

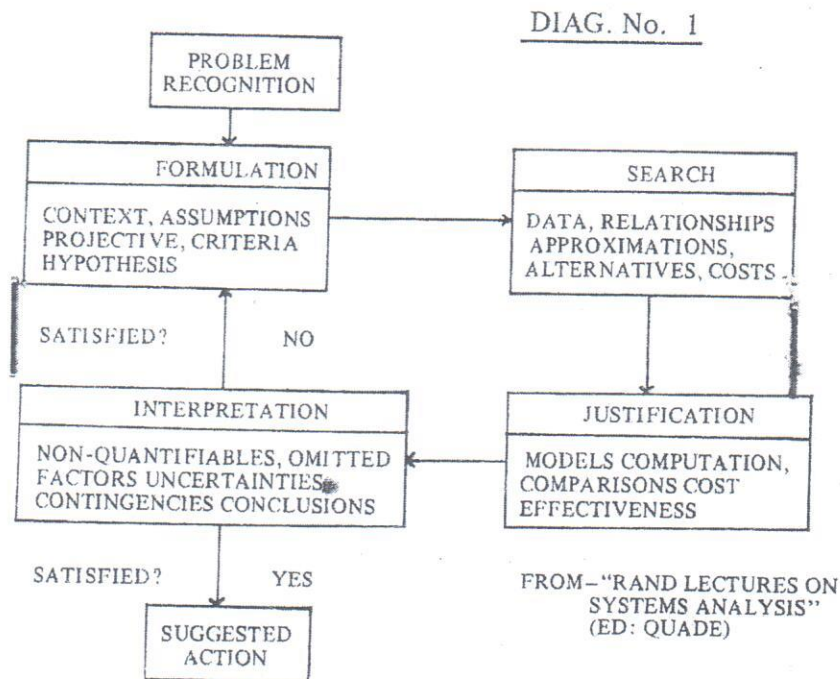
THE BASIS FOR UTILISING MODERN MANAGEMENT AIDS*

By Masood Hasan

Putting management aids to effective use requires something more than just having functional knowledge of the techniques. It necessitates systematization at all levels. Superimposition of modern management techniques on old procedures is likely to create more problems than it solves.

Any manager, executive or administrator who knows how to conceptually solve a problem will be able to use or cause to be used a management aid or technique effectively. A management aid can be used even if conceptual solutions elude a person, but there is a price to be paid ie having blind faith in the technique, for one cannot have one's homework done by proxy and yet expect to know all about it.

Modern management recognizes that there are methodical or systemic ways of getting about problem-solving and this comes best through on-the-job general or supervisory training that relates practice to precept directly. The lack of bringing about such a relationship is presently the biggest gap in our administrative armoury. Systemic or scientific methods are essentially repetitive or iterative in nature ie it permits learning from previous experience. Diagram No. 1 below indicates the cyclic nature of the process.



* Pakistan Administrative Review NIPA Lahore (July-Dec - 1981)

Naturally, unless there is periodic evaluation it is impossible to say whether improvements in the transformation function (input/output), maintenance function (internal continuity) or the adaptation function, (continuity with reference to the external environment) are taking place or not.

Evaluation can and does mean two different things. Firstly, it means monitoring or keeping a watchful eye on progress with a view to the fulfillment within a set time period. Reporting forms the basis of such evaluation which is relatively short term.

Secondly, it means the assessment of the success or failure or the measurement of the impact of the effort on the economy of the country or ascertaining peoples reactions to them and deriving lessons for the future. This evaluation is much broader than the first and the politics underlying the objectives would also come in for appraisal.

Short term evaluation is meant primarily for control and in the long term to provide guidelines for policy/strategy formulation. The "ancient" idea of management has been of the efficient and economical use of men, money, materials, space and time to achieve laid down goals or predetermined objectives. It is difficult many a time, if not impossible to lay down or define goals/objectives without a close understanding of the nuts and bolts. This closed loop between definition of goals/objectives and the ground level implementation (nuts and bolts) has to be traversed both ways many a time (the iterative process) to draw in the slack. Setting up the loop or process or method (formula or procedure) is, of course, more difficult than one thinks.

It has only been realised lately that management is "The development of people, not the direction of things. In other words, if we manage people effectively, successful use of money, materials, time and space will follow" (Abbot) and successful manpower management demands a system. This then is the secret of utilizing better ways and means, know-how, technology or techniques. No more, no less. Why is it, despite the fact that we have access to the knowledge of modern management aid, that little or no use is found of them here? More so, as the results of application elsewhere are known well enough to us.

- Is it that we lack the capability to understand or the learning itself?
- Or is it that even though we have the capability, we do not wish to be burdened by the facts of a given situation?
- Or is it that we are so used to a particular or familiar (comfortable) way of doing things that any effort not conforming to the "set" way means countering too much inertia which requires Herculean effort?
- Or is it that there is blind adherence to the status quo on account of fear of the unknown?
- Or is it while paying lip service to the use of such aids we consciously or unconsciously in practice create conditions making it virtually impossible for such an effort to succeed?
- Or is it because those in authority with 20/25 years experience find that it can take one third of that time, with present-day management

education/aids for new entrants to develop equivalent or even better skills for decision-making, and this creates built-in resistance?

Information

It is quite clear that handling of information is one of the two major activities of the executive:

“The business of government consists of processing information and taking decisions. The information which has to be processed is very extensive and the decisions which have to be taken are very complex. It is unreasonable to expect Ministers and senior civil servants to manage the business efficiently unless they are supported, on a massive scale, by the techniques of modern information technology”. (The Design of Information-Processing Systems for Government: Robertson).

Knowledge and understanding are the basic requisites for a successful response to the challenge, the great challenge, which is that of survival. Survival means continuity and continuity at once focuses our attention on the links in the chain of continuity, the human being himself. There are two types of training the first: away-from the job and the other on-the-job and in each type it is possible to have general/supervisory training on the one hand or functional on the other hand. We make use of training away-from-the-job, in a big way as is evinced by the number of training institutions scattered over the country. It may be added that some of the premier institutions are about 15 years old and 14 years out of date. However, more emphasis is now needed on the type of training which is on-the-job and general supervisory in nature so that techniques taught are applied immediately and some results obtained in the first cycle or iteration of the technique. In a fair number of activities the cycle is one year. In many, less than a year and in a few, more than that. In almost all cases it would imply running the new method in parallel with the old till such time as all the bugs are worked out. It may also mean running the new way of doing things permanently if there is a legal necessity for not doing away with the old.

Just as it is of little use to insist on regulations that run counter to commonsense it is of less use to attempt to inject techniques for improving efficiency or work-flow in an organisation without preparing the individuals concerned to understand that the system needs change, for change it is. If explanations are not given in advance serious misunderstanding will develop later. This requires executive capability of a high order to ensure in advance that the large number of interrelated elements are defined through an analysis – the importance of which cannot be minimized so as to avoid getting bogged down later.

The Systems Approach suggests ways and means of doing so. Techniques fit into this approach. To the extent work-flow (which is related to achieving objectives) demands the organisation, administrative or management structure be altered, it

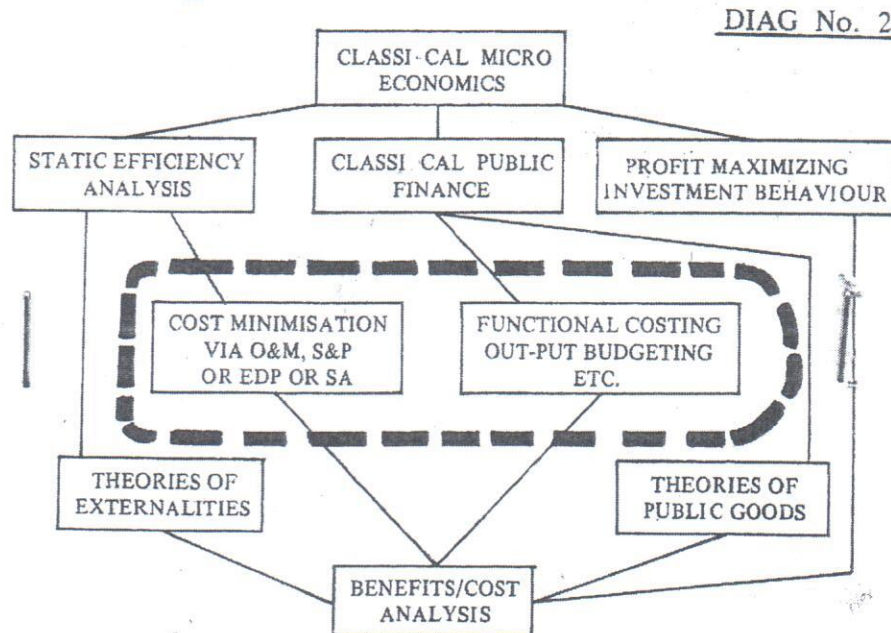
must be altered unless the objective is merely to maintain the structure as an end in itself. Because of vested interests or inertia the tendency is to maintain the status quo. This is not an unexpected attitude as any system of size must have inertia, but then ways and means to overcome it must be given a fair chance of success. And this lies in accepting general training on-the-job as the key to creating attitudes conducive towards acceptance of change because an understanding of why problems arise leads to the next stage ie how can we get about eliminating them.

Science and its applied side: technology, which has been and is expanding at an exponential rate, has brought in its wake complexity for two reasons. The first, that of the awesome accumulation of the written word and the second, that the sum of the parts just refuses to add up to the whole. Added to this is the traditional time lag between significant technological and let us not forget social change and the need to accept and adapt to them, has become non-existent. Consider, that it takes about 10 years for knowledge to double, itself. In the past the estimate was at 25 years, therefore, whatever was learned in college was generally good enough throughout one's professional life. This now, no longer holds true and in the present situation a process of continuing training or means to up-date knowledge is called for if one is not to suffer from personal obsolescence. As an example, consider an executive of 40-50 years of age working in the field of Electronics. Bulk of the techniques being used these days ie transistors, integrated circuits, micro-miniaturisation, satellite communications etc. were unknown or were in their infancy in his college days. This means our yardsticks must be radically revised in order to evaluate output. As mentioned earlier, training---general or coordinative on-the-job helps to bring about such realisation. The assumption made is that disagreements occur not just because people are bound to differ, but because they either lack information or they are misinformed. It is commonly assumed that traditional governmental operations are not amenable to utilising modern management aids. This is tantamount to saying that they are not amenable to analysis, and this is just not so. Techniques or aids must, therefore, be well and truly grouted in a base that arises out of painstaking and laborious analysis. The fact is: techniques have been developed for determining efficiency of operations which do not produce a "profit" at all. This will amount to working out relative efficiencies but even that will help because over a period of time ie several cycles of operations it will result in improvements. On technique is benefit/cost analysis, below is Diagram No. 2 adapted from "Output Budgeting and the Contribution of Micro-economics to Efficiency in Government" (Alan Williams CAS/4 HMSO) indicating where application of techniques can be of positive help. We may ignore most of what is in Diagram No. 2 but confine our attention to the two rectangles enclosed in the broken lines. This indicates where some of the modern management aids can be made use to good effect, including:

O&M	(Clerical Work Study)
S&P	(Systems & Procedures)
OR	(Operations Research)

SA (Systems Analysis)
 EDP (Electronic Data Processing)
 Functional Costing
 Output Budgeting etc.

There are, of course many, techniques available to look after the rectangle marked "Profit Maximizing Investment Behaviour."



Planning/Execution/Control

To a large extent our compartmentalized or fragmented thinking has made it impossible to relate things to one another. We commonly talk of planning as if it has nothing to do with execution and control, which form an inseparable trio. If one of the three is inefficient then as the weakest link in the chain the others are pulled down to the lowest common denominator. To some it may become clearer if we talk of planning as Broad Strategic Planning ie determining objectives and the combination of alternatives for achieving them. Inspection will reveal that by and large the data required for Broad Strategic Planning are variable and its capture does present a major problem. However, the logic for attacking such data is much more certain ie according to a methodology, which is merely another way of saying that when faced with a complex problem, the problem is not that relevant, what is; is the method brought to bear on problem resolution. We may talk of execution as tactical planning ie efficient use of resources that can be allocated to achieve objectives. We may talk of control as operational planning wherein we develop control mechanisms. In this case the available data are fixed but the logic of dealing with such data is variable—it is important to note this difference as compared to Broad Strategic Planning data.

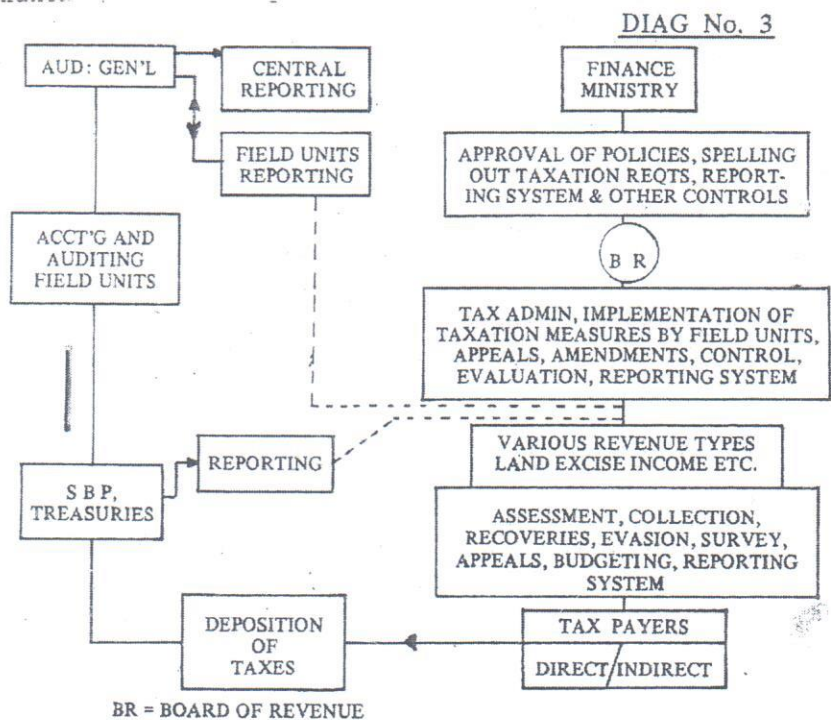
Or let us look at the accountants terminology of budgeting, accounting, management accounting, costing and auditing: their analogues are more intelligible as planning,

execution, control, evaluation (short-term emphasis) and post mortems/historical (to ensure the ground rules have been followed) respectively. The rupee figure merely reflects like a mirror (distorted or otherwise) one of the five functions mentioned above, and there can be other mirrors too, such as manpower, personnel, maintenance, production planning & control, inventory, purchase etc. etc.

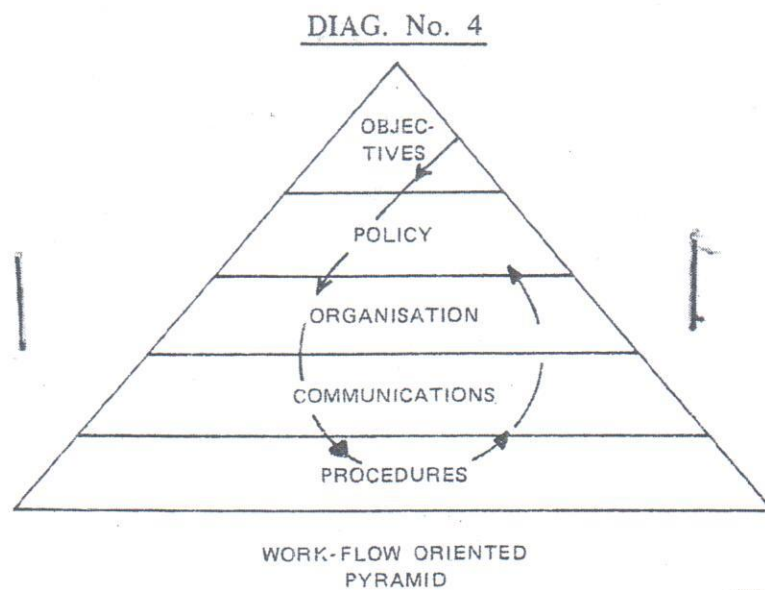
Of overriding interest is that objectives are no longer necessarily determined by circumstance – where formerly there was mainly a choice of means, there is now also a choice of ends. Is it, therefore, just enough to know the details of applying a particular technique? Is this not attempting to purchase or import progress/development or the industrial revolution from abroad, uncrating it like a piece of machinery and then setting it into motion? Putting technology or aids to effective use requires something more than just having functional knowledge of the techniques, equations or formulae. The word “technology” is not being used in the narrow sense but in developing “know-how” to solve any problem that we may be faced with administrative, technical, commercial or industrial and to arrive at solutions may not be the ideal, but optimal in our lifetime! As has been said “most under-developed countries want the blessings of the welfare state today, complete with old age pensions, unemployment insurance, family allowance, health insurance, 40-hour week . . .” without understanding the discipline ie the ordering or systematization, that it must necessarily impose upon us as individuals.

Discipline

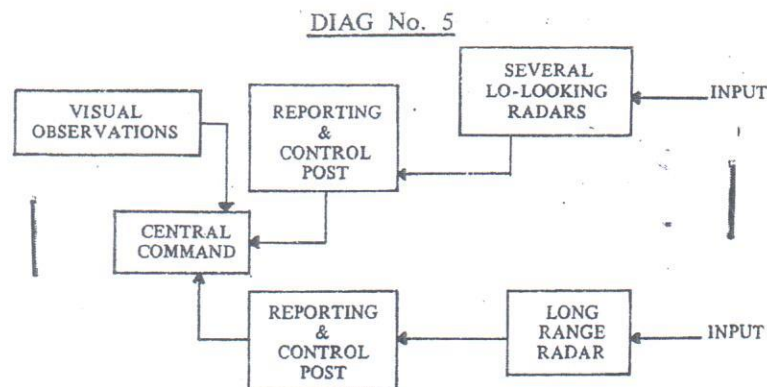
Look at the West, at Russia, at China or at Japan, did this not mean to them that they had to be amenable to some discipline ie creating a “system” ie the process/method/procedure/formula/equation so that for a given input the scientific or empirical or inductive method would ensure an optimal output. If we consider the Tax Administration System, see Diagram No. 3 below:



Apart from the "physical" act of depositing taxes, it is clear that the whole process is a pipeline of information flow with decisions being taken at various stages of the flow. Without any doubt, if tax administration is effective it is possible for government's policy/objectives to be met through a wider range of alternatives. If tax administration is inefficient then enunciation of policy is hot air, because it is unimplementable. Refer to Diagram No. 4, it can be seen that if procedures could be implemented efficiently then we can achieve that self-consistency with policy which is currently lacking because of a managerial/administrative/executive process that has not been prepared to understand (do it's homework). So in order to utilise modern techniques there must be a prepared infrastructure. Techniques by themselves are meaningless. All will agree it is not a good thing to alter policy (strategy) frequently which we have seen happen time and again. Procedures (tractics) are the "thing" that should be altered as and when required.



Consider an Air Defence System, shown in block Diagram 5. After the input, in the form of a flying object registered on the radar screen or human eye, the Air Defence System is in effect a movement-of-information system forming the basis of decision-making. Tax administration is in effect no different after a treasury has been credited with a sum of money the rest of the pipeline is also concerned with information flow and decision-making. There is hardly anything in common with the content of the two systems but the "form" is the same.



One can hunt for submarines in the sea, have a fast spotter plane and cover a large area in a short time resulting in higher observational errors than in a slow plane which would in a given time cover a smaller area. Likewise a fast auditor would check more vouchers than a slow one, but would make more errors in going through them quickly. The “form: of the problem is similar as both activities are subject to the same type of “sampling” and “observational” errors. But try convincing the aviator and auditor of this similarity. They would not see the wood from the trees. There is more in common with a taxation system and a radar data processing system than meets the eye! Both systems could take five or more years to implement. The world, as we know it is changing fast. The rate of change in undeveloped countries (such as ours) is great, though at a lower level of sophistication, than in the developed.

“Any kind of organism, so far as we know can be closely inbred and nevertheless enjoy lasting success in a stable world it allows it even guarantees success. But in a changing world it brings disaster” (The Evolution of Man & Society : Darlington).

We are, amongst other things, leap frogging from the spoken word to the audiovisual, eliminating in one fell swoop the written. Literacy, when it comes, will merely be a matter of looking back from the audio-visual to the written word and all this is bringing in its wake severe problems.

It took 40 years from “idea-to-success” for the world to accept the motor car as a means of locomotion; 14 years for the aeroplane; 10 years for the commercial application of television once conceived, 7 years for nuclear energy for peaceful purposes and likewise a scant 5 years for use of earth satellites as a means of communication.

This shrinkage of time makes it impossible using “traditional administrative concepts” to arrive at self-consistent conclusions that will make possible framing of policies that will co-ordinate well. Because not only do we have less time at our disposal to arrive at decisions but the size of the effort has expanded tremendously. This expansion, by definition, increases the impact of both good and bad decision-making, in the case of the latter with extremely damaging effects. It is much easier for a large organisation when introducing change to alter their policies, as mentioned earlier more easily than their ground level procedures because fewer persons are involved. This happens because expansion had not been budgeted (planned) well in advance or putting it in another way the “old system” of getting things done is supposed to solve problems which are now way out of its competence, ie “requisite variety” in the time-honoured procedures, in the language of cybernetics is missing.

In our case it is clear that by retaining old procedures (which have been stretched beyond their elastic limit anyway) and superimposing modern management techniques, such as the use of computers amounts to hitching a jet aircraft to pull a plough. The plough first used man as the motive power, then the bullock, followed by the tractor, nay a supercharged tractor. This means such superimposition or quick-fix plugging in of the modern on the old will just not deliver the goods. It creates more problems than it sets out

to solve. The language/environment/conditions are completely different, a qualitative change in the nature of problems performing many of the old activities has taken place. One may wish to move stones from point A to point B and if time is not a consideration the operation could take several years. The person responsible could employ 50, 100 or 200 or even 250 men to do the job. Up to this number he would, at a glance know, who was absent without leave, who was malingering, who was working well, who had domestic trouble etc. However, if the job had to be done in a few months 25,000 workers may be required. But the problems generated by 25,000 workers doing the same work at the 250 would be very different. How would one get 25,000 to work in the morning (may be a temporary workers colony would be required), who would report to whom and what of problems of hygiene, of feeding them..... Some-where along the line as the size of the problem grew a qualitative shift in the nature of the problems took place—at a point defying definition, for doing exactly the same work. We face similar qualitative shifts in all fields of organized endeavour. “Our instincts and reasons have been thrown into disarray by the rapidity of men’s inventions.” We have adopted techniques/inventions not adapted them, transplanted them from other climes rather than grafting them on to our socio-economic infrastructure, resulting in tremendous inconsistencies. Look at many of our systems, the transportation system, the administrative system or our system of autonomous bodies or the joint stock company system. They all work with far higher efficiencies in the countries from where we have borrowed them. What is it that we have thoughtlessly added on or “thoughtfully” left out in making such a transfer? To pause and reflect is the first step towards providing comprehension. In any organisation there is a hierarchy in terms of work-flow indicated in Diagram 4.

The “carrier” of information is the organization, wherein for efficient working the communication process (of decisions downwards and feedback for control/evaluation upwards) there should be a minimum of distortion. Ways and means to move in this direction have been “invented” around 1960,

Assuming the objectives have been defined, we expect the enunciation of policy which has to be framed to achieve those objectives which we hope will be accepted by the organization and be communicated downwards so as to be implemented in the mundane work-a-day routine procedures. But we are painfully aware, somehow output procedural action does not necessarily move in phase with the enunciated policy. Obviously the downwards and upwards communication systems within the organisation are not behaving as we would like them to, ie it lacks sufficient predictability. Consider, a requirement that: any two numbers must add up to 12, we may say the “system” or “organisation” or formula” or the “equation” mentioned earlier satisfying this requirement can be represented by the model:

$$x + y = 12$$

where, x and y represent the two numbers. If $x = 5$ then the equation tells us

$$\begin{aligned}x + y &= 12 \\ \text{or } 5 + y &= 12 \\ \text{or } y &= 12 - 5 \\ \text{or } y &= 7\end{aligned}$$

There is predictability in this. What we need to do in our organisational systems is to reduce, as far as possible unpredictability or ad hocism by downgrading or routinising work as far as possible so that with a lower level of effort the junior most levels can cope with the work automatically just because there is predictability. This is where the necessity of a sound data base plus a deliberately and consciously designed upwards funneling reporting or information filtration system is required.

Complications arise on account of the:

- Widening role of data subtlety
- Economically unweighted data
- Deterioration of executive judgement by being immersed in data.
- Gnawing doubts regarding data accuracy and
- Generally lack of time to plan, develop, co-ordinate and create.

In any "organised" system there are several levels in the hierarchy. Unfortunately it has not been recognized, much less practiced, that the number of levels should coincide with the number of decision-making levels and not be related to a head count of the number of employee. A definition of the decision-making levels requires precise knowledge of the movement or handling of information within the system being considered along with a clear definition of the nature of the job and the qualities required in an individual to be slotted into the job.

It is clear that all paperwork (forms, statements and returns) prepared from primary information gathered/recorded at the lowest/clerical or ground level where the physical transactions actually take place cannot all be sent upwards to the Number One, for if that were so (even hypothetically), then only one person ie the Number One could run the whole show. This is not so, because of the limitation of having one brain, two eyes and two hands....and 24 hours in the day and night. There is a constant upwards flow of information, some organized some disorganized. At each level some sort of consolidation ie summarization (some being thrown into the waste paper basket with the very best of intentions) is made. Ideally it should be done in such a way that the increasingly statistical nature in the upward movement of information should continue to truly reflect the actual state of affairs in accordance with the information required at each level for decision-making so that better decision-making can result in responsibility being efficiently discharged upwards ie the mirror as mentioned earlier is true. Unfortunately the mirror reflections are presently just not good enough.

By definition, how does a boss know what his subordinate or subordinate's subordinate has filtered out (with the very best of intentions as mentioned earlier), in thoughtfully providing him their idea of what information/intelligence he required for decision-making to discharge his responsibilities upwards? We are aware that organizations do budget (however inadequately) for their increasing future requirements of cash, manpower....facilities but not for the quantity or quality of information or paperwork being generated. Because of the absence of a good information filtration system how is it possible to rely on the correctness or validity of information thrown up, based on which

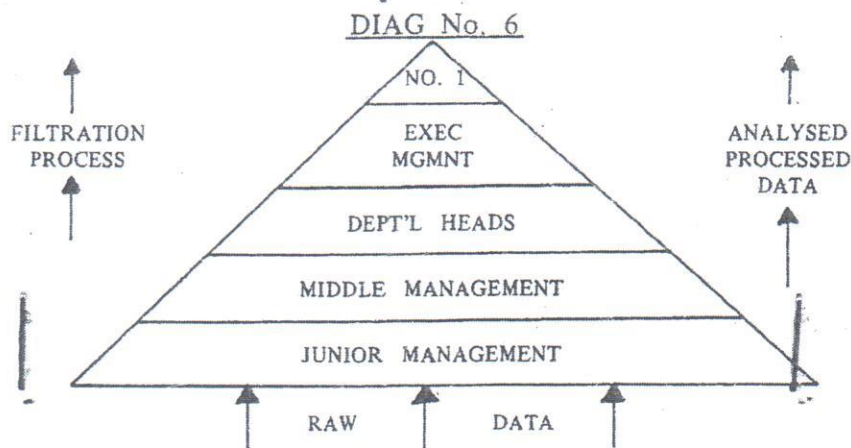
decisions are to be made or taken? The answer is: only by consciously and deliberately designing a reporting (filtration) system with a built-in means for desilting the information channels continuously to avoid organizational thrombosis. In making a start one fact is brought home soon enough ie one field of information has been used very frequently for:

- bringing statistics up-to-date
- answering queries on them
- analyzing them
- forecasting and
- decision-making etc.

In the past, the size of the effort was within one persons complete control separate fields of information were not required. Modern management to a large extent provides the conceptual framework to bring about this reconciliation in the form of integrative aids/techniques. Diagram 6 below indicates the pyramid of management/administrative statistics.

It follows that systematic ways of attacking problems yield dividends but it is necessary to use new ways and means, commencing through on-the-job general training to bring about familiarization with the use of new techniques (developed principally since 1960) to ensure the self-help effort comes from within the organisation. The “form “ of the problem is best understood by those who can take an independent view, the “content” being thrown up from within; integrating the two is in the province of the appropriate technique.

Of paramount importance is an understanding of information flows and just as a heavy-weight wrestler can lift heavy weights his ability to design a crane would be suspect. Similarly, good decision-making is a field of activity which has little do with designing a decision-making system and the business of government requires the introduction of information technology in a big way, which forms the basis of decision-making, the sooner the better.



(ADAPTED FROM “MANAGEMENT INFORMATION” SMITH)

Accuracy in available information/intelligence ensures that planning/execution/control can be optimized—through a systemic loop. In planning, the broad strategic planning objectives are defined and there from policy is enunciated keeping in view the necessity for using the scientific method because, by definition the data are variable and evades easy capture but the logic of handling it has to be fixed. This “fix” is the scientific method. Execution or Tactical Planning leads to a definition of procedures ie how the physical transactions must take place. An understanding of the relationship as mentioned earlier between an information system and decision-making is required.

Control or operational planning concerns the setting up of feed-back information systems, this is somewhat easier than in broad strategic planning because here the data are fixed. It is therefore, the method or logic of dealing with them which is variable. Use of the concepts brought out above can lead to significant increase in efficiencies even when the yardstick is not profit—both short and long terms evaluation providing meaningful inputs to the decision-maker permitting him to act from a higher threshold of knowledge with better results because the short term implementation works within the framework of the long term.