



State of the Sector Report on Philippine Software Development 2004

December 2004
Pearl2 Project

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Pearl2 is a five-year initiative (2002-2007) designed to support the development of small and medium enterprises throughout the Philippines. It aims to help create meaningful jobs for both men and women through the strengthening of Business Support Organizations (BSOs) and Investment Promotion Agencies (IPAs).

This report uses the definition provided by the Department of Trade and Industry (DTI) for micro, small and medium enterprises. Micro firms are companies with assets totaling below Php3 million. Small enterprises are those with total assets of Php3 million to Php15 million, while medium enterprises have assets ranging from Php15 million to Php100 million.

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Abbreviations and Acronyms

BOI	Board of Investments
BPO	Business Process Outsourcing
BSO	Business Support Organization
CebuSoft	Cebu Software Development Industry Association, Inc.
CHED	Commission on Higher Education
CITEM	Center for International Trade Expositions and Missions
CMMI	Capability Maturity Model Integration
DFA	Department of Foreign Affairs
DOTC	Department of Transportation and Communications
DTI	Department of Trade and Industry
ERP	Enterprise Resource Planning
IPO	Intellectual Property Rights Office
IT	Information Technology
LAN	Local Area Network
LBS	Location-Based Services
NASSCOMM	National Association of Software Companies
NCC	National Computer Center
NCI	National Computer Institute
PITON	Philippine IT Offshore Network
PMO	Project Management Office
PMP	Project Management Professional
PSIA	Philippine Software Industry Association
QA	Quality Assurance
R&D	Research and Development
SDC	software development company
SDLC	Software Development Life Cycle
SQL	Structured Query Language
TESDA	Technical and Educational Skills Development Authority
VAS	Value-Added Services

Introduction

In early 2004, the Pearl2 Project identified the software development industry as one of the IT sectors for possible assistance by the Sectoral Enhancement component of the Project.

To determine how best to assist the sector, Pearl2 conducted an assessment of its operations and status. Through a survey of software development firms and a value chain analysis of the industry, an initial set of needs of the sector was determined, together with some possible areas for intervention. The findings of the study are presented in this report.

Methodology

In the case of software development, Pearl2 collaborated with the Philippine Software Industry Association (PSIA) in Manila and the Cebu Software Development Industry Association Inc. (CebuSoft) in Cebu. This report uses both primary and secondary sources of

information. Primary data was obtained from a survey conducted with members of the two BSOs mentioned previously. Focus group discussions were also held with selected officers and members of the BSOs to gain insights into their issues and concerns.

The secondary sources of information included publications and reports from government agencies including the Department of Trade and Industry, Board of Investments and Center for International Trade Expositions and Missions.

The Pearl2 study relies on the framework of a value chain analysis developed by Dr. Michael Porter of the Harvard Business School. (Please see Annex 1 for some background on the value chain analysis). The study, however, is limited to the primary and support activities of the software development sub-sector. It does not include financial or cost information as such data is difficult to obtain and reconcile for an industry-level evaluation.

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- Mr. Greg Lainez, PSIA President; and

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2 Executive Summary

Software development covers three major product categories, each with its own use:

- (i) applications software - designed to perform specific functions such as payroll or accounting
- (ii) systems software - computer operations or tools for software development, and
- (iii) middle ware - programs between applications and system software

Based on interviews with industry sources, the local software development sector is composed of more than 300 firms providing employment to an estimated 10,000 programmers. The industry offers a host of software development services including analysis and design, prototyping, programming and testing, customization, reengineering and conversion, installation and maintenance, and education and training in system software, middleware and application software.

With the exponential spread in the use of new ICTs worldwide, the global software industry promises to be one of the most robust growth areas today. A study by McKinsey & Co. projects total revenues for IT-enabled services worldwide to reach about US\$142.2 billion by the year 2008.

The US is the industry's largest market for software products and services, accounting for 40% of the total demand. This is followed by Europe with a 38% share and Japan with a share of 12% of the total world demand.

Among software developers, India is the world's leading supplier. It has maintained its premier position in the software development industry due to skilled manpower and linkages with key markets.

Local software companies generate sales in two ways: first, by developing software products that are marketed to users; and second, by obtaining contract work from other firms. Sometimes, software firms deploy or assign their skilled personnel to a particular client or company to handle specific IT needs. In 2001, the Philippine software development industry posted about US\$15 million in revenues.

The Philippines has been providing first-rate software development products and services to markets such as the US, Europe, Japan and Australia for more than two decades now. The industry experienced robust growth in the 1990s when foreign investors began to take advantage of local programming expertise. At present, however, the foremost issue facing the industry is the lack of skilled manpower. Manifestations of the problem occur at two levels: programming and project management.

Despite the number of IT schools operating in the country, the curricula in these schools do not meet industry needs and the graduates are not considered skilled enough by the industry for immediate hiring. There are also a limited number of senior personnel with the experience and aptitude to manage projects. No formal training for this position is available, and the expertise is acquired through experience on the job.

Software developers also have to contend with the high cost of operations. Development software licenses are expensive, particularly those of well-known brands. Equipment upgrading and the tools to improve productivity such as work-tracking software also entail substantial investments.

As with the three other IT sectors, the industry has no comprehensive marketing program to develop and sustain foreign clients. Part of the problem concerns the lack of CMMI certification which most clients abroad consider important. CMMI certification, however, is a long and expensive process most local firms can ill afford. The local market for software development, on the other hand, is small. Local clients generally still lack appreciation for the value of software development and are reluctant to invest in this activity or purchase local software products.

Software developers in the country are organized in a national organization, the Philippine Software Industry Association (PSIA), based in Metro Manila. Some developers in Cebu have also set up their local association called the Cebu Software Development Industry Association, Inc. (CebuSoft). Annexes 4 and 5 give some information on these two groups.

3 Overview

Product Coverage

Software development is defined as the process of understanding and enumerating the requirements of a software user and translating these requirements or specifications into instructions for the computer to follow and initiate. Software development also involves testing and editing codes to make sure that specifications and their translations are correct, and in documenting and maintaining the program.

Already the biggest segment in the E-services industry in terms of players, the software development sector comprises more than 300 outfits offering a variety of services including analysis and design, prototyping, programming and testing, customization, re-engineering and conversion, installation and maintenance, education and training of system software, middleware, and application software. These services are offered to local, but most especially to foreign, clients such as US, Europe and Japan.

There are three general software categories, each geared to different markets:

- **Application software:** This refers to programs that address functional concerns across industries such as human resource management, payroll system, project management and other related activities. This also includes word processors, database programs, Web browsers, applications for drawing, painting and image editing, and communication programs.
- **System software:** This refers to the development of programs for operating systems, and software tools and development packages.
- **Middleware:** These are computer programs used to mediate between application and the system software or between two different kinds of applications.

Software products are further classified according to function and use, as follows:

- **General applications** - includes word processing and databases and other programs commonly used in business.
- **Custom vertical applications** - includes customized banking and accounting systems
- **Development platforms** - includes Oracle, SAP and SQL for use in developing databases or related structures in business or other applications
- **Development tools** - includes C++, Visual Basic and Java used to create executable and other programs

- Operating systems - includes Windows and Mac OS which interface with computer hardware and provides the platform for other programs to run
- Utilities - includes virus protection and memory management which aid in the more efficient and secure operations of other programs

Industry Background

The Philippine software industry has been providing world-class software services for more than two decades now. Software development has been undertaken in the Philippines since the 1970s. Over time, a number of foreign firms, mostly from the US, began to take advantage of the growing capabilities of local programmers. Philippine software expertise became recognized worldwide, and the country became established as a supplier of first-rate software products.

The boom for the industry was in the early '90s when lucrative foreign contracts were netted by local software houses. In 1991 alone, the software development sector generated a hefty US\$16 million in revenues. However, together with the rest of the IT industry around the globe, the industry experienced a downturn toward the early part of year 2000. Local software firms now face a serious challenge to find the right market niche and upgrade capabilities to compete against other countries.

Industry Coverage

At least 300 local software development houses make up the software development sector, providing livelihood to an estimated 10,000 programmers in the country (based on BOI estimates). Firms in the industry range from micro enterprises with a limited number of programmers, to large multinational corporations. Majority of companies are small to medium in size. Although most firms are formally registered, some programmers operate informally. Most software development firms are concentrated in the Metro Manila area, with others operating in Cebu, Davao and other key urban areas.

To help the industry advance and promote local expertise in software development, the Philippine Software Association (PSA) was organized in 1988. Now called the Philippine Software Industry Association (PSIA), the group is recognized by the government and other external parties as the representative of the software industry in the country.

PSIA is driven by the mission to be the prime mover of the development of software products and services proudly labeled Philippine-made; and be the key catalyst in promoting the local software industry. At present, it has about 37 members comprised of various types of enterprises including firms with foreign equity.

The organization works closely with the government in developing policies aimed at making the local industry more competitive in international software development services.

Aside from the PSIA, a group of software developers was also recently formed in Cebu, the Cebu Software Development Industry Association, Inc. (CebuSoft). It comprises around 16 members, most of which are small and Filipino-owned enterprises servicing the local market.

Market for Software Development

Worldwide sales and revenues of software have seen dramatic growth in the last decade. McKinsey & Co. estimates worldwide revenues of IT-enabled services to reach as much as US\$142.2 billion by year 2008. According to IT Outsourcing Opportunities in the Philippines (Villafuerte-Abonal, 2002), geographic distribution of the software market is led by the US (40%), followed by Europe (38%) and Japan (12%). The remaining markets account for 10% of aggregate demand.

Local net sales for the software development sector have recorded a steady increase from PhP4.7 million in 1999 to PhP6 million in 2001. Data from the DTI shows exports of the sector increasing from US\$60 million in 1993 to about US\$186 million at present (2004).

Currently, the Philippines has established clients in the US, Europe, Japan and the Asia-Pacific including Australia, Singapore, China and even India. From the revenue and market trends, the local industry has clearly sustained its presence in those markets where demand for software development services is most significant.

4 Sectoral Profile

A survey of software development firms was conducted to obtain a profile of the industry. Most of these were members of the two BSOs for software development, the Philippine Software Industry Association (PSIA) and the Cebu Software Development Industry Association, Inc. (CebuSoft).

About 33 firms responded to the survey. Of this number, six are from the PSIA, 13 from CebuSoft, three from a group in Davao called the Association of Solution Integrators and 11 firms with no BSO affiliation (four in Cebu and seven in Davao). The 19 respondents from PSIA and CebuSoft represent about 36% of the combined membership of the two BSOs. The survey questionnaire used for software development firms is similar to the one utilized for digital animation (Annex 6) except for some minor changes in terms used.

The key findings from the survey results are presented in the next few pages.

Date of Establishment

About one-third of the software development companies have been in the business for more than nine years. More than half are relatively new, having been established only in the late 1990s or early part of the year 2000. These firms have been operating for less than nine years.

Company Set-Up

Majority of the software development firms surveyed (82%) are mostly micro and small businesses. The micro enterprises represented 42% of the firms surveyed, followed by small-sized (39%) and medium-sized companies (12%). Only 6% are large business firms.

Majority (79%) are set up as corporations. Some 19% are sole proprietorships while the remaining 4% are organized as partnerships.

Ownership and Management

Among sole proprietors, all owners are male and college graduates. For the corporate set-ups, majority (93%) of Chairpersons are male. Nine of 10 firms surveyed also have male Presidents. The other management positions in the respondents' firms are likewise held primarily by men (64%).

In terms of educational attainment, slightly more than half (56%) of the Chairs are college graduates while about one-third also hold post graduate degrees. Majority (64%) of the corporate Presidents are college graduates; the rest hold also post-graduate degrees.

Product Lines

The software products provided by the surveyed firms include accounting/inventory software, graphics consultancy, information systems, integrated banking/banking software, POS (ShopAssist, Lane POS and Customizable), customized software and new business applications. Other software products served are E-mail tools, cortex systems and other business/professional applications.

Facilities

Slightly more than half (52%) of the firms surveyed operate in areas less than 100 square meters in size. Some 21% have premises of 100 to 250 square meters while the rest have areas of over 250 square meters.

As to ownership, about 79% rent their business premises while 21% own their facilities. Majority (85%) are found in commercial areas; 15% are based in residential areas.

Employment

Firms surveyed have a total employment of 1,174 direct employees. The proportion of male workers (53%) is almost at par with females (47%). About half of the total workforce comes from production. The other personnel are assigned to marketing (14%), office and administration (11%), quality control (9%), technical/R&D (8%) and other functions (7%).

There is no noticeable difference in salary between male and female workers. Male employees earn a daily wage of about PhP515 while females earn approximately PhP530 daily. The men dominate production (56%), technical/R&D (61%) and marketing departments (62%). The women are the majority in office and administration (60%) and QC departments (56%).

Subcontractors

About one-half of the firms surveyed confirmed that they subcontract work; the other half did not provide relevant data on outsourcing. From the firms that subcontract work, an average 23% of the workload is delegated to subcontractors. Firms usually hire an average of three subcontractors a year, with about seven workers per subcontractor. The subcontractors' workers are predominantly male (63%). Most (88%) are located in the same province as their principal.

The support that the firms usually provide subcontractors is primarily in the form of skills training (56%). Other assistance offered includes tools and equipment (44%), product development (38%) and credit and financing (19%). The common problems encountered with subcontractors are delivery dates (63%), reliability (56%) and quality of work (31%).

Sources of Materials

Software development firms source the materials they need (hardware, software and office supplies) locally (52%) and overseas (48%). Their mode of procurement is through their own sources (42%) and from the open market (33%). The biggest problem with sourcing of materials and supplies is the price, as reported by 69% of the respondents.

Mode of Production and Operations

Production is semi-computerized for nearly half of respondents (46%), and fully computerized for 36%. Quality control (70%) and post-production (55%) are mainly semi-computerized systems.

Capacity Utilization

On the average, surveyed firms use up to 85% of their capacity. About 42% of the firms were operating at full capacity (100%) at the time of the survey.

Quality Control

About 40% of the respondents use their internal resources/equipment to facilitate their quality control system. Some 21% use their internal resources/equipment and have specifically assigned personnel to perform quality control.

Almost one-third (30%) of the quality control problems among respondents arise during the production process while 21% occur during both materials procurement and production operations.

Product Development

Almost all (91%) of the respondents rely on their internal capabilities and resources for product development. The software development firms' primary sources of information for product development are their buyers and the Internet, the frequency response to both being the same at 73% each. Other sources of information are publications (46%), designers (36%) and trade fairs (33%).

About 58% find their present information for product development unsatisfactory; only 39% expressed satisfaction with their present data sources. Majority (61%) of the firms have their internal R&D facilities for product development. Product design concepts for about 94% of respondents are developed mainly from buyers' specifications.

Market Coverage

On the average, the local sales of software development firms surveyed comprise 79% of total revenues; the remaining 21% come from the export market. Business is generated solely from the local market for about half of the respondents.

Export Markets

The major international market of software development firms is the US with a 53% share. Other major export markets are Europe (14%), Japan (6%), Australia (4%), Canada (3%) and other Asian countries (19%).

Marketing Channels and Activities

The main marketing and distribution channel of software development firms is through direct selling (73%). Majority of the firms obtain their foreign buyers from referrals (39%) and thru their own contacts (30%). Other means of generating foreign sales include trade fairs (24%) and business missions (15%).

The Internet (73%) is the chief trade promotional activity of the firms to make their target markets aware of the products and services they offer. Other important promotional activities are trade fairs (61%) and the production and distribution of brochures (61%).

The target market for majority of the firms is a combination of different segments, indicating that the sector does not focus on a particular market niche. About one-fourth (27%) of software development firms cater to a combination of the high-end and midrange market segments (27%); another one-fourth (24%), to the midrange; and the rest to a combination of the mid-scale and low end.

Competitors

Local firms consider their major competitors to be India (36%) and North America/US (33%). They cited skills levels, corporate image and reputation, advanced technology, lower prices, government support, large volume of resources, lower labor costs and strategic locations for marketing as the strengths of their competitors.

Sales

Export sales of the software development firms are low, with majority (27%) posting export sales of only US\$50,000 in 2003. Some 12% of the firms reported export revenues of US\$10,001 to US\$100,000 for the same year. About 42% of the firms surveyed, however, did not specify their export sales in 2003.

About 30% of the respondents reported revenues of under PhP1 million from the domestic market in 2003. Local sales ranged from PhP1 million to PhP3 million for 24% of the firms, and from PhP3 million to PhP5 million for 21% of the firms.

Finance

Production accounts for the biggest share of the operational budgets of software development firms at 40%, followed by administration (24%), and research and development (16%) and marketing (16%).

All the firms surveyed use their own funds for production. Aside from their own funds, some 9% also have credit lines with banks or avail of financing from private lenders.

5 Value Chain Analysis

Structure of the Software Development Industry

The Board of Investments (BOI) estimates that there are more than 300 software development companies in the country. According to industry experts, however, this figure is even below the actual number of establishments as the growth in demand of the offshore software development market has encouraged the entry of more small players. Aside from the well-established software development houses, most of the new players that are targeting the offshore market are small-size enterprises with 10 to 30 programmers. These firms will expand as more work comes in.

The main output (product and/or services) of a software development company (SDC) can be categorized either as a software product or application package that is sold to companies or the provision of software development services to a company in the form of contracting or outsourcing.

SDCs involved in the development of software products normally invest on R&D and on marketing the products they produce. They usually focus on a particular industry or vertical solution (e.g., banking and finance, insurance, manufacturing, etc.), or develop products that are cross-functional in nature such as Enterprise Resource Planning (ERP) systems (accounting, HR, payroll, inventory, etc.). Other SDCs focus on technology-specific products such as wireless/mobile applications. Most SDCs involved in product development are mature organizations that have been in the business for some time. These are also the firms with sufficient resources to invest in product R&D and extensive marketing and promotional programs.

Software services, on the other hand, involve the contracting or outsourcing of work by companies (local and offshore) to an SDC. The SDC develops, customizes or maintains a system based on the client's specific requirements. Another service that SDCs offer is skilled manpower (programmers, systems analysts or project managers) that are assigned to a company. The skills of the personnel to be deployed are based on the specific needs of the client and are usually dictated by the technology it is using. This is more commonly known as body-shopping.

Subcontracting software development is also a normal practice within the industry. SDCs that undertake large, complex projects normally subcontract portions of their work to other local SDCs. Offshore software companies, mostly those based in the US, subcontract programming work (the development of a new system or maintenance of an existing one) to local SDCs.

Process Flow

Software development projects typically start by determining and analyzing the requirements of the client (outsourcing company or targeted market) that will be computerized. This is normally called the business or functional requirement specifications and the initial document usually produced will be the basis of the actual design of the system as well as the programming specifications.

The first link in the value chain is therefore the determination of the nature and characteristics of the software product or service in terms of the technology platform (.NET, Java, Oracle, COBOL/ CICS, etc.), business domain (banking, manufacturing, insurance, etc.), or software services (project management, systems analysis, maintenance programming, body-shopping, etc.). The SDC then hires, if required, and trains the staff, and then sets up the development environment (hardware, software and networking) based on the client's specifications.

For the provision of software services, this document must be validated and approved by the client (outsourcing company) since it will be the basis of most of the succeeding work. For software product development, this will be the basis of the initial software configuration plan.

In their operations, SDCs usually follow the Software Development Life Cycle (SDLC) methodology most suited to the organization. SDLC methodologies can be either a structured approach or an object-oriented application development. The SDLC processes involved in software product development and the provision of software services may differ in terms of the focus given to a particular phase of the cycle. Processes and practices used by SDCs can conform to standards required by the market

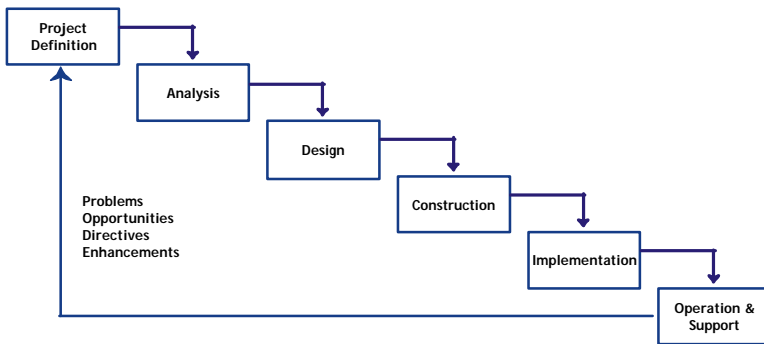
such as Capability Maturity Model Integrated (CMMI). Adherence, continuous practice and improvement of such methodology are the necessary requirements for an SDC to achieve certifications such as ISO and CMMI.

Upon finalization of the client's requirements, these are translated into a systems design or program specifications that will be used as the guide for the actual programming and testing to be done. During the initial phases of software development, the key personnel deployed by SDCs are highly skilled and experienced staff, mostly solutions architects, business analysts, systems analysts and database designers. During the actual program construction and testing, the work shifts to the programmers, who are supervised by systems analysts. Quality assurance plays a major role during the testing phase, increasing in the final stages of the development prior to the release of the finish software product to the market or the implementation of the software to a client.

After a series of tests and code revisions, the software is ready for release – to the market in the case of a software product, or for deployment by the client in the case of software service. After implementing or installing the software at the clients' premises, the next phase is to support the product or newly developed system. This could be in the form of warranties or maintenance agreements. For software products, enhancements or updates are triggered by post-development or customer-reported problems, or the application of newer technologies through continuous research and development. For new systems developed for a client, support is limited to the reported problems by the client. Enhancements of the system are usually treated as new projects under separate contracts.

The figure below shows a typical SDLC model commonly known as the “waterfall” model. Other known models are the “spiral” or iterative model, and the rapid application development (RAD) model.

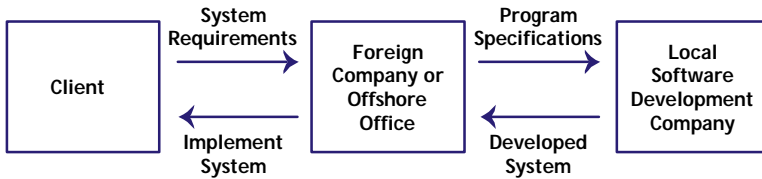
Figure 1
Model for a “Waterfall” Software Development Cycle



Source: “Management Information Systems”, Michael O’Brien

For offshore outsourcing, the model may differ in the sense that portions of the work are done by a different group or company based in another country. The foreign company or group is normally responsible for initiating the project, verifying the client’s requirements, and implementing the finished systems on the client’s premises. The local counterpart SDCs perform the technical design, program construction, system testing, and packaging for deployment to the offshore counterpart. In some cases, the foreign counterpart provides the systems design or program specifications and the local SDC undertakes program construction only. Figure 5 on the next page shows a simple diagram of the outsourcing workflow from a foreign client to a local SDC.

Figure 2
Process Flow for Foreign Outsourced
Software Development Work



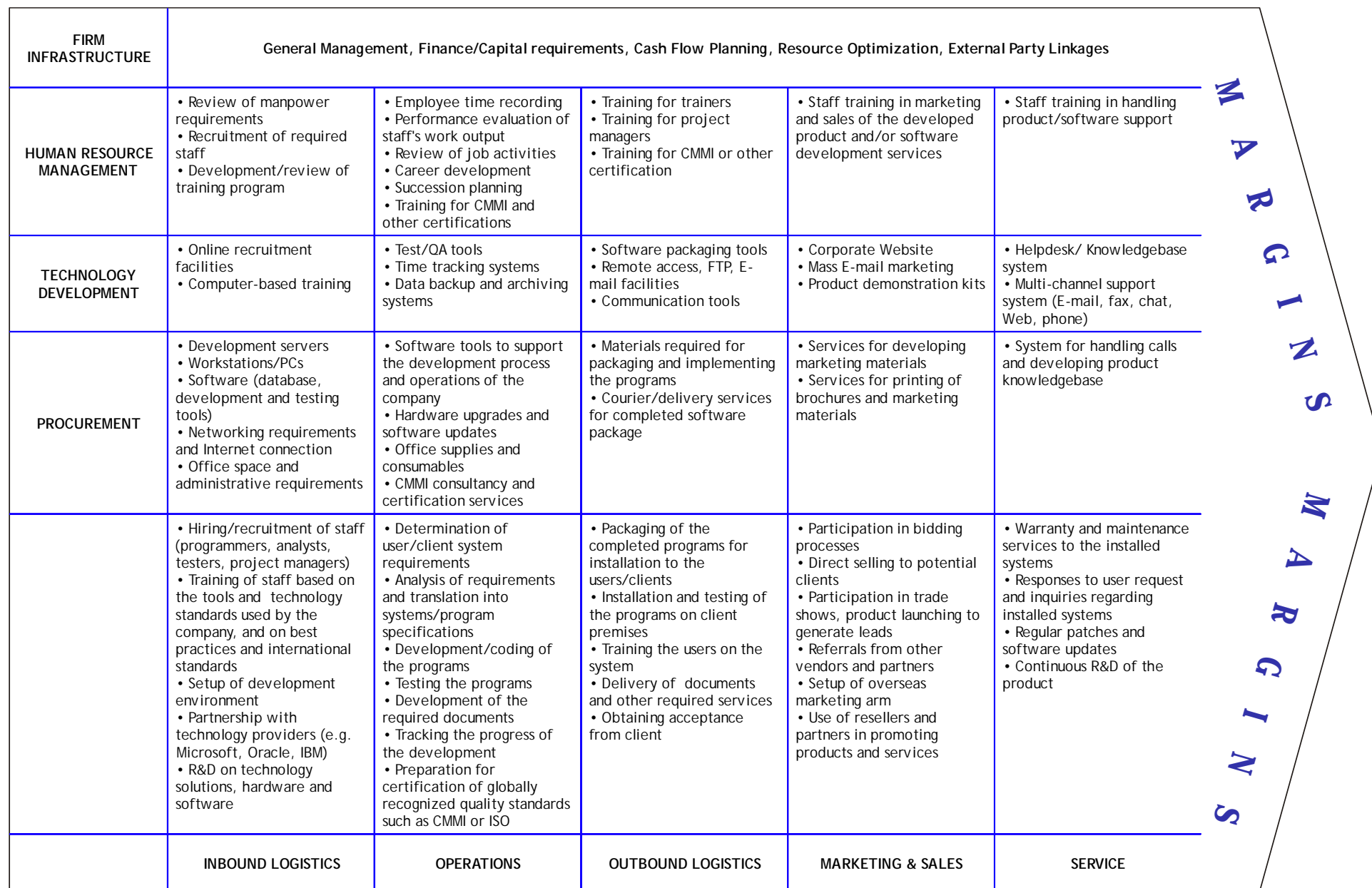
Source: Interviews with industry personalities

Body-shopping is also a common practice for software firms, particularly in maintenance programming when the local company provides skilled manpower to the foreign client through the foreign counterpart company. In this case, a specific technical person or persons are assigned to work at the client's premises for a definite period of time under a contract between the client and the local SDC.

The Software Development Sector Value Chain Diagram

The value chain diagram for the local software development sector is presented in the next page. This diagram covers the industry as a whole and was based on interviews with key industry personalities.

The Software Development Sector Value Chain Diagram



Key Findings from the Value Chain Analysis

The main problem facing the local software development industry is the lack of skilled personnel such as programmers and systems analysts. Aside from the technical staff, SDCs also have difficulty hiring and maintaining senior staff such as business analysts, technology specialists, and project managers, on whom the companies depend heavily to be able to deliver the required software services. Software engineers capable of R&D of software products are also scarce.

Although the Philippines produces a huge pool of college graduates from IT-related courses every year, the knowledge and skills gained from such education often fails to meet the requirements of the SDCs. They need to be trained in the use of tools, development standards, methodologies, and best practices in software development before they can become productive. Training is usually from one to six months, and includes theoretical, hands-on and soft-skills training.

Staff retention has also become a major problem, particularly for senior or experienced staff. Attrition rate is high due to the more profitable opportunities offered by large multinational companies whose offices in the country provide offshore services to their parent firms. Some skilled workers opt to work overseas, which further depletes the local pool of qualified personnel.

Access to financial capital is also an obstacle that local SDCs are experiencing especially because only a few capitalists are willing to venture into the software development industry. As a result, SDCs cannot easily expand their operations, develop new products, acquire software development and testing tools, provide competitive compensation, and implement and acquire

internationally recognized quality management certifications such as ISO or CMMI. In addition, SDCs are hampered by the high cost of software licenses, which limits their capability to upgrade the development tools they use. Because the software that could enhance productivity such as those used for program development monitoring and quality control are likewise expensive, few SDCs are able to use them.

The competition for the global market has become increasingly difficult due to the industry's lack of required certifications such as CMMI. The investments in time and cost of becoming CMMI-certified are also high, apart from the obvious problem of the lack of local capability in CMMI certification.

For their outbound operations, local software firms lack staff with the required technical skills to supervise deployment and implementation of software at the client's premises. Firms also find the market information on hand insufficient to be able to develop an effective marketing program. Moreover, the cost of marketing is huge for the industry, especially for those into the development and sale of their own products. Meantime, the local market is undeveloped and lacks appreciation of the value of software solutions. The result is weak local demand and low pricing.

More details on the issues and concerns on the sector's value chain analysis are presented in the value chain table in the next few pages.

The Software Development Sector Value Chain Table

FIRM INFRASTRUCTURE		
FINDINGS	CONCERNS	RECOMMENDATIONS
Most SDCs are having difficulty obtaining loans from banks or investment firms to be used as capital for their operations and expansion.	Firms cannot readily upgrade or expand operations.	Encourage venture capitalists among local investors to consider local software development firms for investment. Government could issue more incentives to such companies, particularly those that promote job creation.
INBOUND LOGISTICS		
FINDINGS	CONCERNS	RECOMMENDATIONS
Human Resource Management		
SDCs are having difficulty finding people with the skill sets they need. There is a mismatch between the skills that the graduates acquire from their formal education and those required in an actual work environment.	Companies lack the skilled personnel required affecting their production activities.	The educational system has to be thoroughly reviewed, particularly the high-tech courses, to ensure the alignment of the curriculum with the skills required by the industry.
Procurement		
Software licenses of development tools are expensive, particularly those provided by reputable software firms.	High cost of software licenses constrain SDCs from expanding their production capabilities or upgrade their present system.	The industry BSO could seek assistance from product providers to assist SDCs by waiving or reducing the annual fees involved.

INBOUND LOGISTICS		
FINDINGS	CONCERNS	RECOMMENDATIONS
Procurement (con't)		
		SDCs could look for alternative development tools such as the open source environment.
OPERATIONS		
FINDINGS	CONCERNS	RECOMMENDATIONS
Human Resource Management		
<p>Training in the technology used by an SDC is long and costly.</p> <p>Most SDCs can not afford setting up the training facilities needed.</p>	<p>SDCs find it difficult to keep up with the latest advances in technology due to limitations in the technical knowledge of their workers.</p>	<p>The industry BSO should study the possibility of subsidized training programs through assistance from government or other agencies.</p> <p>A common training facility or competency center could be established by the SDCs or through partnership with product providers and government institutions.</p>

OPERATIONS		
FINDINGS	CONCERNS	RECOMMENDATIONS
Human Resource Management (cont)		
Staff retention has been a problem for most SDCs, especially the small ones.	Many local SDCs are losing their personnel to large multinational companies undertaking outsourcing work for offshore clients, as well to parallel industries such as call centers.	SDCs should plan for staff succession so that operations are not disrupted. A solid career development plan for each employee is also in order. SDCs could use "training bonds" to retain an employee.
There is a lack of training programs to assist SDCs and their staff in implementing quality management standards such as CMMI, which could lead to the firms' certification.	Without internationally recognized quality management standards, local firms are hard pressed to compete with other countries for foreign software development contracts.	The BSO should coordinate with concerned government agencies such as the newly created CICT to develop a program that will help the local industry attain global certifications and become competitive in the international market.
Obtaining an internationally recognized quality management certification such as CMMI is expensive.	The certifications are expensive due to the high cost of the consultants and the certification itself. Such certification is basic, however, before an SDC can compete globally. Potential clients expect these certifications of an SDC.	Government and the software BSOs can develop a program that will expand the base of local CMMI certifiers to help reduce the cost of certification. The industry should also link with funding agencies to provide support for the CMMI certification process.

OPERATIONS		
FINDINGS	CONCERNS	RECOMMENDATIONS
Technology Development		
The use of software testing tools and quality assurance (QA) tools in the software development process is limited due to high cost.	The use of these tools ensure the quality and performance of the software being developed. Using such tools will put local software products at par with the globally available software.	SDCs could establish a shared testing facility for QA of their work and products to reduce the costs involved for the individual firms.
The use of productivity tools such as time keeper or time tracking systems by SDCs is also limited, again due to high cost.	These tools are essential to measuring the hours spent by employees in developing software. Most SDCs use a manual system for this task.	SDCs could form a group to develop low-cost software based on the best practices within the local industry. Seed funding could be sourced from the government or from funding agencies. Once established, users can be charged fees to sustain software updates.
SDCs lack standards or methodologies in their operations.	Lack of standards in software development or project management leads to inefficiencies and inability to properly measure productivity.	SDCs should train key staff to develop a methodology that the whole company could adopt. The establishment of a Project Management Office (PMO) will facilitate the use of standards in the organization.

OPERATIONS		
FINDINGS	CONCERNS	RECOMMENDATIONS
Procurement		
Hardware upgrades and software updates are limited due to financial concerns.	Hardware upgrading and software updating is incremental due to high costs. This limits the companies' capabilities to develop new products or enhance existing ones.	Use of cloned machines for the development of workstations should be promoted since these are more economical than branded ones. For development servers (particularly those with proprietary operating systems), SDCs could link with hardware vendors for more flexible payment terms.
OUTBOUND LOGISTICS		
FINDINGS	CONCERNS	RECOMMENDATIONS
Human Resource Management		
Firms lack higher-skilled professionals (e.g., project managers, technology specialists) to manage the client's implementation of the system. Almost 90% of programmers do not want to handle senior (managerial) positions and prefer technical functions.	Implementing the finished software in the clients' premises requires skilled professionals such as project managers, system trainers and technology specialists to ensure client's acceptance of the system and other deliverables. Payment of services rendered is normally tied to the acceptance of such deliverables. Lack of personnel to handle implementation slows down the process and delays payments.	Training programs focusing on the higher level skills must be given priority. These should cover project management and other managerial skills. SDC must support their employees in obtaining certifications (such as Project Management Professional or PMP® certification) to facilitate their development.

MARKETING AND SALES		
FINDINGS	CONCERNS	RECOMMENDATIONS
Technology Development		
Penetrating the foreign market entails several risks and huge investments.	Setting up a foreign representative office or overseas company is expensive but necessary for a local SDC to obtain contracts.	Government support is important, particularly in facilitating trade missions so that local SDCs can determine the potential returns of participating in such an endeavor. Another option is for local SDCs to tie up with foreign companies or find international partners in order to have a presence overseas.
SDCs lack marketing information that will direct their pursuit of potential markets.	The local SDCs have no thorough market research and analysis, particularly on offshore outsourcing software services, which could be used as basis for entering into a contract with foreign partners or clients.	Government and the BSO must take the lead in the development of a market study/analysis program to assist local SDCs in assessing the costs and benefits of offshore outsourcing.
The industry lacks standard contracts that could be used as reference when negotiating with clients.	An SDC may face problems during the implementation of a system due to unclear terms and conditions in the contract of service.	The BSO should initiate the creation of a library of standard contracts that could be used as reference in protecting the interest of both the client and the SDC. The areas to be considered in building this library are the acceptance criteria, copyrights, system ownership and support services provisions.

SERVICE		
FINDINGS	CONCERNS	RECOMMENDATIONS
Procurement		
The setting up of a client or customer service unit to support the installation process increases the company's expenses.	For effective customer support, SDCs need to put up multichannel support systems that are capable of logging all calls and develop a product knowledge base. Such a system necessitates investments in communications, hardware, software and manpower.	<p>Develop a shared facility (call center) that will provide first-level technical support to clients.</p> <p>First level support includes call/incident logging, problem identification, a diagnostic or resolution based on common problems.</p> <p>Problems that are beyond the purview of first-level support are usually forwarded to second-level support, which is usually the SDC that developed the product.</p>

6 Needs Assessment

The value chain analysis of the software development industry has identified some issues and needs as follows:

Firm Infrastructure

- SDCs require large initial capital during start-up phase due to the hardware, software, and networking facilities required. Investments need to be promoted in the software development sector or a low cost financing program should be made available to software firms.

Inbound Logistics

- Educational and technical training institutes should review course curricula and training content to match the skills required by the industry.
- There is a need to negotiate with software development product vendors (e.g., Microsoft, Oracle) to waive or reduce expensive annual fees, or provide discounted software development products to SDCs.

- There is a need to setup a common training facility or competency centers to reduce the high cost of training programmers.

Operations

- Small companies, with the support of the software development BSOs, need to devise a means to retain skilled programmers and highly skilled professionals.
- SDCs need to access more affordable software testing tools and quality assurance tools.
- There is a need to setup a shared facility that can be used for software testing and evaluation.
- Increased use of productivity tools such as time tracker, and project management tools to monitor the progress and measure the performance in the software development life cycle is needed.
- There is a need to develop a localized low-cost time tracker software that local companies can be utilized by the local companies;
- Access to more affordable hardware upgrades and software updates is needed.
- A program or facility is needed to assist software firms in implementing and obtaining internationally recognized quality standards such as CMMI.
- There is a need to develop and train local experts that can help the SDCs in complying with the requirements of the certifications needed.

Outbound Logistics

- Companies need to reduce time and effort in obtaining acceptance of deliverables from clients to avoid delays in the payment of the software services.
- There is a need to train professionals to handle the implementation of the software product and services to their clients.

Marketing and Sales

- The industry needs to attend trade shows (local and foreign) regularly to promote the local software development industry.
- Local firms should tie up with foreign companies or develop international partnerships to penetrate the offshore outsourcing business.
- There is a need to develop a library of standard contracts that can be used as a guide for negotiations with clients to avoid common pitfalls and problems that may arise during the implementation.
- Access to services of an overseas company to market the software products or services should be made available at minimal cost.
- The industry needs to consider branding to differentiate one application from another since most products are similar in many ways.
- There is a need for a market research and analysis on the software development industry, particularly on the offshore outsourcing market.

Service

- Continuous R&D is required to be able to provide updated patches or upgrades to clients.
- Customer service centers should be set up to effectively support clients.



Areas for Intervention

Based on an analysis of the needs of the industry, several measures are recommended in this section to assist the software development sector.

1. Review the curriculum of IT-related courses offered by educational institutions.

The software development industry considers the lack of skilled manpower its primary concern. The problem arises from a mismatch between the skills of graduates of IT-related courses and the skills the industry needs. Although the curriculum of educational institutes providing high-tech courses includes software development methodologies and tools, such preparation is inadequate for the students to acquire the knowledge and skills required by the industry. The industry expects more than a student's knowledge of programming syntax.

There is a need to conduct a detailed study of the curricula of selected IT courses offered by academic institutions. Such a study will help determine the gaps and provide recommendations to address these needs. The study will require the participation of the software development industry, the academe and the government. Part of the study will be a review of the present resources of IT schools and the methodologies used in IT courses.

2. Initiate the setup of IT Competency Centers or strengthen existing institutions such as the National Computer Institute (NCI) under the supervision of the National Computer Center (NCC).

At present, software development companies invest on training new graduates or career shifters on the software development tools they use, and on professional skills such as business and systems analysis, and project management. However, the practice of sending one's employees to formal training institutes may be insufficient as such training imparts only basic knowledge to the employees. The shortage of adequately skilled workers has prompted some SDCs to develop their own training programs that address their requirements – a very costly solution.

Some PSIA members have raised the concept of a shared IT competency center to support the industry's requirements. Such centers that focus on a specific technology such as Java or open source programming could be established. This initiative, however, requires initial funding to take off. An alternative is to strengthen an existing institution such as the National Computer Institute (NCI) under the supervision of the National Computer Center (NCC). The institute was a premier training center in the 1970s to the 1990s and its comprehensive training program has produced quality

graduates. The main advantage of this scheme is that the organization has an existing infrastructure and is a neutral organization. A program to upgrade the current capabilities of the NCI should cover the following areas:

- a. updates of courseware to reflect the technology being used in the industry,
- b. training for professional and management skills focused on the use of well-known and globally recognized standards and methodologies
- c. upgrade of facilities with new equipment and software
- d. re-training or recruitment of new instructors

Both the government and the PSIA should look for funding sources that will support the program for the NCI. Funding can be from foreign funding agencies or foreign counterpart organizations such as Japan's software association, which may also benefit indirectly from such a program. Given the existing facilities and resources of the NCI, the initial funding needed will be less than that the financing required by the IT competency centers envisioned by the PSIA. Members can be charged user fees as a self-sustainability mechanism.

3. Design and implement a program that will help local SDCs comply with the requirements for CMMI certification.

In order to compete globally, local SDCs should attain internationally recognized quality management certifications such as the Capability Maturity Model Integration (CMMI). However, the costs involved are beyond the reach of most local SDCs. Both the process of preparing for the certification and the actual

certification process itself are costly due to the high cost of consultants, most of whom come from foreign consultancy companies. The time needed for preparations, the actual assessment and the certification is also long.

To support the needs of the industry, a program is recommended to develop a local consultancy firm that will provide services in preparing SDCs to comply with the requirements of CMMI certification. The services to be offered should include assessment, training, and compliance reviews. The cost of a local consultancy firm will be far less than the use of foreign outfits providing the same service. A local consultancy firm, moreover, will be more familiar with the status of the local SDCs. The proposed firm should have the personnel with the necessary skills to perform the services offered. These personnel should moreover be given continuous and extensive training to improve their capabilities.

4. Support the development of local productivity tool software (e.g., time tracker, progress reporting) to be used by domestic SDCs.

Apart from the high cost of setting up software development facilities, the tools needed to track the performance and enhance the productivity of the developers are also expensive. However, these tools are necessary, particularly for those companies considering certifications and targeting the offshore market.

A program can be initiated by the software development BSOs to develop a localized productivity tool based on local best practices. This program should be geared toward CMMI certification compliance and use open-source technologies to lower the cost of owning the software. This software should also satisfy the requirements of foreign clients (progress tracking based on person-hours).

Such an initiative was attempted before by the rural banking association when a software called RB2000 was developed by a local company. Designed to be more responsive to the industry's needs, the program was funded by the World Bank. The proceeds from the software developed could be used to defray the cost of program enhancements. A similar scheme can be used to facilitate the development of a local productivity tool software.

5. Facilitate linkages between foreign counterpart organizations and local SD organizations and other institutions.

The government, through its agencies (CICT, DTI, DFA) should facilitate the linkages between the local software development industry with foreign counterparts to open opportunities for the local SDCs (particularly the small and medium enterprises) to penetrate the foreign or offshore outsourcing market. This can be done in collaboration with the local industry BSOs (PSIA and CebuSoft). Linkages in the form of strategic partnerships or alliances can be used to channel support programs to the local SDCs, and as a way of marketing the local software development industry. This will also protect the local SDCs (and foreign counterparts) from unfair trade practices and, with the establishment of representative offices, help facilitate regulatory requirements.

A sample of such a partnership is the collaboration between the PSIA and MCEA, a Japanese IT association based in Tokyo. This alliance could assist local SDCs in penetrating the Japanese market which, according to studies, means billions of dollars annually.

6. Initiate a market research and analysis program, particularly in the offshore software development outsourcing market.

Market intelligence will be of tremendous help to SDCs. Such information will help SDCs position themselves during negotiations with foreign partners and clients. This will also help mitigate the risks in venturing into offshore outsourcing business. A program that gathers relevant market information, processes the data and develops key market indicators and recommended courses of action should be established.

The market research must be conducted by an organization with strong knowledge of the global IT industry and a deep understanding of the operations of the local software sector. A consultant could be engaged to study the framework for such a program. Funding can be sourced internally by the industry BSOs from its members. Further assistance can also be requested from government or foreign donor agencies.

7. Strengthen the industry associations or BSOs for more effective implementation of development plans.

The two major BSOs for the software development industry, PSIA and Cebusoft, should be strengthened in terms of management capabilities. At present, neither of the two organizations has a full-time secretariat or office space. The current directors and officers of the BSOs are therefore unable to focus on implementing the different programs the organizations have initiated.

The organizations need initial funding to be able to hire a full-time secretariat that can concentrate on their group's initiatives, particularly the expansion in membership base. The BSOs should encourage local SDCs to become members of their organizations. Assistance should be provided to the secretariats in terms of setting up the needed management systems, training in basic management skills, and planning and developing various programs for members. Part of the BSOs' activities should be to generate revenues from members for services rendered to sustain the operations of the secretariat.

The BSOs should moreover create specific member groups (e.g., Java developers, wireless/mobile, Japanese market, small or startup companies, etc.) to facilitate programs designed for specific areas.

Annexes

Annex 1: The Value Chain Analysis

The Value Chain Concept

Value chain analysis is a method of identifying and understanding the various activities of an organization that provide value to its products or services and the linkages among such activities. It is used to determine which aspects of a firm's operation can be enhanced, and where to reduce costs, optimize resource use, or even reconfigure the entire chain of operations for better performance. The end result of this effort is increased product or service value, lower costs of operation, or both.

A value chain covers two sets of activities. The first refers to the primary activities of a firm and consists of inbound logistics, operations, outbound logistics, marketing and sales, and service. These are the activities that organizations engage in to produce a product or service.

The second set covers support activities that indirectly contribute to the firm's operations. These include the organization's infrastructure, human resource management, technology development and procurement.

All these activities are interconnected and work in a process that can be structured into a value chain diagram. A firm's value chain can also be linked with external chains such as those of its suppliers or buyers.

Value Chain Analysis in Sectoral Enhancement

An adaptation of the generic value chain described in Dr. Michael Porter's book *Competitive Advantage* was used to analyze the structure and performance of industries or sectors covered in Pearl2's Sectoral Enhancement program. Originally, the value chain was designed for company-level evaluation. For the Pearl2 project, however, it is used to develop a framework for understanding how a particular industry operates, with the objective of determining the needs of that sector. On the basis of such a needs assessment, it is possible to identify areas where appropriate assistance can be provided.

Basically, work with all the sectors covered by the program included: (i) designing the value chain diagram, (ii) developing a value chain table, (iii) describing the main components of the value chain, and (iv) analyzing the flow of the chain to identify issues and problems and possible courses of action. Such an assessment brings to the surface the needs of the sector for closer evaluation. The value chain analysis focused primarily on producers which are members of

the Business Support Organization identified for the sector. The analyses are not by any means comprehensive and do not involve any cost estimates for the chain or a comparison of the value chain of a similar industry or with similar features in other countries or regions. Due to time and resource constraints, no references were made to external value chains.

Reference: Michael E. Porter, "Chapter 2: The Value Chain and Competitive Advantage," *Competitive Advantage* (New York: Simon & Schuster, 1985), pp. 33-61.

Annex 2: Background Information on the Philippines Software Industry Association

The Philippine Software Industry Association (PSIA) was organized as the Philippine Software Association in 1988 and presently has around 37 members. Its main purpose then was to organize the Philippine software industry and help member organizations achieve their business objectives. Since its organization, it has been involved in several missions to sell the Philippines as the preferred choice for software development services. PSA (now PSIA) has worked with the government in developing policies to make the Philippines competitive in the software development services market world-wide. PSIA is recognized by government and other external parties as the representative of the software industry in the country. The mission statement of the PSIA is as follows:

- To act as the sole representative of the Philippine software industry
- To be the primary mover of the development of software products and software services "made in the Philippines"
- To be a key catalyst in growing and promoting the software industry in the Philippines

The PSIA is a member of the Information Technology Foundation of the Philippines (ITFP) composed of associations whose members are involved in ICT in industry, academy and government. The Foundation was formed to act as a partner to the government in policy formulation and strategic directions. For member associations, its main thrust is in capability development.

The contact information for PSIA is as follows:

Contact Person: Mr. Greg Lainez
Address: c/o SoftTech Advantage, Inc.
7/F DAO 1 Bldg.
189 Salcedo Street
Makati City
Tel/Fax: (632) 819.2056
Email: gmlainez@radixsys.com
Website: www.psia.org.ph

Source: PSIA

Annex 3: Background Information on the Cebu Software Development Industry Association, Inc.

The Cebu Software Development Industry Association (CebuSoft) was organized in May 06, 2004. Its main purpose then was to organize the ideals and aspirations of the software development industry in Cebu. Organized and envisioned to be the exponent of world-class Software Made in Cebu, the CebuSoft is a non-profit organization registered under the Securities and Exchange Commission (SEC).

The mission of CebuSoft is to facilitate the creation and promotion of a globally competitive and internationally-recognized Software Development Industry in Cebu, Philippines. The organization unites the software development companies in Cebu in order to forge partnering relationships and develop a unique team-spirit directed at stimulating the development of the Cebu software industry.

CebuSoft's membership is made up of fifteen(15) Cebu-based companies whose core business is in software development.

The contact information for CebuSoft is as follows:

Contact Person: Michael A. Jurado
Address: Takuria Bldg. Juan Osmeña St. Cebu City
Tel: (032) 2548521
Email: mikejurado@primesoft.ph

Source: CebuSoft

Annex 4: Company Profile Survey Form

Pearl2 Project		Sector: IT
Company Profile Survey Form		Sub-sector: Software Development
Control No.		
Company:		

Telephone Nos.		

Office Address:		

Date Established:		
Company Size:	_____	Micro (assets below Php 3M)
(pls. check	_____	Small (assets from Php 3M to 15M)
appropriate box)	_____	Medium (assets from Php 15M to 100M)
	_____	Sole proprietorship
Company Setup:	_____	Corporation
(pls. check	_____	Partnership
appropriate box)	_____	Cooperative
	_____	Other (pls. specify) _____
Ownership		
For sole proprietorship		
Name of owner:	_____	Gender: _____
Highest Educational Attainment: _____		
For corporations		
Board of Directors	No. of female members:	_____
	No. of male members:	_____
	Total no. of members:	_____
Name of chairperson:	_____	Gender: _____
Highest Educational Attainment: _____		

Management				
Name of President: _____			Gender: _____	
Highest Educational Attainment: _____				
Other management positions (pls. indicate position and number of managers by gender)				
	Position	Male	Female	Total
	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____
Business Premises				
Size in sq. m. (pls. check)		Ownership: (pls. check)		Venue: (pls. check)
_____ Less than 100	_____ 100 to 250	_____ Owned	_____ Rented	_____ Residence
_____ Over 250				_____ Commercial
Products				
	Product Lines			% of total sales
	_____			_____
	_____			_____
	_____			_____
	_____			_____
	_____			_____
Employment (in-house employees)				
	Type of work	Male	Female	Total
	Requirements/Systems analysis	_____	_____	_____
	Programming/Developing	_____	_____	_____
	Process quality assurance/Testing	_____	_____	_____
	Project management	_____	_____	_____
	Technical, Maintenance	_____	_____	_____
	Marketing	_____	_____	_____
	Office/administrative	_____	_____	_____
	Total	_____	_____	_____
	Average wage rate of workers	_____	_____	_____
Subcontractors				
Does your company subcontract work? (pls. check)		_____ Yes	_____ No	
If yes, what percentage of work is subcontracted?			_____ %	

Subcontractors (con't)		
If yes, number of subcontractors/companies used in a year:	_____	
If yes, average number of workers of subcontractors:	_____	
If yes, is majority of subcontractors male or female?	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Not sure	
Geographic location of subcontractors: (pls. check)	<input type="checkbox"/> Within province <input type="checkbox"/> Within island group <input type="checkbox"/> Within region <input type="checkbox"/> Nationwide	
Support provided to subcontractors (pls. rank order of importance with 1 being most important)	<input type="checkbox"/> Credit/financing <input type="checkbox"/> Skills training <input type="checkbox"/> Equipment/tools <input type="checkbox"/> Others (pls. specify) <input type="checkbox"/> Product development	
Common problems with subcontractors (pls. rank in order of importance with 1 being most important)	<input type="checkbox"/> Quality of work <input type="checkbox"/> Reliability <input type="checkbox"/> Delivery date <input type="checkbox"/> Others (pls. specify)	
Raw Materials Used		
Major raw materials/ packaging materials	Local or Imported	Location of Supplier
<i>Computers</i>	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
<i>Software</i>	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Raw Materials (con't)			
Proportion of local and imported materials used (%)	Local:	_____	
	Imported:	_____	
Mode of raw material procurement (pls. check)	Open market:	_____	
	Own source:	_____	
	Others (pls. specify)	_____	
Problems with production materials (pls. check)			
_____ Quality	_____ Availability	Others (pls. specify)	
_____ Delivery	_____ Price		
Production			
Mode of Production (pls. check appropriate item)			
Activity	Manual	Semi-mechanized	Fully mechanized
File receipt/distribution			
Production			
Quality control			
Delivery of completed work			
Capacity Utilization (pls. check)			
_____ Fully utilized		_____ Underutilized	
If underutilized, pls. estimate present capacity usage in %:			_____
If underutilized, pls. indicate reason:			
_____ Lack of software		_____ Equipment limitation	
_____ Space limitations		_____ Skills limitations	
Others (pls. specify)			
Quality Control System (pls. check)	_____	Use outside testing facilities	
	_____	Follow standard procedures	
	_____	Use internal resources/equipment	
	_____	Have specifically assigned personnel	
Quality Control Problems (pls. rank with "1" being the foremost problem)	_____	Equipment/tools/supplies	
	_____	Production process	
	_____	Quality of dictation	
	_____	Skills limitation	
	_____	Others (pls. specify)	

Product Development			
Source of product dev't (pls. check)	<input type="checkbox"/>	Internal capabilities	<input type="checkbox"/> External parties
Sources of information for product development (pls. check)	<input type="checkbox"/>	Buyers	<input type="checkbox"/> Internet
	<input type="checkbox"/>	Trade fairs	<input type="checkbox"/> Designers
	<input type="checkbox"/>	Publications	Others (pls. specify)
Is your present information enough for product development?	<input type="checkbox"/>	Yes	<input type="checkbox"/> No
Do you have internal R&D facilities?	<input type="checkbox"/>	Yes	<input type="checkbox"/> No
Do you design concepts based on buyers' specifications?	<input type="checkbox"/>	Yes	<input type="checkbox"/> No
Market			
Proportion of market sales (%)		Exports	<input type="checkbox"/> %
		Local sales	<input type="checkbox"/> %
If exporting, please indicate major regions or countries exported to and the proportion of exports to each area to your total exports		Region/Country	% of total exports
		United States	<input type="checkbox"/> %
		Canada	<input type="checkbox"/> %
		Europe	<input type="checkbox"/> %
		Middle East	<input type="checkbox"/> %
		Japan	<input type="checkbox"/> %
		Australia	<input type="checkbox"/> %
		Other Asia	<input type="checkbox"/> %
	Others (pls. specify)	<input type="checkbox"/> %	
For domestic sales, please indicate regions where sales are made and proportion to total local sales		Region/City	% of local sales
		Metro Manila	<input type="checkbox"/> %
		Others:	<input type="checkbox"/> % <input type="checkbox"/> %
Market Segments Targeted (pls. check)	<input type="checkbox"/>	High end	<input type="checkbox"/> Middle <input type="checkbox"/> Low end
Sources of foreign buyers (if applicable, pls. check appropriate items)	<input type="checkbox"/>	Own contacts	<input type="checkbox"/> Trade fairs
	<input type="checkbox"/>	Business missions	<input type="checkbox"/> Referrals
	Others: (pls. specify)		

Market (con't)		
	_____ Brochures/ catalogs	_____ Website/ Internet
Trade Promotion Activities (pls. check appropriate items)	_____ Trade fairs	_____ Business missions
	Others: (pls. specify)	
Competitors (pls. indicate countries that compete with your products and their main strength as competitors)	Country _____ _____ _____ _____ _____	Strength as competitor _____ _____ _____ _____ _____
Sales		
Exports (please indicate the range by checking in the appropriate area)		2003
Under US\$ 50,000		_____
US\$ 50,001 to US\$ 100,000		_____
US\$ 100,001 to US\$ 300,000		_____
US\$ 300,001 to US\$ 500,000		_____
US\$ 500,001 to US\$ 1,000,000		_____
US\$ 1,000,001 to US\$ 3,000,000		_____
US\$ 3,000,001 to US\$ 5,000,000		_____
Over US\$ 5,000,000		_____
Local Sales (please indicate the range by checking in the appropriate area)		2003
Under PhP1 million		_____
More than PhP1 million to PhP3 million		_____
More than PhP3 million to PhP5 million		_____
More than PhP5 million to PhP10 million		_____
More than PhP10 million to PhP15 million		_____
More than PhP15 million to PhP20 million		_____
More than PhP20 million to PhP25 million		_____
More than PhP25 million to PhP30 million		_____
More than PhP30 million to PhP50 million		_____
More than PhP50 million to PhP70 million		_____
More than PhP70 million to PhP100 million		_____
More than PhP100 million to PhP200 million		_____
More than PhP200 million		_____

Annexes

Marketing Channels					
Pls. indicate your major marketing and distribution channels.	<input type="checkbox"/>	Partners	<input type="checkbox"/>	Direct selling	
	<input type="checkbox"/>	Representative Office	<input type="checkbox"/>		Others (pls. specify)
Finance					
Budget Allocation (in %)		Expense		%	
		Administrative and overhead			
		Research and development			
		Marketing			
		Production			
		Others			
Sources of Funds for Production	<input type="checkbox"/>	Own funds	<input type="checkbox"/>	Private lenders	
	<input type="checkbox"/>	Credit line with bank	<input type="checkbox"/>		Others (pls. specify)
Have you received any assistance from any donor group?		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
If yes, pls. specify the donor group and year assistance was received	Donor Group	Type of Assistance (grant, technical, marketing, others)		Year	
Have you received any assistance from any government agency?		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
If yes, pls. specify the agency and year assistance was received	Government Agency	Type of Assistance (grant, technical, marketing, others)		Year	

Accomplished by:

Date:

Thank you for your cooperation, please be assured that your responses will be kept in strictest confidence.