DEVELOPMENT OF COMPUTER FACILITIES IN PAKISTAN

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ABSTRACT

One of the fastest developing technologies today is the computer technology, which has also played a greater role in the development of business and industry in the advanced industrialized countries. The applications are given in order to implement in various sectos of business and industry. Thus the computers can be used to raise the economy and enhence the quality and standard of the life, to levels not contemplated previously.

INTRODUCTION

It might be surprising to know that much of our future work activity can probably be anticipated now and our career choice makes little difference in the accuracy of the forecast. The prediction: There's workstation in our future, we will receive information from some source, do something with that information, and then forward it to some other person or station. In short, we will spend the rest of our life in a society in which most people are engaged in manipulating and transmitting information.

We are just crossing the threshold of this new information era in which you will live and work. No one knows how it will evolve or how future historians will view it. The ancient Egyptian and Greeks are remembered for their pyramids and magnificent architecture. Roads and aqueducts remain as monuments to the glory of Rome, and towering European cathedrals remind us of

the genius of medieval builders. But the greatest achievements of our time may not be construction projects, although we have built monumental skyscrapers. Rather, future historians may view our era as the time when people developed tools that permitted them to amplify human intelligence and acquire the information needed to explore new systems of health care, education, manufacturing and government.

To appreciate where we are now, let's step back a few paces. Imagine that you have suddenly been transported to a world where pencils, typewriters, mechanical calculators and noisy car-shuffling electromechanical machines are about the best tools you can find to process facts and figures into useful information. Much of what is done on earth today could not even be attempted in this imagined world. As we have probably guessed, we are not describing some planet in a distant galaxy. Rather, we are simply outlining the situation here on earth about 40 years ago, just before the first computers were built.

Most people growing up in the 1950's thought then that computers were large and expensive curiosities that would have little impact on their lives. But those maturing in the 1960's and 1970's knew better. Organizations replaced the few computer systems of the 1950's with hundreds of thousands of new ones that would not only play a pivotal role in sending humans to the moon, but would also prepare paychecks, computer taxes and other bills and process many other jobs that directly affect our lives.[1]

The first computer system was introduced in Pakistan in 1964. These have been supplied by IBM, ICL, NCR and DEC.

Major users of computer systems are Banks, Insurance Companies, Electric and Gas Corporations, Telegraph and Telephone Departments, International Air Lines, Pakistan Customs, Pakistan Railways, Port Authority, National Construction Companies, Agriculture Research Council, Universities, Private Business, Government Organizations and other industrial and commercial establishments.

Pakistan become one of the first amongst the developing countries to use the computers for customs document processing. A new communication network for transmission of data at very fast speeds is also in use. The PIA reservation system has been computerized. So for PIA has achieved successsful automation of 42 stations abroad and 10 within Pakistan.[2]

Although by 1975 computer systems were found in most medium sized and larger organizations, they were still too expensive for most groups and individuals. But electronic advances brought in a whole new category of computers; desktop-size machines with the power of earlier giants, at prices that individuals could now afford. A steady stream of these personal computers poured out in the late 1970's and the stream became a flood in 1980's. Now, in recent years, personal computers are found in work stations, in offices, factories, laboratories, schools, homes, hospitals, government agencies, banks and retail stores. In fact, if all computers were suddenly to malfunction today, planes, trains and many elevators could not move, traffic lights and telephones would be useless, and our country would be plunged into confusion.

DISTRIBUTION OF COMPUTERS

According to the information collected, there are currently 438 Main Frame and Mini Computers installed

in the country. Out of these 20 computers i.e. 57% are in public sector and the rest in the private sector. The majority of the mainframe computers are in the Government, Semi Government organizations and banks. The mini computers are being used in public as well as private sector by business, commercial and industrial organizations.

The distribution of the main frame mini computers installed in different sectors and its comparison with the figures of the last five years have been shown in the following tables.

DISTRIBUTION OF COMPUTERS
MAIN FRAME/MINI COMPUTER INSTALLED

PUBLIC SECTOR	1984	1985	1986	1987	1988
Mainframes	43	48	55	61	75
Minicomputers	34	50	79	120	175
TOTAL:	77	98	134	181	250

PRIVATE SECTOR

Mainframes	10	11	14	14	14
Minicomputers	36	59	63	127	174
TOTAL:	46	70	77	141	188
G.TOTAL	123	168	211	322	438

SECTORWISE DITRIBUTION

	1984	1985	1986	1987	1988
Banking & Financial Institutions	84	75	74	97	146
Manufacture and Industry.	31	47	54	87	120
Utility & Services	20	28	37	53	59

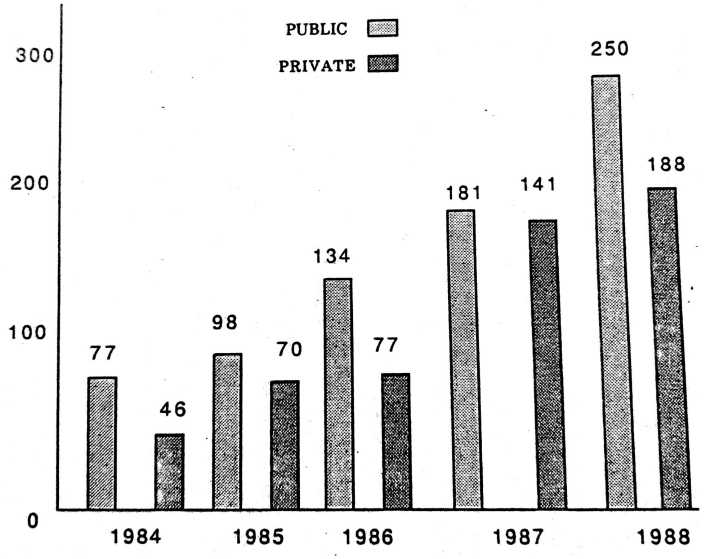
Organizations					Grassroots
Ministries & Deptt.	12	13	19	30	37
Education and Research	8	14	17	34	39
Commerce & Trade	4	9	10	21	37
TOTAL	123	168	211	322	438

DISTRIBUTION BY MODELS

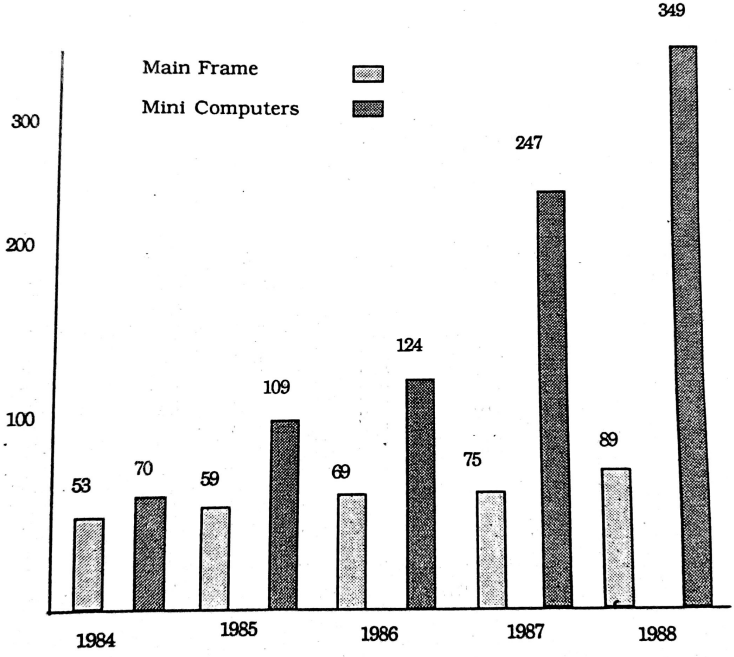
	NO. OF COMPUTERS	% AGE OF TOTAL
IBM 4381	5	
IBM 4361	5	
IBM 4341	1	
IBM 4331	16	
IBM 370	15	
IBM 9370	5	
IBM S/38	4	
IBM S/36	141	
IBM S/34	36	
IBM 1130	1	
TOTAL	**229**	**52.3%**
ICL ME29	13	
ICL 2903	4	
ICL DRS20	17	
ICL DRS300	9	
TOTAL	**43**	**9.8%**
NCR 8400/8500	3	
NCR I-9400	17	
NCR I-9300	16	
NCR I-9020	34	
NCR TOWER	20	
TOTAL	**90**	**20.9**
DEC VAX 11/780	2	
DEC VAX 11/750	2	
DEC VAX 11/730	12	
DEC MICRO VAX	19	
DEC PDP 11	6	
TOTAL	**41**	**9.3%**

NEC 610	1		
NEC 410	3		
NEC ASTRA	6		
NEC 100	1		
TOTAL	11	24%	
ND 5500	2		
ND 5400	6		
ND 5200	3		
ND 110	3		
TOTAL	14		30%
MV 8000 III	3		
WANG VS-45	1		
BASIC -4	2		
H.W. 6/57	2		
H.W. 6/43	1		
SPERRY	1		
TOTAL:	10		2.3%
G.TOTAL:	438		100.0%

COMPUTERS INSTALLED IN PUBLIC $ PRIVATE SECTORS



NUMBER OF MAIN FRAME
AND
MINI COMPUTERS



The most commonly used programming language is COBOL which is employed for administrative, statistical, commercial and business type of applications. The commonly used operating systems include VSE/SP,DOS/VS,SSP,ITX,IMOS,TME and DRX etc.

The number of mainframe/mini computers have grown rapidly and the average growth rate during last five years i.e. (1984 to 1988) has been over 35%. This high growth rate has been possible due to Government policy liberalizing the import of computers and removal of import duties from computer hardware which have tremendous impact in accelarating the growth and use of computers in public as well as in private sectors.[3]

TRAINING FACILITIES

Training facilities exist throughout Pakistan in the computer sciences. At present national informatics committee (NIC), Pakistan Computer Bureau (PCB), National Computer User Committee, (NCUC) and Computer Society of Pakistan (CSP) organizations exist in the country. All the Universities have established computer centres and introduced courses up to M.Sc level.

The use of computers in Pakistan business industries and Government is now approaching a level of maturity where the computing department of Pakistan organizations clearly see the need for advanced training for their programming and systems personnel so that they would be able to implement some of the more sophisticated applications of computers.

However, training facilities hardly meet the growing requirements of computer consultancy services, repairs and maintenance. It is estimated that 4,000 programmers and system analysts are being produced annually by

these institutions. There is presently on acute shortage of experienced computer operators, programers, system analysts etc. This problem has been aggravated by emigration of a number of computer professionals to middle East countries, USA and UK.

IMPORT POLICY

Import of computers was liberalized in the year 1982. Micro and mini computers of C&F value $ 15,000 are on the free list.

The 1983-1984 budget also allowed in baggage a duty free personal computer, of C&F value up to Rs.30,000 to passengers with over six months continuous stay abroad.

In budget 1984-85 duty on all computerised and numerically controlled machines was also reduced from 40% to 30% ad valorem and there is no sales tax .

Imports of various types of computers in Pakistan increased from 585 in 1981-82 to 1,785 in 1983-84. In terms of value, imports increased from 44,24 million in 1980-1981 to Rs.46.76 million in 1983-84.(See Table-I).

IMPORT OF COMPUTERS IN PAKISTAN

Quantity Number.
Value: Million Rs.

	1981-82		1982-83		1983-84	
	Qty:	Value	Qty:	Value	Qty:	Value
1.Compl.Digital Data Ptocessing Machine	518	36.56	530	26.94	1167	23.99
2.Analogue Hybid Data processing Machine.	57	3.95	392	8.54	537	17.79
3.Comp.Digital Central Processing Unit.	06	2.73	73	1.69	58	3.71
4.Digital Centre Storage Unit.	04	1.00	16	1.29	23	1.27
TOTAL	585	44.24	1011	38.46	1785	46.76

SOURCE: Federal Bureau of Statistics, Government of Pakistan.4

FUTURE PLAN

Pakistan would start assembling micro and big computers for which arrangements are being made at computer Training Centre Islamabad. Meanwhile the .Government has approved five projects for manufacture of computers or computer parts. In the sixth five years plan.(1983-1988) Rs. 20 million have been invested for the above programme. (SeeTable-II).[5]

DEMAND OF COMPUTERS IN PAKISTAN:

DISCRIPTION	COMPUTERS	MICRO-COMPUTERS
Installed	85	200
Underway	100	-
Additional .Required by 1988	100	100
TOTAL	285	300

SOURCE: Industrial investment schedule for sixth plan (1983-88).

CONCLUSIONS

Computer has a wide range. Indeed, high speed computational divices have been a primary factor in rapidly changing techniques in many areas.

For instance with the computational and information manipulation capabilities of the computer, the office clerk sees many of the office procedures significantly changed.

The business and industrial person must learn to use highly sophisticated market forecasting tools. The Engineer must become reoriented to a whole new set of ground rules in problem solving, most importantly every person must adjust to the manner in which computer affects his or her life.

It is, therefore, suggested that the availability of dedicated, talented and competent manpower must be created.

It is, however, encouraging that with the dedicative efforts of some national organizations we are moving towards achievement of such goals.

Government organization such as PIA, and some banks have incorporated computerization in order to increase efficiency to compete at world level. By adopting computerized transaction system of billing, cashing at banks, super markets and other places. Tax collection system from business and industrial side can be improved much more by installing automatic computerized system at small to large shops, super markets and industrial units.

The private sector must devote or invest some part of their income in the development of computerized system. Further efforts should be taken to promote cooperation among Universities and research organizations for this purpose. Further it is concluded that by adopting computer technology in government as well as in private sector, will help in increasing the prosperity and economy of the country.

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