COMMUNICATE OR...

Living is largely a matter of communicating. The husband kisses his wife; the customer looks at the price tags; the student raises his hand; the little kid smiles. They all are communicating. People communicate from morning to night in a modern world. For professional bodies it is imperative that its members must communicate with each other. Conventions and seminars are opportunities for face-to-face communications of professional ideas. The amount of written and published communication is a yard-stick of the eminence of a scientist these days. These are research communications.

A lone computer-scientist working in an isolated computer centre feels the pinch of communication. He has problems pertaining to work, profession, training or new ideas to communicate. The CSI journal is one channel of communicating where in research ideas, etc. could be published.

The Newsletter is a more frequently appearing channel. There are many columns representing different sectors of professional activity. Members must use this channel more often for communication. No idea is too elementary for this channel. We cannot emphasise the need for communication within and outside the Computer Society of India than by repeating a cliche "Communicate or perish".
NEW COMPUTERS
A giant Soviet computer, BESM-6, was commissioned at the Bhabha Atomic Research Centre at Trombay. The computers just opened new avenues of progress in various fields of social and economic development of mankind. The new computer rolled out the profiles of Lenin and the late Dr. Homi J. Bhabha.

The Meteorological Department, Delhi are installing a new computer 1BM System 360 Model 44.

COMPUTER AS INDEXER

The entire literary works of the Christian Philosopher St. Thomas have been compiled and indexed with the aid of electronic computers—the first such attempt ever undertaken in the field of automatic linguistic analysis, it is claimed.

According to a Press release from a computer firm, "Index Thomisticus," listing more than 10 million words in 40 volumes was presented today in an international press conference in Rome.

It took over 20 years to punch and process the words which were screened from 179 Latin books.

WEATHER WATCH COMPUTER

The Rs. 48 lakh computer is now undergoing tests for formal commissioning in July. Besides processing day-to-day weather data, coming in from various sources to formulate a unified weather forecast, the computer will facilitate development and testing of mathematical models for numerical weather prediction.

The United States introduced computerized weather prediction in 1956. Now U.S. weather scientists attempt to forecast the weather a month in advance. Britain too has developed numerical weather prediction to extend the range of the forecasts to more than three days in advance.

At present, weather forecasts in India are given two days in advance, while "outlooks" hold good for three days.

It is claimed that it will be possible to predict weather 5 days in advance.

MOSCOW DISPLAY OF ELECTRONIC COMPUTER

A display devoted to the unified system of electronic computers of socialist countries has opened in Moscow, demonstrating the achievements made by Bulgaria, Hungary, Poland, Czechoslovakia, the GDR and the USSR in this field. The display shows an entire family of computers: the EC-1010, EC-1020, EC-1021, EC-1030, EC-1040 and EC-1050, jointly designed by specialists of the COMECON member-countries.

The unified system of electronic computers is aimed at establishing mass production of advanced electronic computer technology for meeting the growing demands of socialist countries. As a result of cooperation between several countries it has been possible to concentrate the efforts of a large number of research and production enterprises. This is a major step forward towards the implementation of the comprehensive programme for social-economic integration of the COMECON member-countries.

The unified system offers several important advantages. Computers included in the system incorporate standard units and make use of identical integral circuits. Such standardization is an essential factor in establishing co-operative and specialization under the conditions of mass production.

It must be emphasized that the programmes developed for different computers of the integrated system are compatible. This means that any programme developed for a certain computer model can be used to solve problems with the help of any other computer in this family.

The production of computers belonging to the integrated system has already begun, with each country specializing in the output of definite models.

TAPE CLEANING

There is possibility that a tape cleaning machine will be manufactured independently in the country very shortly. The price of the machine is expected to be around Rs. 75,000 only.

In addition, tape cleaning facilities will be available at Rs. 30.00 per clean. Members desirous of getting more information in this regard may please contact the Secretary. (The cleaning will be as per I.S.O. specifications.)

MEMBERSHIP DUES

Members are aware that the subscription for the year 1973-74 falls due on July 1, 1973. Please arrange to remit your subscription. Members affiliated with local Chapters may send their subscription through the Chapter.

CSI NATIONAL EXECUTIVE MEET


After the full day deliberations on various aspects of computer, the council noted the members of Poona Chapter in the late evening.

The meeting was covered by Poona Daily News on 19.6.73.

MEMBERSHIP OF IFIP

The CSI has applied to the IFIP for membership and the Department of Electronics is sponsoring the CSI as the competent organization to represent INDIA. It is or more or less certain that Government will defray the expenditure on membership fees.

ACQUISITION OF LAND FOR CSI

Land is being allotted by Government at very nominal rent for National Bodies at DELHI. No formal application has yet been made. The Lt. Governor of DELHI has been met and has promised to use his good offices at the appropriate time.

AUTOMATION COMMITTEE REPORT

Shri K.V. Raghunath Reddy, Honourable Minister for Labour, Employment and Rehabilitation is to meet the representatives of the CSI in July to discuss the Automation Committee Report and the CSI's views regarding it. It is hoped that Chapters have already taken the initiative and had organized seminars for discussing Automation Committee Report. It will be appreciated if the summaries of these discussions are forwarded to Shri P. Jayant, Manager, Managing Information & Advisory Services Division, Air India, Air India Building, Nariman Point, Bombay 400020. Further, CSI will be interested in acquiring details of specific case studies that might have been conducted on the problem of unemployment created by computers. This will help in the discussions with the Ministers. These may also be sent to Shri P. Jayant.

FROM THE CHAPTERS

BOMBAY CHAPTER

Prof. J.G. Krishnayya of IIT, Ahmedabad, spoke on "Information Quality - Timeframes and Timeliness" on 13th May at BIBM. Prof. Krishnayya concluded his study that the cost of obtaining information at the right time is very often well worth justified.

A presentation of systems developed at Philco will be held on 23rd June 1973 at 9.00 a.m. at A' Shrivaghar Est., Dr. A. Bosed Reuid, Bombay-18.

DELHI CHAPTER

The Chapter organised a lecture by Shri G. Moore, Systems Engineers ICL, U.K., on "Real Time Systems in collaboration with the Indian National Science Academy on 11th June 1973 at 6.00 p.m. at the INSA Auditorium. The lecture was well attended by the members of the Chapter and the members of the Academy.

POONA CHAPTER

The Chapter is organizing a lecture on ICL 1900 by B.V. Shastri (Lecture 1) on Friday, the 27th June 1973 at 5.00 p.m. at Institute of Engineers, Poona.

The Chapter is also organizing a film show on Monday, the 2nd July 1973 at Department of Physics, Poona University, Poona. The details of the film show are:

1. Your obedient servant (47 mins)
   It explains to the layman in non-technical terms the mysterious world of computer and leads us to believe that the computers should be as acceptable as telephones are in the modern life.

2. Computer, a humble servant (5 ms)
   The computer is here to stay—should we fear it? Will it dehumanize our society? Let us behold a British experience.

3. I do and I understand (5 ms)
   A new way of teaching mathematics which would make it more meaningful and existing.

4. The Open University (18 ms)
   It deals with the postal courses by packages and television radio programmes.

Notes

AUTOMATION WITHOUT TEARS?

Based on an article by A N Sax in Times Weekly 17th June 1973.

On February 12 this year, the management of Voltas, a leading air conditioning firm, closed down its head office in Ballard Estate, Bombay, on March 29, this was extended to the company's Thane works, over 3,000 employees were affected. On May 16, the employees federation gave the call for an all-India indefinite strike.

The issues at stake are at two levels. On the all-India level, the federation has asked for the controlled use of Electronic Data Processing (EDP) as they feel that this might lead to redundancies and shrinkage of employment potential; the workers are also agitating against the retrenchment of eight union members following an agitation in 1969; finally, they are demanding arrears in bonus payment for the years 1966-67, 1967-70 and 1970-71.

At the local Bombay level, the workers have demanded an increase in D.A. and the imposition of a 45 hours/5 day week in the Thane and Chinchpokli works. It was the agitation at this level that directly led to the lock out.

According to the management of Voltas, computerisation is essential if the company has to survive the rigours of competition with firms like Larien & Touro, GEC etc. (both these companies are already using EDP). Voltas has demanded the lifting of the lock-out and settlement through discussion, or if necessary, arbitration. They feel that the EDP question could be shelved and taken up at a later date when tempers are cooler. The management on the other hand have demanded a) assurance of no retrenchment on existing employees for a period of 3 years and b) recognition of the fact that they have the right to apply

EDP whenever and where they think fit. As the union have pointed out: "...no union worth its name could give any undertaking that it would not accept any retrenchment on any issue when the management continues to wield its power and authority to deny justice to its employees and indulge in arbitrary actions."

EDP appears to be the crux of the matter. The automation committee has failed to take a clear stand on this issue. It states that no committee is foreseen. For Voltas, not by prior consent of its employees, failing which the dispute should be referred to a panel of experts chosen for this purpose. The West Bengal and Maharashtra governments have also made certain recommendations along these lines. The West Bengal government has gone as far as to state that each proposal for EDP should be examined individually by 2 experts (to be selected by management and workers from a panel).

There is no denying that the computer is a labour saving device. According to a computer expert in the T.I.R., computerisation leads to quicker turn-over and reduced labour costs (lower employed) which spell out would mean more profits.

According to the automation committee "Computerisation is likely to lead to either a drop in the number of jobs or to a loss of potential employment. At the same time, apart from rendering some jobs surplus, introduction of computerised systems could also create some new jobs at the enterprise level. The number of new jobs created due to automation would be greater than the number of jobs displaced..."...The net effect is an adverse impact on employment..."...Immediate impact of the computer is the reduction in the demand for clerical employees."

Unless computerisation takes place in entirely new fields, i.e. as expansion, it is reasonable to suppose that it will cause either retrenchment or redundancy or both. In some cases, redundancy may be checked by internal transfers (up to an extent). But in the long run, for the country as a whole, employment potential will definitely shrink.

The railways have computerised, and streamlined employment. As a result, the railways have been able to reduce the number of employees. The T.I.R. figures show that the railway's large source of income for LIC (through insurance on employees), is now much smaller clients.

One must mention that it would be unfair to expect a firm, like Voltas, not to go in for EDP. Current conditions have computerised, even if it affects the employment potential. Should the firms be allowed to computerise at such a rapid pace? It is for the government to clarify its principles in this case. It is for the government to step in and stop this insane race. The fact remains that (a) our population is growing and (b) computer will reduce the number of jobs available.

Computerisation has led to the strengthening of the big business houses, that can afford it, at the cost of small and middle firms that cannot. Smaller firms cannot compete in this race against time. The government while talking of removing monopolies has allowed this state of affairs to continue. Computerisation may also lead to the weakening of the workers and the strengthening of the employers who would then be able to dispense with the service of their employees and use unemploying machines instead. Unless the government makes up its mind on this issue fairly, confrontations such as the present one in Voltas will spread.

MECHANISED BANKING IN INDIA

A news item from Calcutta reports that United Bank of India has launched "mechanised operations" programme for different banking services. It has fully mechanised ledger work and clearing operations at its Old Court House Street branch, housed in its head office building.

After cheques are received at the counter, signatures are verified and given to machine operators who, in turn, simultaneously post the cheques in the National Cash Register—bank and the party's statement. This job is computed in about a minute. Thereafter, the cash branch is advised to make payment. The entire operation takes six-seven minutes against 18-20 minutes required when done manually.

The branch is equipped with six machines for ledger work and four for accounting. The machines—Apota supplied by Blue Star and NCR supplied by Natl. Cash Register—are all electrically operated. Standby arrangements for power generation are there for uninterrupted working of the machines in times of failure of power supply.

COMPUTERS AND UNEMPLOYMENT

Along with the May Newsletter, the Secretary of the Computer Society of India had distributed copies of reprint from Sunday, May 20, 1973 issue of Times of India. The author of this article, Mr. Fred
D’Souza has very eloquently presented the problem of unemployment caused by computers. He claims to explode the following three myths:

1. We must also keep in mind that automation is not only displacing people directly but also indirectly through what are called ‘silent firings’, through the elimination of jobs that workers would have been hired for prior to automation.

2. A second myth is that automation will create jobs for workers not only in running the machines, but in maintaining and building them. The hard truth here is that modern automated equipment requires very little maintenance. If it did not, it would not pay to operate it; and if the equivalent number of the workers replaced by automation were required for building the machines and systems, there would be no point in automating.

3. A third myth that needs to be laid to rest is the belief that those who lose their jobs to automation can be retrained and put into other jobs requiring higher skills and paying more money. As studies have shown, automation is more likely to reduce than to increase the demand for skills and aptitudes. Furthermore, many workers are just not retrainable, due to their levels of intelligence, education and age.

This article concludes with a plea that the Government of India should allow in policy on automation in the light of Dendekar Committee Report.

This article was followed up by a number of interesting letters addressed to the Editor in the subsequent issues of the Times of India. The letter of Mr. Oliver Travis, Bombay caught the editorial attention and is reproduced below:

Mr. D’Souza’s view on computers are not only enlightening but hard-hitting. With the very large labour force that we have in our country, we can ill afford to have labour-saving devices like the computer.

Therefore, let us throw out the telephones and have more messenger boys. Let us throw out the teleprinters and have more postal runners. Let us throw out the calculators and have more of the wizards at figures, the South Indians. Let us throw out the typewriters and have more writers. Let us throw out all the labour-saving and time-saving equipment like conveyor belts, cranes, machine tools and fork lift trucks. Let us throw out the tractor and even the bullocks and start using the good old plough with human labour at the yoke.

Time? Why talk about time! Life on this planet is moving much too fast. Let us slow down things a bit.

And business? Well, let us throw that out too!

COMPUTERS AND DEVELOPING COUNTRIES

V. Rajaraman

Indian Institute of Technology, Kanpur

I. BASIC QUESTION

The primary question which is raised while discussing computers and developing countries is:

Are computers really relevant for economic development?

The main arguments of those who maintain that they are not relevant are:

1. The developing countries are abysmally poor and they can ill afford these expensive machines.

2. There is an abundance of unskilled labour and the general level of education is low in these countries. Computers mean to many an ‘automator’ which is inherently a labour saving device. This machine would aggravate the unemployment problem and is thus not relevant.

3. Even if abundant computing power is available to these countries they could not possibly use them effectively due to the absence of the necessary technological infrastructure.

In fact the same arguments could be used against most modern technology when applied to developing countries.

The above arguments will lead to no useful conclusions as it is first essential to define the problem, ask relevant questions and then arrive at solutions. The argument listed at the beginning are really the constraints to be applied while searching for a feasible solution.

II. THE PROBLEM

The level of economic development and consequently the general standard of living is abysmally low in the newly emerging nations of the world. The economic disparity between the developed and the emerging nations is continually widening.

Given the above problem what type of a plan of action should the emerging nations adopt to reduce poverty?

It is quite clear that a problem of this immense magnitude has no simple solution. The problem needs to be attacked on many fronts and incremental gains in each front would hopefully lead to a net measurable gain over a period of time. Paradoxically rapid technological development of the past two decades which has led to instant communication and fast travel has not only accelerated the growth of economic disparities between nations but has made it accessible to a much wider proportion of the world population. As a consequence the pace of development needs to be further accelerated.

III. ROLE OF COMPUTERS

The critical areas which have a direct bearing on accelerating economic development are:

1. National Planning: In this area the primary problem is the creation of relevant data base which could be used for resource allocation and project planning.

2. Increasing the Productivity of Plants and processes: The main problems are, inventory control, production planning and scheduling which directly affect cost and productivity. This area assumes critical importance particularly due to the scarcity of capital and equipment.

3. National resource conservation and utilisation: Most developing countries are primarily agricultural economies. Further, they have to cope with an uneven and often extreme
changes in natural resources such as rain. Conservation planning, even at a sedimentary level could be of great help.

The relevance of computers is now evident. It is universally recognised that computers provide the means for a systematic analysis of available data and aid in decision making by isolating a small set of feasible alternatives. A very important effect observed in introducing computers is the need to streamline and sometimes alter traditional methods of operation and this in itself would have the desirable effect in jolting "time honored" traditions.

IV CONSTRAINTS

It is indeed paradoxical that the proper role of computers in the developing countries is in the most sophisticated application areas. It is fortunate, however, that the three constraints mentioned at the beginning of the paper, namely, scarcity of money, abundance of unskilled labour and the absence of technological infrastructure do not rule out computers as an irrelevant technology for the developing countries. Unlike some other technologies such as steel making the investment required to install and run computing facilities is very small. In the areas of use enumerated in the last section, these machines will have little impact on increasing the unskilled labour. Sophisticated technological infrastructure is not a prerequisite for applications of computers in the areas of national planning, resource allocation and increasing productivity. The strategy should thus be to concentrate and channel computer utilisation in primary areas which will have the greatest long range impact in national economic development.

V. STRATEGY

The primary problem is one of setting up priorities in allocating scarce financial resources and trained personnel. The strategy would depend on the present state of develop-

ment of the country, the available infrastructure in industry, the manpower and the desired state. In what follows, we will restrict ourselves to the countries in the basic state of development as defined in the U.N. Report on the Applications of Computer Technology for Development (page 30). For the sophisticated application areas envisaged education and training programs for appropriate groups holds the key to rapid and fruitful use of computers.

An elite corps of national planners, design and development oriented engineers, and managers well versed in computer applications in their respective areas of work have to be trained. By the very nature of the applications envisaged, one would need medium-large machines (investment of the order of US $ 2 million each) for this. For the proper operation of such machines one would need a group of well trained system programmers and adequate budgetary provision for their operation. It is apparent that a developing country cannot support many such centres. A strategy would thus consist of a phased program of development.

In the first phase a country should set up one to four National Computer Centres depending on the size of the country (for instance a country of the size of India might decide to have four Centres) with the following goals:

1. To provide an excellent computer facility to the nation. The terminal facility implies not mere hardware but adequately tested and documented software coupled with consulting help to government and industry in formulating operations research, econometric and engineering design problems.

2. To develop continuing education programs for government and industrial executives and college teachers.

3. To act as a focal point for intensive software development efforts.

The above goals would be fulfilled and the centres would be able to effectively provide education and leadership only if one of them is attached to premier Technological University and the other to a University with strength in Economics, Operations Research and National Planning.

A number of advantages would accrue if such a strategy is adopted. These are:

(i) Meaningful education programs in diverse disciplines could be developed and given with the excellent faculty and other facilities such as library, lecture halls etc., available in a University.

(ii) It would be possible to draw on the talents in a university to provide consultation on problem formulation. This will also enrich the academic programs in Universities by having the Faculty in touch with realistic problems of national importance. Presently relevance is sadly lacking in most Universities in the developing countries.

(iii) A good professional Computation Engineering Program can be developed in the University given the accessibility to an excellent facility.

(iv) The large number of students in a University and the continuous flow of students through it will expose a large group to computers. This "multiplier effect" is only possible if a National Centre is on a University campus.

(v) A good academic program coupled with industrial consultation will lead to vigorous software development activity.

(vi) The computing facility could be run economically as a large number of research assistants and part time student help would be available.

(vii) The National Centre could train adequate number of teachers with practical experience in computer applications.

(viii) The National Centre could develop adequate teaching material on computer applications tailored to local conditions.

In the second phase computer education should be extended to all engineering college students and all post graduate students in the other Universities in the country. In this phase educational material prepared by the National Centres (on TV, audio etc. where applicable) and teachers trained there could be available. Smaller timeshared computers (cost of the order $ 50,000) could be installed in the educational institutions in the country and effectively used.

CONCLUSIONS

It is maintained in this paper that computers could play an important and relevant role in the developing countries. Paradoxically the most relevant applications in developing countries are the highly sophisticated ones such as national planning and resource allocation. Unlike many other modern technologies the cost of using computers is relatively low and their long range economical benefits potentially high. Further, a small elite corps of well educated technocrats and engineers could make effective use of computers. A national strategy would thus be to give the highest priority to educate such as elite corps. This would be feasible if a few large National Computing facilities are established and loosely affiliated to the leading Universities in the country.

REFERENCES


Training and Career

RECOGNITION OF COURSES AND EXAMINATIONS

A dialogue was held with the Education Ministry on this question of conduct of examinations. The problem of recognition will only arise once syllabi are drawn up. The Ministry is also not clear as to what level of competency such courses are to meet. They have requested the CII to put up a detailed paper on the subject.

TEACHING SHOPS

Some organisations have taken up with the DELHI Administration that their courses should be "recognised" to enable their "graduates" to get Government jobs. The Lt. Governor has been apprised of this and requested to bring the CII into the referring of such requests to enable a uniform standard all over INDIA. The CII is in touch with the governments of states in this matter.

SETTING UP A LIBRARY

A professional body like the CII must start building up a good library. It is well known that Government gives grants-in-aid of a substantial initial amount and a recurring grant. To obtain such a grant, it is necessary that the Ministry of Education (CII) accept the role of the CII in the national field. Col. A. Balasubramaniam and the President are holding discussions with officials. In view of the grant coming through, the library can be initially established in the premises of any other professional institutions like Institute of Engineers or Institute of Telecommunication and Electronic Engineers.

Personalia

It is a matter of great regret to note the sad demise of Shri S. Mohan Kumarrangam, Minister of Steel & Mines. He was the chief guest of one of the sessions in the recent 8th Annual Convention of the CII. His active participation in the Convention on "Application of Computers to Steel Industry" gave a new dimension to the activities of the Society. We have already sent a condoleance letter on behalf of the members of the CII.

Mr. J. Mathan, Officer on Special Duty, Railway Board, New Delhi has been posted as General Manager of the Integral Coach Factory, Madras.

J G KRISHNAN
Indian Institute of Management
Ahmedabad.


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DATA TRANSMISSION


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