Training Evaluation: Towards an Effective ES Training

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Abstract

ES projects involve group of people and resources that are working together in a professional way. One of the most important factors in order for an organization to benefit from this system is user training. Beside a comprehensive, early, continuous training plan that attached to the ES implementation plan, there should be a criterion to measure the quality of such training. Organization should be aware of the training methods and their effectiveness. In this paper we have discussed the important issues related to an efficient ES training and highlight some training evaluation models that are necessary for organizations to have a successful training.

***Key words:** ES training, organization, business, model*

1. Introduction

Nowadays organizations improve their business practices and procedures in order to stay competitive in the market. Organizations of all sizes, profits or nonprofits have upgraded their capability and adopted one form or another of enterprise systems (ES) to generate and communicate accurate and timely information [1,6]. Important data is collected and stored in a common single database, flowed smoothly between all the departments and accessed from anywhere in the organization in a consistent manner [11].

Great efforts should be done in order to adopt an ES in an organization focusing on both technological and business themes of implementation [2]. Like other IT projects, during implementing ES projects usual difficulties are encountered. ES implementations finish over budget or behind schedule. However, what has been most notable about implementations of ES is their alarmingly high rate of failure [11,12,13].

The questions have been asked by many academicians and researchers about the reasons behind the success and failure of ES implementations. Some of the reasons cited in the literature are lack of support of top management, resistance from employees, poor selection of ES and vendor...etc [1], most of them list the lack of training as one of the main reasons to fail [1,7,12,17,18].

[4] summed up some researchers diversified views and limit the ES key factors to following: leaders valuing ES, business process restructuring, change management, users attitude, training, project management. [14] referred in the literature review to researchers who agree that user training effects directly the Critical Success Factors (CSFs). [5] considered the training one of the major factors that has to be considered in the preparation stage of ES implementation.

2. ES Training Overview

Training considered as a part of the human resource development [23], can be defined as educating staff to improve a specific skill or change practices. [8] defines ES training refers to the processes involved in teaching each of the various user groups to use the ES efficiently in their day-to-day activities.

Organization must prepare their employees to use the new ES [9]. This task can be accomplished by training and educating the employees at different levels to understand the system requirements and how the business processes will be changed [3, 11], a comprehensive training plan should be taken [9, 11] to both technical staff and end-users so that as much of the organization as possible can understand the system requirements, with its scope depending on the type of implementation approach selected. This will spread the knowledge of the system throughout the organization and reduce the burden of maintaining the system on the implementation team [10], this plan should start at the early stage of the project [3].

Educating and training users is very important and valued so much for many reasons: effective training of users is one of the most success factors in ES implementations [2, 12, 14,17,20], on the other hand, insufficient training may lead to implementation failure [1,7,12,17,18]. In addition, it helps employees to accept the change, managing user expectations, overcome much of the fear, learning new skills, workers go out of their routine assignments, and keep ES implementations on the right track [11].

[1, 7,17] agree that the training is the main reason to increase the expertise and knowledge level of the users within the organization. In addition [1] issued that training is not only to using the new system, but also to understanding the new processes and integration within the system in which how the work of one employee influences the work of others which makes user more

comfortable with the system [16]. [15] agrees that it is the best way to contain and reduce the consulting fees –which can reach up to 60% of the total project cost- to ensure that your team has the knowledge they need to independently configure, test, and run the ES.

Although some organizations realize the importance of end-users training, many of them treat it as a single step activity in the overall ES implementation project [6]. However, ES will only produce results if all employees of different level are adequately trained.

3. Training Stages

To overcome user understanding, the training plan should point all levels in the organization, from the top management to the end users in different stages of the ES project [18]. [5] suggested establishing adequate training center during the pre-implementation stage that works as competency center to prepare and set up the training facilities. All employees top management, project team and end-users should know the difference between an ES implementation and a typical Information Systems, and be aware with the system capabilities, risks, benefits…etc, in educational way rather than training [11].

In implementation stage the time and efforts invested in training will pay off most clearly. Weaknesses in training given prior to this stage will become evident, and should be corrected [11]. Top management need to understand what they are in, refreshing their role, understanding how the software affects the overall company [15], Project team needs to focus on the integration between different modules within the organization, and utilize the software to complete end-to-end business processes [15]. End-users may need additional training, or may need retraining (refreshing), to optimize the way the system is used in order to become autonomous in using the ES to accomplish their daily work tasks [11,15]. Training on maintaining the system that was not previously given, or not given in sufficient depth or with the latest system details, should be given now [11].

It is common knowledge that employees of many companies may not receive sufficient ES training usually due to lack of funds, resources and expert trainers at the implementation stage [16], so continuous training after implementation is recommended. Top management may need training on change and knowledge management, project team may want to provide additional documentations, also end-users need retraining to optimize the way the system used and training to serve the ongoing needs and the new requirements of the ES such as training new employees, and training the reclassified employees to prepare them for their new jobs [11]. Besides training on the solution to come over problems they've encountered in implementation stage [15].

Training is one of the most costly components of an ES project and is nearly always underestimated. Unfortunately, managers always worried about the training costs rather than its effectiveness [11, 17, 22]. However, the cost of training budget is very high but we have to put in mind the big impact of this factor over the whole organization if we introduce an effective training program.

4. Training Methods

The traditional training in which users are grouped based on their jobs should be changed because these trainings are usually just a walkthrough of the system and only teaching the users how to do his/her in the system, this will not help the users to understand what they are doing and why [18].

The exact nature of the ES training program depends on the software vendor selection. But in general, there are a large variety of training methods available. Difficult issues or hard concepts (e.g., dealing with employee resistance) is best presented in a classroom setting (Lecturing), on the job training (OJT) using consultants or experts, online (web-based) virtual classrooms, computer-based training (CBT), video courses, in-house training approach, self-study books, training manuals or references [11,17,18], and ES platforms simulation which is a comprehensive interactive training courses that let students feel the real atmosphere of the scene [19]. As a part of the training the implementation team should put a reference (document-manual) that describes how to use the system [10]. Table 1 shows some of ES training methods features [17]. One important point must be considered is that the training courses should be available in languages spoken by organization employees [11].

[14] got from their study that the manner of education and training is critical element to gain a good result and recommend visiting a successfully implementing ES enterprise because the experience of the other organizations in implementing ES will help the successful of ES implementation.

[18] suggested another methodology called Process-Oriented Training, this one focuses on user role in the business and on the impacts of ones job on other areas of business. As a result the users have the ability to figure out the underlying flow of information through the business itself. By this method user are made more productive by helping them understand the entire business processes. They will realize why their step in the process is important and be aware of the consequence of their actions on other steps of a process [18]. [17] recommended a new ES training method that combine two methods and use both advantages to come up with a

better and more proper one. These two methods are on the job training (OJT) and computer-based training (CBT). Regardless of whether you train users in-house with vendor-sponsored courses or send them to training

conducted by the vendor, or hire a consultant to train users on-site, the key take-away for users should be to understand what ES does [21].

Table 1: ES training methods features [17].

Computer-Based Training	CD- ROM	Lecture	Self-Directed Learning	On the-Job-Training	Simulation
Computer provides the learning stimulus	Interaction with training material through using joystick	Communication through speaking	Employees are responsible	Learning through observing peers	Represent a real life situation
Computer analyzes the responses		Cheap	Learning without an instructor	Learning through observing managers performing	Developing managerial skills
	Interaction with training material through using touch-screen monitor	Less time	Learning process controlled by the trainee	Useful for training new hired employee	Fidelity to the equipment that trainee will encounter on the job
Computer provide feedback to the trainee		For large group of trainees	Encourage new employees to learn actively	Less investment in time and money for material	Fidelity to the situation that trainee will encounter on the job
		Supporting other training methods	Gaining better understanding of working place		Expensive
			Reducing the costs associated with traveling		

5. Training Evaluation

Effective training program helps organizations to achieve their objectives. To be effective, training program should involve the following: motivate the trainee to improve his or her performance, clearly demonstrate desired skills, provide an opportunity for active participation by the trainee, provide an opportunity to practice, provide timely feedback on the trainee's performance, provide some means for reinforcement while the trainee learns, be structured from simple to complex tasks, be adaptable to specific problems, and encourage positive transfer from training to the job [23].

Evaluating the training effectiveness should be an important asset for the organizations to permit the revision of programs to meet the large number of goals and objectives, to help decide between alternative training programs, and to decide who should participate in future programs. There are some criteria for measuring the success of training; direct cost, indirect cost, efficiency, performance to schedule, reactions, learning, behavior change, performance change [22, 23].

The training effectiveness evaluation is a systematic evaluation process, there are many models about training effectiveness evaluation have been widely applied. We will discuss some of widely used models in the following sections.

5.1 The kirkpatrick's Four Level Model

The model has provided a solid basis for the examination of training's impact on the organization. Its elegant simplicity has caused it to be the most widely used methods of evaluation training programs. In this model [6, 22, 25] what must be evaluated can be summarized in the following four levels:

Reaction: a measure of satisfaction. Assesses the initial reactions of participants and their satisfaction with a course. This usually done through a survey or questionnaires often called a 'smiley sheet'.

- *Learning:* a measure of learning. Measures the amount of learning that gained from training and

determines how much user behavior will change the job. Trainers usually assess this with criterion-referenced tests.

- *Behavior:* a measure of behavior change. Measures the degree of transfer from what was learned to how the trainee behaves on the job, which determines how much organization will impact from the training. This depended on the objectives of the course and assessed through tests, observations, surveys, and interviews with coworkers and supervisors.
- *Results:* a measure of results. This level is measuring the impacts of the training on the organization. Different kinds of assessment can be used such as tracking business measurements, observations, surveys and qualitative measures. Result is the most difficult level to assess.

5.2 The kaufman's Five Level Model

Kaufman has recognized some shortcomings of Kirkpatrick's four level model and offered a new model that solve these shortcomings by expanding the definition of level 1 and adding a fifth level. The Kaufman [23, 25] model can be described as follow:

- *Enabling:* Availability and quality of human, financial, and physical resources input.
- *Reaction*: Methods, means and processes acceptability and efficiency.
- *Acquisition*: Individual and small group mastery and competency.
- *Application*: Individual and small group (product) utilization within the organization.
- *Organizational Output:* Organizational contributions and payoffs.
- *Societal Outcomes:* Societal and client responsiveness, consequences and payoffs.

At level 1, the factor of the concept enabling addresses the availability of various resource inputs necessary for a successful intervention. Level 5 assesses how the performance improvement program contributes to the good of society in general as well as satisfying the client. This model moves evaluation beyond the organization, and examines the extent to which the performance improvement program has enhanced society and environment surrounding the organization [23, 25].

5.3 CIRO (Context, Input, Reaction, Outcome) Model

Another four-level model originally developed by Warr, Bird, and Rakman [23, 25] provides a wider scope for evaluation. Four general categories of evaluation which form the letters CIRO [23, 25] (**C**ontext, **I**nput, **R**eaction, **O**utcome) are described as follow:

- *Context evaluation:* Obtaining and using information related to the current operational situation to determine training needs and objectives.
- *Input evaluation:* Obtaining and using information about available training resources to select between alternative inputs to training process.
- *Reaction evaluation:* obtaining and using information about participant's reactions to improve the process.
- *Outcome evaluations:* obtaining and using information about the outcomes or results of training, and generally regarded as the most important part of the evaluation.

5.4 ROI Return on Investment Model

The evaluation framework favored by Phillips [23,25] adds a fifth level to the kirkpatrick's [6, 22, 25] evaluation model. Instead of examining whether the program enhanced society, as Kaufman [23,25] proposes, he adds return on investment. Return on investment measurement allows an organization to compare the monetary benefits from the program with its costs, or in other word, ROI [23,25] is the extent to which the outputs of training exceed the inputs. The five level of this model is as follow:

- *Reaction & Planned Action*: Measures participant's reaction to the program and outlines specific plans for implementation.
- *Learning*: Measures skills, knowledge, or attitude changes.
- *Job Applications*: Measure change in behavior on the job and the application of the training material.
- *Business Results*: Measures business impact of the program.
- *Return on Investment*: Measures the monetary value of the results and cost of the program (often expressed as a percentage).

Level 4 may includes cost and time savings as well as quality and output improvements, also includes subjective data like employee and customer satisfaction and retention. Level 5 is examining the return on investment (ROI) of the training. ROI provides a cost benefit ratio that compares the costs of the training with the monetary value of the business impact that occurs due to the training [23, 25].

The literature reviewed discussion shows that evaluation is an important phase in training as it provides feedback with regard to the effectiveness of the program. Using any of the previous models to assess the training program is essential to help organization reaching its goals.

6. Conclusion

Training needs a special attention and devotion to make ES works efficiently. Adopting ES relies on the human response to the system so a structured training provided by the system vendors, consultants or others is needed.

The individual performance improvement leads to organization productivity. This can be gained through effective training that improves the knowledge, talents, and behavior of people and therefore their performance. A key to obtaining consistent success with training programs to be effective is to have a systematic model to measurement and evaluation.

Training evaluation is an important ongoing process of gathering data and feedbacks to determine exactly what training needs exist, so that training can be revised and developed in a way that help the organization to accomplish its objectives. It may be difficult to meet the higher standards of training evaluation. But training and training evaluation is a must for keeping ES implementations on the right track.

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