Indian Computing: Issues At Stake

***Prem Kamble** takes a look at what plagues the IT industry from three different angles – problems of approach at the top management level, of understanding at the end users and the problems with the IT professionals themselves.*

We have taken big leaps in hardware Technology to narrow the gap with the west, but in the computing culture and computer awareness, we are still in our infancy. Ours is a strange mix of well-versed and half-baked computer professionals, some of them 'foreign-returned', some enlightened and some not-so-enlightened users. This complex computer scenario in the country poses some typical problems in introducing computers in the business environment.

The bottlenecks in the process of computerization can be classified into three categories - problems with the company management, computer users and the Information System (IS) departments. Since majority of the Indian companies are at an early stage of computerization, the problems described here are common to most, if not all the companies.

High Expectations and Wrong Approach

Most of the Indian companies are run according to the whims and fancies of a few decision makers. The problem with the decision makers stems essentially from one or more of the following - high expectations from computers, wrong approach to computerization, and short-sightedness.

We first take a look at the decision makers who have very high expectations from computers. During their trips abroad, they watch with wide eyes, the way computers are being used in day-to-day operations of the company. They return with fancy ideas about computers and on their first day in office, they want to install a system in their company. What is worse, from the second day, they expect the computer to produce the same results which they had seen abroad. They assume that the computer would do everything for them instantly.

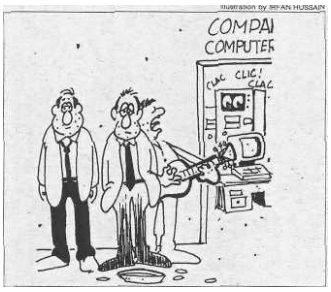
High expectations on the part of the management immediately after the installation of computers leads to unrealistic demands on both the IS professionals and the users engaged in computerization. This in turn adversely affects their morale.

The IS professionals find it difficult to explain to the management that it should view computerization in the right perspective. In India we may have started using the same generation of computers and the same chips which are being used abroad, but we have to exercise considerable restraint in the use of disk and memory, because hardware costs are prohibitive in our country as compared to the prices abroad.

Even if the management decides to install the latest equipment with liberal use of disk and memory, the employees cannot start using sophisticated computers overnight. What we see abroad is a result of years of evolution, gradual learning process and spread of computer awareness. Back home, the process has to be carefully planned and implemented. A computer culture has to be evolved. People have to get used to the EDP environment and the high degree of discipline which is required. A lot of hand-holding may be necessary.

Some decision makers lack the right approach to computerization. They see no difference between computerization and simple automation. Under the present conditions, introducing a computer is not the same thing as introducing any other machine. Just as automatic machines had heralded the industrial revolution and an industrial culture, computers promise to bring in an information revolution and a new information era. Technology changes very fast, but not the habits and behaviour of the people. Several generations of technology may be produced in one human generation, but the basic mental make-up of man changes very slowly from one generation to another. While the centuries-old industrial culture has not seeped into our mind and behaviour as yet, how can we expect the information culture to have any bearing on us?

Introducing computers requires bringing about a cultural change -a change in the way people



think, work and behave. It is, therefore, not the same as introducing any other machine

Computerization is more a socio-psychological problem than a techno-economical one. It needs a proper policy, strategy, planning and implementation. The IS professionals are involved in changing the habits and ways of thinking of the people, habits developed over several centuries. Thus, it is very essential for the management to have an in-depth knowledge of the dynamics of change.

In contrast to the over-ambitious types, there are the over-cautious ones who would not invest in computers as, according to them, the economics do not justify the investment. In most cases, it is because they try to evaluate every benefit in monetary terms. They overlook the long term benefits and the intangible benefits due to computerization. We look back at the industrial revolution once again to examine the sanity of their cautious approach.

Automation during industrial revolution did have its initial expenses and job displacement, but it has put the industry on an altogether different plane where many more jobs have been created and much higher revenues have been generated. Information revolution promises the same.

The conservative decision makers refuse to learn from the experience of industrial revolution and continue to take a myopic view of the opportunities offered by the information revolution.

Computerization is a continuous evolution process within a company. It is only gradually, may be after trial and error, that a company identifies a suitable computer environment for its specific needs. The software too matures in time through constant feedback and improvement.

Computerization should be viewed more as a long-term investment. It is only after prolonged use of computers that a company attains the maturity to be able to effectively use them. As computerization is a slow process, it must be started early before a company finds itself left behind in the race.

Users Awareness And Involvement

Misconceptions about computer pose more serious problems in computerisation than lack of knowledge about them. Various factors have contributed to these misconceptions,

Irreparable damage is done by certain media reports and articles which give distorted ideas about the capabilities of computers. Some computer salesmen too contribute to the confusion by overstating the capabilities of computers to bag orders. When a person sees a computer working, he only sees it producing quick results but he is unaware of the time and effort spent in developing and perfecting the software. As a result, the layman's imagination flies sky-high. On his first encounter with the computer, he anticipates too much and too soon. When the computer does not perform the magic he had expected, his first reaction is that of utter disillusionment and frustration.

Ironically, awareness about computers is limited despite the fact that everyone is so keen to learn about them. There is a lot of enthusiasm about computer education—though misdirected. What people ought to know is not just programming and computer operations, but broadly its capabilities and limitations. They need to know the steps in computerization, the need for coding, the need for using only predetermined input formats and the need for discipline and accuracy, besides learning to appreciate the limitations in testing the software. What is equally important is how to build a good rapport with the IS department.

Computerization in a company cannot succeed without the whole-hearted involvement of the user. With the beginning of computerization by the IS department

starts a process of educating the user with respect to what the system can do and what it cannot. The user then becomes more knowledgeable to explore further computerization of his work activities and to give useful suggestions to the IS professional. The latter too gets increasingly familiar with the user requirements after such valuable interaction. Both can then contribute to further computerization and mutual growth.

The head of the user department has a pivotal role to play in the computerisation process. But normally either he takes too little interest or he goes into too many details, He only needs to play the role of the prime mover since large manpower has to be mobilized for first-time data preparation and trials.

Stumbling Blocks To Progress

There are three categories of problems faced by the IS departments:

- quality of manpower
- inertia
- rigidity of existing procedures.

More than the shortage of trained computer programmers and analysts, there is an acute dearth of people who can implement the systems. It is easy to design and develop systems in the safe environment of a beautiful computer centre but it is difficult to make it run in the tense atmosphere of vested interests, personal preferences and a rigid mental-emotional make-up of the people affected by computerization.

Another significant problem which plagues the computer department is the inertia for taking up new applications and experimenting with them on the computer. Taking up new application with the prevalent methods is an arduous task consisting of study, design, development and implementation. Because of the rigidity of the existing programming methods, the IS person must be absolutely sure of the requirements before starting design and programming- Even with such efforts, he stands the risk of ending up with a system which neither meets the user's requirements nor can be tailored to do so. When the stakes are so high, the work on new applications rarely gets started. The result is a very slow proliferation of computerization activities.

Rarely does any software work perfectly at the very first attempt. Either the user has not specified his requirements comprehensively or the systems specialist has not understood him. Some fine-tuning is normally required before the software meets the exact requirements of the user.

A Ray of Hope

There is a ray of hope in the form of fourth generation, non-procedural languages and DBMS which allow the IS department to develop a working prototype of the system and gradually tailor it to meet the total requirements of the user. He can be involved at the formative stage itself, so that the application can be finalized with his feedback. Small programs enable changes to be made and tested rapidly.

With the hardware prices falling and DBMS becoming more popular, there is great hope that most of the bottlenecks listed above could be overcome. Even if DBMS has overheads to deal with, the flexibility which it offers to the IS person to meet the user requirements better, outweighs other drawbacks that it may have.

Here's hoping that the arrival of DBM5/4GLS will herald a change in the Indian computer scenario. A change that is naturally for the better.

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