CHAPTER 5

DISCUSSION

AND

CONCLUSIONS

OF THE STUDY

Introduction

A) Case Study Observations

B) General Conclusions

C) Applicability of General Conclusions
5.1 INTRODUCTION:
In this chapter the various issues which emerge out of the research work done on the management practices adopted in planning, executing and implementation of large size computer projects undertaken for the first time on all India basis by two departments of central government are discussed. The chapter is divided into three parts. Part A consists of observations emerging out of the two specific case studies covered in chapter three and four, which prove the hypothesis. Part B summarises the general conclusions based on part A. The last part covers the applicability of the general conclusions for similar situations in India

A) CASE STUDY OBSERVATIONS :

5.2 Interest taken by top management. :
5.2.1 Bureaucracy is supposed to work through rules, regulations and delegated authority in the form of schedule of powers. These are supposed to create confidence and motivation in the person working on a particular post. However these could also create lethargy, inertia in many a managers and staff. The system of checks and balances like ‘audit inspections’ etc. have negative connotations. A bureaucrat is seldom held responsible for saying ‘No’ to a new proposal or change or idea, even if the same idea or proposal later on proves to be a useful proposal for the department. On the other hand if he or she shows some initiative and proves wrong, he or she often lands in serious trouble. Therefore for carrying out a change of this magnitude there has to be full backing or support from top to initiate the managers into action. In government one is safe while tackling a proposal
if a precedence is available. A change however demands a new approach, as there is no precedence possible. The constant monitoring of the passenger reservation computerisation by the Minister of Railways himself and the custom computerisation by the Chairman of CBEC during implementation phase made all the difference in maintaining the tempo of change. The ‘moving’ phase of Lewin’s three stage approach needs such push from top. It energizes the change team, shakes the other senior officers out of complacency which they are used to otherwise. It also helps in controlling covert resistance from them. The top management should have a mix approach of ‘autocratic and participative management’. The autocratic approach works well for pushing senior managers in giving necessary help to the project by way of timely release of officers for this project; not changing them unnecessarily, making enough funds available on time etc. Where as the participative approach becomes essential for ensuring whole hearted cooperation of staff at field level including unions. It is not that autocratic approach does not work at this level. In fact in customs department, where initial negotiations with appraisers did not succeed in getting their willing cooperation, they were ordered to do their work as per new method. With close monitoring by senior officers starting from assistant collectors to chairman CBEC, the work at Mumbai customs as envisaged was completed and run for some months by making the appraisers complete their work by working overtime etc., so much so that by early 1987 the pilot project could be declared as a success. The only difference between these two approaches adopted by railway and custom departments becomes apparent later on, when the push from the top declined and later stopped completely. In case of railway’s the push from
the top created enough momentum during implementation & the participative approach at grass root level enabled the system to continue and grow on its own. While in case of custom computerisation as soon as the senior officer in Delhi, the main change agent was transferred to Excise department the daily monitoring petered out and with change of chairman, the system slipped back rapidly as it did have serious weaknesses as pointed out elsewhere in this chapter and chapter four. Thus it is concluded that adoption of only autocratic approach by top management in customs resulted into success for a short time where as a combination of both approaches in passenger reservation system brought in better results at the cutting edge of the organisation. As government agencies are spread all over and have large work force which really makes or breaks the system, winning their cooperation is as crucial as full support from top management.

5.3 Methodical Planning of Change:
Both the studies indicate that for government departments which are as spread out as Railways & Customs, proper planning is a necessary prerequisite for such projects. It helps in understanding the various implications involved, such as cost, complexities of the job, and time span. This in turn gives the policy makers a clear idea of the scope of the work involved and in what phases it should be done. The larger the scope of the work more is the necessity for appropriate planning. Both these projects were taken up after lot of analysis and planning as mentioned in para 3.13.1 & 4.12.1. But while this process continued throughout the project in railways, it did not happen in customs. The concept of
completion of pilot project at Delhi before expansion at other centers had number of benefits for railway as brought in paras 3.13.1. The customs department's eagerness to expand the system at all other centers before all modules were developed, tested and run successfully at Mumbai led to number of problems as indicated in para 4.12. In case of custom computerization the software consultant CMC was appointed for the feasibility study which they with the help of custom's departmental team did thoroughly. For proper planned management of change of the import / export work, which was a very complex and user interactive work, a time span of three to four years was recommended by CMC. This was compressed by the chairman CBEC by pruning the scope of work. The phasing of the work in Mumbai custom house and its expansion, all over India was also done without much time being given to the new change to stabilise properly and prove its utility and appropriateness without any doubt at Mumbai. This resulted in the change teams at Mumbai and Delhi going to other centers for solving the teething troubles there, which in turn affected the tempo of developing new modules to expand the scope of the system. After the team leader at Delhi was transferred and the chairman retired, remaining semblance of planning and coordination also disappeared, the results of which have been discussed in chapter four. This thus proves the hypothesis in 1.6.a that methodical planning is essential throughout such project.

5.4 Composition of change team & Selection of team leader:

For a change of this magnitude it would be too much to expect departmental officers to plan, develop and execute these changes on their own. Number of authors suggest appointment of external agencies or
consultants to do this work more efficiently. This may be succeeding in western culture where more professional attitudes are prevalent, but in India entrusting the work wholly to outside agency has number of negative impacts. Firstly the government system is bound by not only rules & regulations, but also precedences, many of which are beyond the imagination or understanding of the external agents or consultants. Secondly number of officers & staff perceive a non departmental agency as a threat to their authority and position, and start offering overt or covert resistance. Thirdly the external agents being outsiders may find access to crucial records or approach to senior officers or work like inter ministerial coordination a difficult task. The change process therefore has to be handled by a team consisting of departmental officers & staff as internal agents and the consultants who are the technical experts as external change agents. The selection of team leaders for the departmental team is a very crucial factor in success of such projects. The leader should be selected with due thought and purely on merit. The leader should have correct seniority, excellent inter personal skills and good knowledge & experience of the project in hand. The leader should be a willing worker. In both these projects such leaders were selected by the top management with the result excellent results were achieved while they continued as team leaders. The combination of external & internal agents in both departments worked well and delivered the results.

5.5 Formation of change Team :

5.5.1 In large projects of this type which affect the entire gamut of operation of a department, all tiers of management concerned with this work activity should be given a chance to contribute constructively in the
development of the new system. In case the customers can also be involved so much the better, especially in projects which have a large user interface. In the passenger reservation system the internal team was formed to represent all categories of officers and staff. While selecting the team it was ensured that willing leaders from all categories of staff and officers employed in passenger reservation department, who were also knowledgeable, were included in the change team. Passenger associations were also involved at planning and designing stage. The methodical manner in which this team handled each issue is brought out in para 3.13.12. The team members because of this approach became the 'early adopters' of this change. They in turn passed on their positive sentiments to other staff. Such positive wave of sentiments resulted into suppressing covert resistance by staff who had vested interests in the manual system. Since the change team had representation from all concerned categories of staff, it developed the new computerised system which took into account all the possible eventualities, as well as add new customer friendly features such as two ‘wait listing positions’ one as per serial order and second the current one.

5.5.2 In customs computerisation on the other hand the departmental team for initial feasibility as well as later for the software development and implementation was having only few group A & B officers besides the leader and that too different persons in each team. The Custom Handling agents were rarely consulted. One of the reasons given by officers for this is that this work was of ‘sensitive’ nature and participation by more staff or users would have laid to mischief and there by loss of revenue. This is a weak argument in that the seasoned appraisers as well as the custom
handling agents especially at Mumbai are an enlightened lot. They have perhaps more knowledge, even today, of the loopholes in the system. Everyone of them is not a dishonest person. If such good persons were selected as was done by railways and benefit of their experience and wisdom utilised, it would have been possible to overcome the glaring weakness present in this system, such as complex screen designs, extra work for appraisers and so on. In fact on their own some shipping agents and their association who were already aware, of such computerised systems abroad, gave their suggestions, which again were taken lightly, perhaps because of the small size of the team. This thus deprived the change team of developing a more robust software which could have so to say delivered the goods.

5.6 Need and Nature Of Training:
5.6.1 Information technology is a technology with which the younger generations are more familiar. This often creates an ‘inferiority psychosis’ in the minds of adults who are not exposed to it. For this purpose, demystification of this technology is a crucial first step during implementation. This is because computer is such a technology, which once mastered becomes essential part of one’s life. One starts wondering how one could do without it, but to reach that stage requires good and intensive training which can generate such confidence. In case of computerisation projects therefore the vital thing is ‘intensive hands on training’. In passenger reservation this was done in two ways, as brought out in para 3.13.10 & 11 firstly through user friendly screens and using the internal change agents as trainers to teach other staff. Training by outside
software experts to departmental staff often has a communication problem. This communication gap took place in customs department as ORG ran the training programs. Besides that the screen designs in MAPPER 11 are rather complex and do not conform to manual system in vogue. Therefore the training inputs in such a situation should have been more rigorous. Where as the duration of training was only one week for appraisers and two weeks for data entry operators and next to nil for senior officers i.e. it was not enough to create confidence and interest amongst the users. Besides this in Railways the training was made achievement oriented by giving nice certificates to successful trainees in formal functions. The daily outputs in terms of number of passenger requests handled by a clerk after completion of training were monitored. The names of outstanding workers were displayed on notice boards and given cash awards. The laggards were also motivated by publishing their names if they improved their performance. No such methods were adopted in customs, thereby training was never taken too seriously by anyone.

5.6.2 If a system is to effectively function as an MIS, which was one of the objective in both cases, the officers should have been given exhaustive training, so that they could not only get the routine information but could compile relevant information from the system by developing the capability of probing in it. The railway officers involved with this work could do that. Most of large organisation like Railways and Customs have their own training institutions for officers and supervisors. In railways this training is now imparted in the training institutes in each zone as well as the Railway Staff College, where the inputs are given to all officers. Till recent there was no such system in Customs Department. M/S Sperry had supplied
In Mumbai Customs House, there is only one person from the customs department who is capable of making procedural changes as required. He developed an expertise in this area of his own initiative. This true proves the hypothesis in the above-mentioned role of training.

5.7 Formation of Separate Department:

In professional organisations or professionally managed organisations, active participation needs to be encouraged. The results and effectiveness of any activity, evaluation needs to be monitored. Such evaluations can be done in government. In government or bureaucracy, there is by and large a well-defined organisational setup with powers and responsibilities. Hence, it has some departmental divisions and in ex-creatures, departments are in existence. As a result of some changes, the government has undergone some changes. A new separate department, in the name of customs, was given to the customs department. This department is now responsible for the necessary support in making changes in the customs. The involvement of the customs department is now in the lifting of the stern policy to some extent. The involvement of this department is now in the lifting of the stern policy to some extent.
creation of a separate set up may appear to add to the cost of the project but the same is paid back in no time by the set up created.

5.7.2 Computers today is that technology which by the time the department decides to buy the technology, finalises the specifications, invites tenders and places order, has become old. Tremendous technological advances are taking place in this field and unless the organisation has a separate set of officers and staff, to look after the maintenance, modifications and expansion of this technology, the work of introducing new computer systems, their maintenance etc. is likely to flounder. The crucial role played by OIS directorate has been discussed in para 3.13.3. But in custom department a one man cell was created. The officer concerned, even when he was not given a room to sit to begin with, because of the self motivation of doing something for the organisation through the new computerisation process, put in long hours of work and did a tremendous job of sizing of equipment, site planning, firming up of suppliers etc. along with also designing of software with the help of few assistants, who were allotted later. It is felt that if he was given additional support by posting some bright young officers, who had aptitude for computers and also experienced field staff, perhaps the results of custom computerisation would have been different. Similar situation continued even later. The customs department in 1987 created four regional directors for overseeing the work of maintenance and development of new modules under their charge. But were expected to fend for themselves and had to struggle to create some nucleus under them, resulting into tardy progress and poor maintenance of the system. As no separate directorate was set up in CBEC and the 'cell' which was created in 1986 was disbanded after the
officer who was the team leader was transferred to excise, there was no co­
ordination between the joint directors, the scope of work for each was
defined by the collector or commissioner under whom he/she was posted.
This resulted into so many additional works being passed on to the joint
directors, that they could do precious little to improve the system. The
outlook of the seniors perhaps was that the new system in any case was of
little use as an on line system, so why not make better use of the officers.
This also meant a loss of status for these posts and frequent changes as a
disinterested officer getting posted here would make every effort to change
this portfolio.

5.7.3 For want of such a separate directorate at the CBEC ; some good
sporadic efforts on part of some of the regional joint directors in customs
to improve the system have gone unnoticed. Some reports have also been
submitted by some keen officers, pointing out the lacunas and weaknesses
in the new system, which have also met with similar fate. It was only after
M/S. Unisys served a notice to customs department that they can no longer
maintain the \textquoteleft old\textquoteright computer systems in India, that some definite action was
started. Here again the work has been entrusted to joint secretary
\textquoteleft customs\textquoteright at Delhi which is in addition to his other responsibilities. It has
been a sheer coincidence that the officer concerned had computer
background, had worked as a regional joint director at Madras where he
had closely studied the CARES system and is a keen enthusiast of
computerisation. But he has not been given any specific team of officers
so as to create a framework to provide continuity, as and when this officer
moves elsewhere on promotion etc. and a new incumbent takes over. The
custom department has only very recently started a separate directorate for computerisation, still without any basic infrastructure and finance. As against this in railways at each computer center a separate head of department with requisite infrastructure has been created, reporting to the directorate of O.I.S. in railway board, which has ensured proper maintenance and growth of this system.

5.8 Continuity of Team leader and members of the change team:

5.8.1 In government organisations transfers are common. As mentioned in para 2.12.1 in chapter two, rules and regulations have been laid down in government departments to bring in standardisation and uniformity in working all over India. One of the advantages of this is in case of transfers etc. a new incumbent can begin where the old one left without causing major disturbance. While this works well in a normal situation, in change management which is essentially a fluid process, there are no set procedures with the result, shifting of team leaders or key members of ‘change team’ has a traumatic effect. The effect of change in members of the change can sometimes be overcome if the leader does not change. But if the leader is changed and a new one takes over, he may often retard the work of the team under him. The benefit of team leader and other members of the change team continuing unchanged through out such project are plenty as in case of Railways, which has been elaborated in para 3.13.13. Such continuity of the entire gave the team confidence in not only developing a practical and efficient computer system but also helped them in developing group cohesiveness with each other and with members of CMC, the external change agents for this project. This resulted into the
railway officers and staff attaining excellent familiarity with the basic software design. When this was linked with the departmental experience they possessed the resultant software could take care of any eventuality such as system failures; terminal failures etc.

5.8.2 In customs on the other hand the internal and external change agents who had done the detailed system study and prepared the feasibility report were both changed albeit for different reasons, while starting the development of actual system software for Mumbai pilot project. The same mistake was done again when the team leader who had been moved from Mumbai to Delhi to oversee expansion of the computer system all over India, was transferred to excise department for taking up computerisation of that department, even before his work in customs was complete. In computerisation projects sizing and procurement of hardware, building computer centers is the relatively easy part. Fine tuning of the software to accommodate local needs, overcoming the phobias in the minds of senior officers; resolving the various resistances at a particular place from both staff and customers are activities which are more difficult. The continuity of the leader of this project, at least for couple more years since he had the ability to tackle these things would have made a vast difference in actual implementation and expansion of this project.

5.8.3 In fact in railways similar thing has happened in another large computer project ‘the freight computerisation project’ undertaken by railways which followed the passenger reservation project. This project has got badly bogged down, due to various reasons, one of them being, non continuity of team leaders or the members..
5.9 Timely withdrawal of Manual System:

The railway passenger computerisation was first introduced for only one class in two trains and that too in parallel with manual working in forefront and computer in the background. But once the teething problems of the computer system were overcome more trains were quickly added, the response time to queries closely observed and then universal reservation concept of any train, any class reservation from any window was tried. Once this was through the manual system was just stopped. In customs computerisation, while feasibility report talked of full computerisation, the actual import assessment was introduced as a pilot project as a partial computerised system. That is at the implementation stage itself a major weakness was added. And what happened later has been discussed in detail. The custom department themselves have realised this and introduced the ICES system although after about ten years of the CARES software in which this mistake has been rectified as discussed in para 4.11 of chapter four. Therefore whenever a change in system of this magnitude is taking place, the system design should be such that it will offer appropriate scope for parallel runs of the old and new system side by side and gradually allow the new system to take over fully as soon as it’s efficacy and utility is established. After that stage the manual system should be completely withdrawn. If both are allowed to continue, by sheer old familiarity, inertia etc. the new system will suffer even if it has positive features. If by chance the new system has design weaknesses then this slip back is certain. This has been amply proved in these two case studies.
5.10 Impact of Incentives:
In management of change as is seen from different literature that for bringing in new technology or working systems offering incentives is one way of overcoming resistance. The incentives are by and large offered in the form of special pays, promotions etc. One of the first steps management in general and government departments in particular take is to offer to accommodate surplus staff in the same place with full pay protection. This is a common and genuine demand of labour unions. Mostly it is agreed to by management as was done in these two cases also. In fact the work load in both these departments has gone up so much that they had to resort to additional recruitment rather than retrenchment. Since no one really objected to creation of additional posts, or a new cadre little thought was given to the promotional prospects, inter se seniority etc. of the new cadre. Today it is posing problems in both departments. The popular method of incentives is to offer special pay to workers who will come forward for doing this job. This however has failed in both departments in different ways. In case of passenger computerisation no such incentive was needed. As the new system design itself offered so many intrinsic benefits to the workers, such as better working environment, reduction in working hours and freedom from being constantly accused of malpractice, that in spite of no separate special pay being given for this work as incentive, the staff gave whole hearted support to computerisation.

5.10.2 As against this in the customs computerisation project, the new system never replaced manual work but added more steps in it. The
working environment, did not improve much. In fact by mixing up sitting arrangements etc. more ‘status’ problems were created. Everyone across the board was given special pays whether one did the work competently or not; so it lost it’s value or uniqueness. The promised ‘immunity’ to appraisers for wrong evaluation of a commodity based on computer response was short lived. Thus number of ills of the old system continued and new ones were added for the staff. The incentive of special pay was not sufficient to balance all these lacunas. In fact the special pay continued but the system slid back because of these drawbacks. Therefore it proves the hypothesis stated in para 1.6 B ,that for success of new projects mere award of incentives by way of monetary benefits etc. will not ensure results, unless the new system can positively alleviate the day to day difficulties of the workers in a positive way. If the new system is able to offer tangible benefits to the workers and help the worker in his work, the system is likely to be accepted even without such incentives.

B) GENERAL CONCLUSIONS :

From the discussions on the conclusions drawn in section A, it is possible to draw certain general conclusions on the management practices which have been adopted in the case studies. These are enumerated below:

1) For such large projects to be successful full commitment & help from the topmost personality in the hierarchy is extremely essential without which initial planning & implementation of the new system will suffer. However the new change can be successfully maintained and grow only if it has been implemented in such a manner that the staff at the grass root
level has adopted it through appropriate participation. This is possible in
India by a judicious mix of autocratic and participative approach.

2) In large organisations for computerisation projects; proper and detailed
planning is necessary not only for undertaking such projects but also for
executing the pilot project and later its expansion. The expansion on all
India basis are likely to succeed better, if they are commenced after the
pilot project is fully implemented and running smoothly.

3) In government organisations for introduction of a major change a
central directorate or department with adequate powers and staff should be
created. Officers having aptitude for such work should be posted there
even if need be by giving some incentives. The same should be done at
major field units also.

4) Such a large projects should be handled by combination of
departmental teams and outside team who are specialist in the new
technology & not by any one of them alone. The selection of the leader of
the departmental team to head this group must be done with full care to
select a willing, experienced & knowledgeable manager having good inter
personal skills.

5 a) The departmental change team must have, representation from all
categories of staff and officers actually handling the work taken up for
computerisation. The customer also should be taken into confidence by
such a team, as and where applicable.

b) The team leader must select those representatives in this team who have
good record and are opinion makers in their respective categories of staff
so as to benefit from their valuable insight and positive impact they can
have on their peers.
6) In Indian situation change in any member of the departmental team should normally be avoided and change of team leader should never be done as it can have adverse effect on the overall project.

7) A) For any new system to be introduced adequate training must be planned preferably with departmental representatives who are members of the change team. They should be given that much extra training to work as trainers. The training should be made interesting by way of easy screen designs & appropriate incentives. The training must cover all tiers of staff and management concerned with the project.

B) Training modules based on the new systems should be designed and introduced in the departmental training institutes, so that all trainees who enter these institutes are exposed to the new set up and are better equipped to accept and interact with the computer systems. Refresher courses should be also suitably planned so that the senior staff and officers are made aware of the latest developments and can remove their misconceptions.

8) For large size computerisation projects partial computerisation will never be successful. The new system must replace the old system fully after parallel runs in the implementation phase are over. If this does not happen, the old system will always prevail.

C) APPLICABILITY OF GENERAL CONCLUSIONS:

The study of management practices adopted in these two projects brought forth a number of issues, which did not really fall into any established theories on management of change. The various approaches in section 2.11 of chapter 2, are based on the western approach to management. In Indian environment and that too in government departments, which are claimed to
be extremely orthodox & lethargic, these approaches may not deliver the goods. Some general conclusions were therefore drawn from this research which will specifically apply to government departments in developing countries, countries which have been released from colonial rules and are prospering. In fact in both these departments, subsequently, the positive effects of these conclusions and negative effects of not following them have been cited. In my opinion the crucial steps of forming an effective change team with correctly selected team leader, who is given direct access to top authorities and positive benefits of genuine interest and support received from topmost authorities from inception to implementation are unique to our way of working. The emphasis on correct and adequate training also needs to be given utmost attention in government departments in such projects as the education levels of the government workers is still not very high. The aspect of developing a new system which will offer positive benefits to the government workers, while increasing productivity should also be done meticulously as expecting the new system to succeed through monetary incentives alone will not work. Incentives are means to an end and not the end in itself. Both railways and customs and many other departments will be taking up more and more such projects involving fundamental change in the work ethos, as the nation is now well poised to enter the twenty first century. It is hoped that this research work in this field of management will prove of guidance and help to practicing managers taking up similar projects in the coming years.