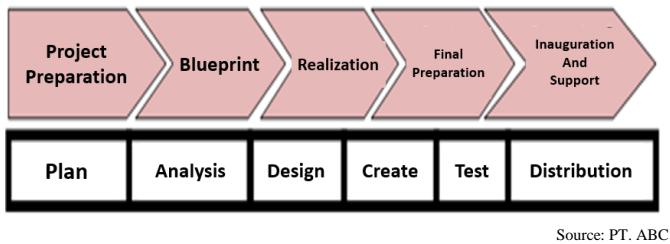


Fig. 3. PT. ABC change model.

Traditional approach to change management related to ERP implementation are usually emphasized on training and communication issues for business processors or users. Referring to the business character of PT. ABC, this approach **has not been sufficient** to address the potential impact of risk, high challenges in similar industries, human resource needs with high levels of competence and business expectations. Therefore, the researcher proposes the development of ADKAR change management model to be a hypothesis. It is more appropriate in the effectiveness of ERP implementation at PT. ABC.

C. ADKAR's Change Management Models

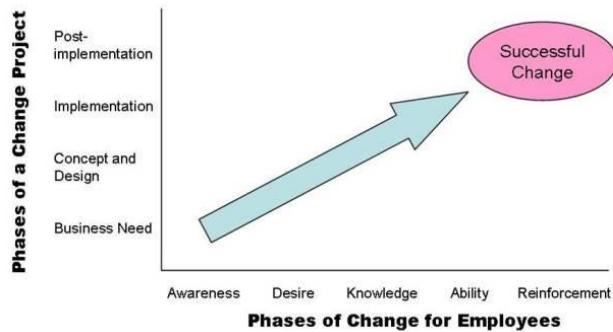


Fig. 4. ADKAR's change management models.

From dimension of change in human being aspects, ADKAR's Change Management Models offer 5 (five) elements that will drive the success of change, which are:

- Creating the awareness that change has become an urgent need.
- Awareness has become the goal or initial target of communication outcomes related to individual/organizational changes.
- Desire, the will to engage and participate in changing need to get support or sponsorship from the top leadership as a driving force for change and eliminate rejection, and to accelerate change programs.
- Knowledge is the stage where it is not only employees who understand the purpose of change and its importance to the company, but also know how to run it. Training and coaching are needed to be done.

- Ability is the stage where employees are expected to have the ability to run the change well.
- Reinforcement, in this stage, the changes that have been executed to be maintained, refined and become a working culture in the company.

ADKAR Models can be used to:

- Diagnose employee resistance to change.
- Help transition employees through the change process.
- Create a successful action plan for personal and professional progress during the change.
- Develop a change management plan for your employees.
- The Adkar model is able to identify in which phase change does not work and help you take the steps needed to make success changes.

The methodology for effective solutions as presented in picture 4 shows the discussion of change and efforts to maintain sustainability of changing. The first step is to map out and explain the model of change or existing conditions in the change effort at PT. ABC, then linked to the ADKAR change management model as an alternative change management to improve the effectiveness of ERP implementation. The second step is to prepare change management steps for improvement based on the McKinsey 7S framework to get a solution in order to maintain the continuation of change [8].

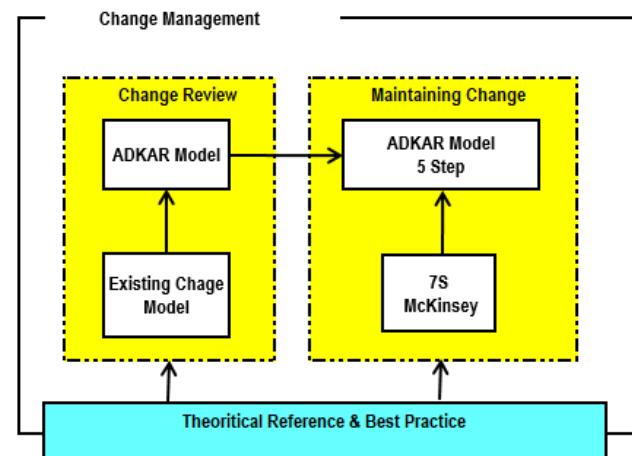


Fig. 5. Improving change method.

From in-depth interviews result are known the root that causes the lack of effective ERP implementation at PT. ABC is because users and some implementers do not yet have an urgent sense of urgency about the need for change. This is explained by the existence of communication problems, lack of optimal human resource management which impacts to the weak motivation and the problem of different understandings about the benefits of ERP for the company.

D. Maintaining the Change

Change management requires people who are chosen as change team who are the leaders of change in communication, leadership, policy and motivation. There is a need for feedback mechanisms and reward systems to support strengthening behavioral changes that have been achieved as desired. The effectiveness of implementing change management can be seen from the results achieved. Differences in the achievement of each employee's performance from the results of the work assessment are needed to determine the steps to deal with changes both to the actors and non-actors of change. The reward system needs to be developed creatively and effectively, in order to encourage appropriate behavior and build a performance-based organizational culture.

The final step of the ADKAR model is reinforcement. It is used to continue the achievements of the change that has been achieved, such as, continuing the behavior change effort and carrying out continuous training, including focusing on instilling and maintaining the good change that has been achieved into the working culture through optimal utilization of the communication line in company.

Strategies in implementing change management are usually adjusted to existing business processes. Yet, the preparation of the steps for the change is further influenced by certain behaviors and habits from both individuals and groups of employees compared to business processes in the company. Human factors greatly determine the success or failure of change programs, therefore, to ensure the effectiveness of change management, implementing team must understand employee behavior patterns in the workplace. The ADKAR change model encourages employees to adapt to the organization's core values for successful change, so focus on employees [9].

As stated in the strength field that communication is important to create a warm climate and atmosphere during the implementation of ERP, the proposed communication strategy is through education, participation and involvement (Table 2).

TABLE II. COMMUNICATION STRATEGY IN CHANGE

Strategy	Strength	Weakness
Communication and Education	After approach approaching is done, Employees will usually support the implementation of change programs.	If there are too many employees getting involved, change programs can take a long time.
Participation and Involvement	Pa Employees who are participating will be committed to implementing changes.	Pr The change program can take time if the team does not properly

	and relevant information that they can be integrated into the change plan	design the steps for change.
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Source: Kotter dan Schlesinger, 1979

Communication strategy will be applied with the ADKAR change management model framework to develop change strategy at PT. ABC, based on the results of the strength field analysis. However, the successful implementation of change strategies in practice depends on how the cooperation of employees in all organizations. In this case, it includes trade unions and managerial. The implementation team must implement a change strategy to make business goals achievable through the activities of people (employees). Change initiatives must change user perceptions, attitudes and behavior. From the group discussion forum and the results of the observation, the researchers got input on various issues and motivations that are different from the stakeholders for analysis material. There are three main strategies proposed to be implemented by the implementing team as team of change, they are; ERP system user involvement in the change process, communicating the progress of its development (feedback) and utilizing the existing communication channels. The first two proposals can be seen in Table 2 above.

Communication is the most important medium in change management, because it is the point to make people change. Communication has seven rules (7 Rules), the same message must be repeated 7 times with 7 different mediums. Repetition is done to make people remember and have an awareness that it matters (something repeated makes our brain prioritize it, for example ads). Different mediums to ensure everyone at anytime and anywhere gets the same message (email, organizational bulletin, head memo, meeting opening, introduction, discussion etc.)

Based on field observation, PT. ABC faces the problems that are quite complicated during the change process in the context of ERP implementation, such as policies, human resource readiness and systems. Therefore, the change program at PT. ABC can be a very challenging job. In order for the change process to be effective, the researcher believes ADKAR's change management model is better applied as a continuous cycle with persuasive approaches such as education, communication, participation and involvement rather than a linear approach (Picture 4). As a note, that during ERP implementation iteration (looping) can be done starting from step number 4, which is the ability to return to the desire, which is to make changes through empowerment. Iteration can be done flexibly, not too rigidly, but the management of PT. ABC must still emphasize the importance of each stage of the process to ensure the success of the change process and be sustainable on a broad scale of change.

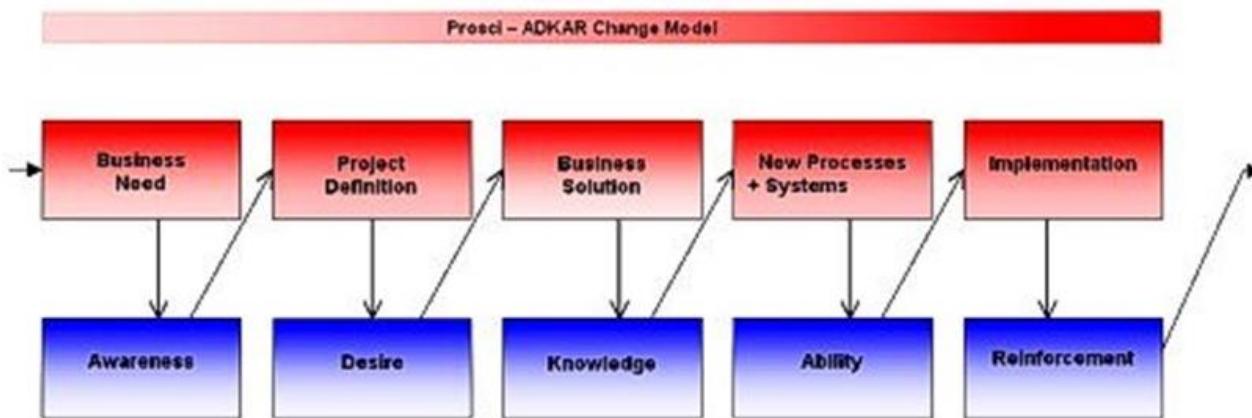


Fig. 6. Change of prioritysteps PT. ABC.

Picture 6 shows the proposed steps of change at PT. ABC in the ERP implementation project using ADKAR change model. Priorities activity for change towards improvement from low priority to high priority are sequential; Awareness, Knowledge, Desire and Reinforcement.

From in-depth interviews with PT. ABC considers it is Reinforcement steps that have not been implemented yet. Therefore, they prefer to go to the Reinforcement step. Reinforcement is very important to maintain the change process to continue, including:

- Celebrating the success and implement program recognition.
- Providing rewards.
- Collecting feedback from employees.
- Conducting audit and performance measurement.

In the process of building reinforcement, it is necessary to know in advance the level of reinforcement of stakeholders towards changes in a company.

E. Embedding New Values of Change into Working Culture

From group forum discussion, it is known that one of the problems in the human aspect in the context of change is the lack of urgency sense to change. Thus, to overcome it, it is proposed using McKinsey 7S framework, especially soft components. This framework emphasizes seven fundamental internal aspects. Organizations must adjust and maintain internal aspects if they want to improve their performance and be able to anticipate future challenges. The McKinsey 7S framework is subdivided into two aspects: hard elements and soft elements. Hard elements consist of structure, strategy and system, while the soft elements consist of staff, skills, style and shared values. Based on observations, in-depth interviews and group discussion forums, the first priority for PT. ABC in the effort to instill change into work culture is an improvement on the soft elements of the system, skill and composition of staff. With this improvement, it is expected to be able to support the shared values owned by PT. ABC, which are: innovation, improvement, integrity and quality [8].

To embed new values change into working culture, Reinforcement model changes ADKAR steps are used and Framework 7S McKinsey soft element [8]:

F. System

The fact from the group discussion forum is that the system in the business process of human resources has become the weakest part in PTDI. The Directorate of Human Resources must reform the system, especially in terms of procedures and the process of monitoring and evaluating the measurement of individual employee performance or work groups.

G. Expertise

One of the main challenges of ERP implementation is to prepare people who have the ability to manage the organization and leadership, in sufficient quantities.

H. Staff

The implementation of ERP is carried out in conjunction with the company's business conditions which are heading for improved conditions. But apparently the number of employees has been increasingly limited. Many senior employees are retiring. Companies must recruit new employees, because new employees are generally still young and have no experience. There is a competency gap between senior and junior employees. This must be minimized. Staff should be trained on company requirements. The critical factor is how the next generation employees are able to integrate the vision, mission and goals of the company.

I. Shared Values

From group discussion forums and in-depth interviews, researcher notices that there are no participants who know the core values of the company, namely 3I & Q (Innovation/Improvement/Improvement, Integrity/Integrity and Quality/Quality) even though those values would become souls and become a corporate identity. The company's shared values if implemented in the steps of change are believed to accelerate the success of change and can play an important role in the development of other important corporate programs. Company values need to be communicated regularly to employees so that they can apply it in carrying out tasks in the company. Leaders

must ensure that employees are committed to the company and improvements are made. Efforts to build commitment in ERP implementation are carried out in three stages. First, organize and promote ERP implementation projects. Second, communicating the implementation of information and building awareness of changing. Third, values are developed where there is a feeling of being recognized for employee work performance by giving prizes or awards.

V. CONCLUSION AND RECOMMENDATION

A. Conclusion

- Change management is needed to support the success of ERP system implementation. Although the development of information technology is so fast and more sophisticated to support the business needs of the company, the most important thing is to change the mindset of the employees so that they are willing to accept and utilize information technology. Employees will resist change, unless they truly understand the change program as it is needed, its purpose, the steps of the strategy and the desired outcome and believe will succeed and benefit both the company and employees.
- To develop effective change measures, PT ABC needs to analyze what forces and resist change in employees related to ERP implementation efforts. It is important for management to understand employees' perceptions of change. For example, there are many employees who are still traumatized in past employee reduction events. Employees partly remembering the past may have different views about PT ABC's need for change.
- ERP implementation can be categorized as a radical change. Therefore, it requires time allocation and very intensive efforts to take steps for change management. Among the necessary change management steps is tireless communication and education to all stakeholders to understand the change program.
- Change management effectiveness at PT. ABC in ERP implementation efforts.
- Measuring the progress of change measures regularly and correctly will help persuade and encourage employees to support or approve change efforts. Engaging in the implementation of change efforts such as measuring progress, asking questions, listening to answers and following the achievement of change efforts are more important than controlling each step of the work. So that it fits the plan or defines from the start the steps of the change strategy. Besides, all the explanations above, change management will be more effective if aligning aspects of ERP information system technology with business processes in the organization so that ERP utilization can be more optimal.

B. Recommendation

- 1) *The Chairman of PT. ABC:* Must maximize the function of human resource as a center for change management activities in the context of ERP implementation.

Human resource is in charge of monitoring, evaluating and suggesting steps to change programs in a broad and strategic scale. The people who sit in the human resource must have competencies in strategy management and a broad knowledge of the company's business processes.

2) *Communication lines:* Existing communication lines have not been optimally utilized. For example, in the context of ERP implementation many things can be communicated that can affect the perspective or mindset of employees, such as what commitments are needed for continuous change or why employees should participate.

3) *Management:* Management and the human resource should continue to communicate the importance of an ERP system that aligns with the company's vision and mission for the future. Existing communication media, especially internal portals, have been connected to most computers at PT. ABC. It can be utilized optimally to disseminate information that can motivate employees such as the achievement money to achieve the success of the change program.

4) *Pilot Project:* As a demonstration of the implementation of change management, it is better to first, make a change management strategy on a limited scale. For example, applied change management to the functions or business processes of the Human Resources Administration Division. The goal is to get a representative learning about change and management so that it is easier to develop further on a larger scale in the company. The initiative or program of change requires energy, especially the energy needed to withstand negative reactions. Human resource together with the change team at PT. ABC develops plans and coordinates the implementation of a change management pilot project where it can facilitate the implementation and development of change management on a broader scale in the company in the context of ERP implementation.

All recommendations of change management strategies above can also be applied to other companies or other organizations that will or are conducting a program of change, especially on the implementation of information systems technology.

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