

Information technology development

**Amjad Iqbal and
Dr Bushra**

The Government of Pakistan in the wake of economic stillness is struggling hard for the revival of activities with significant contribution towards the achievement of social and economic objectives such as labour absorption, income distribution, rural development poverty eradication and balanced economic growth. However, in the conflicting economic bitter realities, and downfall of various sectors i.e. Industry Agriculture social services due to corruption and foreign debt with unequal trade balance there is urgent need of small productive sector to absorb the labour force and create such resource of income generation for boosting such services as a stimulant for the revival of the economy. The peoples are engulfed by the euphoria of the information technology. The Government on its part is considering it as the solution of all problems, whereas the young generation is considering as the savior for the coming times.

It is a common theorem among computer nerds that "given enough resources and time, any problem has a possible and practical solution". The corollary to it deserves more attention as it states "you never have enough resources or time". Something similar has been Pakistan's fate. Since the very beginning in the wake of poor economic conditions and continuous and recurring security threats never allowed the Society to settle down and focus on a particular direction.

The development of information technology as a software Industry takes place during the last two decades of the twentieth century can be regarded as the decades in which computer culture got its pace. Giant companies like Microsoft Corporation evolved in the time and a lot of Industry's pioneer companies failed due to their inability to get in pace with changing technology.

The manufacturing of software

put, nor it requires large labour force.

The most important is the nominal capital requirement for setting-up a software industry with skill brains, a set of chairs and tables on which one can sit and work properly and computer systems as a hardware tool to put into a workable solution. This could be narrated that famous Bill-Gates and Paul Allen, two friends who were the founder partner of Microsoft Corporation. They started with a simple set-up and now Bill-gates is the richest man in the world.

The increased power of software industry could be judged from the volume of international market of information technology is estimated at \$600 billion. This volume is increasing at the rate of 18 per cent p.a. The biggest market of I.T. is USA where there are major computer manufacturing and software development companies are based. Besides USA other developed countries and un-developed countries are making efforts of sharing this field of development.

Our net door neighbour country India is playing a vital role in this multi-national industry. They have developed the software industry by pin pointing the facts at the right time and to respond to the same in some positive manner.

In Pakistan there has to be short and long-term plan to catch up on the decades of mis-management and effort be made in this field.

The improvement and advancement in information technology has brought a revolution in even our daily life. Now, we can e-mail a letter and get it on its destination that may be any where in world in a blink of a second. These facilities have become a source of employment as a new field. For example the job of medical Transcription writers is a result of advancement of software/information technology. The advancement of information technology has lessened the geographical boundaries between the countries to a level of elimination. Technology and expertise can freely flow from one place to another.

common. This was a source of great loss to those computer experts who had to develop computer software with much hardwork. This is still unresolved in third world countries, that mostly use pirated software. The main reason is that peoples cannot afford to purchase licensed software due to the exchange rate difference. In addition there are other issues such as security and privacy still has a great question mark on it. Nowadays standards has been developed to a reasonable level of security, yet many computer hackers are here who are a source of threat to even most advance sophisticated computer net-works.

Besides the various short comings that are involved in the field of Information Technology, this field is worth exploring.

'The manufacturing of software and its development soon got the status of an industry. This industry does not require massive machinery for creation of its output, nor does it require large labour force'

The increasing power of the software industry has a clear indication that there should be sincere efforts for the development of this industry on strong footings to cover the Government desires of solving the un-employment and underemployment problem. In Pakistan the rate of un-employment is 6.1 per cent and approximately 1.25 million people being added to the labour force each year, which is a major socio-economic problem.

youth of the country in the presence of abundant manpower scarce capital resource becomes a more suitable source.

The information technology (IT)/software industry consist of two main parameters which are identified as:

I. Physical infrastructure required in terms of development of computer hardware and its accessories being potential source of industrial development.

II. Human Resources Development and Research and Development facilities to explore the new avenues at national/internal levels.

Besides the two major components there are many small factors involved in the development of the software industry.

The Human Resources development in Pakistan needs special at-

during the 45 years with a growth figure of 12.6 per cent p.a. As against this the manpower per million population increased from 600 in 1950 to 3685 in 1995. The estimated stock of high level S&T manpower in 1995 was 497,000 persons. It was 0.36 per cent of the total population of the country and 1.44 per cent of the total employed force.

The sector allocation in terms of agricultural sector employment being the highest (47 per cent) of the labour force, but the high level S & T manpower employment remains 13 per cent of the total stock of high level S&T manpower and 0.39 per cent of the employed labour force in the sector. The mining, manufacturing, construction and transport sector employ only 17.3 per cent of S&T manpower. This 1.11 per cent of the total employed labour force. The remaining 10 per cent stock of S&T manpower employed by the community and social services, Trade and other sectors grouped together. This is 3.3 per cent of the total employed labour force in these sectors in the country.

The Research and Development (R&D)

Scientists and Technologists increased in the last 30 years by the factor of 6.3 per cent from 2000 in 1965 to 12,525 in 1995. They increases per million from 38 in 1965 to 96 in 1995. The total number of Ph.Ds. in the country is 2486 (1998). There breakup given here under:

Natural Sciences 1337 (54%)
Agricultural Sciences 648 (26%)
Medical Sciences 70 (3%)
Engineering & Technology 417 (17%)
Total: 2486

The total number of Ph.Ds. in the country in the different S&T fields is only 0.50 per cent of the total stock of high level S&T manpower in the country during the year 1998.

There should be revolutionary support from the Government of Pakistan for the development of

slump in Pakistan got pace, the army of unemployed graduates and masters increased faster than ever before. Now Pakistan has a great army of capable graduates and masters who can do miracle in this field. These potential computer experts can develop the software industry with the support of government and earn reasonable high amount of foreign exchange by almost-negligible investment. The computer software industry in the 21st century will become the play field for skilled experts. The future lies in the computer/Information Technology. This being an admitted fact that we are all set to keep in pace with upcoming challenges. In case of failure or mismanagement in formulating the sincere policies that means we are have to get ourselves isolated from the rest of the world.

Future of Pakistan's economy for achieving brighter future, economic prosperity and social harmony relates with the promotion of new areas including Information Technology. The development of computer hardware need special attention and effort should be made to start joint venture with China, Korea, Japan to developed the local industry for meeting the ever-increasing demands of computers for software experts.

The brain drain in the Information Technology from Pakistan be controlled and regulated in accordance with our needs. The policy makers with sincere heart should work out a revival plan ignoring personal interest towards a feasible policy framework in achieving the economic independence, industrial supremacy, social prosperity and the achievement of sustained economic growth. Greater responsibility is to be shared by the successive governments who certainly did not take bold economic decisions to address knotty economic problems and given preference towards politically expedient economic decision of short/narrow objectives.

Needs of time is promotion of constructive and goal oriented poli-

get in pace with changing technology.

The manufacturing of software and its development soon got the status as an industry. This industry, as compare to other industry is quite simple, it does not require massive machinery for creation of its out-

countries to a level of elimination. Technology and expertise can freely flow from one place to another in a blink of a second.

In the start, there were a lot of short-falls in this industry. The incidences of software theft were

people being added to the labour force each year, which is a major socio-economic problem.

The introduction of proper network of Information Technology and integrated efforts of all concerned agencies can them for million un-

with literacy and moving an un-way to skill and hi-tech there is a broad spectrum cover. The existing statistics of high level of Science and Technology (S&T) manpower in the country increased from 38000 in 1950 to 479,000 persons in 1995. This achievement was

support from the Government of Pakistan for the development of such policies to unleash the potential of software industry. The potential in Pakistan to generate experts in information technology is much high. After that the industrial

Needs of time is promotion of constructive and goal oriented policies based on concrete facts and experiences gained from all the concerned sections of the society may be proved rain of blessing from the God Almighty.

