



State of the Sector Report on Mobile Wireless Application 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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Pearl2 Project**Technical Paper #10d: "State of the Sector Report - Mobile Wireless Application Development 2004 "**

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Contents

1. Introduction	1
2. Executive Summary	5
3. Overview	9
Product Coverage	9
<i>Picture Messages and Ring Tones, Messaging, Information on Demand, Games, Entertainment, Internet and Community Applications, Mobile Advertising and Promotions, Mobile Commerce, E-Government, Location-Based Services, Corporate Solutions and Personal Information Manager</i>	
Industry Background	13
Industry Coverage	14
Market for MWAD	14
<i>International Market</i>	
<i>Local Market</i>	
4. Sectoral Profile	17
<i>Date of Establishment, Company Set-Up, Ownership and Management, Product Lines, Facilities, Employment, Subcontractors, Sources of Materials, Mode of Production and Operations, Capacity Utilization, Quality Control, Product Development, Market Coverage, Export Markets, Marketing Channels and Activities, Competitors, Sales, Finance</i>	
5. Value Chain Analysis	25
Structure of the Mobile Wireless Application Development Industry	25
Process Flow	27
The Mobile Wireless Application Development Sector Value Chain Diagram	31
Key Findings from the Value Chain Analysis	32
The Mobile Wireless Application Development Value Chain Table	34

6. Needs Assessment	39
Firm Infrastructure	39
Inbound Logistics	39
Operations	40
Outbound Logistics	40
Marketing	41
Service	41
7. Areas for Intervention	43
Annexes	49
Annex 1: The Value Chain Analysis	51
Annex 2: Company Profile Survey Form	53

Abbreviations and Acronyms

BOI	Board of Investments
BPO	Business Process Outsourcing
BSO	Business Support Organization
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
GSM	Global System for Mobile Communications
IPO	Intellectual Property Rights Office
IT	Information Technology
LAN	Local Area Network
LBS	Location-Based Services
MMS	Multimedia Messaging Service
MWAD	mobile wireless application development/developers
NCC	National Computer Center
NCI	National Computer Institute
PITON	Philippine IT Offshore Network
PMO	Project Management Office
PMP	Project Management Professional
QA	Quality Assurance
R&D	Research and Development
SDLC	Software Development Life Cycle
SMS	Short Messaging Service
SQL	Structured Query Language
TESDA	Technical and Educational Skills Development Authority
VAS	Value-Added Services

Introduction

In the early part of 2004, the Pearl2 Project identified mobile wireless application development (MWAD) as one of the IT sectors for possible assistance by the Sectoral Enhancement component of the Project.

To determine how best to assist the MWAD sector, Pearl2 conducted an assessment of its operations and status. Through a value chain analysis, an initial set of needs of these industries was identified, as well as possible areas for intervention. The findings of this assessment are presented in this report, which was prepared by contracted consultants of the project.

Methodology

Both primary and secondary sources of information were used to gather as much data as possible. The primary sources of information used included a survey of and focused group discussion with a few mobile wireless application developers. As of the time of this report, the MWAD sector remains unorganized and has no viable BSO.

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 value chain analysis model used in this report was developed by Dr. Michael Porter of the Harvard Business School. (Please see Annex 1 for some background on the value chain analysis). The value chain analysis studies both the primary and support activities in MWAD, but 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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Executive Summary

Mobile wireless application development (MWAD) refer to short programs that are commonly used in mobile phone communications and similar activities. The main market for such programs are typically the telecommunications firms or carriers. There are some 30 to 50 MWAD companies in the country at present specializing in programs used in mobile phone communications. The exact figure is hard to derive as some firms whose applications were disapproved by the carriers no longer exist or have re-focused their organizations. More important, the sector has no industry association to serve as a single voice of the developers in lobbying for their development and welfare.

The MWAD developers in the country are mostly small enterprises employing an estimated 200 workers in total. They are essentially dependent on the major mobile phone carriers in the country for business, which explains why 90% of them are based in Metro Manila where the carriers have their headquarters. MWAD firms develop applications often referred to as the carrier's

Value Added Services (VAS). These range from games and novelties (ring tones and wall paper) to information and promotions. By far, applications pertaining to entertainment and marketing are the most common in the market.

The carriers provide the means by which applications are deployed and accessed by their subscribers. Income from the use of the applications is shared between the carrier and the developers under a profit-sharing agreement. If carrier traffic on the application is low, profit sharing is sometimes waived, depending on the agreement.

Demand for MWAD applications is significant due to the number of mobile phone users in the country and the primacy of short messaging service (SMS) as a means of mobile communication. There are about 26 million mobile phone subscribers in the country, and around 19 million are estimated to be using VAS of various kinds. There are no estimates on MWAD applications exported. Moreover, only a few firms have managed to penetrate the global market for VAS.

To compete in the market, MWAD developers must come up with a unique concept, develop it, and market the application to carriers or content aggregators. If their initial offering is disapproved, the MWAD builds on a new concept and goes through the same process of application development and marketing again. If the proposed application is approved, this is cued for release. The waiting time usually takes months.

At present, there are only two major carriers operating in the country, Globe and Smart. Sun Telecoms is the third carrier in the market but its operations are still small. This situation and the lack of any viable group representing MWAD developers have

resulted in lopsided profit-sharing arrangements in favor of the carriers. On the average, the MWAD's share of the profit is only 20% to 30%, with the rest going to the carriers. Gaming and media entities can negotiate for as much as 50% profit share.

In addition to their hold on the market, the carriers have recently established their own pool of VAS developers. This poses direct competition to independent MWAD firms and sometimes leads to accusations of unfair competition, especially when the disapproved concept of an external developer eventually surfaces in another form, albeit with a few insignificant changes, developed by the carrier.

Besides the hold of the carriers on the local VAS market, the MWAD sector has other concerns that should be addressed. As in the other IT sectors, the supply of skilled manpower is low due to a lack of formal training programs. Normally, the deployment of applications is usually carried out by the owner/developer, there being no other adequately trained personnel. Most developers usually learn their skills by self-study and mentoring. Access to development kits is limited as most of these are sourced abroad.

There is also no uniformity in the methodologies used by developers as standards are not yet in place. MWAD firms are limited in their concepts due to lack of access to research materials that can expand their designs. They also lack testing facilities with which they can fine-tune their applications. There are no carefully planned marketing plans for the industry to be able to penetrate markets abroad.

The present situation in the MWAD industry is lamentable given the potential of the local market. This is one IT activity that local developers can excel in and over the long term expand to foreign markets.

3 Overview

Product Coverage

Mobile wireless applications refer to those short programs that are usually developed and deployed for mobile communications. In the Philippines, there are various wireless applications for mobile phones. These applications can be categorized as follows:

Picture Messages and Ring Tones

This is the most popular value-added service offered in the Philippines and includes ring tones, wallpapers, and logos that are developed and made available for download for a small fee by mobile phone subscribers.

Messaging

Called the Short Messaging Service (SMS), this category covers regular text messages broadcast or sent to mobile phone subscribers and specialized messaging applications such as virtual greeting cards. Multimedia Messaging Service (MMS) is also now becoming popular as carriers are providing affordable packages for consumers to switch to MMS-enabled phones.

Information on Demand

This refers to various types of information available through the mobile phone that can be accessed anytime, anywhere such as the latest news (local, global, business, sports, weather, traffic and travel), movie information, music, entertainment, fashion, trivia, cartoons, job openings, lotto results, health, life guides (horoscope, biorhythm), flight information, foreign exchange rates, among others. These services can be requested on demand or by subscription.

Games

Participation in games including TV and radio game shows, for fun and profit, is now possible through the use of mobile phones. Popular game shows can enlist contestants through the use of the sponsor carrier's network of subscribers or by broadcasting special mobile numbers over TV or radio. In addition to games, virtual friends and pets are now offered through the mobile phone as well.

Entertainment

Various TV shows and radio programs now use SMS as a medium to encourage audience participation. This is quick and offers a more personal feel for the audience. Talk shows also use SMS to solicit audience opinion on various issues. The service is seen as a more effective feedback medium than phone calls and E-mail.

Internet and Community Applications

Various community-building applications are now available through the mobile phone including:

- Chatting with multiple friends in a manner similar to Internet chat using suitably enabled mobile phones.
- Instant messaging via applications such as Yahoo Messenger, ICQ, Chikka (<http://www.chikka.com>), which allows one to send text messages from a computer to mobile phones of contacts anywhere they are in the world.
- Sending and receiving of E-mail messages to and from a mobile phone.
- Accessing a mobile phone Website via SMS.
- Creation of a distribution group for dissemination of text newsletters and messages.
- A blog or online diary that can be viewed on the Web and shared with friends.

Mobile Advertising and Promotions

Carriers also offer value added service (VAS) entertainment services such as movies promoted through SMS. Subscribers are also informed about downloads including logos, group graphics, picture messages, screen savers and calendar logos. They are invited to join raffles and other promotional activities, and even play games. Movie tickets can be reserved and bought using mobile phones.

Mobile Commerce

This is gradually becoming a reality as applications are developed to supplement existing E-commerce sites. Examples of mobile commerce are:

- Bidshot (<http://www.bidshot.com>) - allows subscribers to post and bid on auctions through the phone.
- EStore Exchange (<http://www.estimate-exchange.com>) - allows one to shop through the mobile phone.
- Mobile banking - basic banking transactions can now be done through the mobile phone via the major carriers.
- Reload prepaid phone credits through credit card, ATM, and pass-on load to others.

E-Government

Government agencies now offer various information-on-demand services via mobile phones as well as a feedback system that can be accessed by anyone. This makes government agencies prospective clients as well for MWADs.

Location-Based Services (LBS)

This is one of, if not the most, significant services that can be utilized through the mobile phone today. LBS extends the mobile phone from a communication to a tracking device. Customers of LBS firms can track cargo, vehicles and people, or even monitor their homes. Other LBS allow users to search for and find locations. Such services can be done or accessed via mobile phones. Examples of these services include FindMe (<http://www.findme.com.ph>) and ANTS (<http://www.ants.ph>).

Corporate Solutions and Personal Information Manager

Various productivity applications are now offered through the cellular phone as well. An example is B2BPriceNow.com (<http://www.b2bpricenow.com>), which empowers farmers by allowing them to update their catalog through the mobile phone. Farmers and cooperatives can also find out the latest prices of products and commodities per region via SMS. The objective is to assist them in negotiating prices with any middleman.

Please note that the applications mentioned are just some examples of what are currently available. There are so much more. To view the full list of applications offered by carriers, visit MyGlobe (<http://www.myglobe.com.ph>) and ZED (<http://www.zed.com.ph>).

Industry Background

The MWAD as a sector is less than 10 years old as VAS only became popular in the later part of the 1990s. This popularity coincided with the expansion of mobile phone use in the country.

Initially, there were only a few MWAD developers active in the industry. At that time, the carriers were the ones that sought out the MWADs to make the applications these firms developed had available on their networks. However, over time, the number of MWAD players increased and their bargaining power started to decline.

By the end of the 1990s, there were nearly a hundred MWAD players as the industry then seemed to have low entry barriers for developers. As the market evolved and the carriers became more selective, the developers that failed to gain entry into the market

soon went out of business or shifted to other endeavors. The local carriers eventually became more capable in building applications in-house, and the MWADs were pressured to tap into new markets and develop new products or services.

Industry Coverage

Based on feedback from wireless applications developers, there are less than 50 MWAD firms in the country at present. Around 90% of them are based in Metro Manila where the major carriers operate. Although there are a few MWADs in the provinces, the lack of geographic access to carriers renders the marketing of their applications tedious. As a result, MWADs based in the provinces focus on subcontracting and on corporate mobile phone applications. The sector currently employs around 200 workers.

Most MWAD players learned to program and deploy applications by self-study due to lack of formal training opportunities and expertise in this area. The MWADs that are firmly established were those that forecasted demand in this area accurately, built on their skills, and took advantage of the market. Examples of these are Sequel Solutions, Wolfpac and Chikka.

Market for MWAD

International Market

According to GSMWorld (<http://www.gsmworld.com>), around 200 countries are using the GSM (Global System for Mobile Communications) standard and its carriers can deploy value-added services. Nearly all the countries in the world today (95%) have

adopted GSM, except for Colombia, Djibouti, Ecuador, Eritrea, Haiti, and Uruguay. With about one billion GSM mobile phone users, the market offers tremendous opportunities for MWADs to tap into.

Data on foreign sales of local MWAD players are not available. However, based on interviews with some developers, it seems that several local MWAD players have successfully exported their applications to countries such as China, South Africa, and Indonesia. Given the size of the GSM mobile phone users, there is still a large untapped global market.

Local Market

The local market is a vast playground for MWADs. As of mid-2004, the country has 26 million mobile phone subscribers. Some 200 million to 400 million text messages are sent through the country's mobile networks everyday. The "Mobile Phone User Report" by DigitalFilipino.com found that nearly 72% of Filipinos access value-added services (VAS) through their mobile phones. This represents almost 19 million mobile phone subscribers using VAS. Among the favorite VAS are ring tones, wall paper and icons.

The size of the actual market for local MWAD services has not yet been accurately quantified. Most VAS are coursed through the two major carriers in the country today, Globe and Smart. An MWAD player can work with these carriers under a revenue-sharing arrangement. Another mode is to work with companies in developing or integrating mobile phone functionality in their traditional applications. At the moment, the entertainment sector and telemarketing groups are the heaviest users of this technology for their businesses.

4 Sectoral Profile

A total of 22 wireless application developers were invited to join the Pearl2 survey to generate baseline information on the industry. Of these, eight responded, representing a response rate of 36%. Among the respondents, six are based in Metro Manila, one in Cebu, and one in Davao.

There is at present no group or industry association of MWAD firms in the country. The Cebu-based respondents are members of the Cebu Software Industry Development Association, Inc. (CebuSoft) while those from Davao are part of the Association of Solution Integrators in Davao. The survey questionnaire used for MWAD firms is similar to the one utilized for digital animation (Annex 6) except for some minor changes in terms used.

A summary of the key findings is in this section. Please keep in mind that that the total in some cases will be more than the number of respondents as some of the survey questions elicited multiple answers from respondents.

Date of Establishment

More than one-third (38%) of firms surveyed were established between 1996 and 2000. One company (13%) was established on or before 1985 while another (13%) was established in early 2000. More than a third (38%) did not indicate their year of establishment.

Company Set-Up

Wireless application firms surveyed are predominantly micro and small business enterprises (75% of total respondents). The remaining 25% are medium and large firms.

All the firms surveyed are organized as corporations.

Ownership and Management

Some 38% of the Chairpersons of surveyed firms are male although a considerable proportion (63%) did not indicate the gender of Chairperson. About 38% of corporate Chairpersons are college graduate. Only one (13%) holds a post-graduate degree. About half of respondents did not indicate the educational attainment of their Chairperson.

Half of the firms surveyed have male Presidents while the other half did not supply pertinent information. As with the Chairperson, about 38% of the Presidents are college graduates while 13% also hold post-graduate degrees. Other management positions in the firms surveyed are held by men (77%).

Product Lines

Product lines served by wireless application firms include “info-txt” messaging platform, unified solutions, mobile VAS, Web development, community solutions, customization programs, “friendsfinder,” GSM connectivity terminals and applications, mobile chat, school registration systems, software development and other wireless application services.

Facilities

Half of the companies surveyed have premises of 100 to 250 square meters; one-fourth have premises less than 100 square meters while 13% have areas of over 250 square meters.

Majority (88%) of respondents rent their business areas; the rest did not specify if they rent or own their premises. Majority (75%) are situated in commercial areas; only one (13%) firm is located in a residential zone.

Employment

Four of the eight firms surveyed provided information on their employees. They account for a total workforce of about 42 employees, all of them in-house. Two-thirds (76%) are male and the remaining 24%, female. The bulk of the workforce is in production (38%). Next to production is office and administration with 19%, technical/R&D at 12%, marketing at 9% and quality control at 5%.

In terms of compensation, the male workers earn somewhat higher than their female counterparts. The men earn close to PhP400 daily, about PhP50 higher than the average daily wage rate of women of PhP350.

Subcontractors

Among the firms surveyed, only two companies or 25% indicated that they subcontract work while 75% did not stipulate if they subcontract or not. For the two firms that contract out work, about 50% of their total work is subcontracted. The respondents employ an average of three subcontractors a year, with each subcontractor employing about four workers. All the subcontractors' workers are male.

About half of the subcontractors are located within the same province as their principals. The assistance given to subcontractors takes the form of credit (50%) and skills training (50%). The common problems encountered in relation to subcontracting are quality of work (50%), delivery date (50%) and reliability (50%).

Sources of Materials

Wireless application companies source their materials both locally (54%) and abroad (46%). Their mode of procurement is usually from the open market (38%). About 25% of their materials come from their own sources.

The most common problems associated with sourcing materials are quality and availability of the materials (38%) and delivery (13%).

The "materials" used in the case of this sector refer mainly to computer hardware and software. The latter comes mostly from the US, and includes programming applications such as Microsoft Visual Basic, PHP, Oracle and Java.

Mode of Production and Operations

Production for majority of the firms (63%) is fully computerized while quality control is both semi-computerized and wholly computerized, with both modes eliciting the same response rate of 65% each.

Half of the firms have a fully computerized approach for their post-production activities.

Capacity Utilization

On the average, surveyed firms are using 60% of their rated capacities, with one-fourth of the respondents operating at full capacity at the time of the survey. There is no single dominant reason given for underutilized capacity with respondents indicating a random mix of reasons including space limitations, lack of hardware and software, manpower and various other factors.

Quality Control

About 38% of the respondents use their internal resources/equipment for their quality control activities; 25% use their internal resources/equipment and have specifically assigned personnel and follow standard QC procedures. About one-fourth (25%) of the respondents reported quality-related problems taking place during production operations while 38% noted quality problems at the materials, production and post-production phases.

Product Development

All the companies surveyed rely on their own resources for product development. The firms' top sources of information for product development are programmers/designers (63%) and the Internet (also 63%). Some obtain information from trade fairs (50%) and publications (50%).

Asked if they are contented with their present information for product development, one-half of the respondents affirmed satisfaction; the other half noted the opposite. Three-fourths of the respondents use internal R&D facilities for their production. Majority (88%) of the application concepts or designs made are customized to buyers' specifications.

Market Coverage

Wireless application firms generate their business mainly from the local market, which accounts for an average of 73% of total sales. Five out of the eight firms derive 90% to 100% of sales from domestic clients. Most firms (63%) sell in the Metro Manila area.

Sales to foreign clients for five of the firms surveyed comprise less than 10% of their total business. Only one company develops applications exclusively for the foreign market.

Export Markets

For those respondents that have accounts overseas, the other Asian countries are their main market, accounting for 80% of their foreign sales. The US accounts for the remaining 20% of these respondents' export sales.

Marketing Channels and Activities

The main marketing and distribution channel of the surveyed firms is through direct selling (63%). For export market development, about half of the firms used trade fairs as a tool for generating business. Other means of generating export sales are through their own contacts (38%) and referrals (also 38%).

Because the companies' main markets are those using information technology, they use the Internet (63%) as a main trade promotional venue to make their company/products known to target markets. Other major promotional activities are trade fairs (50%) and the production and distribution of brochures (38%).

The market segments serviced by wireless application firms are the mid-range for 25% of respondents and a combination of all three segments - high end, mid-scale and low end for another 25%. Some 13% serve the midrange to high-end segment.

Competitors

The countries or regions that local wireless application firms consider their main competitors are India, Europe and Singapore, with each netting a 25% frequency response. Some 13% of the firms find the US a threat to their business. The competition's strengths cited by the firms are more marketing funds and more aggressive promotions, advanced technology/better technical expertise and support, alternative products and services, easier access to market, lower overhead costs and use of new applications.

Sales

Only two firms provided exports sales data while seven indicated their level of local sales. Export sales for the two wireless application firms in 2003 were under US\$50,000. For local sales, half of respondents generated less than Php3 million in revenues in 2003. About 25% of the respondents earned from Php25 million to Php30 million, 12% had revenues from Php3 million to Php5 million.

Finance

In terms of budget allocation among respondents, production accounted for the highest share at 43%. Administration comes next at 30%. The other departments' share of the budget are 20% to marketing, and 5% to R&D. Some 63% of the firms rely on their own funds for operations while 25% use private lenders.

5 Value Chain Analysis

Structure of the Mobile Wireless Application Development Industry

The MWAD sector is composed mostly of micro and small service providers. Individuals and small companies which are into software development, primarily Web development, were the first to take the plunge into the wireless-applications venture. The tools required in MWAD are not necessarily different from those used by any other software developer today. What may only be required as an addition is a mobile phone and its modem for purposes of testing and roll-out.

The primary customers for MWAD developers are the local carriers such as Globe and Smart. The entry of a new carrier, Sun Telecoms, adds to the roster of potential customers of MWADs' services. The relationship with a carrier is crucial to MWADs because once this is established, a MWAD can start offering customized application development to the various companies targeting the mobile phone as a marketing medium. Profit sharing can take place between the carrier and MWAD, depending on arrangements.

Some MWAD players are taking a separate path — ready-made, over-the-counter applications or the development of customized ones for companies planning to undertake special tasks such as mobile marketing — without the need for a profit sharing arrangement with the carrier or access to its three- to four-digit special numbers that mobile phone users dial first.

MWAD developers rely on computer hardware and software in their work. These are usually purchased locally. The Internet is also used as a medium for research on tools and product concepts. Most applications being deployed for mobile phones are simple in nature because the phone device's limited size and capacity require simple, easy-to-use applications. This makes the production process a lot shorter and uncomplicated for MWADs. As a result, the personnel required is manageable unless the company is engaged in continuous product enhancement and new developments. Those firms into the development of specialized mobile phone applications for corporate use usually tap subcontractors or partners in the area to complete a project.

Most MWADs undertake direct marketing as their primary means of looking for potential buyers. Participating in IT, marketing, and advertising-related trade fairs are also useful for these developers. Recent developments in the MWAD industry, however, is limiting the market space for independent MWAD firms. For instance, media and advertising companies are developing their internal capabilities in offering value-added services that compete with free lance MWAD developers.

Process Flow

The MWAD process flow has three scenarios:

1. The MWAD firm develops its own mobile phone application and undertakes its own product marketing.
2. The MWAD firm has a client that wants to deploy special applications through the mobile phone and make a big public promotion about it.
3. The MWAD company builds a customized application or has a product availed of by a client for its own use.

The first two scenarios has one thing in common: it requires formal participation from the carrier. This is usually in terms of granting special three- to four-digit numbers that the MWAD uses exclusively for its application. Another mode is to make the MWAD's application become part of the existing three- to four-digit numbers assigned to all VAS. In this case, a unique keyword is assigned to identify the application.

In the first scenario, the MWAD has developed a customized application and wants to offer it to the public with the intent of generating revenue from it. The MWAD uses its own creativity in developing unique applications that may attract the carrier's subscriber base. Once an application is identified, the MWAD proceeds to prototyping the application and developing a working version. This is usually performed by one or two individuals.

When a functional application has been developed, the MWAD arranges a meeting with the carrier to offer its application as part of the carrier's services roster. The carrier then evaluates the application's market appeal. Negotiations on the profit-sharing arrangement also take place.

If the application is approved, full development and testing takes place. Afterwards, the application is scheduled for launching. The carrier then monitors traffic on the application and prepares periodic reports on this. The reports are used to reconcile the revenue-sharing settlement and collection.

Another approach of MWADs is via aggregators like ZED (<http://www.zed.com.ph>). Instead of relying on carriers, MWAD presents its application to an aggregator. The process then follows a similar path except that this time, the aggregator is the one to negotiate with the carrier to include the particular application. The agreements under this scenario are usually time-bound, lasting from six months onwards. These are also usually renewable, depending on the marketing performance or demand for the application.

In the second scenario, the MWAD process flow starts upon receipt of a request from a prospective client for a wireless application. These applications can be a product promotion campaign or a contest conducted through the mobile phone. The MWAD's account manager and technical personnel meet the prospective client to determine specifications and requirements. Afterwards, the MWAD coordinates with carriers to see if a launch of the application is feasible. (Sometimes, the client presents the application to a carrier during its meetings with the MWAD.) Upon the carrier's approval, the MWAD develops and tests the application.

After development and testing, the application is launched. The application's lifespan is usually a fixed duration such as a specific promotion period. The MWAD coordinates with the carrier to monitor the performance of the application (i.e., traffic on the carrier) and prepares the reports, as needed. The SMS and wireless transaction logs are thereafter reconciled with the carrier for revenue settlement and collection.

In this scenario, the MWADs can also be approached by carriers to develop applications. For instance, a carrier may want to sponsor a contest in a provincial area that requires a voting system. If available and capable, a local MWAD is tapped to develop the system.

The third scenario is similar to the second. The only difference is that the MWAD and client do not approach a carrier anymore as the application entails the client's use of the its own resources. This arrangement does not require a profit-sharing scheme nor the use of the special three- to four-digit number issued by carriers. Instead, the client buys from the MWAD a packaged solution or orders the development of a particular application. The MWAD develops, tests and delivers the product or service to the client. Usually, assistance is also provided when the client sets up and launches the application. Training in the use of the application may also be given to the client's personnel.

The application is installed in a computer which has a GSM modem that allows the application to send SMS messages to the client's database. The message recipients are then able to reply back. The information is stored and processed according to the needs of the client.

This method is also the recourse of MWADs whose applications were disapproved by carriers. In this case, the developer may approach a potential client that may be interested in the application for its own use.

In all three scenarios, some of the development work may be outsourced. If the MWAD does not have the skills needed to further develop the application, it can tap the services of a freelance subcontractor or another company. The services are then delivered onsite or offsite, depending on the subcontractor's resources.

In the third scenario, MWADs usually outsource the marketing and integration component of their applications. The subcontractors are usually individuals or companies that the MWAD has pre-screened. The relationship can be formal or informal in nature. The MWAD usually also spends time developing the marketing collaterals and packaging materials including custom CD labels, boxes, brochures, and user manuals.

GiveMeUnlimited (<http://www.givemeunlimited.com>) is an example of this organization. The company looks for resellers and system integration partners in different parts of the country to sell and support its InfoTxt application. InfoTxt's packaging has all the ingredients of a professional product presentation.

The value chain diagram of the MWAD sector is presented in the next page. This was derived from interviews with some MWAD developers and IT industry personalities.

The Mobile Wireless Application Development Sector Value Chain Diagram

FIRM INFRASTRUCTURE	General Management, Finance/Capital requirements, Cash Flow Planning, Resource Optimization, External Party Linkages				
HUMAN RESOURCE MANAGEMENT	<ul style="list-style-type: none"> Review of manpower requirements Pre-hiring activities Identification of services for outsourcing Skills training 	<ul style="list-style-type: none"> Employee time recording Performance evaluation of staff Review of job activities Training on new programming skills 	<ul style="list-style-type: none"> Training for project managers Training for application deployment 	<ul style="list-style-type: none"> Staff training in marketing and sales of the developed applications Staff training in sales negotiation 	<ul style="list-style-type: none"> Training of staff to handle product support Staff training in monitoring application usage
TECHNOLOGY DEVELOPMENT	<ul style="list-style-type: none"> Updating of development software Review and upgrade of hardware components 	<ul style="list-style-type: none"> Testing/QA of tools and facilities Time tracking systems Data backup and archiving systems 	<ul style="list-style-type: none"> Review/update of packaging tools Review/update of communication tools Review of carrier/client system specifications Review/update of monitoring system 	<ul style="list-style-type: none"> Corporate Website maintenance E-mail of marketing materials Database of clients and users 	<ul style="list-style-type: none"> Helpdesk/Knowledgebase system maintenance Support system maintenance (E-mail, fax, chat, Web, phone, SMS) Maintenance of traffic monitoring system for application usage
PROCUREMENT	<ul style="list-style-type: none"> Development software (including testing tools) Workstations/PCs GSM phones/facilities Networking requirements and Internet connection Office space and administrative requirements 	<ul style="list-style-type: none"> Hardware upgrades and software updates Office supplies and consumables Outsourced development services 	<ul style="list-style-type: none"> Materials required for packaging and implementing the applications Outsourced services for application deployment, if needed 	<ul style="list-style-type: none"> Services for developing marketing materials Services for printing of brochures and marketing materials Services for marketing skills training 	<ul style="list-style-type: none"> System for handling client's calls and developing product knowledgebase Outsourced services for product support
	<ul style="list-style-type: none"> Hiring/recruitment of staff (programmers, analysts, testers, project managers) Engagement of outsourced developers Training of staff based on the tools and technology standards used Setup of development environment R&D on latest technology solutions, hardware and software 	<ul style="list-style-type: none"> Determination of client/market requirements Analysis of requirements and translation to systems/program specifications Internet search for product concepts Development/coding of the programs Testing the programs Development of the required documents Tracking the progress of the development 	<ul style="list-style-type: none"> Packaging of the completed applications for installation to the carriers/clients Installation and testing of the programs on client premises Training the client on the use of the system Delivery of documents and other required services Securing client's acceptance Setup of traffic monitoring systems 	<ul style="list-style-type: none"> Negotiations with carriers or clients Finalization of revenue-sharing agreement with carriers Direct selling to potential clients Participation in trade shows Obtaining referrals from clients and partners Product demonstrations 	<ul style="list-style-type: none"> Warranty and maintenance services to the installed systems Responses to user requests and inquiries regarding installed systems Application patches Monitoring of volume of application usage Reconciliation of logs for revenue-sharing with carriers Preparation of reports on usage of applications
	INBOUND LOGISTICS	OPERATIONS	OUTBOUND LOGISTICS	MARKETING & SALES	SERVICE

M A R G I N S M A R G I N S

Key Findings from the Value Chain Analysis

The MWAD is a dynamic and competitive sector. Because the life cycle of its product or service is short, creative and innovative thinking is in order, and the MWAD is constantly developing new services that carriers can offer. However, the range of applications the developers concentrate on is not extensive. During the design and conceptualization of applications, research is usually informal and limited. As a result, the conceptualization phase does not capture the market as planned. At present, entertainment services are the most popular form of MWAD applications produced.

Local MWAD developers usually experience difficulty keeping pace with the changing trends in mobile communications technology. The sheer number of brands and models of mobile devices in the market and the rate at which these are upgraded leave the MWADs with insufficient time to correspondingly update their technical knowledge and resources. The lack of formal training courses in wireless application development also leads to a relatively small pool of skilled programmers in the sector.

From the infrastructure network, the carriers have now shifted their attention to the in-house development of mobile phone applications. This, in turn, has created a new form of competition for those MWADS not affiliated with any of the carriers. The situation has also triggered accusations of unfair trade practices, specifically from the independent firms whose concepts are at risk of being pirated by the carrier's in-house developers after a presentation of the prototypes. If not resolutely addressed, new micro enterprises might be discouraged from venturing into MWAD and the sector itself might shrink to a few established players.

In its operations, the industry does not have a set of uniform standards in the development of applications. The methods vary among enterprises. The cost of regularly upgrading equipment is high and most firms lack the testing facilities that could have ensured the quality of the application. Training in the deployment and installation of applications among clients is also lacking.

Likewise, the sector has no cohesive marketing program to expand the export market for wireless applications. Promotional collaterals are insufficient and market information is not readily available. Only a few MWAD firms actively participate in trade fairs due to lack of information on the events as well as the high cost of attendance. In providing customer service, most firms rely on the owner as there usually is no one else in the enterprise, especially for the small MWADs, with the necessary capability or training.

Further details on the value chain analysis of the sector are illustrated in the value chain table found on the next few pages.

The Mobile Wireless Application Development Value Chain Table

FIRM INFRASTRUCTURE		
FINDINGS	CONCERNS	RECOMMENDATIONS
The MWAD sector is at present fragmented. There is no single voice for the sector that can advocate for its welfare or promote its development.	MWAD firms are left on their own to deal with clients and other external parties. The growth and development of the sector is not properly directed.	Government and key industry players should initiate the formation of an association representing MWAD firms. Support should be extended to this association to help it develop its capabilities in providing vital services to its members.
INBOUND LOGISTICS		
FINDINGS	CONCERNS	RECOMMENDATIONS
Human Resource Management		
No formal training program in wireless technologies is available to developers. Most rely on self-study, code analysis and mentoring.	The present pool of developers skilled in wireless applications programming is small.	<p>Institutionalize a curriculum in mobile wireless application development that can be one of the major subjects in computer-related courses today.</p> <p>Hold formal developer trainings and conferences for skills development.</p> <p>Have an optional certification program in place to recognize highly skilled professionals.</p>

INBOUND LOGISTICS		
FINDINGS	CONCERNS	RECOMMENDATIONS
Technology Development		
The development of mobile phone technology is much faster than the upgrading of development toolsets needed for MWAD.	MWAD developers may not be provided with the specifications of later models of mobile phones.	Expand R&D on mobile phone technologies to enable developers to plan out their upgrades of toolsets and hardware.
Procurement		
Most of the development kits and hardware needed are sourced abroad due to limited availability and lack of price competitiveness at home.	MWADs may experience difficulty in sourcing their development kits and components, which might ultimately restrain them from updating their development resources.	MWADs can group together to negotiate for special deals on bulk purchases of development kits and hardware.
OPERATIONS		
FINDINGS	CONCERNS	RECOMMENDATIONS
Technology Development		
The industry has no standard software development methodologies to follow.	Deployment becomes hard because of lack of consistency in applications development.	Provide training in software development process models like the Capability Maturity Model Integration to ensure that products are developed using high-quality standards.
The testing facilities available that start-up developers can use are limited.	The situation results in lack of quality assurance of developed applications that could lead to malfunctions and customer complaints.	MWADs can negotiate for a testing server in one of the carriers to ensure application quality prior to roll-out.

OPERATIONS		
FINDINGS	CONCERNS	RECOMMENDATIONS
Technology Development (cont)		
The brands and models of mobile phones available to phone subscribers are numerous.	Developers cannot possibly write applications for all the types and models of mobile phones, which could affect the usage of their applications.	Conduct a study to determine the most popular brand, types and models of mobile phones, and target these items for the applications being developed.
Research into innovative concepts that can be developed into appropriate applications is lacking or mostly informal.	There is a predominance of entertainment-related applications in the market. Other types of applications which could expand the product range available are not pursued extensively.	The more established MWAD players should allocate more resources to R&D on new product ideas. Exposure to foreign sources of product concepts such as publications and Websites should be encouraged among MWAD firms.
MWAD developers have serious concerns about possible piracy of their applications that carriers rejected earlier. Similar applications developed by the carriers in-house MWAD staff may later surface.	The concern on piracy discourages creativity and initiative among independent MWAD developers and, if true, creates unfair competition in the industry. Independent developers cannot survive for long in such a condition.	The government should facilitate a forum to evaluate the issues involved in possible piracy of MWAD applications. The IPO needs to create a special desk/office that caters to highly competitive sectors where product innovation is rapid such as MWAD. Assistance should be given to MWAD developers in protecting their applications.

OPERATIONS		
FINDINGS	CONCERNS	RECOMMENDATIONS
Procurement		
Most of the required development kits and hardware should be upgraded regularly (one to four times a year).	Upgrades of development kits and hardware can be expensive, especially for small developers, and limit the firms' capability to keep pace with the needs of clients.	MWAD developers can group together and set up a common service facility for purchasing some of the more expensive development components. Government can help developers access affordable financing for resource upgrading.
OUTBOUND LOGISTICS		
FINDINGS	CONCERNS	RECOMMENDATIONS
Human Resource Management		
The technical personnel may sometimes lack skills in the deployment of the application at the client's premises.	Improper installation and set-up of applications lead to malfunction and the instability of the application during use.	Develop a sustained training program and skills testing of technical personnel in implementing the applications. Such training has to be constantly reviewed and kept abreast with clients' needs.
MARKETING AND SALES		
FINDINGS	CONCERNS	RECOMMENDATIONS
Human Resource Management		
MWADs' knowledge of how to market internationally is very limited.	This hampers MWADs from promoting their services abroad.	Government can help MWAD firms compile information on potential export markets. Training in export marketing can also be provided.

MARKETING AND SALES		
FINDINGS	CONCERNS	RECOMMENDATIONS
Technology Development		
The use of Websites and the internet is not fully exploited by MWAD firms for their marketing activities.	Potential clients are exposed only to a few MWAD players.	An MWAD portal can be created with the intent of showcasing what the sector has to offer. However, this will require a core group of developers that will set up and manage the portal.
Procurement		
The development of marketing collaterals is expensive for most MWAD firms, especially the small ones.	Lack of promotional materials restrains the sector's market development activities.	A core group of developers, with government support, can prepare a set of common marketing collaterals focusing on the unique strengths of local MWAD applications.
MWADs hardly participate in trade fairs due to lack of information on available events and the high cost of participation.	The market for MWAD services remains underdeveloped. Other countries may outpace local developers in penetrating foreign markets.	Government should support MWAD firms to attend two to three key trade shows a year to showcase the sector. These shows include GSMWorld, CommAsia, and CTIA.
SERVICE		
FINDINGS	CONCERNS	RECOMMENDATIONS
Human Resource Development		
The MWADs' customer relationship management skills are not formally developed.	The sector relies too heavily on the owner of the firm in managing customer relationships. This limits the coverage or quality of service that can be provided to clients after deployment of applications.	Firms should avail of affordable training in customer relationship management for their concerned personnel.

6 Needs Assessment

Based on the value chain analysis of mobile wireless application development, several needs of the sector were identified.

Firm Infrastructure

- The industry needs an association to represent the developers and craft a development program for the sector. This association will also be useful in realigning present profit-sharing schemes between MWAD developers and the major carriers along international practices.

Inbound Logistics

- Adequate skills training is necessary to increase the quality of the developer base in this sector.
- Developers need access to information on technology developments in mobile phones so they can update their skills sets and programming knowledge.
- There is a need for more affordable sources of development kits and associated hardware used by developers.

Operations

- Increased access to information on trends in applications, technology development and emerging models of mobile phones is needed for use in product development.
- Knowledge of patents and patent processes are needed to ensure the sector's competitiveness. This is needed for the protection of unique ideas conceptualized right from the start, even before the applications are marketed.
- Common standards in development activities need to be instituted to improve quality control of the applications being developed.
- MWADs need a common testing facility that is connected to a carrier network to ensure the quality of applications being developed.
- An open platform is needed to ensure that all MWADs are given the opportunity to market and roll-out their products, and not to be restricted by carrier arrangements. This can help in reducing entry barriers and promote MWAD growth.
- Firms need training in software development process models such as CMMI to improve their productivity and competitiveness.

Outbound Logistics

- The technical staff of MWAD firms need additional training to ensure the proper installation of applications among clients.

Marketing

- MWADs need training and guidance in introducing their products and services internationally.
- The industry's use of Websites and the Internet should be expanded as a means of marketing the services offered.
- The industry needs support, including the development of common marketing collaterals and trade fair attendance, to increase its exposure in the international market.

Service

- Consumer protection policies must be put in place to ensure that VAS paid for by clients are delivered and that any complaints are acted upon promptly.
- Developers and their staff need formal training in handling clients' questions, complaints and post-installation requirements.



Areas for Intervention

The sector has several needs that can be addressed by both government and other groups. Some recommendations to assist in the development of the local mobile wireless application development industry are presented in this section. Because the MWAD developers are at present not yet organized, the primary recommendation given below is for the establishment of a viable industry association. The success of some of the other recommendations presented here depends on the establishment of such an association.

1. Create an MWAD association.

The MWADs face various challenges unique to their sector. A responsive association is needed to ensure that the developers' concerns are addressed in the best way possible. Among the major activities that the association can undertake are:

- Interface with government agencies on intellectual property, trade promotion and policy concerns.

- Bargain with carriers for mutually competitive revenue-sharing arrangements.
- Bargain with carriers for possible open roll-out of applications.
- Protect the rights of developers in cases of unfair competition or piracy of the applications developed.

The formation of a viable association of MWAD developers is key to the industry's development. This association has to be organized and staffed adequately, with the overhead expenses sustained by members' contributions. Over time, the association can develop programs to address the industry's concerns. MWAD developers need assistance from government agencies in the early phase of establishing their association. The specific forms of assistance needed include the provision of venue for forums and meetings, access to information, advice in organizing events, and administrative support.

2. Develop a suitable program for the international market.

Most local VAS applications can be exported. However, the market is huge and the identification of countries that can be targeted based on solid research is imperative. The carriers prepared to roll-out VAS should also be pinpointed. Preliminary information can be obtained from commercial attaches, the Internet and secondary sources. As soon as a list of potential export markets is developed, further studies may be commissioned to gauge the prospects or a business mission to the most promising countries may be organized. A specific timetable of market-development activities should be incorporated into an industry-level marketing plan to tap international market opportunities.

3. Undertake trade promotion activities.

Based on defined target markets, trade promotion activities can be organized to explore possible business relationships. MWADS should participate in internationally known trade shows such as those initiated by Cellular Telecommunications and Internet Association or CTIA (<http://www.ctia.org>), CommunicAsia (<http://www.communicasia.com>) and GSMWorld (<http://www.gsmworld.com>). Moreover, participation in these trade shows should be well-organized. Suitable marketing collaterals and promotional materials must be developed and printed in sufficient quantities. In addition, training in the preparation of product or company presentations, sales negotiation and service pricing should also be given to ensure that MWADs are able to make full use of market opportunities.

4. Organize relevant and affordable skills training for MWADs.

At present, hardly any training in developing mobile application technologies and identifying market prospects and trends is available specifically to MWADs. In preparing the sector to export, it is important to ensure as well that the software development methodologies being adopted are based on internationally recognized process models such as CMMI. Training in such areas will provide some uniformity in the production activities of the different MWAD developers and eventually upgrade their methods and skills. The industry is thus able to improve its competitiveness against foreign developers. Given the small pool of qualified MWAD developers at present, providing the necessary training will not only increase their numbers but improve overall quality as well.

5. Create a sectoral portal and compendium.

The creation of a portal for the local MWAD sector is recommended for marketing purposes, as well as for organizing the various industry players. (This assumes that an industry association that can manage the portal has been established.) Essentially, the portal can help increase awareness of the local MWAD players and update firms on industry developments. A compendium of developers and their services will also be developed and should be an important resource of the portal for potential clients.

6. Build the capacities of MWADs in protecting unique ideas through patents.

Government, through such agencies as the DTI and the Intellectual Property Rights Office (IPO), can help local MWAD developers in protecting their intellectual property rights. Forums and workshops can be organized to expand awareness of how to protect developed applications and tackle specific complaints. In addition, such events will give the industry an opportunity to formulate measures in preventing or minimizing intellectual piracy. A help desk that will assist software development firms and MWADs in dealing with patent and copyright concerns may be also created. This help desk may be housed and managed by the proposed industry association for MWAD.

7. Create an open platform application roll-out for MWADs.

A study into how carriers can be persuaded to create an open platform that will ensure that all MWADs are given the opportunity to market and roll-out their products should be undertaken so that the industry is not restricted by carrier arrangements. Such carrier arrangements work to bar the entry of developers. They are also retarding the industry's growth. Government can organize a forum to tackle the present status of carrier arrangements and find suitable ways to improve the opportunities available to MWAD developers.

8. Establish a common service facility for developers.

Given the fast pace of change in mobile phone technology and market trends, developers should have ready access to information on such developments as well as access to testing facilities. Assuming that enough MWAD firms can be organized into a viable group, they should explore the possibility of a center that can accumulate and store data on emerging trends, technologies, and sources of equipment and development kits. In addition, the center should also provide a suitable number of mobile phone models for testing the developers' applications. Such models can be updated at regular intervals to enable developers to keep pace with technology developments.

9. Improve consumer protection in relation to VAS.

The major carriers should be encouraged to include a customer help desk to assist their subscribers whenever a failed delivery of VAS request is encountered by mobile phone users. The large number of mobile phone users in the country and the rate at which text messages are used means that there are significant users of VAS in the local market. Problems in the delivery of VAS to consumers have to be properly documented and handled. Besides ensuring customer satisfaction, information on product delivery failure can be also be forwarded to the MWAD developers so they can determine possible bugs and improve their next set of applications.

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: Company Profile Survey Form

Pearl2 Project Company Profile Survey Form Control No.		Sector: IT Sub-sector: Wireless Application Mobile Development
Company: <hr/>		
Telephone Nos. <hr/>		
Office Address: 		
Date Established:		
Company Size: (pls. check appropriate box)	<input type="checkbox"/> Micro (assets below Php 3M) <input type="checkbox"/> Small (assets from Php 3M to 15M) <input type="checkbox"/> Medium (assets from Php 15M to 100M) <input type="checkbox"/> Sole proprietorship	
Company Setup: (pls. check appropriate box)	<input type="checkbox"/> Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Cooperative <input type="checkbox"/> Other (pls. specify) _____	
Ownership		
For sole proprietorship		
Name of owner:	<hr/>	Gender: <hr/>
Highest Educational Attainment: _____		
For corporations		
Board of Directors	No. of female members: _____ No. of male members: _____ Total no. of members: _____	
Name of chairperson:	<hr/>	Gender: <hr/>
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	_____	Owned	_____	Residence
_____	100 to 250	_____	Rented	_____	Commercial
_____	Over 250				
Products					
	Product Lines			% of total sales	
	_____			_____	
	_____			_____	
	_____			_____	
	_____			_____	
	_____			_____	
Employment (in-house employees)					
	Type of work	Male	Female	Total	
	2D animator	_____	_____	_____	
	2D background/conceptual artist	_____	_____	_____	
	3D animator	_____	_____	_____	
	Computer animator, graphic artist	_____	_____	_____	
	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?				_____	%

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
Pre-production			
Production			
Quality control			
Post-production			
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. check)	_____	Equipment/tools/supplies	
	_____	Pre-production	
	_____	Production process	
	_____	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.