CORRELATION BETWEEN BUSINESS AND DOMESTIC INFORMATION-TECHNOLOGY — NEED OF THE HOUR

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ABSTRACT

The ability to sustain ourselves, i.e. sustainability, requires some basic change. It calls for understanding the mechanism of finding means to meet the end. This pivotal concept has its applications in all spheres of life, as well as Information Technology.

The 20th Century witnessed several new landmarks in human history. Among them, one key break-through has been how we, as human beings, have learned to use information to optimize our processes & procedures. The domain of Information Technology is serving mankind with provision of the right information, at the right place and at the right time. The operational forms & technologies have evolved over time moving from primacy to advancement. But to understand how people in the I.T sector operate, one needs to understand the mechanics of this dynamic field. The main focus is provision of quality-solutions with clear understanding of customer-needs. The international & domestic I.T market is governed by the same principle. The new millennium has brought Pakistan to the forefront of the global I.T industry. Countless consumer-goods, financial, insurance and technology firms have partnered with Pakistani companies. They have enjoyed the wide range of low cost and high-quality products and services that we have to offer. Pakistani Software companies cover every major field of technology, in terms of software, hardware and services.

PSEB (Pakistan Software Export Board) is a commercial, independently operated organization, set up by the government of Pakistan. It was established in 1995 to help bring world-attention to the new information-age of Pakistan. Today, through many support programs, PSEB aims to help over 700 member I.T companies and an estimated 15,000 I.T professionals. Specific measures to ensure I.T capacity-building in the local market are as follows:

- *Representation of Domestic software houses in local & International market,*
- *Provision of Infrastructure & logistic support, including bandwidth, under one roof in software-technology parks,*
- *Automation of Domestic Manufacturing Industry, there by interfacing local software-houses with domestic business-sector and bring their expertise to world-class solution-provider level,*
- *Assistance in implementation of quality-standards like ISO / CMM for Software-sector, to provide products using state-of-the-art quality-assurance techniques,*
- *Provision of quality I.T graduates to Software houses as interns.*

The need of the hour is to understand & develop long-term ties among domestic software-companies and business sector. The post 9/11 world has hit hard at the software-scene in Pakistan. In the previous scenario, the software companies were primarily looking forward to North American market for business-generation. The current outlook requires exploring alternative options for sustainability of business. New international markets in Europe, Far East & Asia are the new leads, which require working up by local software houses. On the Domestic front, strong cohesion between business and I.T industry is the key to success.

INTRODUCTION

The ability to sustain ourselves, i.e. sustainability, requires some basic change. It calls for understanding the mechanism of finding means to meet the ends. The pivotal concept has its applications in all spheres of life, as well as Information Technology. Sustainability is primarily the sum of techniques by which individuals, families, markets and organizations explore avenues for their survival and growth. The purpose of this paper is to evaluate the challenges faced by the Information-Technology industry, in terms of sustainability and then examine Pakistan Software Export Board's (PSEB) role in helping the Pakistani I.T companies in their capacity-building. (For further details check *www.pseb.org.pk).*

The 20th Century witnessed several new landmarks in human history. Among them, one of the key break-through has been how we as human beings have learned to use information to optimize our processes

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& procedures. The domain of Information Technology is serving mankind through provision of the right information, at the right place and at the right time. The operational forms & technologies have evolved over time moving from primacy to advancement. But to understand how people in the I.T sector operate, one needs to understand the workings of this dynamic field. The main focus is provision of quality-solutions, with clear understanding of customer-needs. The international & domestic I.T market is governed by the same principle.

SUSTAINABILITY IN INFORMATION-TECHNOLOGY

Similar to traditional markets, the information-technology market is dependent upon some critical elements for its survival. The salient features of these factors are as follows:

a. Business Opportunities: The fundamental sustainability feature is generation of business-development avenues, to provide "bread & butter" to the software companies. The work-potential can be explored, locally as well as in international market.

b. Quality Solutions: unless & until quality is installed in the products offered by I.T companies, their chances of survival are minimal. Quality in terms of post-sales support & maintenance, as well as bug-free product-code, is the hall-mark of the companies which have progressed over the years.

c. Human-Resource Training & Development: To provide I.T services, a software company's biggest asset is its human-resource strength. Trained & skilled personnel mark the difference between the progressing companies and companies on the initial stage of the growth-curve.

d. Entrepreneurship Grooming: Like other industries, the leadership-vision & business-sense is critical for the future of a software company. Bright ideas are required to be nurtured into business-models, to be implemented successfully.

e. Infrastructure & Support: To bind the trained people, take advantage of business environment and offer quality-solutions, suitable infrastructure is necessary. Infrastructure in the form of buildings, machines & material, as well as reciprocal industrial setup, including telecommunication and information-technology setup, is mandatory.

f. Domestic & International Representation: To exploit the opportunities locally, as well as in international market, I.T companies must maintain a strong presence in the chosen business-areas for lead-generation to excel and enhance further.

g. Business Counseling & Guidance: Last, but not the least, from time to time the I.T companies require guidance and counseling, to make the most out of available resources. This counseling can be on technical issues, as well as on matters relating to the operational elements of business.

THE LOCAL I.T PRESPECTIVE

The new millennium has brought Pakistan to the forefront of the global I.T industry. Countless consumer- goods, financial, insurance and technology-firms have partnered with Pakistani companies. They have enjoyed the wide range of low-cost and high-quality products and services that we have to offer. Pakistani Software companies cover every major field of technology, in terms of software, hardware and services.

Pakistan is an emerging country at the Information-Technology horizon of the world. With lowest cost of

Table - 1: Cost of Labour: Annual Wages for IT Professionals

Country	Average Annual Wages
United Kingdom	$100,000 +
China	$ 6,000 to $8,000
India	$5,000 to $8,000
Pakistan	$ 3,600 to $6,120

Source: Forbes, 2001, and Computer Weekly Magazine, 2002

development among the Asian countries, English as one of the prime languages spoken & understood in the country, the domestic market offers lots of opportunities. The country is producing nearly 55,000 I.T & computer-related professionals annually, getting training at around 3000 – 4000 I.T institutes & universities nationwide. These graduates& technical professionals comprise the university students, as well as I.T / computer-course diploma-holders. 39% of I.T students already have 3 years of practical experience in their field of work.

This shows the availability of trained human resource, one of the basic requisites for the sustainability of an industry. There are over 700 I.T companies registered with PSEB, with total software companies estimated to be 1000 approximately. Out of this organizational strength, nearly 300 – 350 are engaged in software exports world wide. There are 2 million computer-literate people in Pakistan; 10 out of every 1,000 people use the Internet in Pakistan, compared with just 3 out of every 1,000 people in the neighboring country: 74% of Internet users have been using internet for over a year. There is a huge Pakistani Information Technology workforce overseas, working with international companies to international standards. Much larger numbers of individuals of the same caliber are working in Pakistan, for local I.T companies. This means that international investors & local business-companies can enjoy their excellent skills through domestic I.T companies at just a fraction of the cost. For comparison purposes, see Table-1 which shows Pakistan as having lowest overhead cost of I.T professionals.

At the same time, the Government of Pakistan is aggressively pursuing Information Technology at high-priority in its development agenda. There is 7-year tax-holiday for venture-capital I.T funds. Tax holiday on software exports is available till 2016; for the establishment of software houses, hardware imports are duty-free. Foreign investors are permitted to own up to 100% equity in local software houses/software companies. Imports of software-products are Tax free.

PSEB & THE DOMESTIC MARKET

Pakistan Software Export Board (PSEB) is a commercial, independently operated organization, set up by the Government of Pakistan. It was established in 1995 to help bring world-attention to the new information-age of Pakistan. Initially it was established under Ministry of Communication. In 1999 it was moved to Ministry of Science & Technology. Today it is functioning under the patronage of Ministry of Information Technology & Telecommunication since 2002.

From a humble beginning with staff of a few people to the present-day elaborate set up of professionals & state-of-the-art infrastructure, PSEB has played a vital role in capacity-building for domestic Information-Technology market. The prime objective of this apex software promotion-body is clear & simple. PSEB act as facilitators & mediators i.e. matching the requirements of stake-holders to the huge-resources that Pakistan has to offer. Presently, through many support programs, PSEB aims to help over 700 member I.T companies and an estimated 15,000 I.T professionals. Specific measures to ensure I.T capacity-building in local market are as follows:

- **Business Opportunities**

   The project of Automation of Domestic Manufacturing Industry is helping the local I.T industry to explore the business-options in the domestic business sector. The aim of the project is to computerize 100 Small & Medium Enterprise (SME) business manufacturing units and to introduce the automation-culture in SMEs. Under the project, SMEs from domestic manufacturing industries (Textile, Engineering, Pharmaceuticals, etc.) have been automated in Management, Reporting, Finance, Admin/Work Flow and E-Commerce matters, Quality Solutions, etc. In phase–I of the project, 44 industrial units have been automated. PSEB is offering financial & technical assistance for the development of such solutions.

- **Quality Solutions**

   The project of Standardization of Software Industry is initiated to cope with requirements of international market and to build up trust in I.T product of software-industry of Pakistan. Under this project, the I.T companies are given financial & technical assistance for implementation of quality-standard, such as International standard Organization (ISO) series in phase-I. In phase –II the I.T companies are encouraged to adopt the Capability Maturity Model (CMM) stages in their quest for software excellence. The aim is to bring

80 I.T companies to ISO/9001 level, by providing them financial assistance, up to 75%, along with the technical support. In phase-I, 70 Contracts have been signed

- **Human-Resource Training & Development**

  The Groom (Internships) project is launched with the aim to establish linkages between the software industry and educational institutes. This will help in getting I.T students exposed to the working of software-houses and will facilitate educational institutes to update their curriculum in the light of technologies required in the field. The aim is to deploy 1000 students into the local software-industry, bearing the internship cost of the students up to Rs. 3000/ month for three months. As part of phase–I, 425 students from 116 Institutions (from all parts of Pakistan) have been placed in 96 different software-houses.

- **Entrepreneurship Grooming**

  In order to give an opportunity to young & bright talent of Pakistan, the initiative has been taken to establish 20 new software-companies, consisting of 5 personnel each, concentrating on development of software products from international business- plans and provide them the project-management facilities and office-infrastructure & other logistic facilities at Software Technology Park (STP) Lahore. The construction of incubators has been completed and teams have been selected.

- **Infrastructure & Support**

  PSEB, via its project of Software Technology Park (STP) and Data Node Networks, is fundamental in provision of logistic & bandwidth facilities under one roof. Five towering Information-Technology Parks embellish the four main cities of Pakistan. There are two Technology Parks in the capital city of Islamabad and one each in Lahore, Karachi and Peshawar. Due to their immense popularity, the development of many more in public & private sector is on the horizon. These STP's enable I.T companies to start business immediately with saving of time for instant deliveries. These STP's have subsidized tariff, with high-speed data-connectivity.

- **Domestic & International Representation**

  One of the key services of PSEB is representation of domestic I.T companies at international marketing avenues & domestic exhibitions. The purpose of taking software-companies to international exhibitions is to facilitate the industry to participate in the leading international expos, to show their prowess to the world. Some of the major exhibitions in which Pakistani companies were represented were Gitex Riyadh 2002, Gitex Dubai 2002, Outsource World London 2002, Soft China 2002,Second Vision & Technology Expo Bahrain 2002, ITCN Asia 2002 (Dammam Expo Center Saudi Arabia), ITCN Asia 2002 (Karachi Expo Center).

- **Business Counseling & Guidance**

  The project has been started to develop libraries and Business councils at Lahore, Karachi, Islamabad and Peshawar, for the guidance & support of local I.T industry. Libraries at Lahore and Islamabad have started operations with almost 500 books and about 40 magazines. Member's advisory council is on board to help the software-industry. The exhibition pavilion at PSEB, Islamabad, has been established to facilitate effective introduction by I.T companies of their products and services to their respective clients, using PSEB platform.

CONCLUSIONS

The main need of the hour is to understand & develop long-term ties among domestic software-companies and business sector. The post 9/11 world has hit hard at the software scene in Pakistan. In the Previous scenario, the software companies were primarily looking forward to North American market for business-generation. The current outlook requires exploring alternative options for business-sustainability. New international markets in Europe, Far East and Asia are the new leads, which require working by local software houses. On the Domestic front, strong cohesion among business & I.T industry is the key to success. By understating the needs of the industrial units, software companies will be able to develop tailor-made solutions, as per requirements of the local industry and, subsequently, leading to world-class level.