ORGANIZATIONAL RESTRUCTURING OF ARMY - AN ANALYSIS

The Romans said, " If you would have peace, you must be prepared for war". And while we pray for peace, we can never forget that organization, no less than a bayonet or an aircraft carrier, is a weapon of war. We owe it to our soldiers, our sailors, our airmen and our marines to ensure that this weapon is lean enough, flexible enough and tough enough to help them win if, God forbid, that ever becomes necessary.

From the opening statement by Congressman Nicolas House Armed Services Committee on the reorganization of the Department of Defence, USA, 19 Feb 1986.

INTRODUCTION

The next twenty years are likely to see very substantial changes in the nature of all organizations, whether civilian or military. One important factor facilitating and, to some extent, driving these changes will be information technology (IT), whose relentless advance--it is said that the performance/price ratio of Central Processing Units (CPUs) doubles every 18 months--is not expected to abate any time in the foreseeable future. As in previous technological revolutions, however, the second- and third-order effects of the changes will not be felt until organizations adapt and learn how to take advantage of new capability. We cannot predict how these changes will evolve, but we can extrapolate from recent trends and argue by analogy from earlier revolutions in information technology. Although discussion of the "revolution in military affairs" has centered around the impact of technology on weapon systems, there are reasons for thinking that more fundamental improvements in military effectiveness will require, along with doctrinal changes, the use of aappropriate organizational structures.Technological advances of the previous decades—tanks, aircrafts capable of giving close air support and mobile radios-- it also required certain organizational characteristics. Front line Panzer units could request air support directly from the Luftwaff without having to go through higher Army echelons. Many of the organizational characteristics of the German Army –"mission orders" or Auftragstaktik , the assumption of initiative and responsibility by lower echelons, streamlined administrative and reporting systems--predated blitzkrieg were consonant with it and were important elements in contributing to its success. Changes in the ways that commercial organizations do business have already been tremendous. To an ever-increasing degree, the economy is moving from an industrial-age model, in which machines and natural resources are used to produce material product, to the "information-based organization". Companies as a whole will become smaller; that large, vertically integrated corporations will either flatten their managerial hierarchies or else evolve into networks of smaller, more agile firms; that low-skill labour will continue to be devalued and replaced by work with greater skill and cognitive requirements; and that self-organized teams will displace individual effort. All corporations will have to operate in a much more uncertain and chaotic environment and will therefore place a premium on flexibility, learning, and adaptability..The question is how to structure

military organization to take advantage of the new information technology. The information revolution is favouring and strengthening network forms of organization. While a networked organization may be ideal for sharing information gathering it may not be the best model for military commanders when dealing with tough decisions in combat. Experience of corporate organizations, likely implications of the organizational change in corporate sector on organization of the armed forces and a probable way to affect organizational changes in the armed forces need to be analysed critically.

Revolution in Military Affairs

Numerous recent books and reports have heralded the emerging Revolution in Military Affairs. John Arquilla and David Ronfeldt's In Athena's Camp (1997) was one of the earliest treatises on this topic. The suggest that:

- Military requirements will shift from destruction to disruption via information technology.
- Advantages of technology will come from changes of doctrine, organization, and strategy.
- Network forms of organization will be favoured; hierarchical forms will encounter difficulties.
- Technology will push the speed of decision making, with humans being the limiting factor.
- Humans' roles and performance will also be significant factors in information assurance.

The revolution is not, however, limited to technology. It includes emphasis on joint missions rather than service platforms; fewer service components, commands, weapons and platforms and speed in terms of hours rather than weeks or months. These types of changes will be far reaching and likely much more painful and anguished than the technology insertion suggested by his vision. This pain and anguish will be a significant element of the "price" of the benefits of the advanced technology. These and many other studies across the military services project needs for lean, agile forces to meet heterogeneous mission demands with emphasis on leveraging advanced technology.

Leveraging Information Technology

Armed forces must leverage information technology and innovative network-centric concepts of operations to develop increasingly capable joint forces. Our ability to leverage the power of information and networks will be key to our success in the 21st century. New information and communications technologies hold promise for networking highly distributed joint forces and for ensuring that these forces have better situational awareness-about friendly forces and those of adversaries-than in the past. C4ISR systems draw combat power from the networking of a multitude of people using an array of platforms, weapons, sensors, and command and control entities, which are collectively self-organized through access to common views of the battlespace. Leveraging information technology and harnessing the power of

networks poses three challenges. We must make information available on a network that people will be willing to depend on and trust. We must populate that network with new types of information needed to defeat future enemies and make existing information more readily available. And we must deny enemies' information advantages against us. The ultimate goal is to empower armed forces through the network, "to move power to the edge." The edge doesn't just mean thesoldier in the trench -- it refers to anyone who urgently needs information anywhere on the network.

Military Information Revolution

The obsession with linear channels of communication that centralize control of events in the hands of senior officers miles from the action was reinforced by both the technology of communications and the mentality that all action must conform to a plan made in advance. Our tactical and operational commanders failed to seize the initiative when 3 JAT provided such an exemplary opportunity in the battle of Dograi in 65 Operations.

Data networking has emancipated information from the scenery of location. By freeing, utilizing and rewarding brain power networking mobilizes the intelligence of the many at the expense of control by the few. The brilliance of leadership in measured increasingly by its ability to liberate the genius of the rank and file and to inspire the genius with a vision.

Before the latest information revolution, organizations used information, at best, as a tool of management. At worst, they hoarded it as an instrument of control. Important information was stamped "Sensitive" or "Proprietary" and guarded and manipulated in hopes of affecting both internal and external actors. Now, the velocity of change and IT place a premium on gathering information from outside and sharing it throughout the organization. The strongest corporations are those that have switched from closed to open – from an inside-out to an outside- in drive train.

Analysis of Different Types of Organizations [1]

Problems with Traditional Organization Structures . These are :-

- Lack of flexibility to changing mission needs/rapidly changing world.
- Internal and external communication (ideas are not communicated).
- Slow/Poor in responding to customer requirements.
- Turf battles.
- Failure to get things done.

Customers/Vendors have a hard time dealing with this type of organization (multiple/ unknown contacts).

Flat Organizations. We want to reduce layers of an organization in the hope of achieving organizational efficiency and effectiveness.

Boundaryless Organization

The different types of boundaries are as under :-

Vertical. Boundaries between layers within an organization. Classic Example is Military organizations. However the problem is if someone in a lower layer has a useful idea; the Chain of Command mentality comes in.

Horizontal. Boundaries which exist between organization functional units. Each unit has a singular function. Problem is each unit maximize their own goals but not the overall goal of the organization.

External. Barriers between the organization and the outside world (customers, suppliers, other government entities, special interest groups, communities). Customers are the most capable of identifying major problems in the organization and are interested in solutions. Problem is to lose sight of the customer needs and supplier requirements.

Geographic. Barriers among organization units located in different countries Problems is isolation of innovative practices and ideas .

What is a Boundaryless Organization?

- One that makes all of these barriers much more permeable than they are now; loosen boundaries .
- Let information/ideas/resources/energy flow throughout the organization and into others.
- Jack Welch of General Electric coined the term .

- Can an organization be completely boundaryless? No -- there will always have some hierarchy, functional divisions, geographic boundaries, limits between organizations.

Organizational Processes. The organizational process required by flat and boundaryless structures are as under :-

Required by Flat and Boundaryless Structures

- Decentralization of authority.
- Information sharing.
- Diffusion and distribution of competency.
- Redefinition and reallocation of awards.

Other Implementation Issues and Overcoming Them

- People issues (Turf mentality).
- Resistance to change.
- Cost issues.

Role of IT.

IT Which are Enabling and Driving New Organizational Forms are: -

- Telecommunications.
- E-mail.
- Distributed Computing/Client/Server Technologies.
- Access to database (production schedule).
- Flat organizations create a need for systems which give employees prompt, direct access to information required to do their jobs and cope with increased work loads and fewer support staff.
- Collaborative Technologies.
- Groupware.
- Group Decisionmaking Tools.
- Internet/Intranet .
- CD-ROM technology .
- Office Automation Software .
- High Capacity Data Storage.
- Object-Oriented Technologies.
- Videoconferencing .
- Networks.
- Executive Information Systems.
- Geographical Information Systems (track where employees are located and contrast with workloads, program benefits, outcomes).
- Integrated Data Management System - same package record, Hertz -- rental car data from a single system.

Information technology and changes in corporate organizations

> "business especially large ones have little choice but to become information based. The centre of gravity in employment is moving fast from manual and clerical workers to knowledge workers who resist the command and control model that business took from the military 100 years ago. Information technology demands the shift[3].
>
> - Peter F Drucker, Management 'Guru'

Revolutions in Business Affairs

Over the past decade, innovations in business practices – especially those leveraging information technology – have revolutionized the ways we work in our offices; communicate with colleagues, family, and friends; search for information, make purchases, and so on. This is perhaps most evident in the office where email, Internet, word processing, spreadsheets, and presentation packages have become standard tools at all levels of the organization, dramatically decreasing needs for secretaries, letterhead, faxes, etc – but not printed hardcopy. Ten years ago. It would have been very difficult to imagine what we take as everyday business practices now.

Commensurate changes in military practices have been much slower in coming, in part because of a mismatch in time constants for change between technology and military domains. The "business as usual" perspective is incompatible with the facts of how the networked economy has already changed many things. Beyond the impacts on the business practices noted earlier, there are numerous more focused examples that clearly indicate the pervasiveness of change.

- Wal-Mart has been characterized as likely to be the first company having one trillion dollars of inventory, yet owning nothing. They buy products from their suppliers moments after you buy them from Wal-Mart, dramatically reducing inventory costs, thereby freeing resources for investment elsewhere. Perhaps military commanders will discover the merits of only paying for assets (e.g., transport capacity) when these assets are needed.
- Amazon's online customer relationship management proactively keeps you informed of the progress of your order, assuring that your expectations are met or adjusted as necessary. It is easy to imagine military commanders liking the idea of assets keeping them informed of their ongoing status and updating estimates of when desired military effects can be realized.
- Bloomberg provides customized and personalized customer support, yet roughly 90% of this support is automated via archiving and managing of past questions and answers. A personalized support system that learns a commander's needs and preferences, including adaptation to user feedback about its support, is likely to be relied upon by commanders.
- Cisco supports networking among its customers (network design engineers), resulting in 80% of customers' questions being answered by other customers, thereby, dramatically lowering support costs. It is easy to imagine, assuming appropriate security mechanisms, military commanders coming to rely upon a rich network of team members, sister organizations, and coalition partners, all helping each other with questions and answers in real time as these questions emerge.

Considering these examples, it seems prudent to predict that networking and communications technologies will fundamentally affect command and control, human decision making, and human effectiveness more broadly. However, we cannot predict how users will adapt to these technologies and change the ways they work. Nevertheless, we can expect the unexpected.

The three major effects of the information revolution on corporate organization are :-

- **"Flattening" Organizational Structure**. To speed up the flow of information within the organization and creates the proper incentives for its use.
- **"Informating" or Digitisation** . To facilitate the collection, processing, destruction and use of more detailed and more timely information throughout the organization.
- **Concentrating on "Core Competencies".** To emphasize ones sources of competitive advantage while disencumbering oneself of functions that can be performed better by others.

Flattening an Organization

> Now we are entering a third period of change : the shift from the command and control organization, the organization of departments and divisions, to the information based organization, the organization of knowledge specialists [4]

-Peter F Drucker

Flattening an organization involves re-assigning the function and authority of one or more layers of middle management. The overall member of management layers decreases as a result. At Eastman Kodak after restructuring, the distance between manufacturing manager and factory fell from 13 levels to four. The main advantage

sought in flattening an organization is in terms of information flow. In the traditional hierarchical organizations, information is costly to generate and transmit, the process takes time and effort and is not free from error and distortion. It is common in bureaucracies for each level to pass along only that information it thinks the next level above or below it wants or needs to hear. The result is necessarily an overall loss of precision , as well as time, as the information passes through the hierarchical structure.

Flattening also contains certain risks. They are:-

- Span of control for senior management increases, decreasing their ability to supervise their subordinate's activities or identify problems areas.
- Loss of "middle perspective". Higher level supervisors may lack the detailed knowledge of day to day operations, while those engaged in the actual operations may lack the time and ability to reflect on them.

In the late 1950s, in the height of Cold War, the idea that increased flexibility of command would be required to operate in a tactical nuclear environment led to the Pentomic Army concept in US Army in which the brigade echelon was abolished . To compensate, the span of control at the division and battalion level was increased to five battalions and five companies respectively. The concept was soon abandoned as mistaken, it may be that from an organizational point of view it was premature than simply wrong. Peter F Drucker states, " The best example of a large and successful information based organization, and one without any idle management at all, is the British civil administration in India."

Informating

> Information is data endowed with relevance and purpose. Converting data into information thus requires knowledge. And knowledge by definition, is specialised.
>
> - Peter F Drucker

Information technology enables speeding up the flow of information and ensures that it gets to the right place at the right time in the right format. However, the latest communication systems can be counterproductive if they lead to information "overload". The additional reporting burden on subordinate units can interfere with their ability to fulfil more crucial tasks [7].

One solution to the problem is called "informatting" which is the application of automation to information processes to minimize the reporting burden, avoid "information overload" and gain the greatest possible value from the available data. The key is to automate the required information process and then tailor the display of the data to the particular needs of the various consumers at various echelons and

with different responsibilities. Automation can be applied to data collection, transmission, aggregation, processing and presentation . In such a system information is collected automatically or as a by-product of other operations. One of the best known examples of this is the procedures adopted by first in Fortune 500 list, the retailer chain Wal Mart .Here the information that a particular product has been sold, which is obtained at the checkout counter when the bar code is scanned, is used not only to calculate how much the customer owes but is also transmitted to a company wide database. Without increasing workload of the checkout clerk and burdening other company employees , timely and detailed sales information is collected for processing and use. CEO of General Electrics Jack Welch said that as soon as one bulb is sold by the retailer chain Wal Mart ,the production line at General Electrics knows how many bulbs he has to manufacture[8]. The data is made available to a wide variety of users within the organization in formats specifically tailored to their needs. This avoids the problem of "information overload", the swamping of users with large amounts of routine data, which makes it harder for them to focus on what is of particular importance. This is accomplished without burdening a large number of employees with the transmission, aggregation and processing of data, tasks that can absorb a great deal of time and energy in traditional organisational hierarchies.However, potential availability of large amount of data could inhibit rapid decision, tempting the commander to keep searching for more and more information long after he should have made his decision.

"Informatting" can be seen as a decentralizing influence since it enables information to move flexibly throughout the organization not just in vertical reporting channels. However, while the automating of information is the key to reaping the advantages of advances in information technology it must be balanced by the ability to retain visibility of the entire process, to interrogate it in unconstrained ways and to make incremental adjustments to it.

Concentrating on "Core Competencies" [9]

The idea of "Core Competencies" is a challenge to the more traditional view of a corporation as tending towards an integrated organisation that itself perform all the vital functions that are important for the conduct of its business. The firms tended to integrate a wide variety of functions under a single management structure because of transaction costs. With the introduction of cheaper, more sophisticated Information Technology, many of the costs of dealing across firm boundaries began to decline. Increasing market efficiency for linking buyers and sellers implies that firms should focus more carefully on the few core competencies that give them strategic advantages in the market places. They should buy the additional, more peripheral products and services they need instead of making them[10.]

Learning Organization

Harvard Business School defines, " A learning organization is an organization skilled at creating, acquiring, interpreting, transferring and retaining knowledge and at purposefully modifying its behaviour to reflect new knowledge and insights". The professional military culture places great value on action and generally disdains process. Only comfortable when acting, we feel guilty if valuable time is given over to reflection. Rather, we are focused almost totally on the end result, the final product. If we are to progress successfully, the balance between product and process needs to shift in the future towards process and we need to trust that a high quality process will produce a higher quality product or performance.

In preparing for the future, the singly most valuable contribution of the current leadership is to build a learning organization which is devoted to increasing the effectiveness of initiative and ingenuity of commanders and highly skilled employment team – in effect, to put into motion. "boundaryless learning culture" in which ideas are valued regardless of their source. Even with abundant information, talented people are not going to flourish in an organization where their function is merely to move product or please management. They will thrive on access to information only if they are also given the latitude, encouragement and incentive to act upon it.

The military loves organization traditions and technical progress. Military leadership is usually enthusiastic about technological innovation, as long as it is an add on for which they do not have to give up other cherished formations.

Creating A Learning Organization. There should be a major shift in the way the Armed Forces prepare for the future. Their behaviour should be characterised by:-

- Constant experimentation with new ideas and methods as the new information systems are absorbed.
- Pursuit of multiple alternative solutions.
- Careful analysis of actual operations to extract the maximum amount of information from real world experience.
- Willingness to make frequent small changes in methods and structures as new lessons are learnt.

When corporations experiment, they may be able to tell right away whether an idea is good or not. However for the armed forces things are different. The real test of a new tactic or organizational structure does not come until it is tried in actual combat.

Virtual Organization

A virtual organization can be thought of as an *ad hoc c*ollection of individuals, brought together for a specific purpose, e.g., the design of a product. These organizations are usually *cross-disciplinary* in that the members come from different functions or specialties. For example, a product design team typically consists of representatives from research and development, manufacturing and marketing . The membership of virtual organization is often *inter-institutional*. For example, multiple organizations sometimes pool their expertise in product development. More typically, representatives of suppliers and/or customers increasingly form an integral part of the design teams of companies. Finally, virtual organizations are *transient* in their existence. That is, such teams are usually disbanded (or radically restructured) after the assignment is completed . Virtual teams have been used extensively in tasks as diverse as product design, software development, management consulting, and health care . Virtual organizations share many of the properties of joint task forces designed for missions such as humanitarian relief (wherein the core military units collaborate with local governmental units and other institutional structures such as non-governmental organizations for a specific purpose), coalition warfare and traditional combat missions. For example, a joint task force is composed of multiple components, each of which is cross-functional, being an aggregate of multiple

communities of practice. Each community of practice is based on a specific knowledge domain. Joint task forces are constituted for specific missions and similar to virtual organizations, are disbanded after completion of the mission. The use of virtual organizations offers several advantages. The ability to create temporary, dynamic project-oriented structures enables flexibility. Second, the composition of the teams can be tailored so as to provide an "optimal" mix of skills for accomplishing a task. Third, because the teams do not have to be co-located, they can include members who are also engaged in other tasks performed at other locations. Thus, virtual teams constitute a handy mechanism for bringing together expertise that is otherwise dispersed across - or even located outside - an organization. Fourth, because of their transient nature, virtual teams are less likely to be burdened with the entrenched organizational routines and authority relationships that so often inhibit performance in more permanent organizational structures . Finally, virtual teams offer a means to create organizational forms (such as task-specific alliances with other organizations) that are difficult to accomplish in more conventional situations).

However, virtual organizations also suffer from shortcomings, because the processes underlying their collaborative activities are social as much as they are technical. Such activities, e.g., articulation of doctrine and the commander's intent, require shared understandings which emerge from social interactions among individuals and groups. The interactions are characterized by extensive communications, both within the team as well as with individuals external to the activity. The quality of the output therefore critically hinges on the efficacy of the collaborative process. This, in turn, depends on a team's ability to create an appropriate structure as well as adequate mechanisms for communication. The presence of a structure also helps an organization develop its own implicit culture and norms, helps make sense of ambiguous situations , and provides a scaffold to facilitate the learning and socialization of new members.

Now, consider a virtual organization such as a joint task force, which is comprised of multiple entities brought together for a specific mission. The *ad hoc* nature of the organization can imply the lack of a well-established and time-tested structure for coordinating its functioning. While this may be ameliorated to an extent by the presence of a well-defined doctrine, the process of melding the units may still be difficult because the key members may not be familiar with each other. In addition, the task at its initial stages can have a high degree of equivocality, at least in how it is perceived across the different units in the organization. Further, the cross-functional and inter-institutional composition of the organization can create ambiguities in the status, authority, and expertise of the members. All these difficulties may be exacerbated by the geographical dispersion of the organization.
Thus, for a virtual organization to function effectively, it would have to go through a period of time wherein these problems are addressed and settled satisfactorily. In essence, this constrains the range of tasks, missions and time scales within which virtual organization can be deployed. Thus, while virtual organizations do offer much potential for solving a diverse set of problems, it needs to be noted that virtual is not always virtuous.

Edge Organization. A new kind of organization, an edge organization, has been enabled by a change in the power proposition for information. Edge organizations are characterized by the widespread sharing of information and the predominance of

peer-to-peer relationships. Edge organizations have a fundamentally different power topology from traditional organizations. In an edge organization, virtually everyone is at the edge because they are empowered. The distinctions between line and support organizations disappear. The resulting stovepipes, associated with separating line from support organizations, are eliminated as well. The need for the communications and translation functions performed by the middle is greatly diminished and as that need diminishes so will the size of the middle. With the disappearance of stovepipes and the demise of the middle, barriers to information sharing and collaboration disappear as well. Edge organizations are, in fact, collaborative organizations that are inclusive, as opposed to hierarchies that are authoritarian and exclusive. In socio-economic terms, hierarchies are socialist and edge organizations are marketplaces. Edge organizations are organizations where everyone is empowered by information and has the freedom to do what makes sense. They are organizations that embody a power to the edge approach to command and control. As hierarchy age, they tend to acquire the characteristics associated with bureaucracy, including inflexibility, inefficiency, and fragility. It also explains why the empowerment of the organization is the key to handling large numbers of simultaneous tasks in a dynamic environment. This is because empowered individuals and organizations that constitute an edge organization have a greater " bandwidth" for action than their unempowered counterparts in traditional hierarchies.

Personnel Policy : Distribution of Skills in the Organization

Peter drunker states, "the information based organization will also pose its own special management problem. I see as particularly critical :-

- Developing rewards, recognition and career opportunities for specialists.
- Creating unified vision in an organization of specialists.
- Devising the management structure for an organization of task force.
- Ensuring the supply, preparation and testing of top management people".

If organisations are to be flatter and more adaptive, they will require a greater distribution of skills throughout their various levels. In corporations specialists may not be promoted if that means that they would have to give up exercising their special talent and become managers : an excellent computer programmer may make an indifferent manager. Instead, the company can reward the specialists by increasing their salaries, giving them more challenging jobs to do and assigning them "mentoring" responsibilities by which they impart their knowledge and experience to younger specialists.

Many of these techniques are not feasible in the Armed Forces. Salary is set by law and is associated with rank, so are the service privileges. The "kicked up or kicked out" promotion system creates the situation worse. For specialists viz intelligence personnel have very few promotion opportunities. It may be difficult for the armed forces to retain the service of such specialists over the long term, even though it may be in the Armed Forces interest to do so. This contradicts the notion of flat organization, in which retention of skills at the bottom of the hierarchy is crucial. Also there is no scope for any lateral entry in armed forces. Everybody has to enter in the lowest rung of the hierarchy and work his way up.

Implications for the Armed Forces

> The highest inventive genius must be sought not so much amongst those who invent new weapons as among those who devise new fighting organizations.
>
> -- Maj Gen JFC Fuller

Armed forces have always been regarded as the prototypical strictly hierarchical organisation. However, hierarchical a military organisation may appear on paper, the confusion, uncertainty, urgency and stress of combat requires the implementation of many contemporary corporate nostrums such as individual initiative at lower levels, lateral communication and team work. Irony is that the army popularly regarded as the most rigidly hierarchical organization - the Prussian or German Army in fact operated in a manner most consonant with the recent corporate literature.

Information age compels changes in organization. New technology empowers subordinates, decentralizes control and globalises information. This creates the opportunity to exploit technology at lower levels of combat. The application of new technology to old organizational structures is a design for failure.

In information age military we might expect the evolution of smaller more independent tactical units, flattened command hierarchies, a greater emphasise on networks rather than platforms and a thinning of boundaries between services. The aim would be to increase the effectiveness, efficiency and flexibility of armed force. Success in this would allow to do more and faster with fewer resources and less risk.

CENTRALISATION OR DECENTRALISATION

> The arguments advanced for centralization are generally based on efficiency. In contrast, the arguments for decentralization deal with effectiveness.

Centralisation offers many advantages to an organization. They include economies of scale, consolidation of expertise, maximum conformity and integration, consolidation of leadership, potential for better decisions, and standardization of output. With all personnel in one location, an organization may achieve maximum conformity of working standards and ensure smooth integration from all parts of the workforce. All the decisions are made at one point, ensuring no confusion as to objectives. Since all the decisions are made at the one point, the leadership of the organization can exert strong control. And provide the leader has extensive experience in the operation of the organization, the potential for better decisions exists. These decisions have a direct impact on the end product. Decentralised agencies tend to customize their product based upon the changing desires of the users. By placing all targeting under one organization, output would be uniform.

While these advantages of centralisation are valid. Consolidation of numerous subordinate functions into one large organization presents the possibility of swamping certain individuals with too much information from too many sources. Information overload is a distinct possibility.

Besides dealing with tremendous amounts of information, a centralized organization might lose the flexibility offered by smaller agencies. May give the different users the impression that the centralized organization is dictating what the product will be instead of providing what they need. Instead of asking what the users want, a centralized agency may get in the habit of telling them what they will get.

As decision making is forced to the top levels of a centralised structure, innovation and initiative are squelched down the corporate ladder. There is very little incentive for middle and lower-level managers to try new approaches, since there is little room for movement within the executive ranks. It can lead to large staffs and staff layering. The one making the decisions may require more and more support to screen incoming data and ensure only the most pertinent information goes through.

Decentralization

As an organization flattens its hierarchy, a number of factors have to be kept in mind. Decentralization is not an end in itself; there are certain functions performed in organizations that are better performed by centralized authority than on a distributed basis. Centralized organizations generally can move more quickly and decisively than decentralized ones, and they can achieve scale economies more readily; on the other hand, they may adapt more slowly to changed circumstances, and problems at the "center" may tend to paralyze activity throughout the organization. A military organization seeking to accomplish a specific goal in the near future needs centralized command authority; a military seeking to adapt to a fast-changing and uncertain external environment needs a higher degree of decentralization in order to adapt adequately. Today's Army is arguably in the latter situation: given that it is very hard to predict the kinds of wars it will fight or the weapons it will use in another 20-30 years, the key to a successful future Army is sufficient flexibility and adaptability to adjust rapidly to changes in future environment.

Advantages and Disadvantages of Decentralization. Advantages of decentralization include faster, more responsive decisions, greater flexibility, more initiative at lower levels, reduced coordination efforts, reduced administration, and redundant capabilities.

The organization can react more quickly in this arrangement than if it had to route all decisions through a central location. Decentralisation can lead to greater flexibility in dealing with problems. A small unit is able to adapt to unexpected circumstances with more ease than a large, cumbersome organization. Some employees will take risks and make valuable, new contributions in the process. Each dispersed portion of the whole responsible for its own operations, those at headquarters do not have to deal with the day to day affairs.

Centralization	Decentralization
Advantages	**Advantages**

Economy of scale Consolidation of expertise Maximizes conformity and integration Strong leadership Better decisions Standardized output **Disadvantages** Information overload Reduces flexibility Lack of innovation Breeds mediocrity Large staffs	Quicker, better quality decisions Greater flexibility Encourages initiative Reduces coordination Reduces administration Redundant capabilities **Disadvantages** Duplication of effort Localization of expertise Difficulty of standardized change Lack of uniformity

All these plusses and minuses need to be considered before any decision is made concerning the appropriate structure for any given organization. There are many variables that dictate how much weight should be given to certain advantages or disadvantages when deciding the issue. The purpose and goals of the organization are foremost. A simple product may be produced at various dispersed locations, but a highly complex process needs to be centralized. Large organizations have different needs.

Command and Control

While the information age will complicate military strategy, it will revolutionize military organizations and the approach to command and control. Command and control is a military term for leadership and management. In military hierarchies, the commander's staff is often seen as the control mechanism, an adjunct to the command role of the formal leader or commander. For example, Eisenhower's headquarters for OPERATION OVERLORD included more than 16,000 personnel.

Beyond these command and control issues, the rapidly expanding operational capabilities of military forces are also challenging the traditional division of labour—the "roles and missions" – of the military services. The further that surveillance and reconnaissance systems can see and weapons systems can shoot, the greater the zone of influence – and interest—of the commanders that control them. The result is that service-specific "battlespaces" increasingly intersect with each other, and will eventually merge.

Joint Warfare

Industrial Age militaries lack the quality of "jointness," the ability of individuals and organizations from multiple services to work together synergistically. In Industrial Age militaries, various approaches were employed to help ensure that the activity of different services were deconflicted, that they could operate on the battlefield without interfering with or harming each other. It was not until very recently, with the passage of Goldwater-Nichols[3] Act that a significant effort was made to make U.S. forces "joint."

Hierarchical Organisation

One of the advantages of hierarchy is its standardisation. It facilitates a certain predictability allowing an organisation to assimilate large member of new personnel to remain effective with high turnover in the event of casualties. Unit structure is predictable and repetitive allowing interchangeability and facilitating task organisation of groups of units. Knowledge, technique and experience gained from past endeavours is retained by the senior personnel and passed to the lower echelon of the organisation often in an informal manner. Authority for independent action can be delegated in the organisation but responsibility cannot. A commander is always responsible for the outcome regardless of whether a flawed decision was his own or that of his subordinates.

In a hierarchical organization, those at the top have the power to command, to set the direction for the organization, allocate its resources, and control the reward structure. Information flows along the axes of power, hence these flows are vertical. Information collected at the bottom flows vertically to the top, and directives flow vertically from the top to the bottom. The middle is needed to deal with the practical limits on span of control. The middle serves to mediate and interpret information flows in both directions, allocate resources, and delegate authority. Some think of the top as exercising command and the middle as exercising control.

Hierarchies are commonly composed of specialized stovepipes that balkanize the organization, creating fiefdoms that are difficult to meld into a coherent whole. In the Industrial Age, stovepipes were necessary because the economics of information made it prohibitively costly to support widespread information sharing and peer-to-peer interactions.

The operational chain of command insulates the operators from the higher degree of uncertainty that often prevails at the highest level of organisation. The personnel who man the intermediate echelons, experienced operators themselves, may detect flaws or potential problems and either modify the `plan or recommend an alternate course of action.

Modern armies have succeeded by following the mechanical, bureaucratic model, specialization, unambiguous chain of command and enforcement of established routine. The same dedication to uniform, established and centralised procedures also makes them highly resistant to change. The rigid hierarchical organisational structure impedes the progress of new ideas. Because of formal rank and hierarchy informal access to senior leaders is cut off almost entirely. However, there are valid reasons why military as an institution tilts towards conservatism. The dangerous nature of military profession counsels against incorporating unverified innovations in to the organisation. The cost of failure to the Armed Forces and the nation is so great that it warrants a conservative approach to new idea. In the corporate world people may get fired when managers fail, in the military world people may lose their lives when officers fail. Finally military order and discipline, which are still essential, limit the freedom of commanders to “let go” as their corporate cousins can.

Networked Organisation

> Our existing hierarchical structure, created long before it started making its impact, is unable to cope with our current and future requirements. We will be at a great disadvantage if we do not realise the value of networking as we move towards the next millennium[13].

- General VP Malik

The information revolution is favouring and strengthening network from of organisation often giving them an advantage over hierarchical organisations. Unlike hierarchical organisation, networked organizations offer decentralised control orientation that makes better use of information technology. In a networked organization , the information gathering process will be more equally distributed and more information will be available more rapidly to all levels of command. Commanders will share rather than control information, resulting a faster decision making at all levels of command. Leaders are able to concentrate on their specially : Strategy. Networking creates synergy between lower level initiative and top level responsibility.

While a networked organisation may be ideal for sharing information gathering it may not be the best model for military commanders when dealing with tough decisions in combat. Unlike their business counterparts military commanders must really make life and death decisions and put subordinates at risk. In a networked organisation, who among the collaborators will make these decisions? War requires commanders not collaborations. Decision making may be more a hierarchical function than information gathering. Some type of hierarchical organisation is required to support the decision making process.

We also need much better understanding of how networked operations will differ from hierarchical operations. If echelon skipping becomes the norm for information flows, what then are the roles of the echelons? How is a shared situation assessment achieved and maintained when soldiers can talk directly to Generals and vice versa? What does situation awareness mean in a networked “pickup” organization?
As decision makers gain experience with advanced technology, experiment with the new capabilities, discover new and better work methods, and adapt in general, how can and should such changes be evaluated? Yet, there is nevertheless the risk that networked operations will be approached like internet where “click and try” is a predominant mode of behavior.
Some of these inventions will eventually prove to be significant innovations in doctrine, organization, and strategy. Many of these inventions, however, will need to be quickly short circuited. Methods and tools for making such discriminations, earlier rather than later, will be sorely needed.

There are serious implications for networked organizations in the Armed Forces. Should military be organized as a true network in which self synchronization, synergy and speed of action replace the traditional hierarchy characterized by deliberate planning, experience and command and control?

Flattening the Organisation

Reducing the number of management layers not only speeds up the flow of information from initial acquirer to ultimate user but can also increase its accuracy. While the corporate literature suggests that such flattening could be a useful step, it must be kept in mind that it is not a goal in itself, but only a possible means towards the ultimate goal of creating an organisation that can react more quickly to events, especially unforeseen ones. If the high level commander visits a front line personally, he has effectively shortened the data path by skipping the intermediate echelons.

In armed forces data path are often shortened in ad hoc fashion. Such improvisation is often necessary although it does run the risk of creating confusion if the bypassed intermediate levels are not informed of what is going on. For example Military Operations Directorate at Army Headquarter may wish to be in direct communication with the battalion in action in a sensitive place like Hazrat Bal shrine in Srinagar because of sensitivity of the case and media reporting live. In case of some policy decision to be given by Army Headquarter or Ministry of Defence, there may not be time to go through normal hierarchy and direct instruction to lowest echelon may be passed.

Middle management provides leadership to subordinates, performs various specialised functions and serves as a training ground for future high level leaders. In corporate world superiors do not have to "control" their subordinator in any "hands on" manner. Superiors are not expected to be responsible for teaching their subordinate necessary skills or for nurturing their growth as potential future executives.

For the Armed Forces the leadership function is much more complicated. In combat, the span of control is important because superior commanders must provide directions to their subordinates. No matter how mach initiative the latter are permitted or encouraged to take, and no matter how good the information flow to them, the need for concerted, decisive action will require that, on some occasions at least, superiors actually direct the actions for their subordinates. This places some limits on the feasible span of control, regardless of the use to which information technology may be put.

Actually information technology enhances span of control more than they do span of command. The span of command is the limiting factor in units designed for combat. Workload associated with controlling a given number of subordinates decreases significantly as information technology are applied. Generating alternatives, accounting for and co–ordinating personalities, gauging and boosting morale, weighing unquantifiable risks and anticipating human reactions by friend and foe require personal attention by leaders and principal staff. Information technology in not very helpful in these tasks.

Span of command should vary from echelon to echelon and among type of organisations based on complexity of the command workload. Span of command can be greater at higher echelons than at lower. A corps can handle more divisions than a battalion companies or a company platoons. Higher commanders and staff are more experienced, more robust, the potential rate of change in combat situation is more moderated and all divisions are not as likely to be equally engaged. Applying information technology in the military realm will not lead to needing fewer echelons. They instead empower the command and control structures of the force to deal with uncertainty, react to change and reorganising and exploiting opportunities which is the domain of battle and the essence of military art.

THE MILITARY AS A FLAT ORGANIZATION

While an army might at first seem the epitome of a large, hierarchical organization, there has been a long tradition of flat armies that predates similar innovations in the commercial sector by several decades, if not generations. Military organizations have always faced problems of poor information--and more severe ones than their commercial counterparts do, since they face an enemy using all means to

deliberately disrupt their flow of information. Motivation in military organizations has always been social in addition to individual, moreover, since combat involves the risk of death; it is no surprise, therefore, that "teams" have been widely used in armies before they were introduced into factories.

There are a number of historical instances of flat combat organizations. Napoleon's headquarters at the Battle of Jena in 1806 directly controlled eight separate Corps with no intermediate command echelon. So broad a span of control was possible only because each corps was trained and equipped to act autonomously; indeed, on the day of the Battle of Jena, Napoleon failed to communicate with two of his Corps, while a third went on to win the battle of without his knowledge.

The importance of lateral communications, initiative and risk-taking on the part of subordinate officers, and the need for senior officers to concentrate on planning and other high-level functions rather than the overseeing of detailed execution. Cannot be overemphasized. There are a number of functions in military organizations that either require centralized command authority or else encourage an excessive degree of centralization. It is critical to sort out functions that need to be centralized and those that are better devolved to lower levels of the organization. Among the factors encouraging centralization are :-

- Strategic planning.
- Fire support.
- Logistics.
- Medical evacuation.
- Intelligence.
- Political factors.

Training. An army that requires lower-ranked officers and men to exercise greater initiative and assume greater responsibility must ensure that those personnel have adequate training and expertise. Some corporations have responded to this challenge by separating the processes of career development and promotion to make sure that specialists can be adequately rewarded for good performance without having to join management ranks and hence cease practicing their specialty In the future the Army may have to apply this principle to various specialties in order to keep expertise at the lower levels of the organization.

In his book, The Unintended Consequences of Information Age Technologies, David S. Alberts warns that when subordinates are provided with the " larger picture" that new data transfer capabilities allow, they are " likely to second-guess decisions made at higher levels and … have the information required to undertake initiatives their superiors may find inappropriate." Not the least of the many difficulties that can arise when subordinates take initiatives that " superiors may find inappropriate", are those related to compliance with the law of war.

The My Lai massacre occurred during the Vietnam War when inadequately trained and poorly led troops acted on their own initiative. Sadly, atrocities seem to be an enduring feature of war. Stephen Ambrose notes that When you put young people, eighteen, nineteen, or twenty years old, in a foreign country with weapons in their hands, sometimes terrible things happen that you wish never happened. This is a

reality that stretches across time and across continents. It is a universal aspect of war, from the time of the ancient Greeks up to the present.

What is worrisome about the new technology of war is the access to vastly greater firepower it will put into the hands of the young troops Ambrose describes. The new battlefield organization that infestation or battles warm tactics produces is illustrative. Analysts say that the "most revolutionary aspect" of the new concept is that the infantryman does not rely on his personal weapon to engage the enemy, but will instead call in external fire support . In short, the experts say, "rather than a 'shooter' the infantryman becomes a 'spotter." They further observe:

This change of identity for the infantryman stems from technological advances. With enhanced digital communications, more accurate smart munitions, and manportable guidance systems, fire support… is the king of the battlefield. In addition to traditional tube artillery, the individual team can call for and direct close air support, rocket fires, naval gunfire, and missile attacks. Quite obviously, whatever havoc troops were able to wreak with their personal weapons at places like My Lai, that terrible potential will be greatly increased in the future by the new technologies is, by design, less robust.

Terrorism and Net War[14].

Terrorism seems to be evolving in the direction of violent networked organisation. Islamic fundamental organisations like Hamas and the Bin Laden network consist of groups organised in loosely interconnected semi- independent cells that have no single hierarchy. All the recent terrorist groups like Osama Bin Laden led Arab Afghan movement, Islamic Group (IG) of Egypt and Armed Islamic group (GIA) share the principle of networked organisation, relatively flat hierarchies , decentralization and delegation of decision making authority and loose lateral ties among dispersed groups and individuals. For example Osama Bin Laden led terrorist organization Arab Afghan are part of a complex organization of relatively autonomous groups that are financed from private sources forming a "kind of international terrorist internet". Osama Bin Laden used his wealth and organizational skills to support and direct a multinational alliance of Islamic extremist. At the heart of the alliance is his own inner core group known as Al Qaeda which sometimes conducts missions on it own, but more often in conjunction with other groups or elements in the alliance. Bin Laden specified that holy war against the USA and the west will be fought by irregular, light and highly mobile force using guerrilla tactics. A study with inputs from various researchers "Special Report : Al Qaeda" in Janes Intelligence Review [15], provides an extensive analysis of Al Qaeda's organizational structure, history and activities. The analysis views Al Qaeda as a kind of "conglomerate" with both formal vertical and informal horizontal elements, making it a partial hybrid of hierarchical and network forms of organization. Information technology is an enabling factor for networked groups. Terrorists use IT to coordinate and support their activities. The greater the degree of organizational networking in a terrorist group, the higher the likelihood that IT is used to support the network's decision marking. Recent advances in IT facilitate networked terrorist organization because information flows are becoming cheaper, more secure and more versatile.

A relatively minor military power, the combined forces of north vietnam and the viet cong that fought and defeated a great power, the usa , operated in many respect

more like a network than an institution. In recent times the international terrorists, guerrillas insurgents, drug smuggling cartels, ethnic factions as well an racial and tribal gangs – are all organized like networks. Although their leadership may well be hierarchical. These organizations are innovative, flexible, exhibit shared goal, focus on core competencies and are difficult to counter. Perhaps the reason that military institutions are having difficulty in low intensity conflicts is because they are not meant to be fought by institutions. The lesson is – institution can be defeated by networks. It may take networks to counter networks.

What has long been emerging in the business world is now also becoming apparent among netwarriors. Organizationally, they are likely to resemble a set of diverse, dispersed "nodes" who share a set of ideas and interests and are arrayed to act in a fully internetted, "all-channel" manner. Networks come in basically three types.

- The chain network, as in a smuggling chain, where people, goods, or information move along a line of separated contacts and where end-to-end communication must travel through the intermediate nodes.

- The star, hub, or wheel network, as in a terrorist syndicate or a cartel structure, where a set of actors is tied to a central node or actor and all must go through that node to communicate and coordinate with each other.

- The all-channel network, as in a collaborative network of militant small groups, in which every group or node is connected to every other.

Network organizations reduce limitations of terrorist organizations and improving their robustness by :-

- ❖ Augmentation of manpower.
- ❖ Pooling of expertise and experience.
- ❖ Improving access to critical resources.
- ❖ Shortening critical paths to goals.
- ❖ Creation of useful redundancies.

Military Organizational Dilemma in Information Age

> Inserting new technology in to World War II structure is like electrifying the horse cavalry. It is like trying to run Windows XP on a Wong Computer.

The application of new technology to old organizational structure is a design for failure. This was tried during the 1930s, by the british and french armies with disastrous results in world war ii. New technology empowers subordination, decentralizes control and globalises information. This creates the opportunity to exploit technology at lower levels of command .the technology to enable these changes is here now. Present organizational structure of the army is too complex, too large, centralizes too many capabilities at a high level, deploys too slowly and is too vulnerable to weapons of mass destruction. Deployment of one brigade immobilizes two more brigades, halts effective training and renders the ww ii division structure non-deployable. New technologies cannot and should not be grafted on to old organizations that are not optimally designed to exploit them. Truly revolutionary change occurs when technology, organization, leadership and tactics all change.

What is Required

- Improve the Army's agility and punches through organizational change to achieve rapid deployability and real joint war fighting capability.
- Must adapt force structures to current and future strategic environment within a real joint operational architecture.
- Plan for future. Future Army look too much like the Army today.
- World War II style divisions too slow, too centralized ; not organized for rapid deployability within Joint Task Force.
- Mix of air and sea lift will get Army to fight quick.
- Must be organized to conduct any mission the country assigns.
- Integrate and exploit information and capability at lower levels. and across service limits.
- Organization should be streamlined and functionally based (deep, close, rear), flattened and modular.
- Exploit digital communications to drive connectivity.
- Information exchange requirements are joint.
- Simplify the structures to create opportunities to exploit cutting edge technology across service limits.

How to Reorganize

> Until recently 10000-18000 man division was thought to be the smallest combat unit capable of operating on its own for a sustained period. It would typically include there or four brigades, each with three to five battalions. But the day is approaching when a capital intensive third wave brigade of 4000 – 5000 troops may be able to do what it took a full size division to do in the past.
>
> - Tofflers[16]

How information is used reflects both the structures of information flows as well as the thinking and mentality of people who uses this information. The two influences one another and are inextricably interlinked. Structurally and intellectually this suggests the need for an integrated, joint command and control structure on the operational level that induces military leaders to interpret information as military activity in ways that results in the exploitation of capabilities across service lines.

MacGregor[17] suggests that basing the Army on a variety of tactical units that are much smaller that today's divisions, but about twice the size of today's brigades. Information units will help tie together these building blocks into larger, mission-tailored Task Forces. The information units could also patch in units from other services. This is version of an "open architecture" army that is not only rapidly adaptable, but also joint and combined from the bottom up. Presently British and French Armies orient contingency planning along the lines of large Brigade Battle Groups (5000 troops). Contemporary German Army doctrine organizes war fighting around large mobile brigade Battle Groups (5000 troops). The group based structures can become a model for a commonality of doctrines, organization and communication in future Armed Forces structures.

MacGregor suggests the following:-

- Compression of division and brigade into new echelon, to achieve fewer command and control nodes, lower overhead, more teeth less tail.
- Diestablish selected formations (selected unit and headquarters) and equipments not needed. Retain useful equipment within new, adaptive more deployable framework.
- Leasing of new equipment (C4I2, AH 64D engines, light armour etc), avoid large capital investment up front and keep pace with rapidly changing technology.
- Create substantially greater cohesion and reduce personnel turbulence at group levels.
- Configure size and modernization of military to meet discernible threats, both current and rising.
- Restructure the Armed Forces tactical units to increase their flexibility.
- Reform force management practices to ensure efficient utilization of assets.
- Adopt training needs and personnel management practices to the needs of operational deployment.
- Reorganisation is based on the way we fight, not on how we garrison.
- Approach to organizing, training, educating, modernizing and fighting the Army is joint. This integrates Army with other services in Joint Task Force.
- Retain equipment that works, dump what does not. Procure new platforms with the flexibility to accommodate frequent changes of weapons, avionics and operational doctrine. Platforms can last decades, systems no longer do.

Implications for Army Force Design

The preceding considerations suggest that if the Army is to contribute effectively to multidimensional operations at any point on the spectrum of conflict, as it must, its future fighting organizations must embody several key design characteristics. They are :-

- **Modularity**. Future Army formations must be adaptable to a broad range of operational tasks without major reconfiguration, but also without forfeiting the cohesion essential to effective combat performance. That cohesion is most essential at the tactical level of engagement, where both soldiers and units are under the greatest stress, and where rapid combined-arms synchronization is most vital.
- **Agility**. Regardless of the nature of the contingency, the Armed forces are required to mobilize on short notice to operations of uncertain magnitude and duration in all types of terrain. To achieve this without loss of operational momentum, units must be able to deploy quickly, engage immediately upon arrival, and expand as required concurrent with continued employment. Modularity will contribute to agility.
- **Interoperability**. Multidimensional operations inherently are joint and usually will be combined. Army formations therefore must be designed

from the outset for routine subordination to a joint and/or combined task force, and for smooth integration with air, maritime, amphibious, space and special operating forces. They likewise must be able routinely to support and be supported by nondefence agencies in areas ranging from information operations to civil security and humanitarian services.

- **Robustness**. The more uncertain the future commitment environment, therefore, the more essential it will be for the methods, organizations and equipment of future Army forces to "degrade gracefully" through sufficient built-in redundancy to absorb losses without becoming ineffective. I urges careful attention to organizational and equipment self-sufficency. Thus, weapons optimized for nonline-of-sight engagement using remote sensors must nevertheless be able to function if those sensors or their communications links are damaged or destroyed.
- **Adaptability**. By far the most important single design requirement of future Armed Forces will be the training and education of adaptable soldiers and leaders. The less predictable the demands for which they must prepare, the less we can afford to base their training and education on a rigidly consistent doctrinal template. Instead, future Army doctrine, education and training must be designed deliberately to accommodate uncertainty, and to foster a culture of institutional initiative and self-reliance that encourages soldiers and leaders to react calmly to the unexpected, avoid predictability, treat rapid changes in mission and environment as routine, and act aggressively within the framework of the force objective if and when forced to rely on their own resources.

Revolution in Logistics Affairs [18]

The area where the advantage of IT and the recent business practices can be effectively used with immediate effect is the logistics. The advantages of "just in time" concept of inventory management to old "just in case" concept would save us crores of rupees of inventory. Outsourcing to private industries instead of depending on in-house captive organization which are not cost effective is a common practice in the most advanced armed forces of the world. An audit has to be made on the huge logistics infrastructure that are already there. Is there a need to run these organizations in the most cost ineffective way just because the asset is there. There is a crying need to club these organizations both within individual services and intra services. Same is applied to various educational institutions of all the three services. Protecting own turf is a natural reaction of any armed forces of the world. However, closing down base depots and educational institutions have been done as during the Thatcher era in UK or are being done now in USA. In a country like India a man of the knowledge and stature of Shri Arun Singh can do this organizational restructuring with the active backing of the Government.

Adapting Best Business Practices. Some areas where the new management and business practices of private sector have been adopted by advanced armed forces in the world are :-

- All aspects of the contracting process for major weapons systems are paper free.

- Percent of purchases under $2500 are made using the government-wide IMPAC purchase card (almost one half of all purchases). To put buying decisions into the hands of the people who need the products.
- Certain paper free systems for weapons support and logistics.
- Discontinue volume printing of all regulations and instructions and make them available exclusively through the Internet or CD-ROM.
- Prime vendor contracts for maintenance, repair and operating materials are made available for every major installations.
- Replacing the traditional military " just-in-case" mindset for logistics with the modern business "just-in-time" mindset.

For example US Department of Defense began shifting over to a so called "prime vendor" process where for example, hospitals are given a list of products available from local vendors that have pre negotiated terms and prices. Items ordered are delivered immediately eliminating the need to maintain the stores and the cost of managing the warehouse.

The defence logistics Agency in USA has introduced the concept of maintenance, repair and operating material support. In stead of placing requisitions and receiving shipments from a defence warehouse, orders are placed over the Internet directly to the vendor with delivery within 72 hours. This concept achieves the following :-

- Adopting best practices.
- Relying on the commercial infrastructure whenever possible.
- Improving responsiveness to the need of the soldiers.
- Attaining overall savings to the taxpayers.

Huge number of items are to be inspected at the factory by representatives of Director General Quality Assurance (DGQA) prior to accepting delivery of goods. It necessitates significant expense and requires government-unique business systems and practices. Commercial business procedures for source acceptance are significantlyloss expensive with no apparent loss in effectiveness. Government source inspection should be the exception rather than the rule specially when we have good quality history for the vendor producing the material for example say Maruti Gypsy.

Eliminating Unneeded Infrastructure.

There are large number of infrastructures which are no longer needed by us. These drain resources that could otherwise be spent on modernization. In many armed forces a three pronged strategy of closing excess infrastructure. consolidating or restructuring the operations of support activities and demolishing old buildings is being adoped.

Housing. Housing is a critical element of the quality of life of our military personnel and their families. The recent Married Accommodation Project is an effort in the right direction. However, we should be able to outsource the contracts for construction of housings to private reputed builders who could take it as a prestige project and not get primarily dependent or MES followed by CPWD and other government agencies.

Utility. MES provides the utilities for electricity, water, furniture, building, roads and sewers. Many of them are old and need significant repairs. It is not uncommon to hear that significant percentage of funds allotted gets expanded in catering for pay and allowances of MES employees and very less fund is available for procurement of stores for repair and maintenance. In number of places local civilian expertise is a available to carry out these tasks and should be outsourced. Only in places where local resources are not available MES should be employed.

CONCLUSION

> The military implication of new organizational sciences that examine internetted, non hierarchical vs hierarchical management models are yet to be fully understood.
>
> -- TRADOC Pamphlet 525-5, Force XXI Operations

Military operations in the future will be conducted by Information Age organizations. Unlike today's military organizations that would be reasonably familiar and comfortable to 19th –century warriors, Information Age militaries will be more of a reflection of contemporary private sector organizations. Information Age militaries will differ from 20th-century militaries with respect to their strategy, degree of integration, and (3) approach to command and control.

The challenge of the military is to develop new organizational structures that achieve the efficiencies and creativity businesses have gained in the virtual and reengineered environments, while at the same time retaining the elements of the traditional hierarchical, command and control system essential for operations in the combat arena. Dr. Wheatley, a behavioral theorist, put it this way:

> They [the US Army] have the technology to move information down to the lowest level so that it is possible for the men inside tanks to have as much information as their commanders have… But once you give that information to tank crews, and they start working for their own safety, their own victory, how are they going to respond to commands from above? And what happens to battle strategy? Is it in the head of the commander, or do you just train the crews and let them figure it out for themselves as the situation demands?
>
> In view of advances in Information Technology there is a serious need to look into organizational restructuring of Armed Force. Current improvements in communication technology has enhanced the performance of both hierarchical and network organizations but in neither case does technology dictate structure. Before we trade off our command structure and abandon the enduring flexibility and redundancy it has traditionally provided we must consider our new courses carefully. Lastly the problem of reorganization involves not only designing and improved structure, but figuring out how to implement it also.

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