

# Training ERP

## A holistic approach to sustainable IT implementation

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**Abstract.** In this paper the impact of ERP implementation on a company in general will be reviewed. In particular the implications of integrated and standardised business processes on the daily business and the roles of ERP-users are discussed. On the basis of these insights different training areas will be pointed out. Additionally measures to be taken in order to train ERP-users in these areas will be framed. The findings of this article are based on theoretical research and practical experience.

### 1. INTRODUCTION

Enterprise Resource Planning (ERP) software is experiencing a rapid world wide growth. ERP applications are popular for allowing to integrate business processes throughout various functions of an enterprise. In addition ERP software supplies companies with a great variety of standard solutions for individual business problems.

Thus ERP is intertwined with business processes and has a strong impact on the organisation of a company. ERP systems generally require a change from a rather segregated to a more integrated process orientation. They cut across traditional department lines, change the way a company does business and consequently change the way people do their jobs.

However, technical problems still dominate ERP Projects. Most executives dealing with ERP do not understand the importance of special training efforts for the success of their ERP project. After all, the neglect of sufficient user training has been a cause of many an ERP system failures. Therefore the ultimate objective of a successful ERP implementation is a work force prepared to use the new system to do business.

### 2. IMPACTS OF ERP IMPLEMENTATION

#### 2.1. General impacts on the organisation

ERP systems are integrated business application software and span most functions required by a major corporation, including, but not limited to, finance, manufacturing, sales and distribution and human resources.

The implementation of ERP packages do have great impact on companies on several levels:

(1) Due to built-in best practices based on experience and broad customer base ERP systems provide a high technological standard. Additionally they include a high functionality and a great number of business processes (Ramsay Dietz 1999).

(2) On account of their high functionality, ERP systems do have a large optimisation potential. Most functions will only be implemented and utilised by-and-by (Raubold 1990).

(3) The high level of data and process integration constitutes the most significant influence of ERP systems on the organisation. In the case of ERP systems implementation business processes will be changed for the purpose of integration. Business cases will be proceeded over only one logically united database (Blume 1998).

(4) Ultimately the integration and the changing of business processes leads to an organisational change. The adaptation to the new processes will induce to a standardisation of the organisation. Apart from advantages that result from optimisation and standardisation companies will be restrained concerning their flexibility (Bancroft 1996, Scherer 1999).

#### 2.2. Impact on people and roles

Concluding from the general implications of ERP implementation mentioned above, a number of impacts on users can be derived. Since ERP systems influence corporations in particular on the level of processes, data integration and structures, users roles and chores will be affected in many ways.

*Coping with a new and complex system:* The user has to learn to cope with a new and very complex system. ERP systems are a new tool with a great number of varieties and a high functionality the user first has to learn to handle (Raubold 1990). The great number of business processes and the high functionality of ERP-Systems are one explanation for the large demand for training. However, in order to recognise what the implementation of an ERP system means to people and roles, it is crucial to understand that ERP systems are not just another tool that assists employees to do their jobs.

*Integration of processes and data:* As the systems changes processes and integrates data, it changes the users everyday work and there by users roles within an organisation (Blume 1998).

The proceeding of business cases over a logically united database leads to *growing dependencies between departments and individuals*. From this follows that co-operation has to be intensified. Multidimensional connections additionally reinforce these dependencies. Working on the basis of one single database means that data is put in once only and reused several times. Consequently *data quality* is of vital importance as faulty inputs now are affecting the whole system. Through integration processes are optimised. This signifies a *shift in tasks and volume of work*. Data entry for example is shifted to the beginning of the process chain. In other departments some tasks lose in importance while other tasks become relevant. Usually job descriptions change due to ERP system implementation. In conclusion *power and control are modified*. Middle management tends to lose power and control while on one hand responsibility of users grows and on the other hand some control tasks are seized by the system.

*Standardisation:* The organisational change the implementation of an ERP system entails will affect users strongly. They'll have to face to work in a new organisation. Understanding and accepting a new structure and consequently accepting a new role induced by an ERP system is a vital part of an implementation (Scherer 1999).

### 3. TRAINING AREAS FOR USERS

Considering the vast influence ERP implementation takes on users and considering that it is the users who have to work correctly with the new system the importance of training will not be questioned. In order to realise sustainable ERP implementation users have to be taught not only how to input information, process data and request reports, but they also have to understand the new business processes in order to realise the impact of their work on the overall organisation. Additionally users will have to change their daily activities and behaviours. They will have to redefine their roles and learn to cope with changes in power.

Three different training areas arise from the changes ERP implementation entails. In addition when planning user training, it has to be considered that learning does not stop with the going live of the ERP-system. Figure 1 indicates the different training areas.

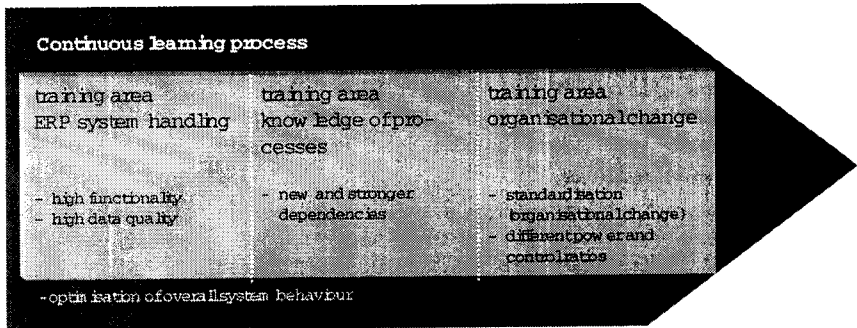


Figure 1: Training areas for users.

*Training area ERP system handling:* Obviously users have to learn how to handle the ERP system on the level of data entry and report requesting. The training area ERP system handling frames the basis of proper user training.

*Training area knowledge of processes:* Understanding the new processes that lie behind the ERP system is vitally important for accurate system handling. Without understanding the interrelation of data and the new processes users will not be competent enough to work correctly with the new system on a long term.

*Training area organisational change:* In order to accept the newly implemented system users have to learn about the organisational change through ERP packages. In the course of their learning process they have to be taught in what ways the company's organisation will be affected by the new system.

*Continuous learning process:* When considering the high optimisation potential of ERP systems it is obvious that training efforts have to be continued for the long run.

## 4. MEASURES

### 4.1. On individual and organisational learning

In order to perform competent action not only theoretical knowledge is of importance: Knowledge from experience plays an important role in everyday working life (Fleig/Schneider 1998). Research shows that individuals learn basically through experience (Fleig/Schneider 1998, Stuber/Fischer 1998). Knowledge from experience bears great resemblance to tacit knowledge (Nonaka 1994). Therefore knowledge from experience as well as tacit knowledge is a personal concept. That is why enabling concrete experience in the course of ERP systems is of major importance for individual learning. Besides concrete experience several factors support the development of knowledge from experience (Fleig/Schneider 1998, Nonaka 1994):

- Responsibility and autonomy,
- Communication and co-operation,
- Reflection upon one's own work.

However learning when implementing ERP packages should not be reduced to the individual level. The cross corporate nature of ERP systems necessitates learning on an organisational level: First of all it is co-experience or learning in teams that triggers the process of organisational knowledge creation (Nonaka 1994, Senge 1995). Apart from learning in teams organisational learning can be supported by the following principles (Nonaka 1994):

- Environmental fluctuation in order to generate a creative chaos in which learning about an new organisation wide software is made possible.
- Providing redundant information and training, to enable communication over functional boundaries along new processes.
- Determining information storage and processing.

### 4.2 Draft for training measures and implementation

There are different measures to be taken in order to generate and establish the knowledge necessary for a sustainable ERP system implementation.

*Classroom training* is an ideal platform to transfer theoretical knowledge about how to utilise the system. However it is only to be used for the basics (Trepper 2000).

Yet besides traditional classroom training *learning-on-the-job* is crucial for individual learning. The main, important theme is proximity and realism, where training is available either on or as close to the job as possible (Trepper 2000). By increasing the possibility of experience making and generating an experience enabling environment throughout the project individual knowledge creation will be accelerated.

Forming *user circles* to establish team learning supports co-experience and finally organisational learning.

In figure 2 the three major training platforms are shown. As indicated in figure 2 learning doesn't stop in the moment the new ERP system goes live. In order to establish organisation wide knowledge transfer and knowledge generation training efforts have to be embedded in a knowledge network.

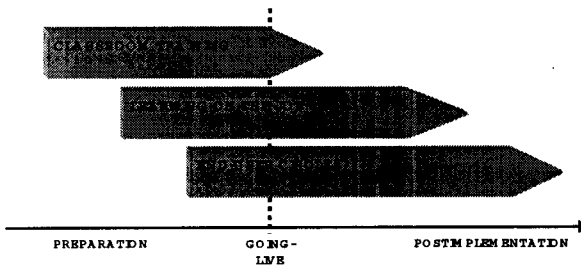


Figure 2: Training measures

### 4.3. Knowledge network for continuous organisational learning

"The knowledge network has to be considered as virtual or matrix organisation which is supplementary to the far smaller implementation team. A knowledge network is continuously built-up in parallel to the regular projects progress" (Scherer 2000). The knowledge network is divided in two platforms – one strategic, one operational. Users are involved on an operational level, while the key-users, the project manager and process owner are the connection between the operational and strategic platform.

The knowledge network enables efficient and effective information transfer and "provides a framework to facilitate the generation of organisational knowledge on a broad scale" (Scherer 2000).

## 5. CONCLUSION

User training is of vital importance for sustainable ERP system implementation. Users must be trained not only how to input information and how to request reports, but they have to understand the new processes that lie behind the new system. By changing business processes ERP packages take a vast influence on organisation and how people work within an organisation. Therefore users have to learn as well how to work in a changed organisation.

In order to meet the requirements of a holistic training users do not only have to learn in a traditional classroom, but they must be given the possibility to gain concrete experience by working with the new system. Finally learning in groups triggers organisational knowledge creation.

It is important to note, that neither successful ERP implementation nor learning stops when the new system goes live. One way to implement continuous learning is the building-up of a knowledge network.

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