

ROLE OF ENTERPRISE RESOURCE PLANNING SYSTEMS IN MANAGING CHANGE : A CASE OF PUBLIC SECTOR ORGANIZATION

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ABSTRACT

Organizational change is a indispensable phenomenon for the development of any organization; and the Enterprise Resource Planning Systems play a vital role in the development of the modern organizations by integrating the decision making process. The present study was conducted on 150 executives at NTPC, Rihandnagar, India. In this survey a questionnaire comprising of three dimensions communication of objectives and process of change, perceived effectiveness of training, and resistance to change was administered. The obtained data was analysed using percentage and t-test. The results indicate that communication was the best facilitator of managing change in comparison to other dimensions. The results also show that the perceived effectiveness of training was found to be satisfactory and at the same time, resistance to change was low among the executives. The technical and the non- technical executives significantly differ on communication of the objective and process of change; and the level of the resistance to change was found to be significantly higher in the non-technical employees in comparison technical employees. The results also indicate that the mean score of the level of the resistance was also significantly higher in the higher executives than the lower executives. So, it is suggested that the organisation must communicate the objectives to each and every executive of the organisation as all executives are part of the organizational system. It was also revealed that the lower executives were not well informed about the objectives of ERP systems. The supervisors and workers must also be involved in the change process.

INTRODUCTION

Everybody has accepted by now that change is unavoidable. But that still implies that change is like death and taxes--it should be postponed as long as possible and no change would be vastly preferable. But in a period of upheaval, such as the one we are living in, change is the norm (Drucker, 1999). Change in some way is necessary aspect of human life. One of the few things of real permanence are in this world is change. We see all sorts of changes - change in nature, seasonal change, and change in man - made organization, change in biological beings, and so on. Whole society is changing in some way or the other, for better or worse, though the objective of change is better (Ahn & Choi, 2008). The term change refers to alteration in the present system. Thus, organizational change is alteration in working condition or communication pattern or the technology used or the people.

ORGANIZATIONAL CHANGE

Organizational Change (as opposed to Transformation) is an incremental improvement on existing organizational capabilities. This may be all you need. An organizational audit will make clear whether you need incremental change or transformational change. Almost all people are nervous about change (Aladwani, 2001). Many will resist it - consciously or subconsciously. Sometimes those fears are well founded - the change really will have a negative impact for them. In many cases, however, the target population for the change will come to realize that the change was for the better.

The pace of change is ever increasing - particularly with the advent of the Internet and the rapid deployment of new technologies, new ways of doing business and new ways of conducting one's life. Organizational Change Management seeks to understand the sentiments of the target population

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and work with them to promote efficient delivery of the change and enthusiastic support for its results. There are two related aspects of organizational change that are often confused. In organizational change management we are concerned with winning the hearts and minds of the participants and the target population to bring about changed behaviour and culture. The key skills required are founded in business psychology and require 'people'.

RESISTANCE TO CHANGE

By definition, people are affected by change. A few will comfortably accommodate any degree of change, but most people have a change journey to undertake.

Resistance to change is normal. The Project Manager should expect to encounter it and deal with it. The worst time to encounter resistance is during the cutover to the new solution. Transition is usually a busy, critical, high-risk period when the last thing you need is a lack of co-operation from the target population.

The most common response to impending change is a negative response where, initially at least, the target population sees the change as a bad or threatening things.

A different emotional curve may occur where individuals are initially in favour of the change. In the "good news" curve, the risk is that they will be disappointed by the reality of the change or the effort it will take to achieve it.

In these cases, you should recognize the likelihood of disappointment during the change process. Be ready to lift them out of the trough in time to benefit from their enthusiasm.

FACTORS IN RESISTANCE TO CHANGE:

- ◆ **Individual Resistance**
 - Economic factors
 - Skill Obsolescence
 - Fear of Economic Loss
 - Reduce Opportunity for Incentives
 - Psychological factors
 - Ego Defensiveness
 - Status Quo
 - Low Tolerance for Change
 - Lack of Trust in Change Agent
 - Fear of unknown
 - Social Factors
 - Desire to Maintain Existing Social Interaction
 - Feeling of Outside Interference
- ◆ **Group resistance**

- Nature of Group Dynamics
- Vested interests
- ◆ **Organizational Resistance**
 - Counting on Past Successes
 - Stability of System
 - Resource Limitations
 - Sunk Cost
 - Inter organizational Agreement

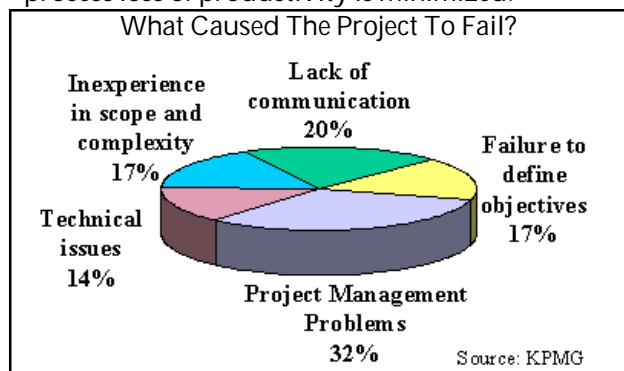
CHANGE MANAGEMENT

Organizational Change Management is a vital aspect of almost any project. It should be seen as a discrete and specialized work stream. Why then, you might ask, do we discuss it as part of the Project Management work. Unfortunately, it is common to find that the human component of the project is not recognized as a separate element of the work. The project management team frequently has to do their best to ensure that a technological change is successfully implanted into the business. In the worst-case scenario, the project leadership do not see this as part of their responsibility either and blame the organization's line management when their superb new technical solution is not fully successful when put to use.

Part of the art of Organizational Change Management is to: understand what journey you want which populations to take (it may not be the same for everyone), assess what their attitude is likely to be, and use that knowledge to guide them in the right direction.

It considers that where organizational change is implemented correctly the benefits include:

Employee participation a greater understanding of the change a better informed decision is made trust is maintained throughout the process loss of productivity is minimized.



This survey looked at disastrous projects. One of the questions asked for the prime cause of the failure. Although the result did not spell out "people"

as the cause, it is interesting to note that many of the causes were to do with the behaviour and skills of the participants. Arguably all but the "technical issues" were related to the capabilities, attitudes and behaviour of people.

USING THE RIGHT CHANGE STYLE:

The design of the project's approach should take into account the optimum style of addressing organizational change issues. In general, the target population will be more supportive of the changes if they have been part of the change process. The cynical view is that you should make them feel part of the process even if you prefer to ignore what they have to say. In fact, their active participation is likely to add to the quality of the solution - it should be taken seriously. Conversely, if they feel their views were sought then ignored they are likely to become more resistant.

Working with a broad selection of the target population adds time and cost to the project. The degree to which you involve them will depend on the magnitude of the change. A straightforward non-controversial change may require no previous contact. If, for example, you are simply introducing a new set of expense codes you can publish the message "with effect from 1st April, new codes must be used as per the attached book". Conversely, if you are making huge changes to the job and lifestyle of the target population you will need to work with them to gain their co-operation, for example, if you wish them to re-locate voluntarily and re-train for substantially altered jobs.

Here are some change styles that may be appropriate:

- Collaborative - The target population are engaged in the change process, typically through cascading workshops or meetings. They will be kept up to date on the issues. Their views will be actively sought and acted upon. Feedback will demonstrate how their input has been acted upon.
- Consultative - The target population is informed about the changes and their views are sought.
- Directive - The workforce is informed about the changes and why those changes are important.
- Coercive - The workforce is told that they must obey the new instructions.

COMMUNICATION

One of the main tools for promoting change is communication. Early in the project an initial

approach to communication will be formulated. It has two main purposes:

- to convey important information that the audience needs to know, and
- to promote organisational change.

Messages supporting the project's change objectives should be carefully constructed. The best media should be identified to convey the right messages to the right people at the right time. During the project, these messages and methods will be refined based upon achievements, feedback and the changing circumstances of the project.

ORGANIZATIONAL CHANGE MANAGEMENT DURING THE PROJECT

Organizational Change Management techniques fall into two main types: Input - analysing the problem, and Output - inducing organisational change. It may also be appropriate to couple these organizational issues and needs with the mainstream design work of the project; so that certain issues could be solved by the way the solution is designed. It may be easier to make the solution fit the people rather than the people fit the solution. The input activities are essentially forms of fact-finding and analysis. Organizational Change Management experts have many specialized tools to: identify a population; assess that population's capabilities, attitude, behaviour, culture; define the change goals; and determine what is required to bring about that change.

In the absence of an expert you would fall back on basic fact finding and analysis, coupled with common sense and experience. Output activities tend to be various forms of communication, for example: communicating messages, coaching setting up sponsorship cascades and collaborative workshops.

Although the change management analysis, design and planning may be specialist tasks, much of the change output can be applied by other project team members. All team members will have opportunities to spread the right message. In many cases, the way they approach a given activity might have a significant affect on the target population - increasing or decreasing resistance. Non-specialist team members should be given the basic skills and understanding to promote organisational change. They should also be guided by the specialists (if any) and by the project's change management approach and planning.

For each phase the change management plan will be prepared in detail. Input and feedback from

previous phases will inevitably lead to modifications to the overall approach.

Often a new phase means new team members and new participants from the business. Make sure there is a good process to capture their support and enthusiasm.

The end of a phase is always a good time to review progress. Many organisational change activities are imprecise in their effect. It can be hard to measure whether the target population has now become sufficiently supportive for the project to succeed. Take a fresh look at the organisational issues: did we really understand the barriers? how effective were the actions taken? what more do we need to achieve? The conclusions will be fed into the planning for the next phase of work.

ORGANISATIONAL CHANGE MANAGEMENT AT THE END OF THE PROJECT

The test of change management is whether the new business solution can be launched successfully in as efficient and pain-free a manner as possible. The lead up to the transition is often the most intense period. In many cases it is the first time the affected populations really become aware of the changes (although, as you saw above, it is not wise to tackle change issues late in the project). Now they are confronted with changed jobs, new procedures, new skill requirements, training courses, and maybe even physical re-location.

In some projects not all the current workforce will be required for the new solution. Dealing with the painful process of redundancy is normally left to the HR and line management functions. There are, however, two big issues for the Project Manager:

The redundant staff will be required to operate the current systems and processes until the new solution is ready - and maybe for some period of parallel running. Since it is a legal or contractual requirement in most countries to announce potential redundancies well in advance and to give individuals notice before their departure date, the question is how to ensure they give good service and do no damage to the organisation or the new systems.

There may also be implications for the survivors - those people who you are relying upon to deliver the new solution. They may be affected by the bad news concerning their colleagues. They may even go through a period of uncertainty when they do not know whether or not they themselves will be

retained. What needs to be done to maintain their support and enthusiasm? Bear in mind that the same issues could confront project team members as well as the target population.

By this stage in a major change, there needs to be a substantial support mechanism for the target population. As the key messages are communicated, the project team needs to be ready to help and prepared for the inevitable issues. By this time, the sponsorship cascade should be complete and solid - often extending down to local champions carefully placed in the users' teams. Support mechanisms will ease the users' troubles, for example with appropriate training at the right time, desk-side coaching, good help desk /call centre support.

Organizational Change Management should not stop with the end of the project. During the Benefit Realization stage of the lifecycle, continuing emphasis will be needed to encourage the community to adapt to the new ways of working and get the most from the change.

CHANGE AT NTPC LTD., RIHAND

NTPC's agenda is aimed at effectively achieving and managing the exponential and diversified growth in a dynamic business scenario. It is engaged in enhancing empowerment, especially at the regional level. It is revisiting the scheme of delegation of power and aligning the executives to the new business requirements through intensive programmes in areas like leadership development.

It is using IT enablement in a big way. The Company has begun the roll-out of ERP, a flexible, standardized, and integrated information system as one of the key strategic initiatives at a few pilot units. It is a major tool to help its transformation and change-management objective. It will enable your Company in speedy decision making for competitive advantage.

This ERP solution will align your Company's business processes with global best practices. The implementation of Project ERP would benefit NTPC in achieving improved and faster exchange of information, improved productivity, better data consistency and knowledge sharing. It will help in automation of all business functions of NTPC and in establishing uniform processes and practices across the organization. Company-wide implementation of ERP was scheduled to be completed by May 2008.

IMPLEMENTATION OF AN ENTERPRISE RESOURCE PLANNING (ERP) SOLUTION

The ERP solution would meet functionality

requirements of key business areas (like contracts and materials, Finance and accounting, Project Systems and accounting, Payroll, Maintenance, Operations etc.). The ERP package selected would be compatible with/ or have integrated solutions across the value chain like coal mining, transmission, distribution, and power trading that would be leveraged by NTPC in its diversification plans. The package selected would also provide scalability for higher number of users and/ or number of stations.

The ERP solution will provide multiple benefits to NTPC:

- Higher employee productivity because of IT enabled processes
- Availability of real time/ near real time and accurate data for decision making
- Unified view of the enterprise that will assist in critical path analysis, quick problem identification and resolution, other than aiding transparency across organisational processes and quality of decisions
- Cost reduction

INCREASING THE ERP SUCCESS

The world of technology and business consulting is tainted by horror stories of ERP projects gone wrong. Companies such as Hershey's have had widely publicized lawsuits against ERP software vendors because of their failed implementations. In some extreme cases, these companies sue because they couldn't ship product or their entire business shut down because the software did not work correctly.

So how does one increase the likelihood of ERP success and ERP benefits realization? Many assume success or failure is the fault of the software you purchase, but in reality, 95% of a project's success or failure is in the hands of the company implementing the software, not the software vendor. Therefore, there are a number of factors that should be addressed to make your project successful, beginning with an effective ERP software selection process and continuing through implementation.

Here are just a few ERP implementation critical success factors that we have seen:

1. Focus on business processes and requirements first. Too often, companies get tied up in the technical capabilities or platforms that particular software supports. None of this really matters. What really matters is how you want your business operations to run and what your key business requirements are. Once you have this

defined, you can more effectively choose the software that fits your unique business needs.

2. Focus on achieving a healthy ERP ROI (Return on Investment), including post-implementation performance measurement. This requires doing more than just developing a high-level business case to get approval from upper management or your board of directors. It also entails establishing key performance measures, setting baselines and targets for those measures, and tracking performance after go-live. This is the only way to truly realize the benefit potential of ERP.
3. Strong project management and resource commitment. At the end of the day, your company owns the success or failure of a large ERP project, so you should manage it accordingly. This includes ensuring you have a strong project manager and you're "A-players" from the business to support and participate in the project.
4. Commitment from company executives. Any project without support from its top-management will fail. Support from a CIO or IT Director is fine, but it's not enough. No matter how well-run a project is, problems arise (such as conflicting business needs), so the CEO and your entire C-level staff needs to be on board to drive some of these
5. Take time to plan up front. An ERP vendor's motive is to close a deal as soon as possible. Yours should be to make sure it gets done right. Too often, companies jump right in to a project without validating the software vendor's understanding of business requirements or their project plan. The more time you spend ensuring these things are done right at the beginning of the project, the less time you'll spend fixing problems later on.
6. Ensure adequate training and change management. ERP systems involve big change for people, and the system will not do you any good if people do not understand how to use it effectively. Therefore, spending time on money on training, change management, job design, etc. is crucial to any ERP project.
7. Make sure you understand why you're implementing ERP. This is arguably the most important one. It's easy to see that many big companies are running SAP or Oracle and maybe

you should too, but it's harder to consider that maybe you don't need an ERP system at all. Perhaps process improvement, organizational redesign, or targeted best-of-breed technology will meet your business objectives at a lower cost. By clearly understanding your business objectives and what you're trying to accomplish with an ERP system, you will be able to make a more appropriate decision on which route to take, which may or may not involve ERP.

The activities should all start at the beginning of the ERP software selection process and continue through implementation

RATIONALE OF STUDY

This part of the report deals with the goal, objectives of the study, and its limitations in an elaborate manner.

Goal: To obtain feedback on the Change Management with implementation of ERP system as a change from the executives of NTPC Ltd., Rihand.

OBJECTIVES OF STUDY

1. To assess the understanding of ERP within the employees.
2. To assess the effectiveness and efficiency of trainings being provided for ERP operations.
3. To assess the level of resistance or acceptance for ERP as change within the employees.

METHOD

1. Specifically designed structured questionnaire was circulated among the executives to measure their attitude towards implementation of ERP system.
2. The rating was on a Five point scale:
 - a) Totally False = 1
 - b) Quite False = 2
 - c) Neither False Nor True = 3
 - d) Quite True = 4
 - e) Totally True = 5
3. The sample covered all levels from E-1 to E-7 from various departments who have varied

experiences of working in NTPC Ltd. The questionnaire was distributed on random basis to 150 executives (33% (approx.) of total nos. of executives 440).

4. The total group was divided in Two (2) categories i.e.:
 - a) Junior Executives, from E-1 to E-3.
 - b) Senior Executives, from E-4 to E-7.
5. Further, the total group was divided on basis of department into Two (2) categories i.e.:
 - a) Technical
 - b) Non-Technical
6. Findings of the study can be generalized for the entire population of executives.
7. Findings were analyzed on basis of the grade of executives, their experience at NTPC, and the department (technical/non-technical) they are working.
8. Final conclusion was drawn in the survey and was noted.

Data Tabulation and Analysis

The data collected through the structured Questionnaire during the survey was tabulated on three levels:

- Organization Wide
- Department Wise - Technical/ Non- technical.
- Designation (Experience) Wise - Higher (more experienced) Executives / Lower (less experienced) Executives.

Average (mean) of each question was found out and represented by side of the question number in the table.

During the survey I found two features of sample that:

- Some of the executives in Non-technical Department were having Technical back ground of education.
- Some of the employees in Lower level were the supervisors promoted to Executive level. Thus they were having more experience than some of the Higher Executives.

Table-1

Organisation wide mean and percent of scores of Employees' Responses

Dimensions	N	Maximum score	Obtained Mean Score	Percent of obtained score
Communication	150	15	10.76	71.73
Training effectiveness	150	25	16.94	67.76
Resistance to change	150	40	22.55	56.38

RESULTS

The scores at the organizational level of the variables (communication of the objectives of the change, perceived effectiveness of the training, and resistance to change) are recorded in terms of mean, SD and t test, which are given below.

The above table shows that, there is high level of communication (71.73%) in the organisation of the objective and process of the change (implementation of ERP System), there is satisfactory level of perceived effectiveness of training (67.76%). At the same time, there is low level of resistance to change (56.76%), among employee.

The above result present the clear picture of organization wide status of the communication of the objective and process of the change, effectiveness of

the training provided, and level of the resistance to change, but there is need to understand that, whether there is difference on these dimensions among the different categories of employees. To look into it, further analysis of data is done as follows. In the tables 2, 4, and 6 scores the mean, S.D. and t- value of the variables (communication of the objectives of the change, perceived effectiveness of the training, and resistance to change) among the Technical and Non-technical employees in the organization, further in the tables 3, 5, and 7 scores the mean, S.D. and t- value of the variables (communication of the objectives of the change, perceived effectiveness of the training, and resistance to change) among the higher and lower ranked executives.

Table-2
The Mean, S.D. and t-value of the Technical and the Non- technical Employees' on Communication of the objectives and process of change

Dimensions	Group	N	Mean	S.D.	t-value
Communication	Technical	90	10.9	2.14	2.26*
	Non- Technical	60	10.13	1.97	

The above table indicates that the mean of communication of the objective and process of change, significantly varies among the technical and the non- technical employees.

Table-3
The Mean, S.D. and t-value of the Higher and the Lower Executives on Communication of the objectives and process of change

Dimensions	Designation	N	Mean	S.D.	t-value
Communication	Higher	50	11.51	2.23	3.01**
	Lower	100	10.38	2.07	

** Significant at .01.

The above table shows that, the mean score of communication of the objective and process of

change is significantly higher in the higher level executives than the lower executives.

Table-4
The Mean, S.D. and t-value of the Technical and the Non- technical Employees' on Perception of training effectiveness

Dimensions	Group	N	Mean	S.D.	t-value
Training effectiveness	Technical	90	17.43	4.37	1.70
	Non- Technical	60	16.25	4.03	

*Significant at .05.

The above table indicates there is no significance difference between the technical and the non- technical employees' on the mean score of the

perceived effectiveness of the training being provided, as obtained t- value (1.70) is lower than critical value (1.98) even at.05 level for the df (148).

Table-5
The Mean, S.D. and t-value of the Higher and the Lower Executives on Perception of training effectiveness

Dimensions	Designation	N	Mean	S.D.	t-value
Training effectiveness	Higher	50	16.64	3.99	0.72
	Lower	100	17.15	4.28	

The above table shows that, there is no significance difference between the higher executives and the lower executive on the mean score of the

perceived effectiveness of the training being provided, as obtained t- value (1.70) is lower than critical value (1.98) even at.05 level for the df (148).

Table-6
The Mean, S.D. and t-value of the Technical and the Non- technical Employees' on Resistance to change

Dimensions	Group	N	Mean	S.D.	t-value
Resistance to change	Technical	90	18.91	5.06	4.05**
	Non- Technical	60	22.59	5.70	

** Significant at .01.

The above table leads to inference that, the level of the resistance is significantly higher in the

Non-technical employee than that in technical employee.

Table-7
The Mean, S.D. and t-value of the Higher and the Lower Executives on Resistance to change

Dimensions	Designation	N	Mean	S.D.	t-value
Resistance to change	Higher	50	27.4	5.97	6.46**
	Lower	100	21.02	5.12	

** Significant at .01.

The above table indicates the mean score of the level of the resistance is significantly higher in the higher executives than the mean score of the lower executives.

CONCLUSIONS

The organization have well conveyed the objectives to higher executives of all department and even lower executives in Technical Department (Specially IT), who are basically change agents. But, majority of employee in other departments feel they have not been well communicated. Even though most of the employees feel that the ERP system will help

NTPC to achieve its goal. This reflects trust of employees in the organization. Almost every employee of the organization feels that ERP will bring transparency in the present system, irrespective of their Department or Designation.

The trainings provided to the employees are well and good at the organization level, but this is because of a lot of technical staff are in the survey. Actually, these trainings have been of little use to non-technical staffs. Were as the young employees are finding these training useful even in non-technical departments. Employees' involvement in the change

is having Second highest average score after expectation for transparency in system. That is almost all employees feel involved. A good number of employees are finding the implementation of ERP as a gate opener for their carrier.

More than half of employees are unaware of their responsibilities in the new system. But, the change agents are well aware of every ones responsibility and they are trying hard to convey every one their responsibility. A very few higher executives or employees in their retirement age do not to change. But, rest every on is willing to chance and accept new system.

Most of employees have learned Computer to be effective with ERP, but some of them are worried about their success in computer operation.

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