**The Use of the Internet in Small Firms in Cyprus:**
**The Gender Perspective**

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## Abstract

This paper attempts to assess the current situation in Cyprus in regard to the use of the Internet in small firms with special emphasis on the gender perspective. In the first part, the focus will be on describing the use of the Internet in general - and e-commerce in particular - comparing the island's data wherever possible with those of other candidate countries and the EU average based on public published data. In the second part, the focus will be on analyzing women entrepreneurs – the characteristics of their businesses, women entrepreneurs' needs as well as their demographic characteristics – and if and how they use the Internet and e-commerce based on primary research (questionnaires and interviews).

Keywords: Cyprus, small firms, Internet, e-commerce, women entrepreneurs

## Introduction

Just a few years ago, there was a climate of euphoria pertaining to the prospects created by the Internet and electronic commerce.

> 'The electronic trading of physical goods and services represents an evolution of present ways of trading, capitalizing on new possibilities offered by technology to improve efficiency in terms of lower costs, effectiveness in terms of widening market potential and better meeting customers' needs as well as providing a means for enhanced product and service innovation, notably through customer-supplier interaction'. (Timmer, 1999).

The wide spread use of the Internet is considered to be the precondition that E-business can truly unfold its potential in terms of productivity and competitiveness, new applications and new jobs (EITO press release, 28 February 2002). Even today the role of the Internet and electronic commerce is highly appreciated and Europe is struggling for a leading role in the digital economy. At the same time, however, the difficulties facing e-commerce cannot be ignored. 'It is growing but much slower than expected and seems to be mainly taken up by well-established companies' (COM (2002) 62 final).

Notwithstanding the benefits entailed for both the buyer and the seller when carrying out transactions online, some inhibiting factors have prevented electronic commerce from developing even more rapidly. Some of the advantages are, for instance, the convenience of finding and comparing information prior to proceeding with the purchase of products or services as well as the convenience of buying from home at any time of day or night etc (Capron, 2000), the flattening of the company hierarchy etc. On the other hand, the issue of security seems to be a major concern. 17% of all Internet users in the European Union countries experienced certain problems in 2000, such as viruses (8%) and credit card abuse (2%) (COM (2001) 140 final). Other constraints include trust (how confident are consumers in being able to obtain redress in the event of online disputes), the costs entailed, the lack of IT expertise staff etc.

While the world seems to be 'divided' in two major categories: the more advanced countries that make the most out of technology and the less advanced countries that are slower in exploiting the opportunities provided by technology, Cyprus is struggling to belong to the first group, a perfect match for its ranking (22) in the Human Development Index[1]. On the whole, Cyprus has achieved noteworthy progress in the fields of digital economy and e-commerce over the last few years. However, women seem to be lagging behind. What is more, statistical and other evidence reveals that there are still untapped opportunities.

**The Use of the Internet in Cyprus**

Cyprus alongside Malta and Slovenia are leading the field of EU applicant countries in terms of telecommunications and information technology (Deiss, 2002). Almost 100% of the population in these three countries has access to a landline telephone, compared to an EU average of 86% and a candidate country average of 77% (Lee, 2002).

While the EU-15 average proportion of personal computers per 100 inhabitants was 30.4, for the candidate countries it was only 7.0, basically due to the low percentages registered in Turkey (4.1), Poland (8.5), and Romania (3.6), which collectively account for 74% of total population of the applicant countries (Deiss, 2002). Based on data from the same research, Slovenia recorded the highest percentage, a steady 27.5 for the years 2000 and 2001, followed by Cyprus with 22.4 in the year 2000, closing the gap to 25 personal computers per 100 inhabitants in 2001. The slowdown in Internet take up might be due to the fact that Internet connections are linked to low PC availability/ access, which sets an upper ceiling to penetration.

[1]The Human Development Index measures a country's achievements in terms of life expectancy, educational attainment and adjusted income.
(http://www.google.com/search?q=cyprus+human+development+index+in+2000)

The numbers of Internet subscriptions in Cyprus have been constantly increasing. While there were only 10.2 Internet subscriptions per 1000 inhabitants in 1996, the number rose to 99.5 in 2001.

Table1: Number of Internet Subscriptions per 1000 Inhabitants

Internet penetration at home is showing encouraging levels of growth. According to the Labor Force Survey, (2001), 33% of households possess a personal computer and 20% have access to the Internet. This was a 6% increase from the previous year (14%) (Labor Force Survey, 2000). The number of Internet users is estimated between 120000 (Klerides, 2002) and 150000 (Deiss, 2002) out of a total population of three quarters of a million. This is interpreted as a growth of 25% or as 22.1 users per 100 inhabitants in comparison with 7.8 in the candidate countries and 31.4 in the EU (Deiss, 2002).

An ad hoc survey covering only urban areas shows that 51% possess a personal computer and 30% have access to the Internet from their homes and an additional 11% have access from elsewhere (for example at wok, at Internet cafes etc.) (e-minder IST – 2000 – 28403). In the European Union, the percentage of households connected to the Internet increased from 36.1% (Eurobarometer, June 2001) to 37.7% in December 2001 (Eurobarometer, December 2001).

Within three years, from January 1999 – January 2002, the number of connections and users has almost quadruplet. The number of connections rose from 20.000 in January 1999 to 73.000 in January 2002, while the number of users rose from 40.000 to 160.000.

Table 2: Number of Internet Connections and Users for the Years 1999 - 2002

**The Use of the Internet in Small Firms in Cyprus**

Personal Computers and Internet penetration in small and medium-sized businesses in Cyprus is quite high and comparable, to some extent, to that of the European Union average.

With regard to enterprises employing more than 10 people almost all (98%) make use of PCs and have at least one computer. This is broken down to 97% for micro companies, 99% for small companies and 100% for medium enterprises (e-minder IST –2000-28403). At the same time one in ten business units have one computer for each employee and one in four have an IT department (Klerides, 2002). 92% of SMEs have access to the Internet and 7% have some kind of local area network (e-minder IST –2000- 28403). Internet penetration in business in the EU is almost 90% of enterprises with more than 10 employees, while more than 60% have a website (COM (2002) 62 final).

Furthermore, imports of computers and other related equipment and software programs expanded by 14.5% on an annual basis in the period 1995-2000. Considering the steep fall of prices, this translates to an annual increase of above 15% of investment in high technology equipment, which is judged as satisfactory and reflects the efforts undertaken by enterprises to adapt to the challenges posed by the new digital economy (Klerides, 2002).

What these numbers seem to ignore, however, is that 94.8% of all enterprises in Cyprus are microenterprises that is they employ less that 10 employees (HRDA, 1998); hence, they don't fall in the category described above. For the sake of comparison, we should bare in mind that the equivalent average percentage in the EU countries is similar, 92.5% (Labour Force Survey, 1998). According to the official Census of Establishments carried out by the Department of Statistics and Research in the year 2000, only 24% of all business units possess a computer and only 14% have access to the Internet.

What is more, the number of Internet hosts, however, decreased by -76.7% from the year 2000/2001 to the year 2001/2002. The percentage of Internet hosts fell to 0.3 per 100 inhabitants, while the average of the candidate countries was 0.7 and that of the member states 3.5 (Deiss, 2002).

**The Use of Electronic Commerce in Cyprus**

For e-commerce to take place two or more parties need to be involved in the economical transaction, the seller (e.g. the company) and the buyer (e.g. the citizen). In the case of citizens, we need to take into account the penetration to main telephone lines, mobile telephony, and the cost of Internet calls. The quality of lines in Cyprus is high with a high degree of digitization (100%) (e-minder IST- 2000- 28403). As regards mobile phone subscriptions in Cyprus have increased from 6.9 per 100 inhabitants in 1995 to 46.2 in 2001, which is higher than the average in the applicant countries (31.2) but lower than the EU15 average (72.4) (Deiss, 2000).

The readiness of a company to implement e-commerce is measured by having at least one computer connected to the Internet and preferably back-office software. According to an ad hoc survey, 51% of SMEs are on average connected to the Internet and almost half of them have a website. More analytically, Internet penetration for micro companies is 39%, 49% for small companies and 70% for medium-sized companies. It further claims that it is hard to measure e-commerce presence in Cyprus accurately, as it is too low (e-minder IST –2000- 28403).

The same survey indicates that the major method of connection to the Internet Cyprus businesses use is the analog (55%), followed by ISDN (30%), and ADLS (8%), however, these are only available near the cities and not in rural areas. The only available payment infrastructure for e-shops is that of using manual back-office Point of Sales systems to complete the transactions that are received online. Businesses enabling online ordering are estimated around 18%.

Regarding the use of e-commerce by citizens, it is illustrative that a large percentage of 67% of Internet users have visited e-commerce sites. However, it appears that only 12% have proceeded with the actual purchase of goods or services from such sites (Klerides, 2002). 10% of these have made electronic purchases from international web sites and only 2% from Cypriot sites. We should note here, however, that the number of Cypriot electronic commerce sites is rather small. In the year 2000 in the EU 31% of Internet users purchased online. The percentage increased to 36% in the following year (COM (2002) 62 final). However, only about 5% shop online on a regular basis (COM (2001) 140 final).

What is perhaps interesting to mention here is that of the 12% of e-customers, 10% proceeded with the purchase because the product was available online, 5% because they thought it was cheaper, 4% because of home delivery, 2% because of the service (that is 24 hours a day, 7 days a week), 2% because of the convenience to shop from home and 1% for variety (Klerides, 2002).

The main constraints of electronic commerce are lack of e-commerce legislation (69%), lack of consumer confidence (67%), unsecured transactions (62%), costs involved (33%) and e-commerce being complicated (33%) (Cyprus Socio-Economic Survey).

One important vehicle for the promotion of digital economy and e-commerce in Cyprus has been the exploitation of the participation in EU community programs. A number of activities were financed through the participation of Cyprus in the 5$^{th}$ Framework Program for Research and Development and EUMEDES.

**The Government's Commitment**

These data reveal that more steps need to be taken in order to boost consumer confidence in electronic commerce. Based on the eEurope+ Action Plan to turn Europe into the most competitive and dynamic knowledge-based economy in the next decade, the

government's strategy, according to the Minister of Finance Mr. Klerides, is currently aiming at:

- upgrading the telecommunications infrastructure

- accelerating the efforts for the liberalization of the telecommunications sector (all necessary legislation regarding liberalization has been passed by parliament and the liberalization of telecommunications as well as postal services and air transport will go ahead as planned on before January 1, 2003) (Charalambous, 2002)

- ensuring high-speed access to the Internet at affordable prices (the costs in Cyprus and Malta are lower than both in the EU and candidate countries (Lee, 2002).

- creating the necessary legal framework (so far, incorporated to the local law regulation is the regulation for long distance contracts (EU Directive 97/7/EE) and the regulation for personal data protection (EU Directive 95/46/EC) in the law 138 of 2001, but not the regulation on digital signature, domain registration, and e-commerce (e-minder IST –2000- 28403).

- expanding IT curricula at all educational levels (PC penetration in primary and secondary schools is 15 pupils per 1 computer),

- turning e-commerce into a life-long learning approach,

- building trust and confidence in electronic commerce, protecting the security of networks,

- encouraging SMEs to go digital,

- attracting world-renowned information technology companies to set up businesses in Cyprus,

- as well as encouraging research in the field of information technology.

**The Gender Perspective**

An ad hoc survey (Nearchou-Ellinas, 2000) using questionnaires sent by mail to member of the Organization of Employers and Industrialists intended to identify, among other things, similarities and differences in the purchasing and using habits of computer hardware and software between women and men business owners. 300 questionnaires were sent out, and 52 were received. In other words, the response rate was 16.7%. The results of this survey indicated that men and women business owners exhibit a similar pattern in the influencing factors behind their decision to purchase computer hardware and software. Both men and women rely heavily on 'experts'' opinions (men 63% and women 88%) and offers (men 44% and women 25%). On the other hand, they rely less on advice from friends (men 11% and women 13%) or on their own knowledge (men 22% and women 25%).

In regard to using computers, men tend to use them almost as twice as much as women in their business (men 74% and women 38%). They also use them in more ways. In addition to women's main use of computers for word processing and accounting, men seem to use them also for design and modeling, as well as for calculations and preparation of financial reports. According to the Cyprus Socioeconomic survey, the software most frequently encountered in companies in Cyprus is accounting/auditing 95%, office tools (90%), Internet (90%), Communication (85%), Human Resources Systems (79%), Logistics/ Order processing 75%, Customer Management systems (64%) etc.

Moreover, male entrepreneurs appear to be making more frequent use of the Internet. While two in three (67%) men business owners use the Internet for information purposes,

the equivalent percentage for their female counterparts is only 38%. Women business owners seem to use the Internet more than men to communicate, in particular for e-mail messages. 63% of women business owners in the sample use the Internet for communication purposes compared to 60% of men entrepreneurs. These results are in accordance with another survey that wants the two main uses of the Internet to be for communication purposes such as e-mail (96%) and information gathering (88%) (e-minder IST –2000- 28403). The Internet is used even less frequently with reference to purchases (men: 7% and women: 2%) and sales (men: 4% and women: 2%). Inarguably, the use of the Internet for business transactions is considerably low. The fact that there were more purchases than sales online recorded is probably due to the higher costs of online selling. Buying only requires a connection and a credit card, whereas selling requires a website to be set-up and maintained with adequate security and possibly logistics organization (COM (2002) 62 final).

Why are the percentages for women lower than those for men? In order to be able to answer this question we need to understand who Cypriot women entrepreneurs are, what companies they own and what sector they are active in, as well as what impediments they might be facing. The data we will be looking at now are from a survey on Female Entrepreneurial Activity in Cyprus (Nearchou-Ellinas, 2002) This was a national survey, which concerned the total population of 6968 women business owners according to the Department of Statistical Services' Census of Establishments, of 1995. 373 women were selected with systematic sampling according to the district and area and interviewed.

Female business ownership is very low (only 12%) compared to other countries as the United States (37%) (St. Onge and Stevenson, 2001) and the European Union (27%) (Eurostat Yearbook '97, 1998). Two in three women entrepreneurs in Cyprus start up their business already in their twenties mainly influenced by the desire for control and decision-making. Four in ten women set up a company without having had any previous employment, which would allow them to gather experience and (a part of) the starting capital. Hence, we observe that women are driven towards developing entrepreneurial

activity; their inexperience and lack of relevant studies, however, is likely to turn their efforts to a 'hit or miss'.

Who are these women who make the daring decision to compete in the enterprising world? 46% of women entrepreneurs are in the age range of 31-44, which is in accordance with other findings in the literature (Bush and Hisrich, 1987). 82% are married, compared to only 55% in other surveys (Brush and Hisrich, 1983), with a fertility rate (1.9) comparable to the national average (1.83). 50% possess only a high school leaving certificate and 34% - half of the findings in other surveys (68%) - (Bush and Hisrich, 1983) have postsecondary education qualifications. The tendency among younger women is to further their education.

Women with higher education created more than half (53%) of the enterprises set up within the past two years. One in two (53%) women business owners who have tertiary education qualifications had their studies in medical or paramedical fields (as for example pharmacists, opticians etc.). Only 6% have a degree in Business Administration or related fields. None of the women in our sample had her studies in computer science or related studies. This is not surprising as computing seems to be mainly a 'male' field of studies. Out of 1325 students registered in computer science courses in tertiary institutions in Cyprus and abroad, 937 (71%) were male and only 388 (29%) were female students (Statistics of Education 1999/2000). Alongside women with secondary education, they employ most personnel and have the lowest self-employment record. Women with a tertiary education background and an educational performance of better than average (83%) understand the importance of constantly updating their knowledge and skills the most. Consequently, they participate themselves as well as provide their employees time for participation in seminars and workshops the most. Moreover, they make the largest use of the options provided by the Internet.

Almost all women-owned businesses (99%) are microenterprises; hence, women are, in fact, 'microentrepreneurs'. 69% of women-owned companies are 'size class zero', that is one-person business units. This percentage is too high compared to other countries, as the

United Kingdom, for example, where self-employment is limited to only 20% (Carter and Anderson, 2001). This means at the same time that one in three women business owners generated employment. They invest on average 50 to 60 hours per week in their company and exhibit a very introvert market orientation. 96% of women-owned businesses do business only in their local community or town. E-commerce could be used as a means to expand their business activities beyond the geographical boundaries of the company premises.

Furthermore, there is strong segmentation in traditionally 'female' activity sectors: the clothing and shoe industry, the medical and paramedical professions, the kiosks and mini markets, the trade of gifts, hairdressers and florists. E-commerce might not necessarily be applicable to all these activities. The design of a web site, however, could be used as a means to increase awareness around the company name.

Obviously, due to the burden of their multiple roles, women business owners tend to think 'small' with a limited vision for growth. This mentality leaves them more often than not indifferent towards upgrading their skills and knowledge. However, women entrepreneurs claim they need further upgrading of their skills/ knowledge in Marketing (37%), Sales (31%), Computers (29%), and Finance (23%). However, 64% never attend any workshops or seminars. 88% of the women in our sample do not use the Internet at all in contrast to the UK, for example, where 37% of women business owners have their own business web site (Carter and Anderson, 2001).

More specifically, 76% of the respondents in this survey never use the Internet for information purposes. 80% never use it for communication purposes. 97% never use it for sales or purchases, while 94% never use it for any other purposes.

Figure 1: Use of the Internet by Women Business Owners

Women business owners in the district of Paphos exhibit the least interest in the use of the Net as 94% never use it at all. In the capital Nicosia, the percentage of never using the

Internet is the lowest (82%). As anticipated, women with primary education qualification never use the Net. The percentage drops to 88% for women with secondary education and decreases to 50% for women with higher education. This is also reflected in the age of the women in our sample. The percentage of women aged 45+, who never use it is as high as 98% whereas it drops to 74% for those aged 18-30. Obviously, the younger the women in our sample, the less computer phobic they are.

It was women with secondary and tertiary education qualifications aged 18-59 in Limassol and Nicosia that initiated the few sales/ purchases on the Net. We should, of course, consider that e-commerce, on the whole, is not yet quite widespread in Cyprus.
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Figure 2: Use of the Internet by Women Business Owners (age variable)

**Conclusions**

In brief, despite the efforts and the progress recorded both in the private and the public sector, there are still considerable untapped opportunities for e-commerce and e-business in Cyprus.

Women business owners, in particular, seem to need even more support than their male counterparts for a number of reasons. Apparently, the entrepreneurial arena seems quite intimidating to Cypriot women, as they own only 12% of the companies in Cyprus. Moreover, they are in their majority merely self-employed (69%) and content with a 'decent' income and not really looking into options to expand their business, which is densely concentrated in traditionally 'female' areas.

Not only do they not have any studies in computer science or related fields, but they also seem to be in need to upgrade their (limited) computer knowledge. A surprisingly high percentage (88%) of women business owners never use the Internet, let alone being involved in electronic commerce. The trend for younger and better-educated women, however, appears to gradually embrace technology.

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Table1: Number of Internet Subscriptions per 1000 Inhabitants

| No of Internet subscriptions per 1000 inhabitants | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|
| | 0.2 | 24.6 | 44.4 | 55.4 | 89.1 | 99.5 |

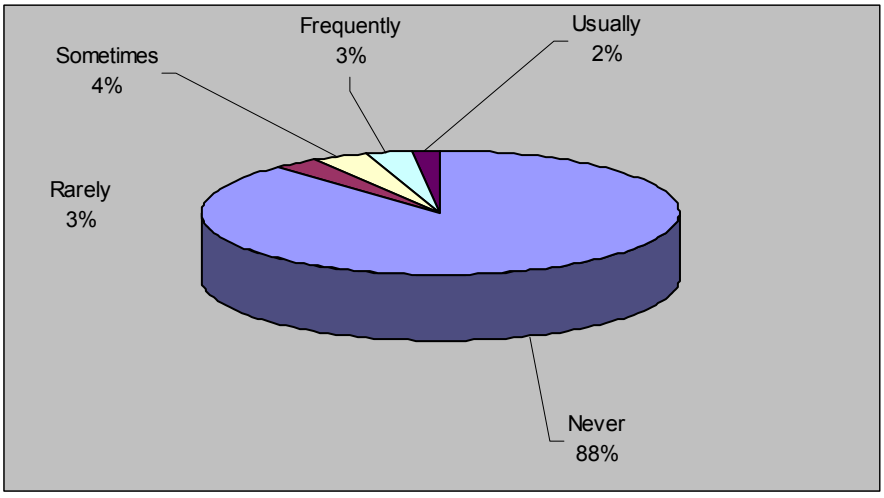
Source: Statistical Services

Table 2: Number of Internet Connections and Users for the Years 1999 - 2002

| | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|
| Connections | 20000 | 34000 | 57000 | 73000 |
| Users | 40000 | 55000 | 120000 | 160000 |

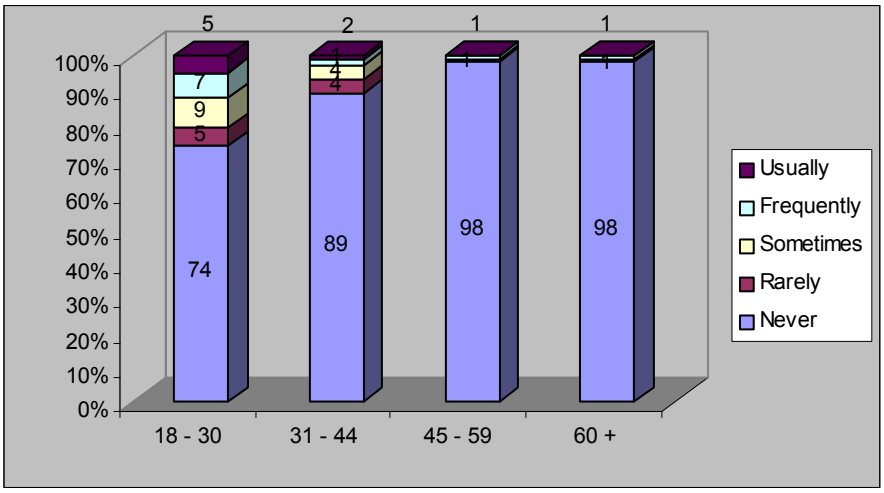
Source: Klerides, 2002

Figure 1: Use of the Internet by Women Business Owners




Source: Nearchou-Ellinas, 2002

Figure 2: Use of the Internet by Women Business Owners (age variable)




Source: Nearchou-Ellinas, 2002