

SMEs AND E-COMMERCE

Prepared for

THE ASIA FOUNDATION



January 2002

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1.0 INTRODUCTION

This study examines the use of Internet and e-commerce by small and medium-sized Indonesian enterprises in 12 cities across the country, and aims to identify the benefits of current usage and the obstacles to greater use. The study also explores broader policy issues relevant to improving the accessibility of the Internet and e-commerce facilities, as well as the effectiveness of their use by Indonesian SMEs.

The study, which is based on a survey of 227 companies in 12 cities on Java, Sumatra, Sulawesi, Kalimantan and West Nusa Tenggara (Bali and Lombok) conducted between August and November 2001, demonstrates undeniable benefits of Internet usage, particularly by export-related SMEs on Java and Bali. Despite this significant progress, Indonesian SMEs face significant obstacles to greater usage resulting from the weak investment climate, poor telecommunications infrastructure and a general lack of Internet skills and understanding.

1.1 Summary of Use Patterns

Once isolated and heavily reliant on buyer visits, export-oriented SMEs are now using the Internet to reach out to new overseas buyers, maintain contact with existing buyers, and learn about market trends and opportunities. While the range and sophistication of use varies widely, there is a distinct pattern in the degree and effectiveness of SME Internet usage.

The results of this survey suggest three phases in the evolving use of Internet by SMEs, each of these phases represented by a company type: 1) SMEs which use the Internet; 2) SMEs which are preparing to use the Internet in the near future; and 3) SMEs which know very little, if anything, about the Internet and have no plans to use it in the future. The labels "Users", "Prospective Users" and "Traditional Companies" are used to classify these three types of SMEs.

1.1.1 Description of Internet Users

Successful SME Internet users tend to be further advanced in production management, production capacity, capital accumulation, accounting, marketing and English communication than the average company. On the management side, the owners often have post-high school degrees, or they have acquired management and marketing skills through long-term experience in their industries. While this is not the case for all SME users, there is an undeniable link between the education and experience of business owners and managers and the effectiveness of their Internet usage. However, there are also numerous cases of business owners who hired outsiders who were skilled in accounting, English and computers to support Internet activities. Additionally, there are many SMEs that do not use the Internet effectively, and this is often due to weaknesses in their businesses as a whole.

1.1.2 Prospective Users

These companies are working towards more professional management standards, but are still struggling with internal issues. We found that many prospective users have mastered production management; they can produce large orders on time but they are often weak in accounting, marketing and English skills. More often than not, these companies struggle with credit issues, are less capable in financial management and often face difficulty in obtaining short-term loans to fund production of increasingly large orders. One feature common to these SMEs is an awareness of the importance of marketing and the need to reach out to buyers rather than simply waiting for them to show up on their doorsteps. Related to this, these companies often realize the importance of Internet for communication and promotion but are not yet ready to go on-line because they have not overcome various internal constraints.

1.1.3 Traditional Companies

These companies are labeled as traditional due a passive approach to doing business. Such companies typically focus most of their efforts on production and do little to reach out to their markets other than sometimes setting up a retail outlet for their goods and simply relying on passing

trade. These companies typically know very little about the Internet and show limited interest in using it in the future.

1.2 Drivers of Change

The primary driver for advancement of SMEs through these three stages is the force of the market. Both competitors and buyers play a central role in propelling SMEs towards improved internal management and adoption of the Internet. Competitors often do this by setting an example and demonstrating that improved management and Internet use results in increased sales and greater economic prosperity.

Buyers frequently play a more direct and significant role. In industries ranging from agricultural products to furniture and handicrafts, overseas buyers drive the development process by placing demands on their suppliers to overcome internal constraints and participate effectively in the global on-line supply chain. This is because it is generally in the interest of foreign buyers who do business with Indonesian SMEs to purchase as close as possible to the production source to obtain better prices as well as to exert more control over product design, quality and delivery performance. In return for better output at lower costs, these buyers and their agents invest considerable efforts to educate and support small and medium-sized businesses.

Bali is home to many clear examples of this process. Buyers often drive the performance of SMEs by assisting with product design, quality control and production scheduling. Balinese producers of garments, handicrafts and jewelry have been particularly adept at incorporating design features introduced by export buyers into their product lines. As a result, Bali has become a key buying location for both small and large-scale international retail companies, who continue to source in Bali despite the perceived security risks that plague Indonesia as a whole.

On-line travel companies have played a strong supporting role, particularly for small-scale hotels that previously lacked international marketing capabilities. Companies such as Indo.com (previously Bali-Online.com) and BaliParadise.com have developed a means to assist small hotels that often do not have computers by taking on-line orders for a small commission. Indo.com now books thousands of room nights every

month, mostly for small-scale hotels with room rates of less than Rp 100,000 a night. Initially, the company found it difficult to promote the concept of on-line bookings. However, now that the benefits are visible, with occupancy rates having soared from 20 to 90% in some cases, small-scale hotels throughout Bali are rushing to collaborate with on-line booking companies.

Competitors often set an example in Bali by introducing new products and services and using the Internet to support communication and marketing. An on-line property company founded by an expatriate to rent villas on the island spawned scores of local counterparts and the formation of a new industry. Similarly, an on-line wedding organizer, also started by an expatriate, triggered the establishment of five local companies, each of which has played a role in creating an industry that was practically non-existent before the Internet age.

Yogyakarta is another center that shows the importance of the market driving SME development and Internet usage. In this instance, trading companies have played a key role. When Out of Asia (OOA) set up in Indonesia in 1995, the key challenge was to identify suppliers that could produce international-quality handicrafts while taking advantage of Yogyakarta's competitive labor costs and abundant raw materials. OOA faced obstacles in the early years related to poor design skills, low production capacities and inconsistent quality. To address these weaknesses, OOA hired a large team of university graduates to work with small producers, many of whom had previously only sold their goods along the sidewalk of Yogyakarta's main shopping street, Jl. Malioboro. The OOA team has since worked with nearly 100 SMEs in the Yogyakarta area to increase their production capacities, delivery performance and quality control.

The depreciation of the Rupiah in 1997/98, combined with the back-to-nature trend that characterized consumer markets worldwide at this time, led to a dramatic increase in OOA's sales. Consequently, the SME producers with which the company was trading also experienced strong growth and new-found prosperity. With business booming, many OOA employees, who had now mastered the process of sourcing and marketing to large international buyers, set up their own trading companies modeled after OOA. Today there are 15 companies that have emerged from what many refer to as the OOA University. This process has led to a further

increase in handicraft sales in Yogyakarta and surrounding areas, and has helped handicraft production become a key strategic industry in the province. Furthermore, many SME producers have been transformed into more professional organizations with a greater understanding of the needs of international buyers and the importance of actively marketing their products. The more successful producers now participate directly in domestic and international trade shows and use email to support direct sales to international buyers, while some of these have developed their own websites.

1.3 Usage Patterns

Patterns of Internet usage follow a typical course of development, which often begins with email and later leads to the development of websites and the use of Internet for research and IT development.

1.3.1 Email

The need to communicate with foreign buyers is often what compels SMEs to begin using email. Many Indonesian SMEs recognize the importance of initial face-to-face interaction with their buyers prior to using the Internet to facilitate a sales transaction. Producers often meet potential buyers either at the producers' business premises or at trade shows. Buyers will typically purchase a small number of samples and later place orders via email. Buyers prefer email because it is cheaper than fax and telephone communication. SMEs that were already experienced in dealing directly with foreign buyers in Indonesia have been quick to adopt email because of the lower cost.

Email also provides an effective channel for maintaining a business relationship after buyers place an initial order. It allows producers to send new product offerings, often with photographs, to trigger additional orders. Hotels and travel companies also benefit from being contactable by email, for instance when overseas tourists can book return visits without having to pay for international telephone calls. Email also provides a means for foreign buyers to re-order, or to send product specifications to several competing suppliers and then select the most competitive offer.

1.3.2 Websites and Promotion

Once companies become convinced of the benefits of email for driving sales to existing customers, they often consider the option of developing a website. In the survey, promotion and establishing links with potential new buyers were cited as the most important reasons to construct a company website.

For manufacturing and trading companies, websites have proven beneficial in establishing links with prospective buyers, but have seldom led to sight-unseen sales. The majority of foreign buyers who already source, or are planning to source, from Indonesia, search websites to identify potential suppliers whom they will later visit directly. In most cases, these buyers are from small and medium-sized manufacturing or retail operations that purchase in lower volumes than the larger-scale international manufacturers and retail chains, which tend to place big orders at the international trade shows. To gain pricing advantages in lieu of volume discounts, these smaller-scale foreign buyers actively seek out SME suppliers that may not participate in international or Jakarta-based trade fairs. The Internet provides an efficient channel for them to locate such suppliers.

As mentioned above, selling products sight-unseen through websites is far less common; however, some suppliers of high value, low volume products have been successful in selling directly over the Internet. Some jewelry suppliers in Bali, for example, supply small retailers and individuals in other countries and rely solely on transfers for payment and international express services for delivery. The high cost of funds transfer and express delivery make it unviable for other smaller-scale buyers (particularly individuals) to purchase lower-value products like books and garments through websites.

Hotels are also an exception, and international tourists frequently book rooms by email after viewing a hotel on-line. This is often the case for cost-conscious travelers who prioritize affordable accommodation in appropriate locations. Websites, therefore, have proven highly effective for small-scale hotels in popular tourist areas such as Yogyakarta and Bali.

The effectiveness of a website is directly linked to the quality and simplicity of design, the type of images displayed and the quality of

English used to describe products and services. Additionally, websites that are registered with search engines, and therefore easily found by prospective users, perform better than those that are simply placed on the web.

1.3.3 E-Commerce Sites

There are two types of e-commerce sites operating in Indonesia: 1) internationally or domestically-based sites which promote products manufactured in Indonesia and 2) internationally or domestically-based travel and tour sites which promote Indonesian hotels and travel packages.

Websites promoting Indonesian-manufactured goods ranging from industrial products to furniture and handicrafts generally offer company listings and some form of product display. For example, the international e-commerce site operator, Global Sources, offers company listings, product display and information on global market trends, trade shows and marketing through its Indonesian affiliate, P.T. Global Jaringan Nusantara. Global Sources possesses an established international network that consists of over 300,000 active buyers and is supported by a comprehensive range of on and off-line catalogs. In addition, the company offers site design and marketing support, and is planning to introduce on-line payment and certification services to its clients. Fees are significantly higher than those of its local counterparts and range from US\$9,000 to US\$19,000 a year. The company now has 79 Indonesian clients, most of which are medium-sized companies operating in Jakarta, Semarang, Yogyakarta and Surabaya.

Local counterparts such as EastJava.com and Indotradezone.com provide similar services such as product listings and website information. In contrast to Global Sources, these companies lack off-line international marketing links, and rely heavily on on-line marketing and aggressive placement of site information on international search engines. Additionally, local start-ups such as EastJava.com provide a range of informal services to SMEs to help them learn how to use email, develop websites and manage international orders. Given the fact that fees charged by domestic start-ups are less than Rp 1 million a year, domestic e-commerce sites are set to play an important role in promoting greater SME Internet usage. Domestic e-commerce sites also provide a way for

Indonesian SMEs that are not yet ready for, or capable of, developing and/or maintaining their own websites, to easily establish a presence on the web.

1.4 Research and Information Searches

On-line research capabilities range greatly among SMEs and are closely linked to the educational background of users. University-educated users are more likely to use the Internet to obtain information on production technologies, examine market trends and opportunities, assess the activities of domestic and international competitors, and locate potential suppliers. The survey shows that while a significant number of SMEs use the Internet for research, the degree and depth of research capability is limited. However, for the few companies which do use the research function extensively, there is a clear impact on sales.

1.5 Domestic E-Commerce - B2C and B2B

1.5.1 B2C

Domestic e-commerce targeted to retail consumers is practically non-existent among SMEs. Of the Internet users surveyed, only one company had targeted a portion of its Internet marketing activities to domestic customers. Larger Indonesian companies engaging in domestic e-commerce have also achieved minimal success due to high on-line payment and delivery costs. Despite these challenges, Internet use by university students in Internet cafes is increasing dramatically, and these computer-savvy young people will eventually move into white-collar positions and begin to source online, provided that Indonesian suppliers can provide low cost options backed by reliable service. There is also anecdotal evidence that the upper income segment of younger Indonesian consumers has already begun to purchase from on-line suppliers in the United States such as Amazon.com and ebay.com.

1.5.2 B2B

Indonesian companies have been slow to move towards on-line sourcing. While the surveyed showed that some SMEs are communicating with

domestic business customers and suppliers by email, they are still relying on faxes to confirm orders. This is mainly due to the fact that large and medium retailers and manufacturing companies that purchase from SMEs do not yet accept the legitimacy of email confirmations, and prefer to continue using faxes.

1.6 Barriers to Greater Usage

Indonesian SMEs face a range of internal and external barriers that prevent greater and more effective Internet usage.

1.6.1 Internal Barriers

Management-Related Skills

As noted above, prospective users are likely to be engaged in making improvements to their operations, often focusing on production management, financing and accounting, product development and marketing. While many of these SMEs intend to use the Internet in the future, they are constrained by these other issues, which they consider more fundamental. Some Internet users also faced internal management problems, and our research consistently showed that companies with successful operations backed by solid internal management were also likely to be effective Internet users.

English and Internet Etiquette

Two notable weaknesses of many Internet users were lack of English skills and poor response time to emails. Service providers and successful businesses both noted that poor English displayed on websites or in emails and slow response time generally had the effect of pushing away potential customers.

Computers and Costs

Internet users frequently explained that computer skills were actually easy to acquire and that the cost of computer equipment and Internet usage was reasonable, particularly when compared to the benefits they received. Non-users, however, were more inclined to view computer costs and computer skills as a barrier to future usage, particularly for those companies that did not plan to use the Internet.

1.6.2 External Barriers

Security and International Perceptions about Indonesia

The most overwhelming obstacle pointed out by SMEs -- and which indirectly affects their effective use of the Internet -- was domestic security. Practically all of the 227 companies interviewed explained that the Indonesian security situation and international perceptions of Indonesia had a direct impact on their sales. The most decisive and disturbing example was in Lombok, where hotels and manufacturers said that their sales all but ceased for six months following the riots of 2000. In August 2001, Lombok businesses began to return to their pre-2000 activity levels, only to be hit with the aftermath of the September 11 terrorist attacks and the so-called sweepings in other parts of Indonesia. SME owners throughout Indonesia explained how a bombing in Jakarta or ethnic riots in Kalimantan could have a negative impact on their sales. According to these owners, the actual security situation in their particular location does not make a real difference in this instance. Indonesia is often internationally perceived as unsafe, and this has recently persuaded some foreign buyers to avoid visiting Indonesia and even to stop re-ordering goods. There were no indications from companies that the Internet could serve as a tool to somehow bypass security concerns, particularly since many SMEs rely on direct visits from buyers at the early stage of the transaction process.

Educational Issues and Poor IT Support Services

SMEs, service providers and industry analysts alike frequently pointed to the poor state of the Indonesian educational system as the ultimate constraint on Indonesian SMEs. Successful SMEs tend to be those that are run by dynamic individuals who, in many cases, have the benefit of a better than average education, or who have the some of the experience necessary to gain an entrepreneurial understanding of their industries (exposure to export buyers). The key feature that distinguishes successful Internet users from the more traditional non-users (who had no interest in the Internet) is that successful users frequently possess the entrepreneurial drive to expand their businesses, create products suitable to changing market demands, and actively market those products both on and off-line. The fact that these skills are often lacking in more traditional-style companies does suggest the need for improving the public school

curriculum and teaching methods as well as improving access to privately-run business training programs, particularly in areas outside of Java.

There is a noticeable lack of effective support services for SMEs outside large cities such as Jakarta and Surabaya. Internet users we spoke to frequently pointed out that they face difficulties finding capable service consultants to help with IT development and website design. Many companies noted that they had spent considerable amounts of money to develop websites but ended up with poor quality and ineffective results. Even in towns such as Bandung and Yogyakarta where there were large numbers of Internet-savvy students, SMEs complained that professional IT services were still lacking. Several SMEs noted that while students and recent graduates did have a basic grasp of IT and Internet issues, students were not capable of adequately servicing the needs of SMEs.

This suggests the need for greater penetration of privately-owned IT schools to play a supporting role in preparing Indonesian graduates to function effectively as service consultants. In Jakarta, this process has already begun but it has not progressed to secondary cities such as Yogyakarta, Palembang and Makassar.

Lack of Telephone Lines, Poor Access, Limited and Poor Service

Interviews with state-owned telecommunications company, PT Telkom, in each of the cities surveyed, revealed that installation of new telephone lines has come to a standstill and that there are virtually no new lines available. Many non-users do not have a telephone line, and have received no indication from Telkom that they will be provided with one at any time in the near future. This is a problem in large towns such as Denpasar, Yogyakarta and Surabaya as well as in isolated areas on the outskirts of towns.

The primary barrier to increasing the number of new phone lines is the continued Telkom monopoly, the failure to resolve on-going disputes with Telkom's foreign investment partners (KSOs), which have installed most of the telephone lines to date, and low telephone use rates.

There will be little new line capacity installed without significant foreign investment. The government and its state-owned companies are not capable of providing the funds needed and have to invite the participation

of foreign investors who, in turn, will avoid investing until the KSO issues are resolved and telephone tariffs are increased. Through the joint operating schemes or KSOs, the government initiated an aggressive line installation program that significantly improved quality and access nationwide. The effectiveness of these partnerships collapsed with the economic crisis and currency depreciation, which began in August 1997. With insufficient funds due to low Rupiah payments and high US dollar costs, the foreign partners have been unable to sustain profitability.

Investment in fixed landlines will also not take place until telephone rates are increased. According to a 2001 US Embassy report on Internet and Communication Technologies in Indonesia, this country's telephone rates are among the lowest of all the Asian developing countries, and this is due to the Rupiah depreciation which saw the currency plummet from a rate of Rp 2,500 to the dollar in August 1997 to the current level of over Rp 10,000. Meanwhile, telephone rates have only increased 87% in Rupiah terms. Telephone charges at the current level would not support any new investment in additional line capacity. Interestingly, the SMEs interviewed in this survey deemed the amounts they paid for telephone and ISP charges combined to be reasonable. It does appear, therefore, that there is sufficient buying power, at least among export-oriented SMEs, to pay more to help support the development of new line capacity.

In addition to the lack of telephone lines, medium-sized SMEs, service providers and e-commerce sites that supply numerous services to SMEs complained of the low quality and high cost of bandwidth in Indonesia. This high cost is mainly due to the lack of participants in the leased line industry, which is dominated by Telkom and Aplikanusa Lintasarta (an Indosat affiliated company). There is also a shortage of cable television lines, which also allow for broadband Internet access and provide a cheaper option to leased lines, but are only available on a limited basis outside of Jakarta. This is mainly due to government licensing requirements that have kept market players limited to a few well-connected business groups and Telkom. Satellite-based mobile bandwidth is becoming increasingly available outside of Jakarta, but the high price of these services puts them beyond the reach of most SMEs and SME service companies. The only option to improve access and reduce the cost of bandwidth is to allow greater private company participation in the sector.

Privatization of either Telkom or Indosat would also support line development and improved IT infrastructure. With the implementation of the 1999 telecommunications law, the local line network will be opened to competitors such as Indosat as early as 2002. Privatization of either Indosat or Telkom would provide funds for improving and expanding the existing lines; however, foreign investors would likely demand managerial control before investing, partly to avoid the difficulties faced by the KSOs.

Poor Quality of ISPs

SMEs frequently noted that ISPs offered inadequate service because of the poor quality of telephone lines and the long distance network, limited bandwidth and access numbers and substandard support capabilities. Interviews with ISPs revealed that high operational costs combined with low revenues have made it difficult for them to reach a state of profitability. Greater competition in fixed and leased line provision would lower ISP costs and support improved services.

Telkom/Indosat Monopoly: a Potential Threat

With the implementation of the 1999 telecommunications law, Telkom and Indosat will be set to compete in both the domestic and international communications markets. Private companies will technically be allowed to participate in both domestic and international communication but market access will only be granted through a government licensing mechanism. It is unclear if and when private companies will actually be granted access to these markets.

Telkom, in particular, has an advantageous position as it will control practically all the telephone lines in the country. Telkom is also likely to become one of the largest players in the ISP market as it able to offer combined ISP billing with its telephone services. The company already offers combined Internet/telephone pulse rates without a monthly subscription fee at a rate which is cheaper than the other ISPs for low-volume users who access the Internet for less than 15 hours a month. These services have already placed an additional competitive burden on Indonesian ISPs. The real threat, however, relates to Telkom's future moves as an ISP as it could easily lower its Internet access rates to push its competitors out of the market. It is important that the government considers the application of the 1999 antimonopoly law to state-owned

companies to ensure that Telkom and Indosat do not dominate the ISP market at the expense of retail customers and SMEs.

It is also important that the government opens up the market for international access so that charges on international bandwidth are reduced. The only legal providers of international bandwidth are Indosat and Satelindo, in which Indosat has a 75% stake. The charges for international access are significantly higher than in other countries, but current grey area options utilizing satellite access offer cheaper alternatives. Most Indonesian ISPs rent a small portion of their bandwidth needs through Indosat or Satelindo and then rely on the grey operators for the bulk of their transmissions. However, there is a risk that the government could begin to clamp down on these alternative operators, which would increase the ISPs' costs even further. Opening the market to grey operators will ensure access to international bandwidth which is closer to real market rates and will also allow for a process of aggregation to take place whereby ISPs can collectively pool their international transmissions to further reduce costs. The current illicit means of accessing international bandwidth prevents ISPs and providers from pursuing aggregation due to the potential risk of a government clampdown.

1.7 Policy Implications

1.7.1 Let the Market Drive the Process

The survey clearly shows that market forces are driving SMEs to use the Internet to improve communication with their customers and increase sales. As noted above, buyers, competitors and e-commerce sites all play key roles in motivating SMEs to adopt the Internet. The benefits of this process are indisputable. Export-oriented SMEs are increasing their sales to foreign buyers, while on-line travel and hotel bookings are increasing rapidly.

Direct government programs to encourage SMEs to adopt the Internet will be less successful in accelerating this process due to several factors. First, SMEs who have evolved to the point of being ready to use the Internet -- due to developments and improvements in internal management, production and service levels -- generally do not need financial assistance.

As this survey shows, companies that are ready and willing to use the Internet are also capable of paying for it. The fact that the majority of companies who expressed an intention to create a website in the next 12 months planned to spend an average of Rp 5,000,000 shows a definite financial ability to use the Internet. The assertion by the overwhelming majority of users noted that their ISP costs were reasonable also indicates that SMEs do not need financial assistance to adopt the Internet.

Government-sponsored training programs are also unlikely to have a meaningful impact as they would only assist a minimal number of users, and might target SMEs that are not far enough along in their development to be able to use the Internet effectively. A natural market-driven process will bring these companies to the Internet when they are ready.

The government should instead focus its efforts on dealing with broader structural problems that obstruct the effective use of the Internet by SMEs. These issues include improvements in the following areas:

- Security and perceptions of security in Indonesia
- Education
- Telecommunications infrastructure
- Regulatory consistency, purpose and enforcement

1.7.2 Security and Perceptions of Security

The Indonesian SMEs most likely to adopt the Internet are also the ones most reliant on foreign visitors to Indonesia, whether those visitors are large-scale retail buyers or tourists. For most SMEs, the Internet is an extension of the relationship that begins through face-to-face contact in Indonesia. The Internet alone cannot serve as a substitute for this type of interaction. The Internet adoption process will only accelerate when the international community becomes convinced that Indonesia is a safe place to visit. This, in turn, will only take place when the government begins to respond more effectively to security issues. Related to this is the overwhelming need for the government to launch a systematic and straightforward public relations campaign that addresses international security concerns.

1.7.3 Education

The survey shows that a lack of entrepreneurial skills and a shortage of professional IT consulting services in most areas of the country constitute barriers to Internet usage. In addition to pursuing continued improvement in primary and secondary-level education, the government should take immediate steps to support state-owned universities to improve business and IT training, through increased funding and greater cooperation with foreign universities. Additionally, the government should work to create an investment-friendly environment to support nationwide foreign investment in IT training schools.

1.7.4 Regulatory Framework and Legal Enforcement

Initial signs of government regulation in the Internet and multimedia industry have been arbitrary and discouraging. Presidential decree no. 96 issued in 1998 placed an immediate ban on foreign investment in the Indonesian Internet industry. Even though the decree was revoked two weeks later owing to strong opposition from industry participants, it sent the wrong messages to international venture capital firms, which were just gearing up to invest in Indonesian Internet start-ups. Similarly, a luxury tax of 20% placed on computers and components in early 2001 (but revoked in June 2001) shows a government inclination to tax and place burdens on both Internet users and service providers, rather than to take steps to facilitate the growth of the industry. The government should also recognize the power of the Internet, and technology in general, to induce economic growth and increase the overall tax base.

To encourage growth and investment, the government should avoid unnecessary regulation and engage the private sector, including SMEs, to identify specific areas where regulation is needed. Protection of domain names and high incidences of on-line fraud require immediate attention. However, it is essential that the government realize that enforcement of existing regulations is more important to Internet users than the introduction of additional legislation such as an e-signature regulation or a Cyber law. The fact that one leading Indonesian bank experienced an on-line payment fraud rate of 50% shows the dire need for strict enforcement of basic criminal laws. Without proper enforcement, additional regulations will have very little effect.

1.7.5 Telecommunications Infrastructure

SMEs and service companies described the poor state of Indonesian telecommunications infrastructure and the need to improve line access and quality while lowering the price of bandwidth. This will only occur if the government opens the market and creates an operating structure conducive to fair competition. Additionally, the government must take immediate steps to encourage investment in the sector.

- Encourage new investment through the increase of phone rates to above the level of operating costs, the fair resolution of conflicts with KSOs, and privatization.
- Implement the 1999 telecommunication law in a spirit of open and fair competition. This will only be achieved when a truly independent regulatory body is formed and licenses are provided to private operators in a fair and transparent manner.
- Improve the competitive environment by applying the Indonesia anti-monopoly law to state-owned telecommunications companies to allow maximum choice and better services for retail customers and SMEs, as well as to ensure a productive operating environment for ISPs and other SME support companies.

2.0 SURVEY RESULTS

2.1 Project aim

The objective of the survey is to describe current usage patterns and functions of the Internet and e-commerce among SMEs in Indonesia, and to identify barriers to greater use.

2.2 Methodology

The survey utilizes a stratified sample with primary weight placed on Internet users. The decision to focus on users rather than conducting a random sample of the total SME population was based on the fact that SME Internet usage is very low in Indonesia – less than 1% of the SME population. A random sample would only reveal numerous cases of non-usage with very little input on use patterns and barriers.

Therefore, the results should not be used as a basis for calculating the total number of SMEs that use the Internet and e-commerce.

The survey focused on the following cities:

- Java (Jakarta, Bandung, Yogyakarta, Semarang and Surabaya)
- Sumatra (Medan and Palembang)
- West Nusa Tenggara (Bali and Lombok)
- Sulawesi (Makassar and Manado)
- Kalimantan (Samarinda)

SMEs with 5-25 employees were deemed as small companies while SMEs with 26-300 employees were designated as medium-sized.

The following methods were used to select companies for the survey:

- Internet searches for companies with web-sites
- Indonesian e-commerce sites
- Department of Trade and Industry (database of SMEs)
- Bureau of Statistics (for exporters of major products in each city)
- State Ministry of Cooperatives and Small and Medium Enterprises

- Yellow Pages
- ISPs in each city
- Industry experts in each city
- Government departments in some cities

In primary and secondary cities (particularly those on Java), company selection was undertaken in Jakarta and 60-80% of interviews were scheduled from Jakarta before each research visit. The remaining 20-40% were selected after discussion with industry associations and experts in each of the cities in question.

In tertiary cities (particularly those located outside Java), initial interviews were conducted with industry associations, telecom providers, ISPs and experts to determine major industries in each city and the key SME players within various industries. Based on this information and other information collected from Jakarta, a company target list for each of these cities was devised.

Only head offices of companies were selected as respondents. In addition, only company owners or key managers were interviewed.

2.3 Sample

Sample Size

227 companies were surveyed.

Table 1
SAMPLE SIZE

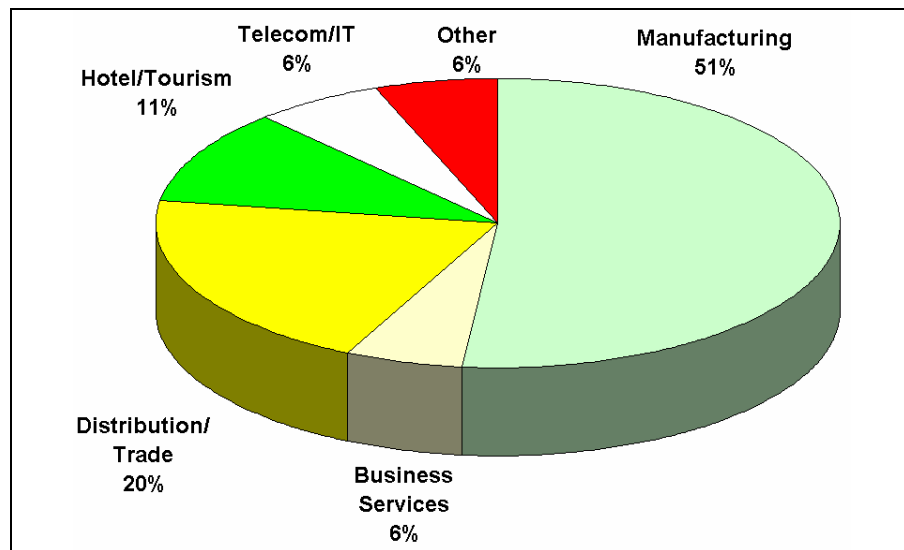
City	Small	Medium	Total
Jakarta	12	11	23
Surabaya	10	15	25
Medan	9	13	22
Bandung	7	9	16
Semarang	3	20	23
Yogyakarta	9	10	19
Denpasar	12	6	18
Makassar	12	9	21
Manado	1	14	15
Palembang	11	6	17
Samarinda	10	5	15
Lombok	7	6	13
TOTAL	103	124	227

Source: CastleAsia

Sector breakdown

- Manufacturing accounted for 51% and Distribution and Trade for 20% of the companies surveyed.
- Hotel and Tourism represented 11% and other sectors accounted for 6% each.

**Figure 1
SECTOR BREAKDOWN**

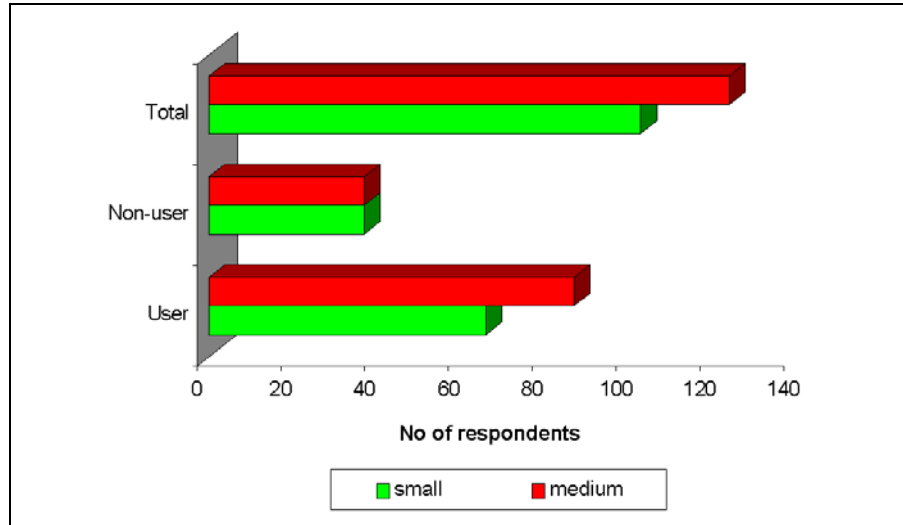


Source: CastleAsia

Small vs. Medium-Sized Companies

- The ratio of small to medium-sized companies was 45:55

Figure 2
SMALL vs. MEDIUM-SIZED COMPANIES



Source: CastleAsia

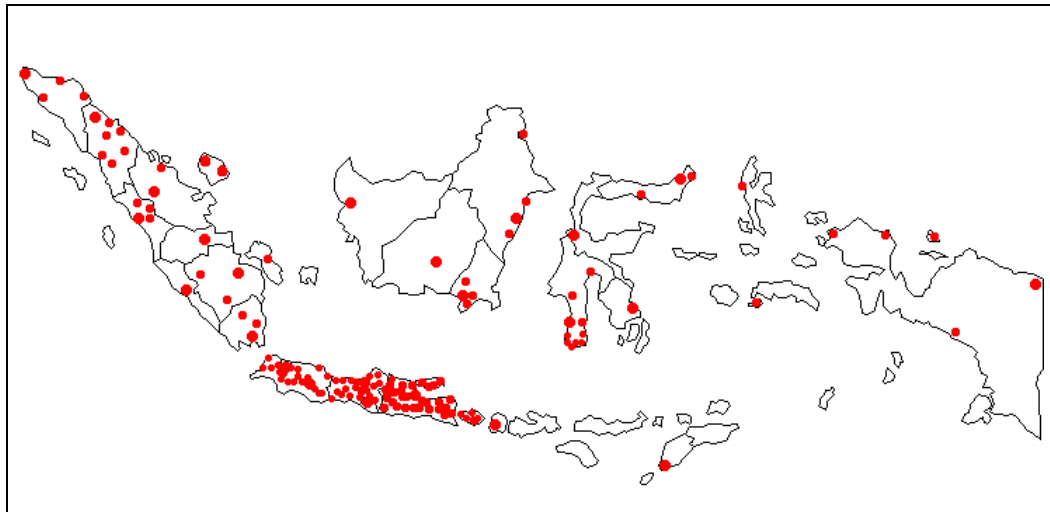
Internet Users and Non-Users

The ratio of Internet users to non-users was 67:33.

3.0 INTERNET OVERVIEW & USE PATTERNS

Internet use in Indonesia is only viable in cities and towns due to poor infrastructure and lack of access in rural areas.

Figure 3
INTERNET ACCESS AVAILABILITY AROUND INDONESIA

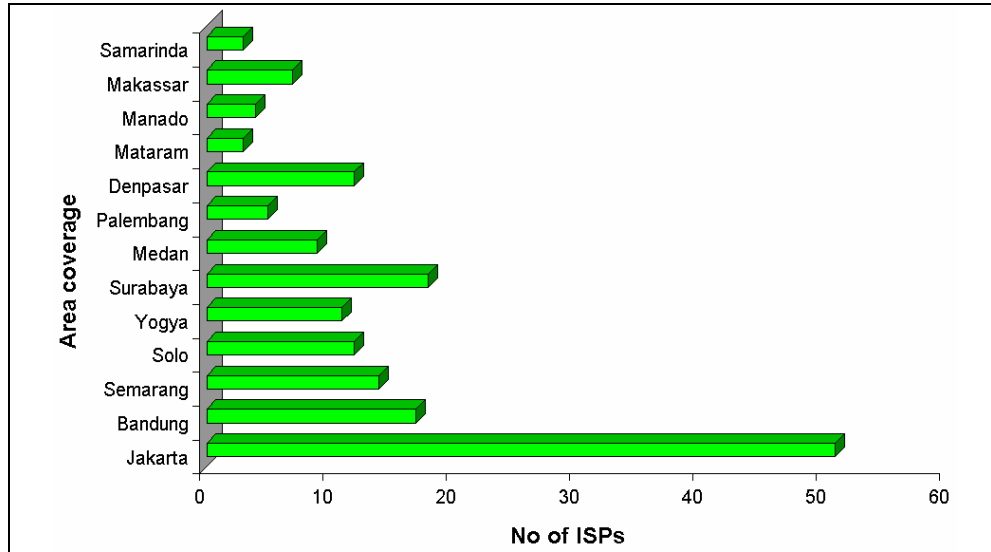


Source: CastleAsia

In many rural areas, ISP service is generally unavailable and Internet users must access ISPs through long-distance calls to nearby towns. In these areas, telephone lines -- when they are available -- are of poor quality. Transmission speeds are extremely low, often below 10 kpbs and there are frequent breaks in connection. Additionally, the shortage of telephone lines is particularly acute in rural areas.

ISP service is also limited in towns outside Java, Bali and Sumatra due to the low number of subscribers in these areas.

Figure 4
No. of ISPs BY CITY



Source: CastleAsia

Table 2
ESTIMATED NUMBER OF ISP SUBSCRIBERS IN SOME SECONDARY CITIES

	Total	Business	Residential	Government
Manado	2,790	700	2,000	90
Samarinda	1,800	400	1,150	250
Palembang	1,800	N/A	N/A	N/A
Makassar	4,000	1,000	3,000	N/A
Mataram / Lombok	1,000	200	680	120

Source: CastleAsia

Internet use in cities outside Java and Bali is characterized by slow speeds (typically 10-28 kbps) due to poor telephone infrastructure. ISPs in these areas tend to have low bandwidth capacity and users face difficulty logging on to the Internet. Use is further hampered by frequent electricity blackouts due to a heightening power crisis in these areas. In cities on Java and Bali, Internet service is somewhat better, with more ISPs which offer slightly higher speeds and greater access.

3.1 Internet Users

3.1.1 Sample

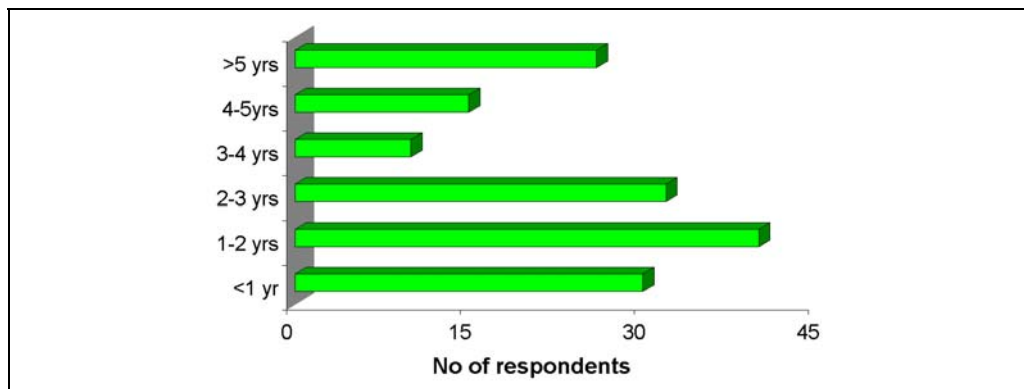
Of the 227 companies surveyed, 153 companies use the Internet - 98% use it in their offices while only two percent use it in Internet cafes, referred to as *Warnets* in Indonesia. There are many reasons why SME Internet users avoid *Warnets*, but convenience was the most often cited reason for using the Internet in their workplaces. SMEs also consider the costs they have to pay to access the Internet to be reasonable.

3.1.2 Number of Years Using the Internet

The bulk of companies we interviewed started using the Internet during the past three years. The primary driver that encouraged these companies to get on-line was pressure from competitors and/or customers. Competitors often set an example of successful Internet usage. Foreign buyers of Indonesian export products also played a key role by encouraging suppliers to provide an email address and co-ordinate transactions on-line.

A few forward-looking SMEs started using the Internet as early as five years ago. Many of these companies had owners who had some overseas experience or had read extensively about overseas Internet trends.

Figure 5
NUMBER OF YEARS CONNECTED TO THE INTERNET

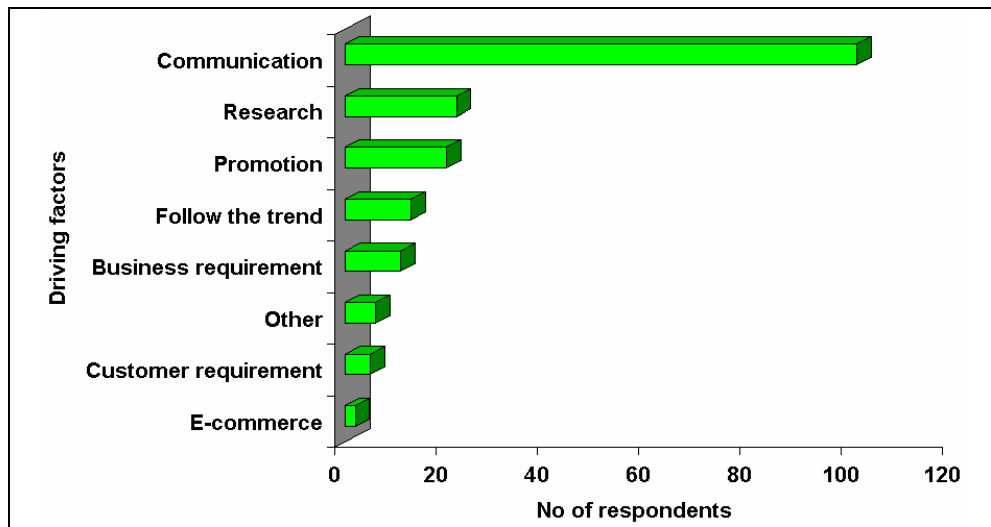


Source: CastleAsia

3.1.3 Progression of Internet Usage

As noted above, the primary driver of Internet usage is encouragement from competitors and overseas buyers. Usage often starts with email as a means to maintain contact with overseas buyers to replace more expensive overseas calls and fax transmissions. Once SMEs realize the benefits of email they are often keen to begin exploring other functions such as information searches and research, setting up their own websites, listing on e-commerce sites and downloading software.

Figure 6
DRIVING FACTORS LEADING TO INTERNET USE

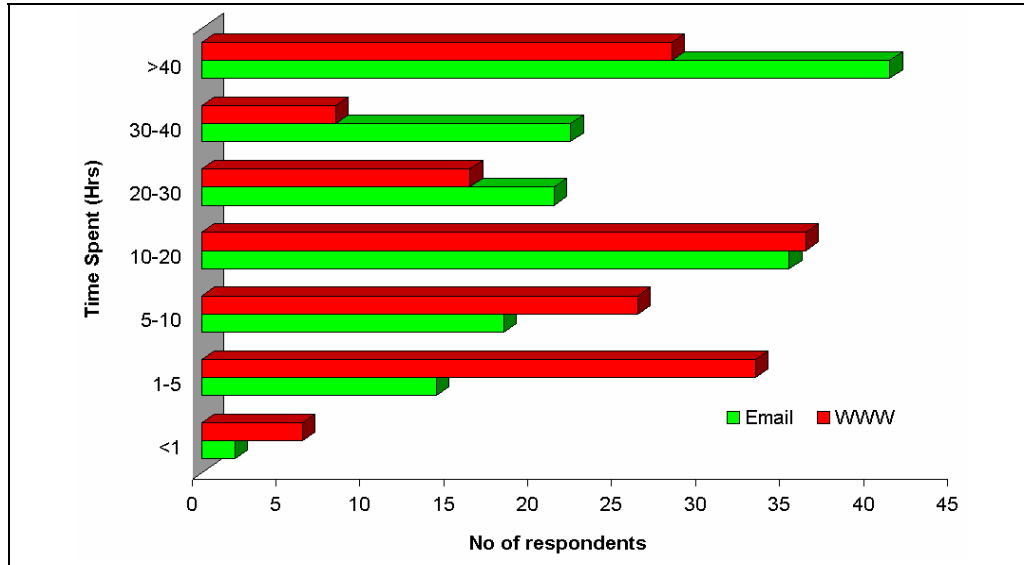


Source: CastleAsia

3.1.4 Monthly Internet Usage Time

Over 50% of Internet users access email services for more than 20 hours a month and nearly 25% use it over 40 hours a month. Meanwhile, over 60% use at least one other function of the Internet for up to 20 hours a month. It should be recognized, however, that low transmission speeds have a significant impact on the number of hours of Internet use.

Figure 7
MONTHLY INTERNET USAGE TIME

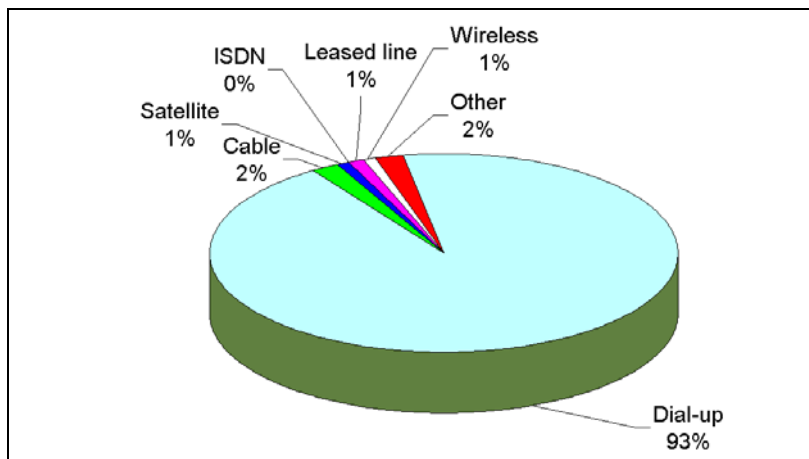


Source: CastleAsia

3.1.5 Type of Connection

93% of SMEs use dial-up connections to access the Internet. Other connection options are either not widely available (especially outside Jakarta) or are too expensive for most SMEs to justify using.

Figure 8
TYPE OF CONNECTION

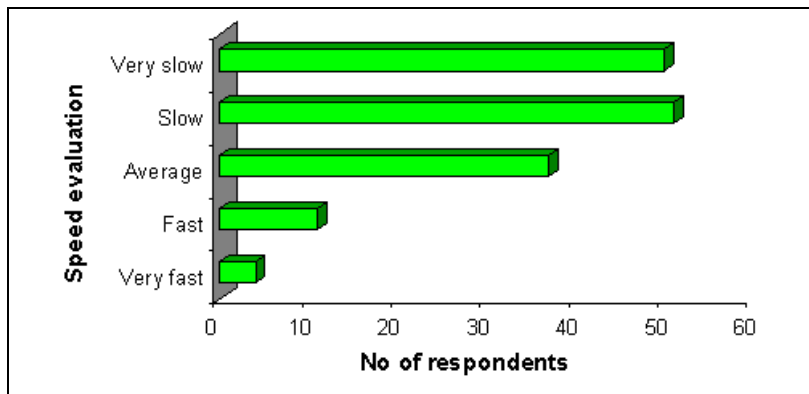


Source: CastleAsia

3.1.6 Speed Evaluation

Only 10% of SME users consider the Internet to be either very fast or fast. Many of these companies use faster forms of connection than dial-up. Companies that use dial-up and consider the Internet to be either very fast or fast are often new users and are not aware of other options. 66% consider their Internet speed to be either slow or very slow.

Figure 9
SPEED EVALUATION OF INTERNET CONNECTION



Source: CastleAsia

40% of companies stated that slow speeds affect the way they use the Internet. These companies usually compensate by using the Internet during non-peak hours.

60% of companies stated that the Internet speed did not affect their decision to use the Internet. Indeed, most of the companies surveyed simply accepted the speeds as normal because they were not aware that faster options were available.

3.1.7 Number of ISPs Used

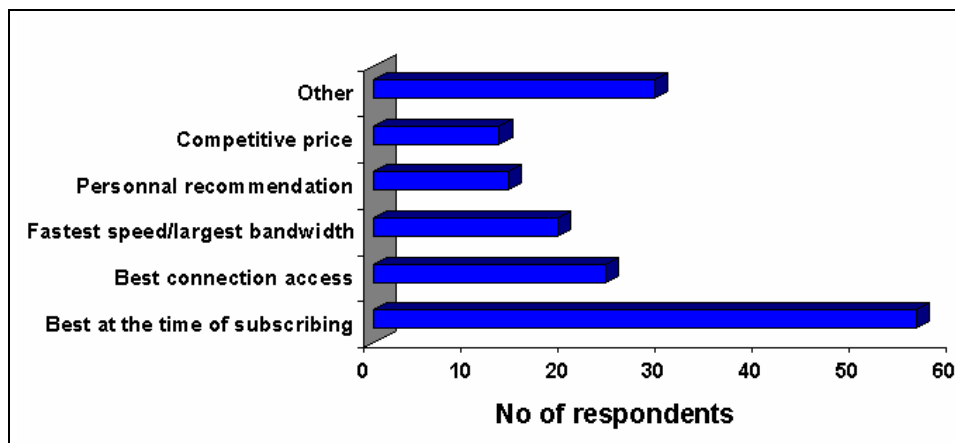
81% of users subscribe to only one ISP, while 18% use two ISPs in order to ensure better access and continuous connection. ISPs in Indonesia, particularly those outside Java and Bali, are approaching full capacity because of the limited number of access lines available. This has made logging on through a dial-up connection difficult and tedious.

Furthermore, the connection quality is often poor, with inconsistent and slow transmission speeds and frequent breaks in the connection.

3.1.8 Reasons for Choosing an ISP

New Internet users tend to choose the newest ISP on the market as capacity and access are often better with newer ISPs. The quality of ISPs, however, tends to decline over time as capacity is exceeded. Companies are often hesitant to change ISPs despite poor service, as they will have to change email addresses and are doubtful that alternatives would be significantly better.

Figure 10
REASONS FOR CHOOSING AN ISP



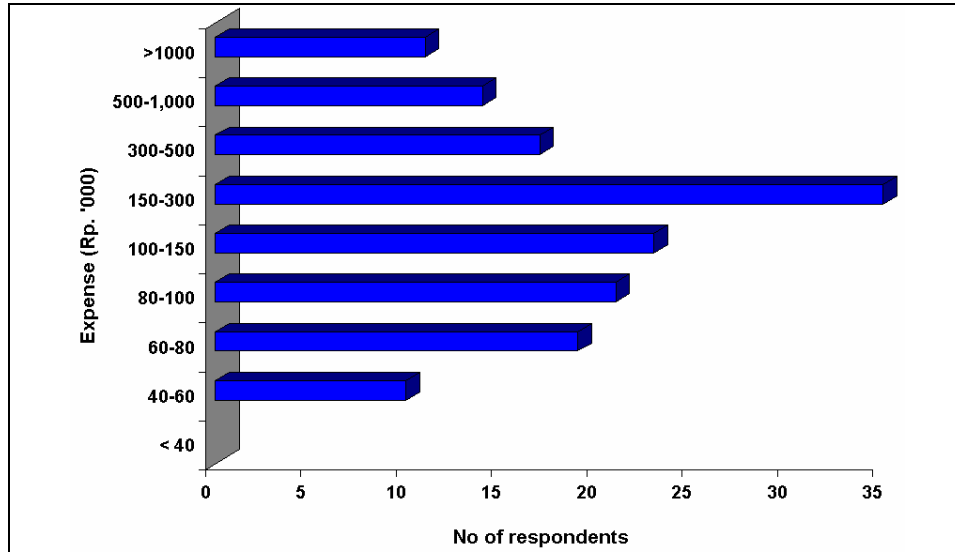
Source: CastleAsia

50% of companies said they were satisfied with their ISPs. Nevertheless, many of these companies complained incessantly about access and speeds, while also saying they felt that their provider was the best of the lot.

3.1.9 Monthly Cost of Using the Internet

Most companies pay between Rp 60-300,000 (US\$6.66-33.33) a month for a standard dial-up connection (usually including a standard monthly fee with an allotted amount of connection hours). 5% of companies use broadband connections and pay around Rp 1,000,000 per month.

Figure 11
ISP SUBSCRIPTION PER MONTH (RUPIAH)



Source: CastleAsia

Companies using dial-up connections are required to pay telephone charges based on the number of pulses used. The following table provides an estimate of telephone costs.

Table
TELEPHONE TARIFFS

	Price per minute	
	09:00-15:00	15:00-09:00
Local		
Local 1 (0-20km)	Rp 91.85	Rp 61.24
Local 2 (20-30km)	Rp 122.46	Rp 91.85
Long Distance	(08:00-18:00)	
Zone 1	Rp 1,584	
Zone 2	Rp 1,771	
Zone 3	Rp 2,211	

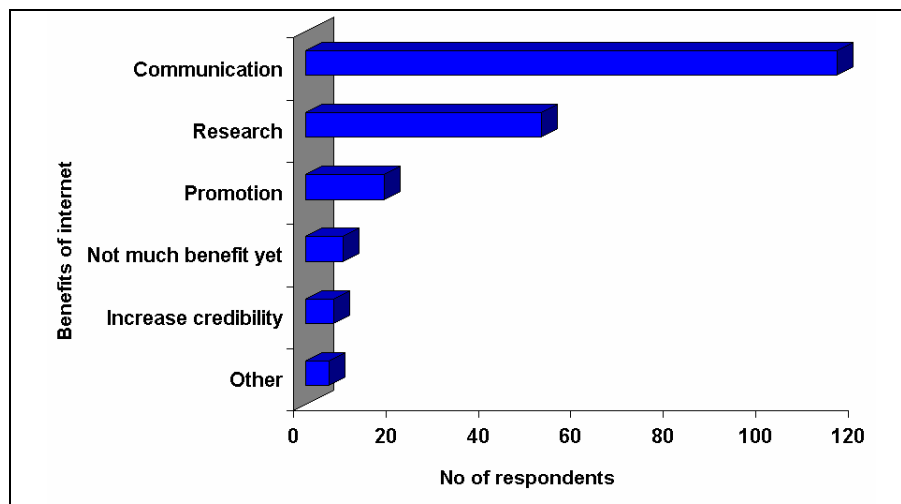
Source: CastleAsia

Based on local rates (1), 15 hours of telephone connection during office hours (9am to 3pm) costs Rp 82,665. Therefore, the total cost of using the Internet for 15 hours is approximately Rp 220,000.

3.1.10 Benefits of Using the Internet

Practically all Internet users surveyed said the primary benefit of Internet use was cheap and efficient communication. The second most cited benefit was research, followed by promotion.

Figure 12
BENEFITS OF USING THE INTERNET



Source: CastleAsia

4.0 INTERNET APPLICATIONS

4.1 Communication

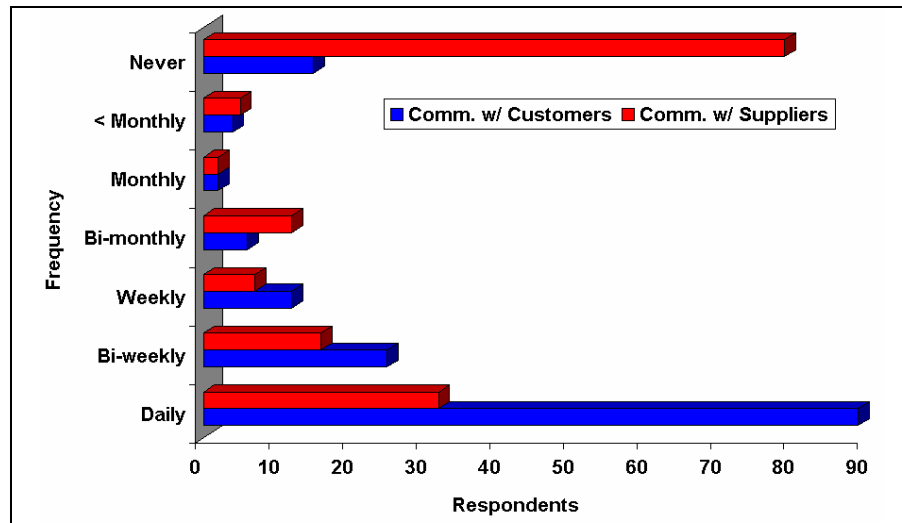
4.1.1 Sample

96% of users access the Internet in order to communicate (147 companies). 90% of these companies use email with buyers and 48% use it with suppliers.

4.1.2 Frequency of Use

The users surveyed said they communicate far more frequently with their customers than with their suppliers. Instead, they tend to deal with their suppliers through face-to-face contact, telephone orders or faxes.

Figure 13
FREQUENCY OF EMAIL COMMUNICATION

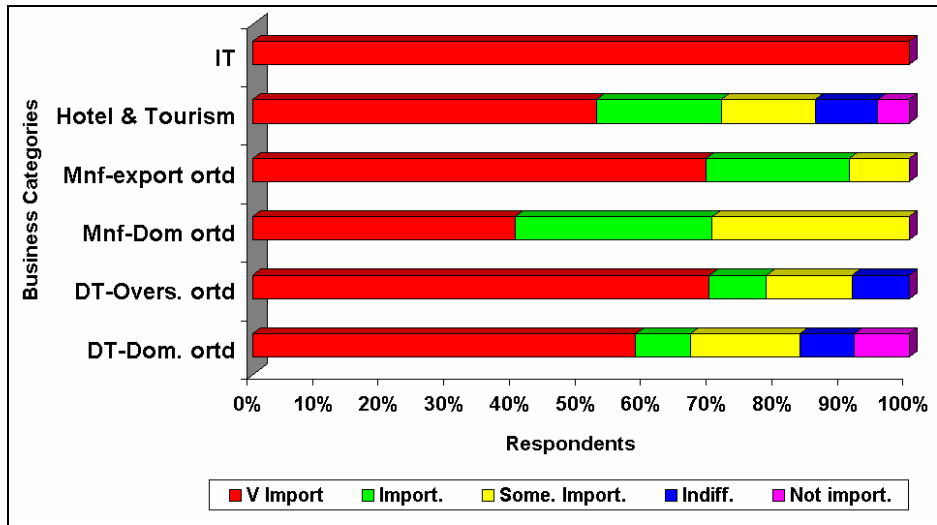


Source: CastleAsia

4.1.3 Importance of Email

Overall, 66% of Internet users consider email to be very important and 16% consider it important.

Figure 14
IMPORTANCE RANKING OF EMAIL TO COMPANIES



Source: CastleAsia:

Manufacturing and Trading – Export-Oriented Companies

For these companies, email was deemed to be very important because it allows inexpensive and efficient communication over any distance. SMEs often described a process through which they met potential buyers in Indonesia and then organized transactions through email. Email allows many of these companies to send product photographs on-line, and organize payments and delivery details at a low cost.

Manufacturing and Trading – Domestic Oriented Companies

The importance of email to SMEs that sell their products primarily to the domestic market is limited. This applies to both business-to-business and business-to-consumer transactions. Domestic businesses remain reluctant to order supplies through email and still prefer the more “tangible” option of placing orders through fax transmissions. These transactions are often backed up by numerous telephone calls. For SMEs that sell directly to consumers, there is also little interest in organizing sales on-line. This is mainly due to the low level of development of business-to-consumer e-commerce in Indonesia because of high on-line transaction costs and low levels of consumer trust in sight-unseen transactions.

Hotel and Travel Companies

Most companies in the hotel and travel industry consider email to be very important for their business. This is particularly true for companies that either have a website or are listed on hotel/tourism trade sites. Small-scale hotels in Bali and Yogyakarta that offer low cost rooms in highly sought-out tour locations have been successful in increasing their occupancy rates dramatically simply by listing their hotels on trade sites such as Indo.com. Several hotels noted that average occupancy rates increased from 20% to 90% as a direct result of a web listing. In these cases, email provides a means for reserving hotel rooms, and sometimes also for arranging credit card payments. Tour companies, including travel agencies as well as specialty tour companies such as diving and adventure tour operators, have also been able to obtain a significant amount of new business through the Internet, much of which is organized through email. On the other hand, hotel and travel companies which do not have a presence of the web use email much less frequently and consider it to be less important. In these cases email is only used to book rooms or tours for repeat customers.

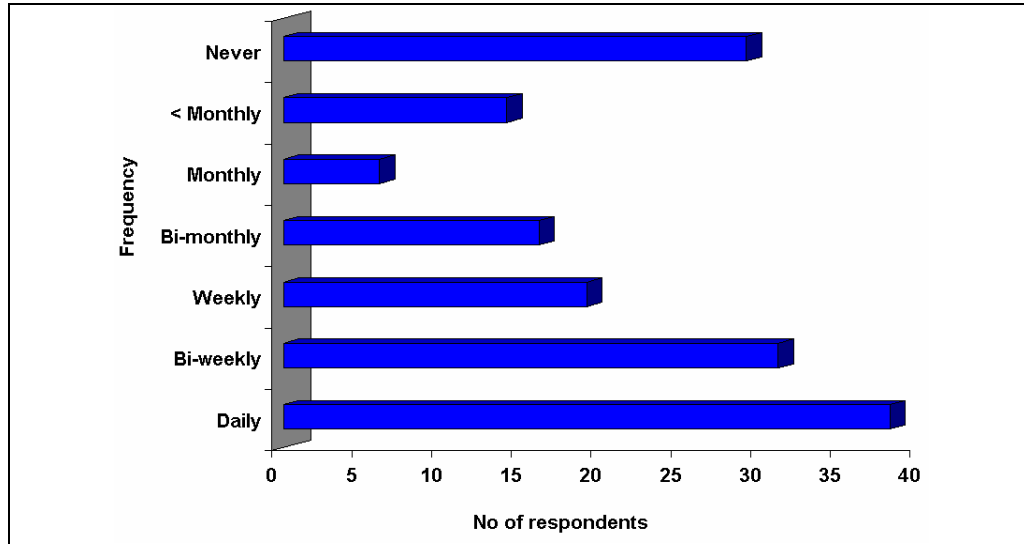
IT

All IT companies consider email to very important for their business.

4.2 Research

81% of companies use the Internet for research. 25% of all respondents use it every day, 20% several times a week and 13% once a month or less. Research is considered important by companies in all sectors to find potential buyers, locate product/service suppliers and undertake price/product comparisons. Most companies conduct their searches on English-language sites. Some companies, however, told us that they avoid on-line research because of slow speeds and the high disconnection rate.

Figure 15
FREQUENCY OF USING INTERNET FOR RESEARCH

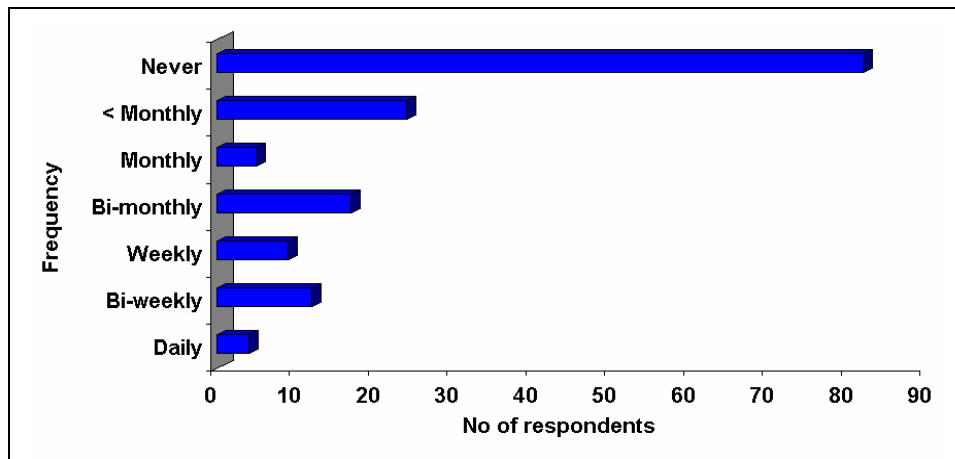


Source: CastleAsia

4.3 Downloading

46% of SMEs said they had used the Internet to download software (usually anti-virus software). Download frequency varies widely from one company to another.

Figure 16
FREQUENCY OF USING THE INTERNET TO DOWNLOAD SOFTWARE



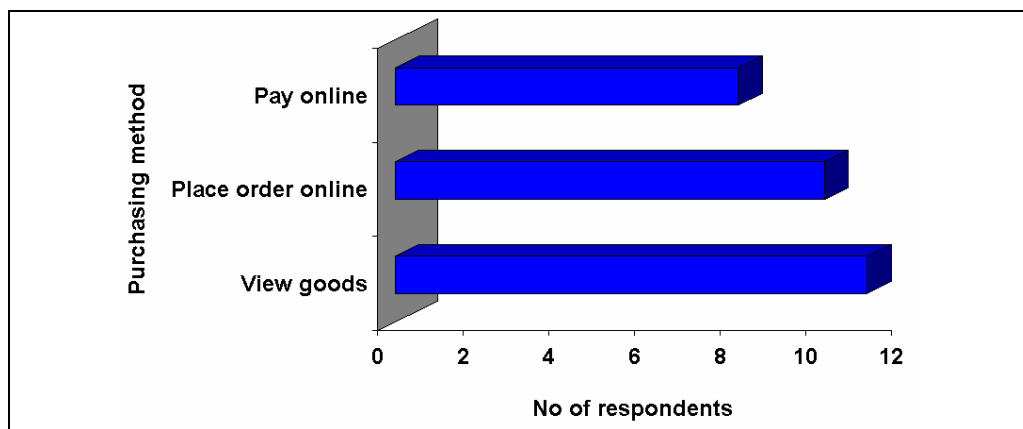
Source: CastleAsia

A significant number of companies did not know how to download information.

4.4 Buying Online

7% of users (11 companies) have purchased goods or services online. One company just viewed the goods online and then ordered them offline and paid by bank transfer; two companies placed orders online and paid by bank transfer and eight companies placed orders online and paid online by credit card (5% of Internet users). Most of these companies purchase on-line less than once a month.

Figure 17
FREQUENCY OF USING THE INTERNET TO PURCHASE ONLINE

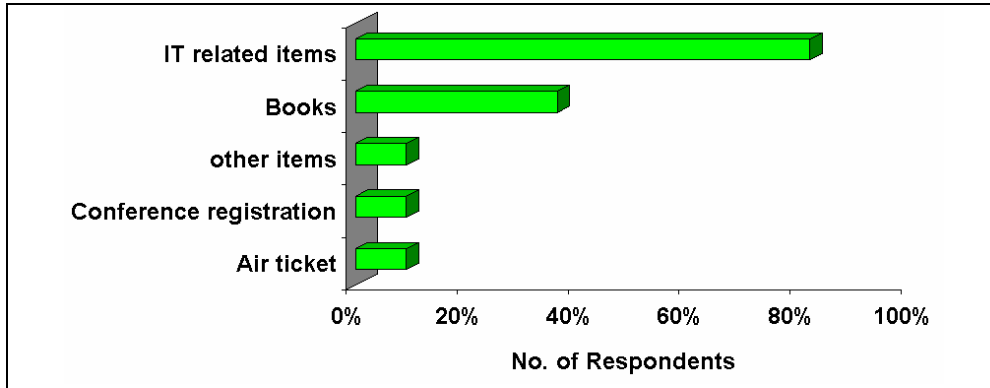


Source: CastleAsia

4.4.1 Goods / Services Purchased

73% of these companies have purchased IT-related items including domain registrations, payments for US servers and computer hardware and software. 36% of companies purchased books for company use. Only one company purchased raw materials using the Internet.

Figure 18
TYPE OF GOODS PURCHASED

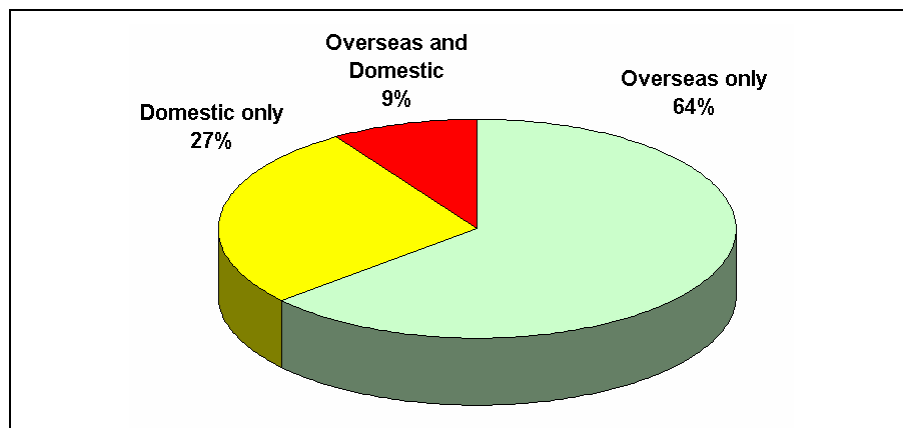


Source: CastleAsia

4.4.2 Origin of Goods / Services

Most companies purchase from overseas websites only (73% of Internet users purchasing online), usually from sites based in the United States. Three companies have purchased from two or more countries – secondary countries being Germany, Australia and China. Goods purchased from domestic websites use offline payments while purchases from overseas websites use online payments.

Figure 19
ORIGIN OF GOODS PURCHASED



Source: CastleAsia

4.4.3 Concerns of Purchasing On-Line

36% of companies that have made online purchases (4 companies) said they are concerned about payment security; two of these have used domestic sites only and have not yet attempted an online payment transaction. Two companies have paid online to international websites and remain concerned about payment security. Two expressed concern about goods being delivered to Indonesia – one because delivery service was not available and the other because of concerns over the reliability of the Indonesian postal service.

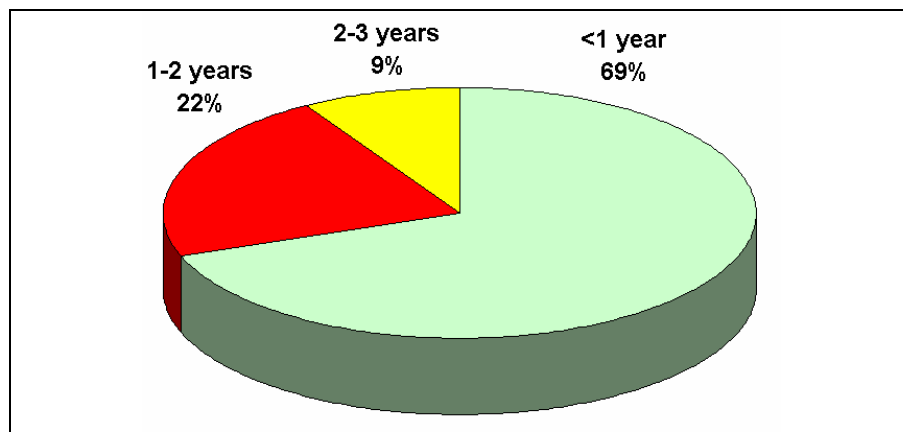
4.5 Internet Banking

15% of SMEs (23 companies) have used Internet banking (I-banking).

4.5.1 How Long Have They Been Using I-Banking?

I-banking is a new service for in the banking world; it is therefore not surprising that 69% of I-banking users have been using it for less than a year.

Figure 20
NUMBER OF YEARS USING I-BANKING

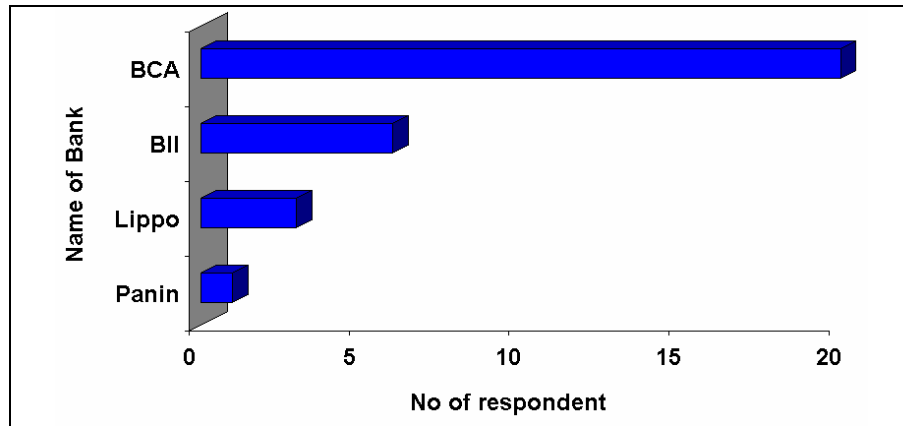


Source: CastleAsia

4.5.2 Banks Used for I-Banking

Companies often use more than one bank for I-banking - 87% of them use BCA and 22% use BII.

Figure 21
PREFERRED BANKS FOR I-BANKING

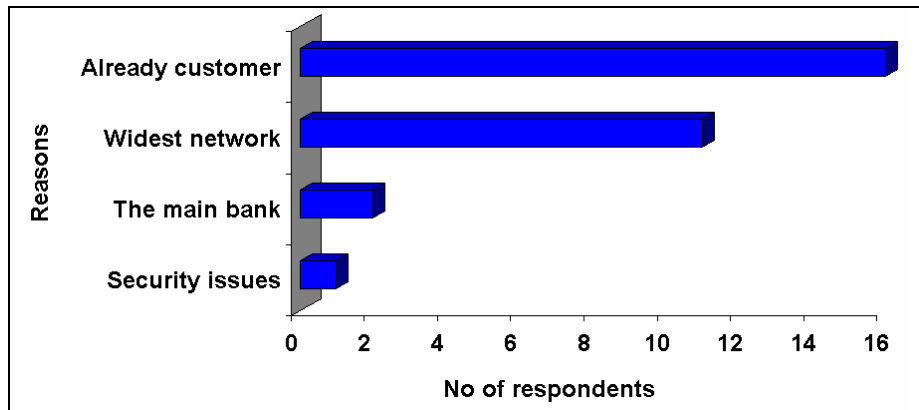


Source: CastleAsia

4.5.3 Reasons for Choosing an I-Bank

70% of SMEs using I-banking were already customers of the bank when it started offering this service. Companies often bank with more than one bank, and therefore choose their primary bank or the bank they perceive as offering the highest level of security, for I-banking services.

Figure 22
REASONS FOR CHOOSING AN I-BANK

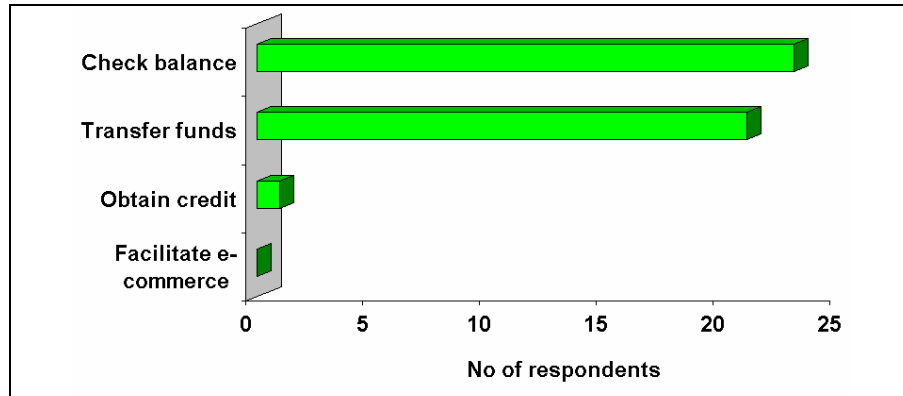


Source: CastleAsia

4.5.4 I-Banking Functions

Companies use I-banking to check their account balances and to transfer funds. I-banking allows only limited amounts to be transferred within the same bank network.

Figure 23
I-BANKING FUNCTIONS

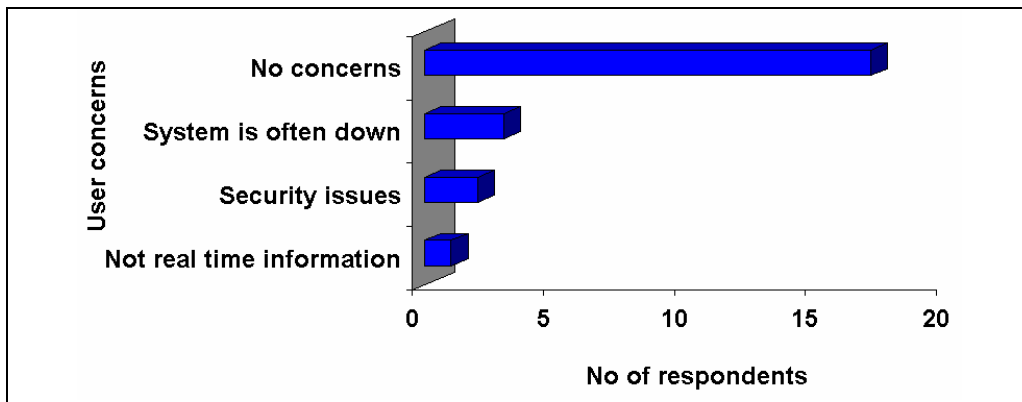


Source: CastleAsia

4.5.5 Users' Concerns About Using I-Banking

70% of I-bank users said they have no concerns regarding I-banking, while 17% complained that either the Internet or the I-banking system are often down. Only 9% are concerned about security of information.

Figure 24
USER CONCERNS

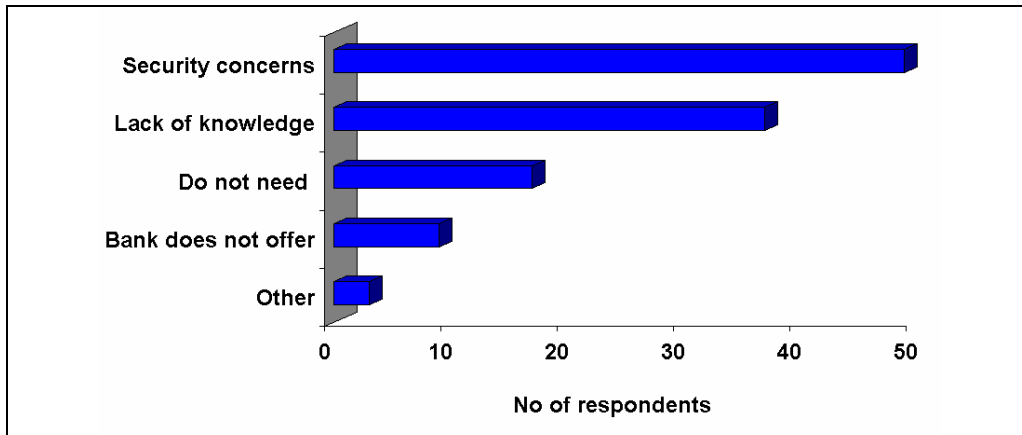


Source: CastleAsia

4.5.6 Why Have Companies Not Started Using I-Banking?

Non I-banking Internet users do not use the service due to security concerns and lack of knowledge.

Figure 25
REASONS FOR NOT USING I-BANKING



Source: CastleAsia

4.6 Websites

Websites are useful promotional tools for some companies; however the success of a site is often limited by poor quality.

4.6.1 Websites for the Hotel & Tourism Sector

Hotel and tour companies consider websites to be very important to gain international exposure and connect with potential customers. Numerous hotel and tour companies described the direct impact of having a site on their sales. Some hotels in Bali have experienced average occupancy increases from 20% to 90% as a result of having a website. Similarly, tour companies told us that websites served as their primary channel for obtaining new customers or booking return visits.

The most successful websites have generic, easy to find names. Using a place name such as Bali in the name of a tour company or hotel is

particularly effective. Registration with search engines is also critical. In almost every case of an unsuccessful site, the company had failed to ensure that the site was placed on international search engines. Other features of more successful sites include the presence of contact details on the site and regular updates (especially regarding rates). Finally, correct English on the sites and prompt responses to email requests for information and reservations are also important features of more successful websites.

Several hotels and travel operators noted that they would prefer to be able to accept on-line payments but felt that the current cost was not justified. The high cost of on-line transactions (average 10% plus set-up and annual fees) is partly due to the high fraud rate in the travel industry as a whole, and in Indonesia in particular. In lieu of on-line payments, these companies rely primarily on email reservations without payment, but there were cases of credit card payments cited where the card details were sent via email, as well as bank transfers (for higher cost tour packages).

4.6.2 Websites for the Manufacturing and Distribution & Trade Sectors

Websites fulfill different needs for small and medium-sized companies.

Smaller Companies

The primary importance of a website is usually to connect with potential overseas buyers. For many small manufacturers, its website is the first contact point for potential buyers who have not visited Indonesia. Companies explained that small-scale buyers often rely heavily on website searches before making a buying trip to Indonesia. Handicraft and furniture manufacturers, in particular, frequently described how they obtained new buyers who would otherwise have passed them by, had they not had a web presence. In some cases, a well-designed site has the effect of making a very small operation appear much larger.

Successful websites for manufacturing and trading enterprises tend to be simply designed and display correct English, and are well-placed on search engines. Quality photographs also provide a competitive advantage.

On-line payment was cited as an important issue for small-scale manufacturers and traders, which target small-scale retail customers and private consumers. Silver jewelry manufacturers, garment producers and art dealers were among those who described how they had lost sales because of an inability to offer on-line payment facilities. In these cases, customers were either reluctant to disclose credit card information by email or felt the costs of international transfers were not justified given the low value of the transaction.

Medium-Sized Companies

The benefits of websites for medium-sized companies are mostly the same as those for smaller companies. The primary exceptions are medium-sized manufacturers that serve large-scale retail and distribution operations. For companies that supply only two or three large buyers, there is often little interest in using a website to obtain new customers, due to the expected smaller scale of those potential buyers and the additional administrative burden caused by the numerous requests coming in through the site. These companies tend to use their sites as on-line company profiles to further showcase their capabilities to their large-scale buyers.

Medium-sized companies also tend to be more concerned about information security and the protection of designs, compared with small companies, which generally lack in-house design capabilities. As a result, many medium-sized companies said they either use mechanisms to lock access to online product information or rely on CD-ROMs to send their production information to potential customers. Medium-sized companies are also not concerned with on-line payment because they tend to service much larger orders where payment is effected by telegraphic transfer or letter of credit.

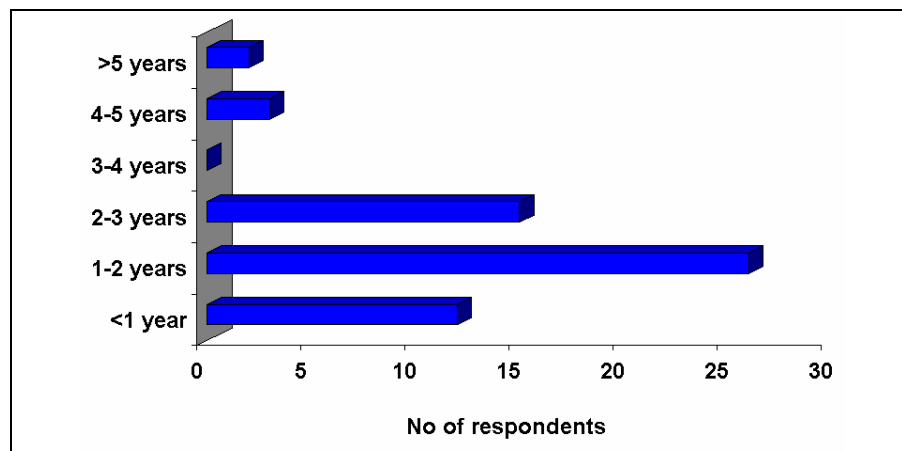
4.6.3 Sample

38% of SME Internet users have a website (58 companies) while 10% (16 companies) are in the process of making a website. 1% (2 companies) said they have stopped using their websites. Meanwhile, 51% of Internet users, or 77 companies, do not have a website.

4.6.4 How Long Have Companies Had a Website?

Most companies have had their website for 1-3 years.

Figure 26
NUMBER OF YEARS WITH A WEBSITE

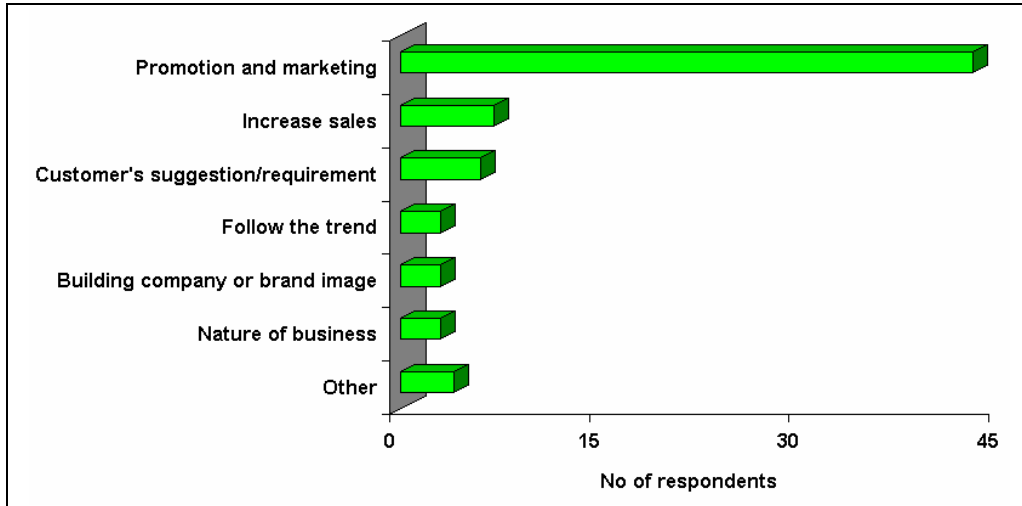


Source: CastleAsia

4.6.5 Driving Force for Developing a Website

74% of website owners stated that they developed their site primarily as a promotion and marketing tool.

Figure 27
DRIVING FACTORS



Source: CastleAsia

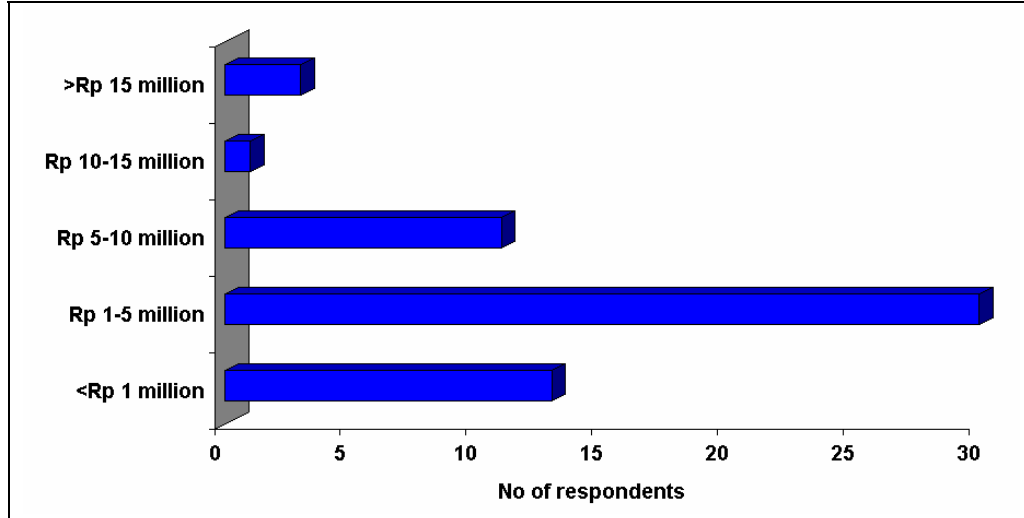
4.6.6 Websites Registered with Search Engines

Only 66% of companies with websites have registered them with search engines such as Yahoo or Google, which allows browsers to find the sites easily. Many companies are not Internet-savvy and rely on web-designers to undertake the entire task of designing and placing the site on the Internet. Many web-designers are unaware of the importance of registering sites and consider their job finished after the website is designed and uploaded.

4.6.7 Cost of Developing a Website

Most companies spend Rp 1-5 million developing their website.

Figure 28
WEBSITE DEVELOPMENT COSTS



Source: CastleAsia

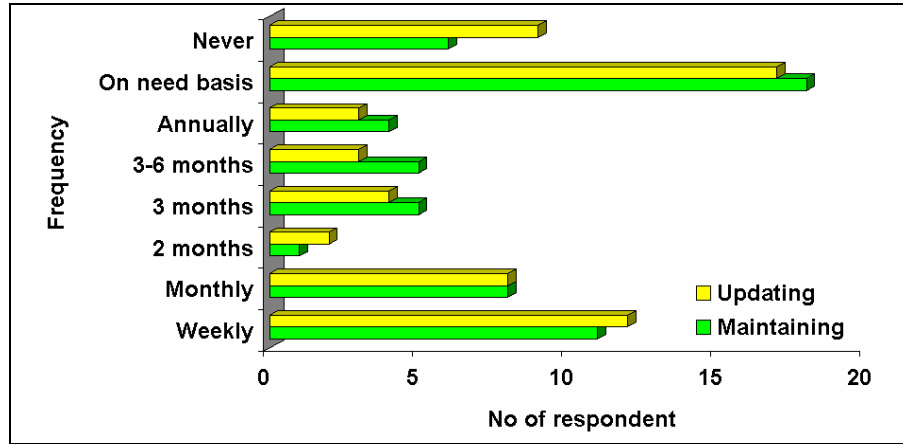
4.6.8 Is a Website Worth the Time and Effort It Requires?

85% of website owners think that their website was worth the money, and the remaining 15% do not. This is generally because the website has not been registered with a search engine and therefore does not generate many hits. Some companies that have made a website but not registered it still consider the site to be worthwhile as it brings credibility to the company – they can refer their customers to the site, for example.

4.6.9 Maintaining and Updating a Website

25% of companies maintain and update their information regularly (once a month or more often). 16% never update and 10% never maintain their websites. Many of these companies have paid a one-time fee to have the website developed and did not know that websites have to be maintained and updated. Meanwhile, 31% update and 29% maintain *on a need basis* – which for many companies means very infrequently.

Figure 29
 FREQUENCY OF MAINTAINING AND UPDATING THE WEBSITE

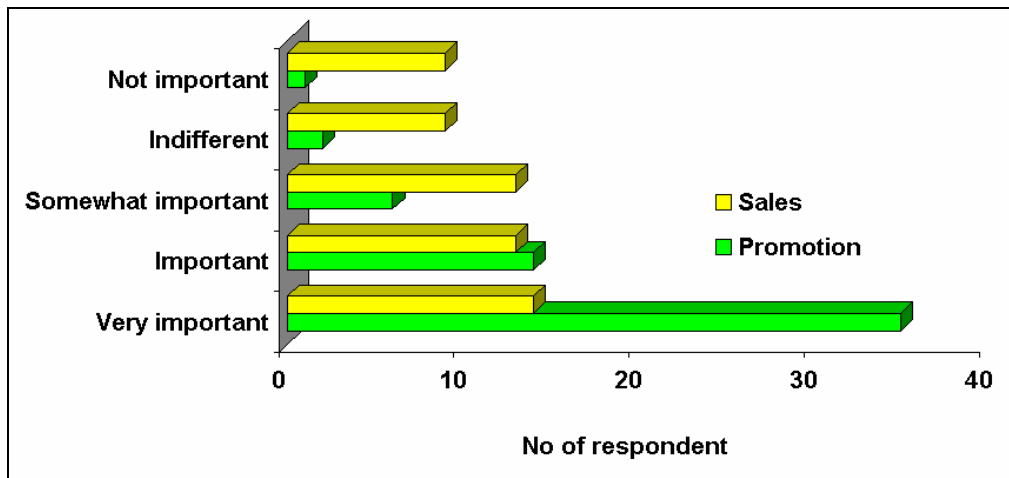


Source: CastleAsia

4.6.10 Importance of Website for Promotion and Sales

When asked about the specific importance of having a website, 60% of SME website owners responded that their website is very important for promotion, while 24% consider it to be important for this purpose. In comparison, when it comes to sales, 24% see their website as very important and 22% consider it important.

Figure 30
 IMPORTANCE OF WEBSITE TO COMPANY

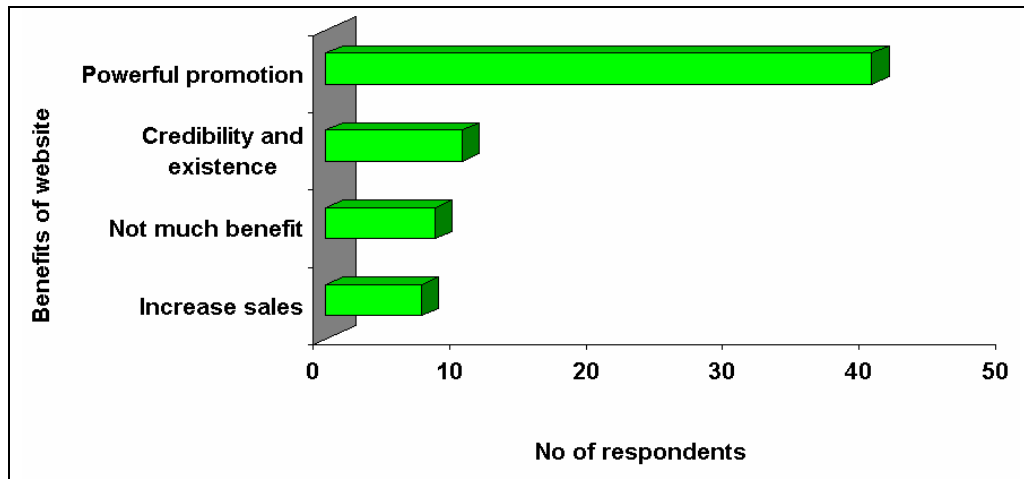


Source: CastleAsia

4.6.11 Benefits

The promotion tool feature dominated again when we asked SMEs with websites about the benefits of their site, with 67% citing it as the main benefit. 17% said their site brought the company credibility. 14% said their site did not bring the company any significant benefits; however, this was often because the website was not registered on search engines.

Figure 31
BENEFITS OF THE WEBSITE

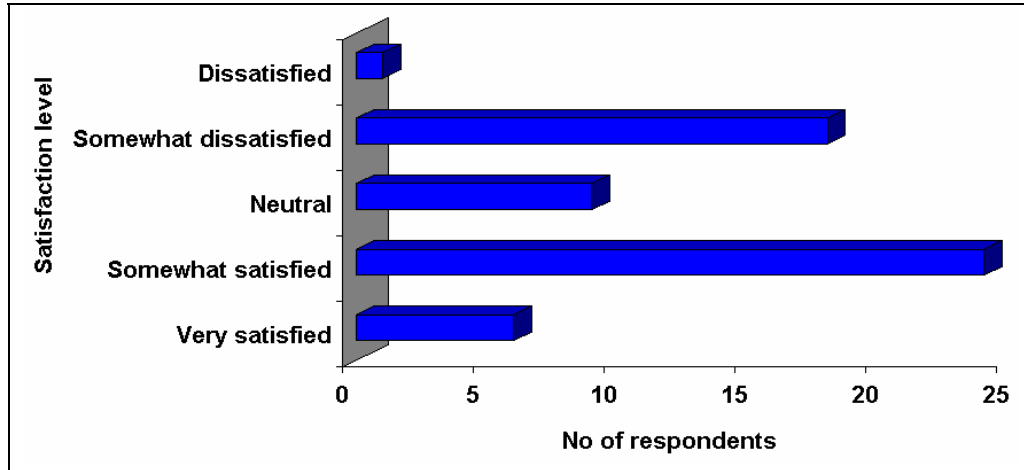


Source: CastleAsia

4.6.12 Satisfaction

Most companies were somewhat satisfied with their current website but do see room for improvement.

Figure 32
SATISFACTION LEVEL

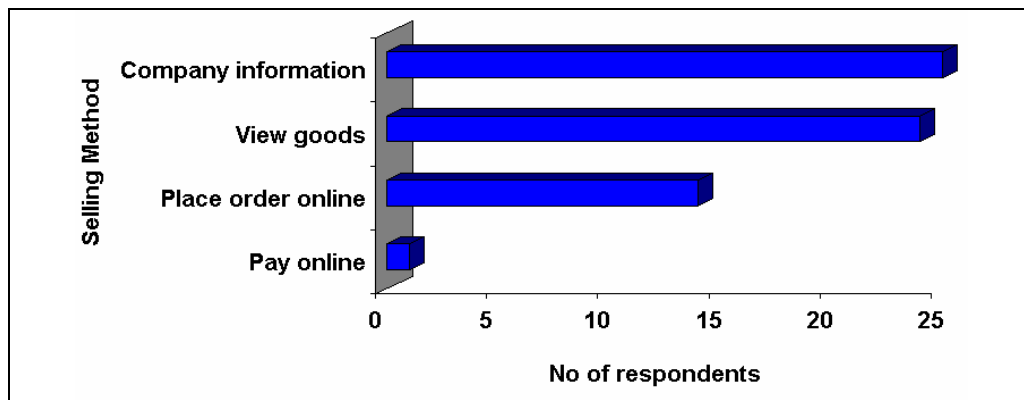


4.6.13 Selling Goods Online Through Own Website

25 companies sell goods over their websites (43% of companies with websites), of which:

- 96% (24 companies) show their goods online (online brochure / catalogue)
- 56% (14 companies) are set up to receive orders online (through linked email)
- 4% (1 company) can receive payments online.

Figure 33
ONLINE SELLING FEATURES

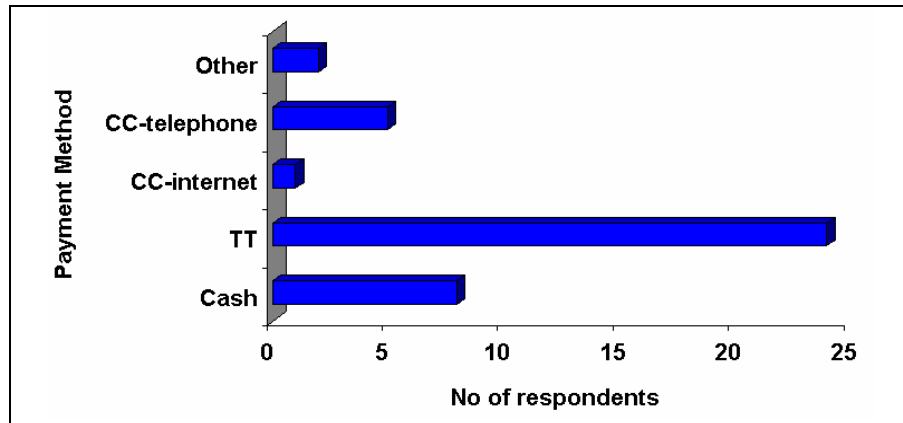


Source: CastleAsia

4.6.14 Payment Methods

Most companies that allow customers to view goods or place orders online receive payments by telegraphic transfer. A few companies -- usually hotels or tourism-related companies -- receive cash, with the customer paying upon check-in. Some companies receive credit card details over the telephone and process requests manually.

Figure 34
PAYMENT METHODS

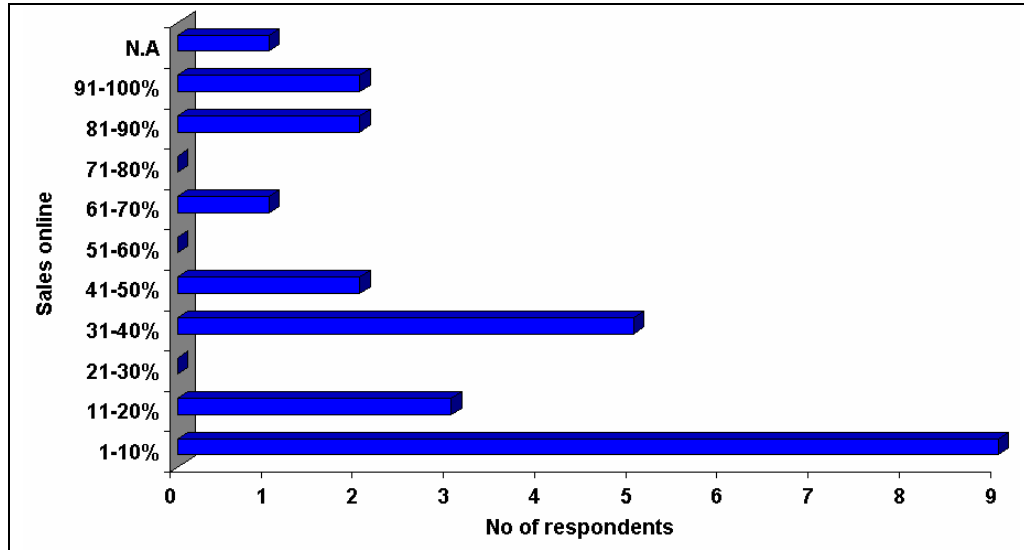


Source: CastleAsia

4.6.15 Percent of Monthly Sales On-Line

48% of companies reported that less than 20% of their total turnover comes from online sales, while 16% of companies derive more than 80% of their sales from the Internet.

Figure 35
SALES ON-LINE



Source: CastleAsia

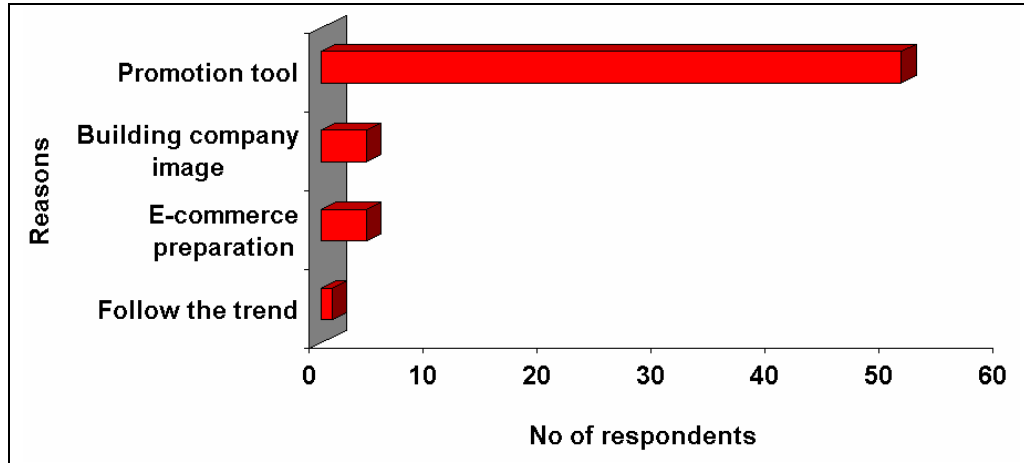
4.6.16 Plans for Developing a Website

61% of SME Internet users currently do not have websites - 41% of these have no intention of making a website, while the remaining 59% are currently developing a site or intend to develop one in the future.

4.6.17 Reasons for Developing a Website

94% of the companies planning to develop a site are doing so for promotional purposes, while 7% intend to have a website to improve their company's image.

Figure 36
REASONS FOR DEVELOPING A WEBSITE

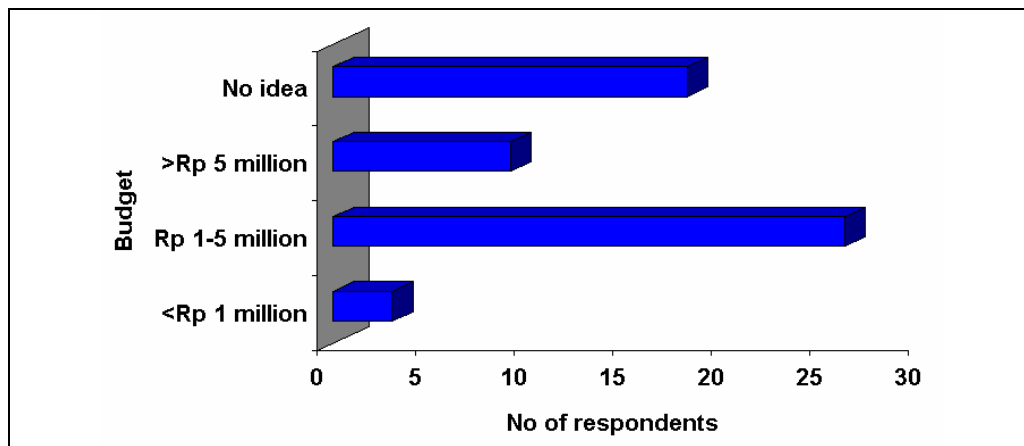


Source: CastleAsia

4.6.18 Budget for Developing a Website

43% of SMEs planning to create a company website have budgeted between Rp 1-5 million, while 28% have no idea of the cost of development.

Figure 37
WEBSITE DEVELOPMENT BUDGET

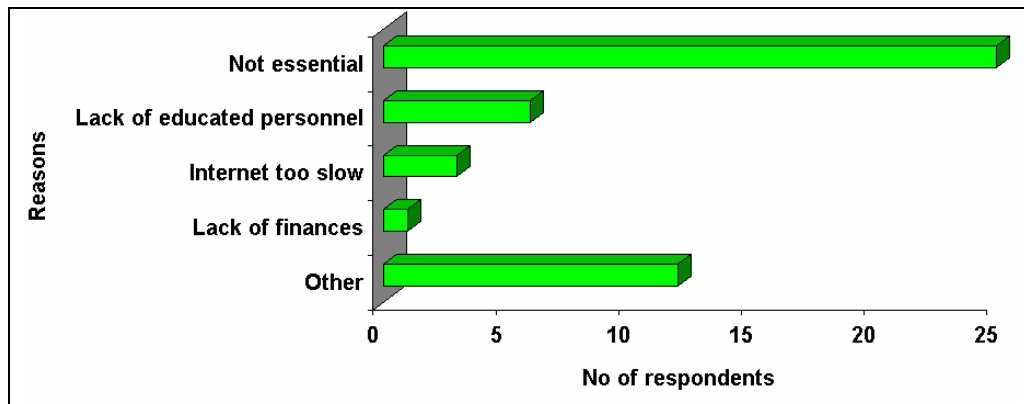


Source: CastleAsia

4.6.19 Reasons for Not Developing a Website

The primary reason given for not developing a website was that it was not considered essential for the business.

Figure 38
REASONS FOR NOT DEVELOPING A WEBSITE



Source: CastleAsia

4.7 E-Commerce Sites

E-commerce sites used by Indonesian SMEs support overseas transactions, primarily by providing company listings and product information on the web. There are two types of e-commerce sites used by Indonesian SMEs: international sites and domestic sites. The most successful e-commerce sites are those that involve direct marketing and ongoing assistance to SMEs. This group includes international player Global Sources and domestic start-ups such as Indo.com and EastJava.com.

4.7.1 Sample

28 companies (18% of companies surveyed) have joined e-commerce sites. Companies outside Java and Bali, however, have little knowledge of e-commerce sites and their benefits.

4.7.2 Number of E-Commerce Sites Joined

61% of e-commerce site members use only one e-commerce site (17 companies) while 26% use two (seven companies). Only four companies had joined three e-commerce sites.

4.7.3 Which E-Commerce Sites are They Using?

Companies list 22 different e-commerce sites in use - 10 are based in Indonesia and 10 were overseas-based. In the other two cases, the origin of the site is unclear.

Table 4
E-COMMERCE SITES USED

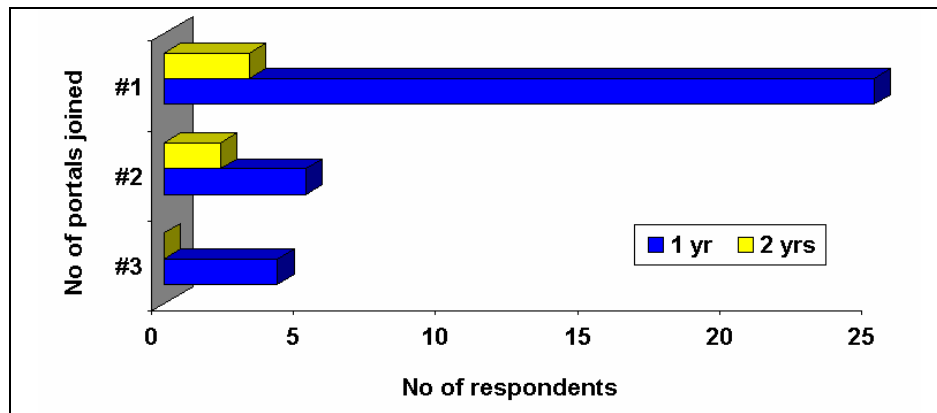
Site	% of companies
Global Sources	40%
East Java	14%
Indo.com	8%
Indotradezone	8%
Other sites	4%

Source: CastleAsia

4.7.4 How Long Have They Been Members of the E-Commerce Site?

Most companies that are members of e-commerce sites joined them less than one year ago.

Figure 39
NUMBER OF YEARS AS E-COMMERCE MEMBERS

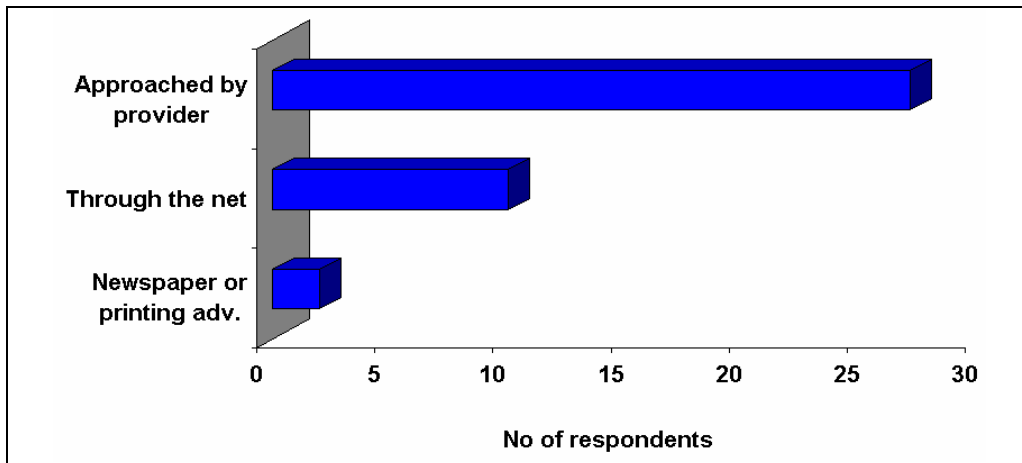


Source: CastleAsia

4.7.5 How Did Members Find Out About E-Commerce Sites?

73% of e-commerce site members were approached by the site operators, while in 27% of cases, the company found the e-commerce site through the net.

Figure 40
METHOD OF FINDING E-COMMERCE SITE



Source: CastleAsia

4.7.6 What Do the E-Commerce Sites Do?

Most e-commerce sites provide company-listing facilities only. This can range from a free name listing without any company details or product information to a comprehensive company profile with examples of products displayed. Two sites sell products / services online and are set up to receive online payments. Only one e-commerce site is used for procurement

Table 5
E-COMMERCE SITE FACILITIES

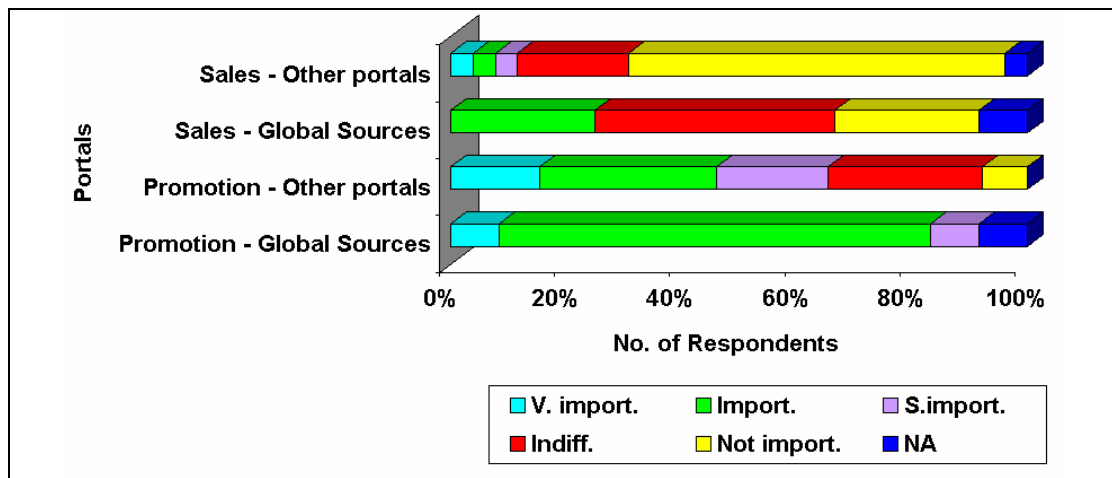
Online transaction	Selling	Procurement	Company listing
Indo Hotel accommodation (UK)	Indo Hotel accommodation (UK) Global Sources	Metrodata.com	Eastjava Rivital Indagsulut Indotradezone Geocities Alibaba Baliinter Visitors guide Export import Balicraft Balibagus Madebali Ecplaza Ectrade Fiber2fashion Nexia Bciasia Swiss company (no name)

Source: CastleAsia

4.7.7 Importance of E-Commerce Sites to Companies

E-commerce sites considered more important for promotion than actual sales. Respondents considered Global Sources much more important than other e-commerce sites.

Figure 41
IMPORTANCE OF E-COMMERCE SITE TO COMPANY



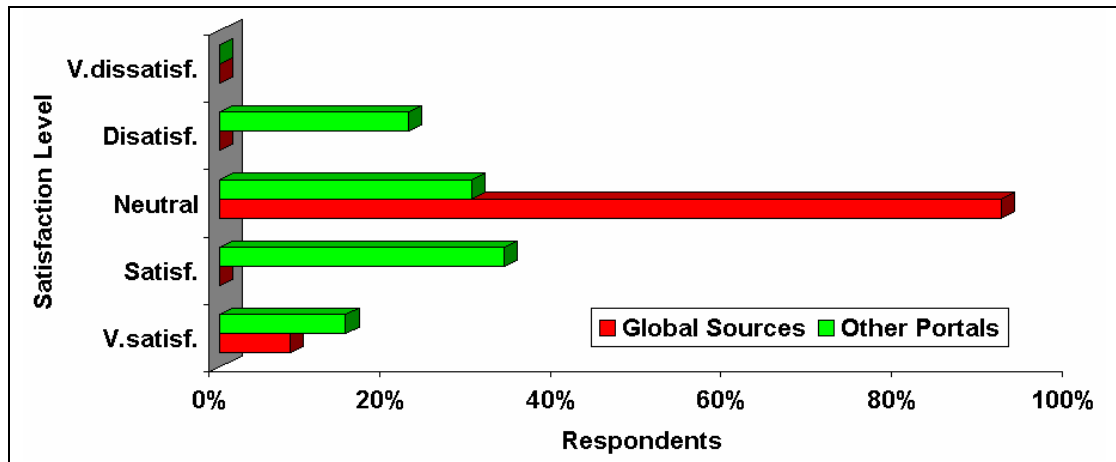
Source: CastleAsia

4.7.8 Satisfaction With E-Commerce Sites

Most of Global Sources customers remain neutral regarding their satisfaction of the site. This is because in most cases they had used the site for less than a year. They had also paid considerable amounts of money to list on the site and preferred to wait and see if their expenditures were justified through increased sales at the end of the year.

Most other e-commerce sites are free or charge small fees and therefore customers are more easily satisfied. Most of the dissatisfied customers noted that they had been cheated by companies that never delivered any service at all.

Figure 42
SATISFACTION WITH E-COMMERCE SITE



Source: CastleAsia

4.7.9 What Else Do Companies Expect From E-Commerce Sites?

45% do not expect to receive any additional services from the e-commerce sites they are currently using, while 24% have requested additional value-added services such as customer screening, product certification and marketing support.

4.7.10 Continued Use of E-Commerce Sites

74% of SMEs will continue to use their chosen e-commerce sites. Five companies (13%) said they will stop using the sites and another five companies were unsure (13%). Generally, the higher the cost of the site, the greater the number of companies that are uncertain about continuing to use it in the future.

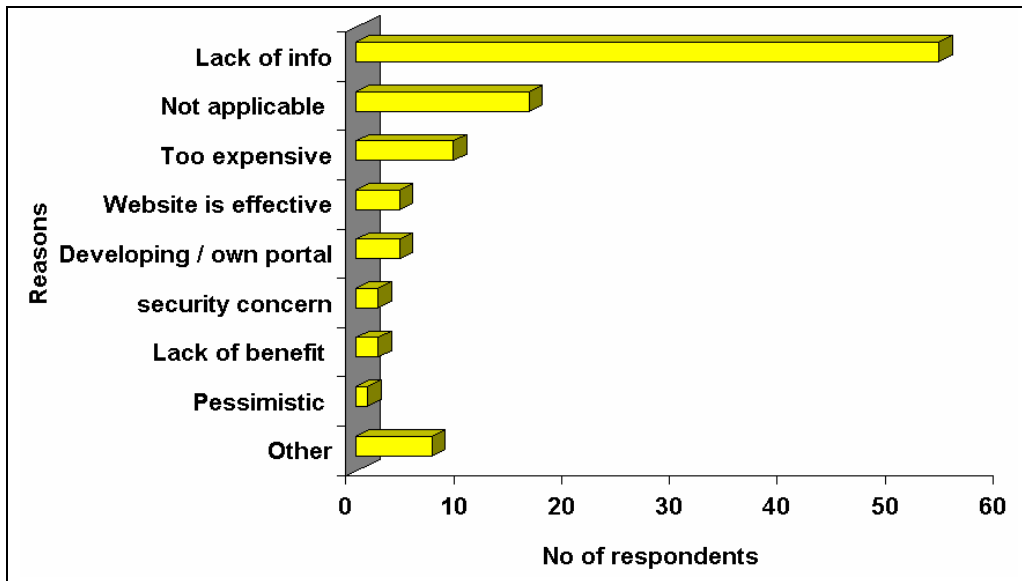
4.7.11 Will Non-Users of E-Commerce Sites Join One in the Next 12 Months?

A further 21% of Internet users are considering joining an e-commerce site in the next 12 months.

4.7.12 Why Not Join an E-Commerce Site?

55% of Internet users said they will not join an e-commerce site due to lack of information. Many of these are located outside Java and Bali. 13% noted that e-commerce sites are not applicable for their business - often because the company only offers customized products.

Figure 43
REASON FOR NOT JOINING E-COMMERCE SITE



Source: CastleAsia

5.0 NON USERS

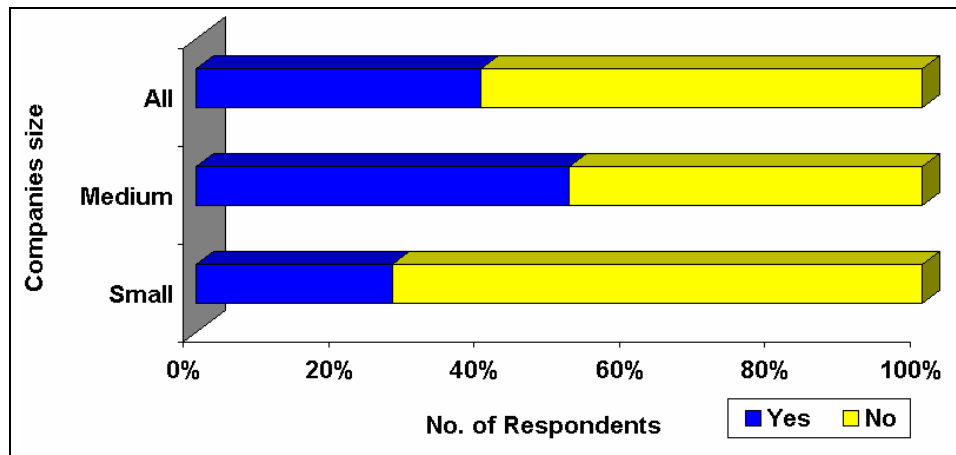
5.1 Sample

74 SMEs (33% of total surveyed companies) do not use the Internet in any way. Within this group, the ratio of small to medium-sized companies (based on the number of employees) is 50:50. 69% of non-users are manufacturers and 15% are engaged in distribution and trade.

5.2 Will Non-Users Start Using the Internet in the Next 12 Months?

39% of non-users plan to use the Internet in the next 12 months (prospective users). Medium-sized companies are more inclined to start using the Internet in the next 12 months than their smaller counterparts. 66% of prospective users are medium-sized companies.

Figure 44
PLAN TO JOIN THE INTERNET IN THE NEXT 12 MONTHS?



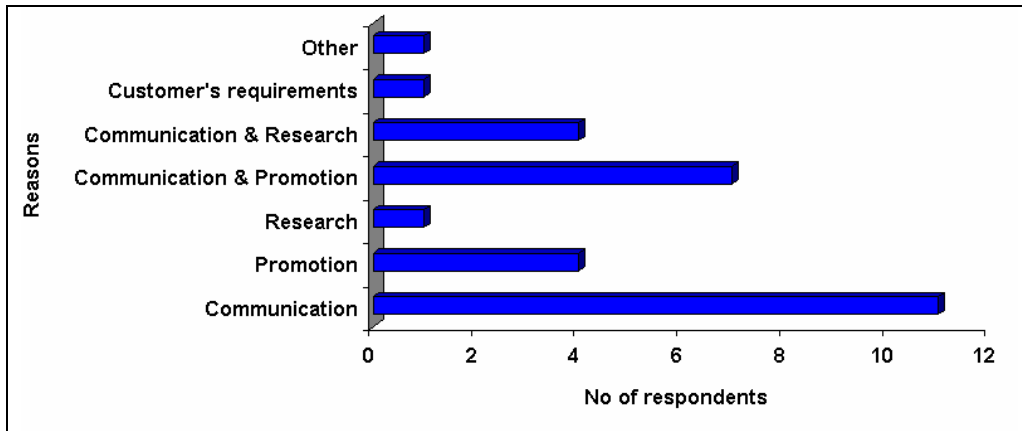
Source: CastleAsia

5.3 Prospective Users

5.3.1 Reasons to Begin Using the Internet

76% of prospective users want to start using the Internet for various communication purposes – 38% for communication only, 24% for communication and promotion, 14% for communication and research and 14% for promotion only.

Figure 45
REASONS FOR STARTING TO USE THE INTERNET



Source: CastleAsia

5.3.2 Place of Use

90% of prospective users plan to install the Internet in their offices. However, some smaller companies with limited resources will initially use the Internet at Internet cafes.

5.3.3 Type of Connection

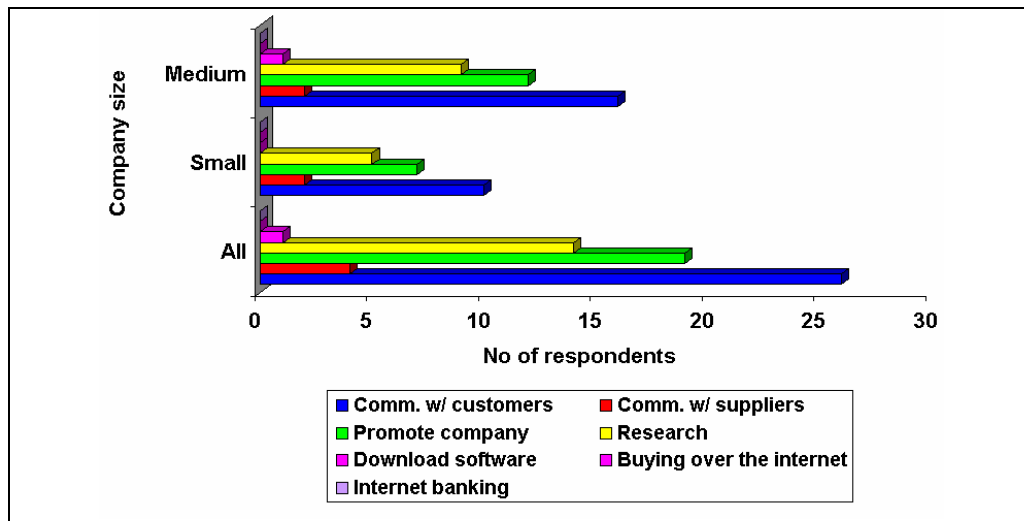
Displaying a pattern similar to than of current Internet users, 84% of prospective users plan to use the cheapest and most widely available form of Internet connection – namely dial-up. 10% percent will use a wireless connection and 6% were unsure of the type of connection they will use. This can be attributed partly to a lack of knowledge about the Internet.

5.3.4 Which Internet Functions Do They Plan to Use?

90% of prospective users intend to use the Internet for communication; all of these will communicate with buyers. 14% of prospective users are also planning to communicate with their suppliers.

66% of prospective users stated that they intend to use the Internet for promotion; however only 31% will develop a website. This highlights the fact that there is some confusion about the Internet and its functions. 48% would like to use the Internet for research and information searches.

Figure 46
INTERNET FUNCTIONS TO BE USED

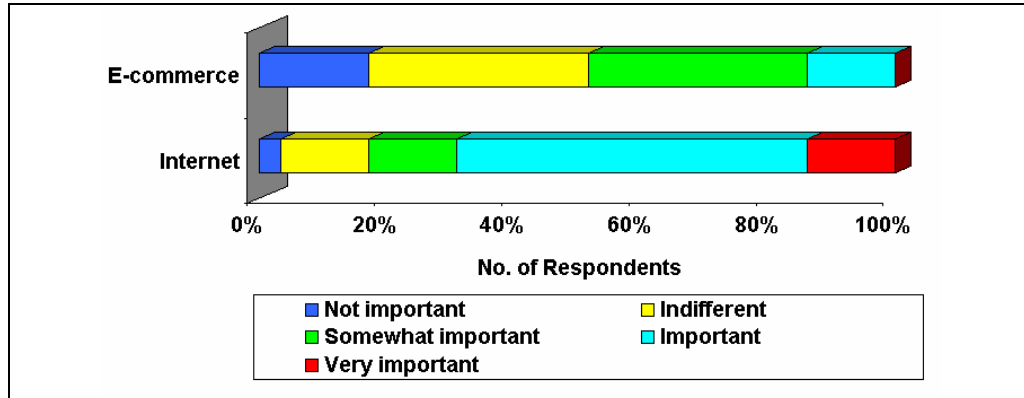


Source: CastleAsia

5.3.5 Internet and E-Commerce Importance Rating

In the same way that current users do, prospective users consider the Internet as a whole to be far more important to business than e-commerce alone. 70% regard the Internet as either very important or important for business in Indonesia. Meanwhile, 70% say that e-commerce is somewhat important, or are indifferent to its value as a business tool.

Figure 47
INTERNET AND E-COMMERCE IMPORTANCE RATING



Source: CastleAsia

5.3.6 Intention to Develop a Website

Only 31% of prospective Internet users have considered developing a website (9 companies). The majority of these are medium-sized manufacturing companies.

5.3.7 Reasons for Developing a Website

All prospective Internet users that plan to develop a company website will do so for promotion purposes.

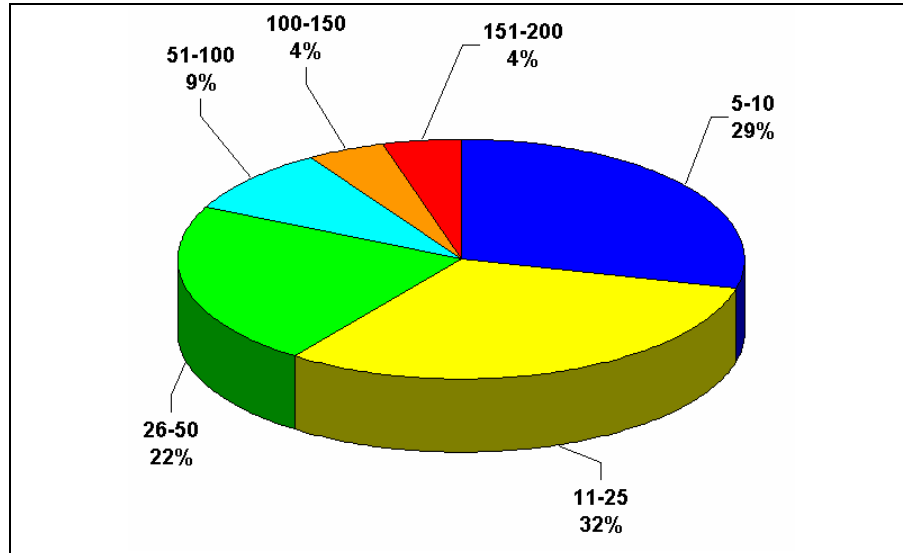
5.3.8 Reasons for Not Developing a Website

69% of prospective users claim to have no intention of developing a website (20 companies) primarily as they do not require one.

5.4 Traditional Non-Users

61% of the non-users we interviewed said they have no intention to start using the Internet in the next 12 months – these we have named traditional non-users. 60% of traditional non-users are small companies and only 8% of them employ more than 100 people.

Figure 48
EMPLOYEE SIZE OF TRADITIONAL NON-USERS



Source: CastleAsia

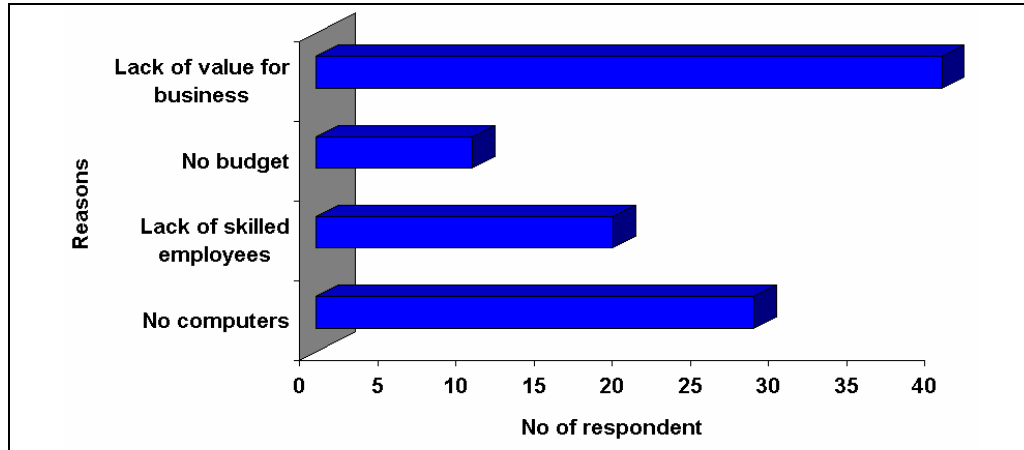
Many of the traditional non-users (38%) are small manufacturing companies that either do not export, or export less than 50% of their products. 16% are manufacturing companies that export more than 50% of their products.

64% of traditional non-users do not use a computer for business purposes and a further 16% have only one computer in the company.

5.4.1 Reasons for Not Starting to Use the Internet

90% of traditional non-users do not see any value in using the Internet and 42% cited a lack of skilled employees.

Figure 49
REASONS FOR NOT USING THE INTERNET



Source: CastleAsia

Non-user SMEs we spoke to also gave numerous other reasons why they do not intend to use the Internet. However, most of these can be linked to the primary perception that the Internet cannot provide any specific benefits. Most of these companies prefer to take a passive approach to doing business. They lack the desire or ability to market their products and rely solely on the buyers coming and purchasing on site. Still, there are some non-users that understand the benefits of marketing and using the Internet, but feel that they lack these skills. Older respondents frequently pointed out that computers and the Internet were for the younger generation and that they were not willing or interested in joining the Internet age. Another group of respondents noted that the Internet is simply too expensive; however, this has more to do with a lack of awareness of the benefits than a lack of buying power.

5.4.2 Most Non-Users Have Yet to See the Benefits of the Internet

60% of non-users believe that the Internet is not important for Indonesian businesses. 24% stated that it is either very important or important, but they have no plans of using the Internet themselves within the next year.

78% of non-users said e-commerce is not important for Indonesian businesses. Only 16% said it is somewhat important.

6.0 CASE STUDIES

6.1 Users

6.1.1 Pegeg and Company

Nyoman took over Pegeg from his father when he returned from architecture school at UC Berkeley in 1991. Pegeg was originally a trading company, but Nyoman was interested in design and jewelry so he decided to use his father's trading company as a vehicle to establish an export oriented jewelry business.

To develop his business, Nyoman relied heavily on the Internet. He studied metallurgy, design techniques and identified appropriate manufacturing equipment. He also began to track jewelry fashion trends and incorporate foreign design elements into his own work.

Within two years, Nyoman was supplying leading jewelry retail companies such as Smithsonian and Federated Department stores. He argues that the key to his success compared to many of his competitors has been his use of the Internet. While redundant designs and weak production technology often limit his competitors, Nyoman has managed to produce top quality cutting edge jewelry due to his rigorous Internet research activities.

6.1.2 Bali Weddings International

Established Bali Weddings International in 1992 targeting foreign couples wishing to marry in Bali. Initially the company relied on costly telephone and fax transmissions to arrange the details of wedding for couples before their arrivals in Bali. The volume of correspondence was high and comprised a significant percentage of its operating costs.

When Internet service was introduced in Bali in 1995, the company established an email account that quickly became the primary channel for arranging weddings. Cost savings have been enormous.

Initially several web design companies proposed to build a site for Bali Weddings Int'l. The company did not agree with practices of web designers at that time which set out to charge commissions for each sale generated. Bali Weddings noted that commissions were not payable on sales through traditional advertising and should not be payable on web advertising. In late 1996, Bali Weddings Int'l chose MMC Marketing to design its website as it offered to only charge for the design, search engine submission and maintenance of the proposed site.

Today Bali Weddings Int'l organizes over 400 weddings a year and 80% of it sales originate from its website. Bali Weddings Int'l success has triggered five other companies to set up similar businesses and promote over the Internet. The company noted, however, that web presence is not a means for success and that websites must be well-marketed on the net. Sites should be simply designed and display proper English. Companies should respond to emails in a timely fashion, preferably within the same day. Bali Weddings noted that many of its competitors had failed develop and manage their sites properly so their success tended to be limited.

6.1.3 CV. Karya Kita - Bintang Dunia

A passion fruit syrup producer based in Makassar. The company was founded in 1961 and is now the largest passion fruit syrup producer in South Sulawesi. It currently employs 150 people. It purchases approximately 300 tons of passion fruit directly from farmers or cooperatives and sells 200,000 liters of syrup per annum. Approximately 70-80% is sold within Sulawesi, but the company is expanding to selling in other provinces through supermarkets. It also supplies Garuda Airlines with passion fruit jelly cups. The company exports between 20-30% of output mainly to Australia.

Karya Kita typically uses fax and telephone communication with domestic suppliers and customers as they do not use email --- including the large supermarket chain, which purchases from them. However, for international correspondence Karya Kita uses email. It initially started using it one year ago when its main export client asked them to get on-line to ease communication.

6.2 Ineffective Use

6.2.1 Puri Bunga Hotel (Hotel in Lombok)

A small hotel in Senggigi established in 1997. Business dropped dramatically since the Lombok riot on the 17-1-2001 with occupancy and room rates dropping to less than 10%. To boost business, the hotel started scouting out low-end tourists at the airport and harbor. As this was only minimally successful, in 1999 the company also developed a website with the assistance of a web designer. The company paid a one-time fee to the designer and has not updated or improved the site since it was downloaded. The company also never checked to see whether the site had been registered on any major search engines.

Not surprisingly, the company is dissatisfied with its website and the Internet in general. When asked why, the hotel manager explained that they had internal weaknesses that resulted in poor results. The hotel has five computers but only one was connected to the Internet. This computer was located in the director's office and only the manager was allowed to check emails on rare occasions when the Director was in his office. The manager said that he usually checked emails once a month. However, the computer had been broken for one month and there did not seem to be any plan to fix it.

6.2.2 Putra Sakti Mahajaya (Medan)

Putra Sakti Mahajaya is a Medan-based motorcycle distributor supplying retail shops and business throughout Sumatra. The company has four branches that are all connected to the Internet. The company previously used email intensively to communicate with customers. Retail customers generally made daily inquiries about new models, stock availability and prices before placing orders through fax transmissions. During the last year, the company has found it increasingly difficult to log-on and stay on-line. Because of this, the company is now using email much less frequently. Whereas before they checked email every day, they are now logging on only twice a week. The company said that it is considering switching to another ISP but doubts that other companies would offer service that was any better.

6.3 Prospective Users

6.3.1 Eny-Y

Eny Y grew up in a leather-making village outside Yogyakarta. When she married in 1990, she and her husband set up a small production plant in the back of their home. Eny sold their goods in the evening along the sidewalk of Yogya's main street, Jl. Malioboro. Their products were basically the same as all of the other leather goods craftsmen in the area. The only difference, according to Eny, is that her products were of better quality.

In 1995, Warwick Pursor, the Representative for Out of Asia in Indonesia, approached Eny on Jl. Malioboro. Soon after, Pursor presented some samples of Eny's work to Ralph Lauren Incorporated. Pursor convinced Ralph Lauren that producers like Eny could produce goods of the same quality as top-quality Italian leather manufacturers. By the next year, Eny was producing up to 1000 pieces of leather baskets and frames for Ralph Lauren and other leading international manufacturers.

Now that Eny's business has developed with production workers of 100 people and three full administrative staff, Eny is beginning to think of ways to market directly to international customers in order to bypass locally based trading companies. She recently hired a university graduate to computerize all inventory records and accounting transactions. After she gets this system in order, Eny plans to develop a website.

6.4 Non-Users

6.4.1 Krupuk Thoyib

Thoyib is a leading krupuk manufacturer in Palembang and supplies over three tons of krupuk a month to markets throughout Indonesia. Thoyib unlike many of her competitors has a telephone and is able to take fax orders from many of buyers on Java and Sulawesi. Thoyib would like to see her business grow but does not have any plan to change the way she conducts business. She relies on most of her customers to approach her. When asked whether she intended to use email to conduct transactions,

she said she was too old to use something so technologically-oriented, that Internet was not something for her generation. She also said she did not think she could afford to buy a computer.

6.4.2 Maharani Pottery (Lombok)

Ismail and his wife set up a small pottery stand on the road to the Sasak pottery villages in 1995. Their intention was to establish a location outside the pottery villages in order to trap tour buses that were heading up to pottery villages. Maharani also offered to pay tour companies commissions of 40% for sales.

Maharani's strategy proved a success and what began as a small retail shed is now a 1000 square-meter pottery warehouse. Practically every tour bus stops at Maharani on its way up to the main Lombok pottery village.

When asked how he planned to grow the business even more, Ismail said he would source even more products and expand the warehouse. In respect to the Internet, Ismail said he had no intention in using the Internet because it was too expensive, that a simple village man like himself could never afford a computer, much less a website. This perception existed despite the fact that Ismail had recently build a new 850 square-meter house, owned two cars and continued to expand his warehouse.