Prerequisites and Impediments to a More Intensive Use of the Internet by Exporting SMEs: The Greek Reality

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Abstract

It has been suggested that the Internet has the potential of eroding some existing advantages of larger and better established firms and creating a level playing field by allowing SMEs to compete on a more equal basis in world markets. In order to encompass the Internet technology, exporting SMEs have to face several impediments and prerequisites. This paper reports the results of a survey of the sporadic empirical investigations that have been conducted throughout the world both in developed and developing countries in order to identify the best practices on the subject of Internet use for exporting purposes by SMEs. The literature survey leads to the identification of the prerequisites of Internet use by exporting firms and the main impediments to a more intensive use of the Internet. Finally, based on a qualitative research study, we present the current situation for Greek SMEs regarding Internet use in exporting.

Key words: *Exports, Internet, SMEs, E-Commerce*

1. Introduction

During the past 15 years, and especially after 1991 when the World Wide Web was conceived by Tim Berners-Lee at the European Centre for Nuclear Research, a lot of academic research studies have focused on the subject of Internet and e-commerce. While there is a large number of studies concerning the role of Internet in international marketing and business activities (Quelch and Klein, 1996; Hamill, 1997; Hamill and Gregory, 1997; Samiee, 1998a; Avlonitis and Karayanni, 2000; Dou et al., 2002; Lichtenthal and Eliaz, 2003; Moen et al., 2003; Biswas and Krishnan, 2004), relatively little space has been devoted to the potential use of Internet in exporting.

Firms became interested in the Internet and the WWW almost as soon as it appeared. Apart from the user-friendly and consumer oriented homepages, the present popularity of the World Wide Web as a commercial medium is due to its ability to facilitate global sharing of information and resources, as well as its potential to provide companies with an efficient channel for advertising, marketing and even for direct distribution of certain goods and information services. On the other hand, the Web frees customers from their traditionally passive role as receivers of marketing communications, gives them much greater control over the information search and acquisition process, and allows them to become active participants in the marketing process (Ng et al., 1998).

Internet has made possible international transmission of services on a scale that was not possible via fax and telephone. Today, consumers and firms are using the Net to buy many back-office services such as electronic publishing, hotel reservations, mailing list management, on-line technical support and website design and management. Beside back-office services, several products such as books, CDs, movies and computer programs, can be transmitted electronically via Internet throughout the world. Through the Internet, businesses are able to find suppliers and buyers, conduct valuable market research, and post information on their products and services. At an even more sophisticated level, exporters can use the Internet to do everything from submitting documentation to booking a container on a ship (Larson, 1996).

Exporting has traditionally been an economic activity much sought after by corporate managers throughout the world for a number of reasons: it utilizes idle operating capacity and improves production efficiency, it raises technological, quality and service standards in the organization, it strengthens the company's arsenal of competitive weapons, it provides a better profit base to reward shareholders and employees, it generates more funds for reinvestment and growth, and it diversifies business risks by operating in multiple markets (Ramaseshan and Soutar, 1996; Leonidou, 2000). It has become clear that exporting is vital to a company's and/or to a country's economic survival (Kedia and Chokar, 1986), contributing to their future wealth and increase in domestic employment and production. Analyzing and understanding the process, which SMEs use in reaching a decision to implement an export strategy, can identify those factors which encourage or hinder the export activity. The analysis and understanding of these factors will enable more SMEs to think about exporting as an alternative of their strategy to survive, grow and flourish in today's highly competitive business environment (Tajzadeh-Namin et al., 1996).

However, private and public sector decision makers have recognized that there is a variety of barriers that can inhibit exports and thus need to be understood (Ramaseshan and Soutar, 1996; Bauerschmidt et al., 1985). These barriers, encountered by firms engaged (or intending to engage) in exporting, are of special interest since exporting provides the most popular mode of entering foreign markets (Leonidou, 1995a). In fact, the presence of these obstacles can largely explain why current exporters are not exploiting their full potential in the international marketplace and why non-exporters are not engaged in exporting at all (Leonidou, 1995a). During the last four decades an extensive amount of research has been conducted worldwide with the object of tracing the most important barriers to exporting (Groke & Kreidle, 1967; Alexandriedes, 1971; Pavord & Bogart, 1975; Bilkey & Tesar, 1977; Bilkey, 1978; Tesar & Tarleton, 1982; Kaynak & Kothari, 1983; Bauerschmidt et al., 1985; Yaprak, 1985; Karafakioglu, 1986; Kedia & Chokar, 1986; Kaynak et al., 1987; Cheong & Chong, 1988; Keng & Jiuan, 1989; Sharkey et al., 1989; Dichtl et al., 1990; Tseng & Yu, 1991; Leonidou, 1995a; Leonidou, 1995b; Ramaseshan & Soutar, 1996; Bennett, 1997; Sorensen & Buatsi, 2002).

The results of these research studies led to the conclusion that while there is no unanimity about either the number of underlying factors or the exact content of each of them, it is possible to identify a limited number of impediments capable of summarizing the complete set of export barriers (Hajidimitriou and Azaria, 2004). The proper, and under the right circumstances, use of the Internet has the potential of resolving some of these serious long-standing impediments associated with exporting. The major exporting obstacles that the use of Internet can eliminate or minimize are the following: information acquisition (concerning suppliers, competitors, foreign market characteristics, and foreign customers and their buying behavior), access to foreign markets, export promotion, communication with foreign suppliers or customers, the costs associated with the above activities, inadequate foreign representation and psychic distance (Hajidimitriou and Azaria, 2004).

In this paper, first we are going to present a short overview of the current international situation of e-commerce and Internet performance as well as the advantages of Internet use for exporting purposes. In the third and fourth sections, we are going to describe our investigation approach and the methodological aspects of our investigation, respectively. Next, we are going to present the results of a survey of the sporadic empirical investigations that have been conducted throughout the world both in developed and developing countries in order to define: 1) the prerequisites of Internet

use by exporting firms, and 2) the main impediments to a more intensive use of the Internet. In the following section, we describe the current situation in Greece regarding Internet use by Greek SMEs, the prerequisites that they have to fulfill, and the impediments that they are facing. Finally, we present the conclusions of our research together with some thoughts about much needed further research in the area investigated by this paper.

2. An Overview of the Current International E-Commerce and Internet Performance and of the Advantages of Internet Use

E-commerce was, and still is by many measures, hailed as a revolutionary force in business, being able to both improve the way business is conducted today, and perhaps more importantly to reshape complete industries (Lichtenthal and Eliaz, 2003). The diffusion of global e-commerce has spurred the growth of exports through the Internet. Exporting companies are increasingly realizing the potential of the Internet to either enhance existing export activities or find new foreign customers (Dou et al., 2002). The twin phenomena of e-commerce and globalization pose new challenges and provide new competitive opportunities for large firms and SMEs alike. Small and medium-sized enterprises, in particular, are only beginning to embrace these new opportunities (Tiessen et al., 2001). Although they represent more than 95% of business population globally (OECD, 2004, p. 4), SMEs do not contribute proportionately to export trade (Tiessen et al., 2001).

Internet-based market structures and, more broadly, the extension of global telecommunication networks appear to offer producer firms in developing countries new exchange mechanisms that will enable them to compete on a more equal basis in world markets (Paré, 2003). In fact, it has been suggested that the Internet has the potential of eroding some existing advantages of better established firms and creating a level playing field by allowing almost any interested exporter to obtain presence on the Internet and to list its address on various directories and Internet search engines (Hamill and Gregory, 1997; Hoffman and Novak, 1997).

It would be erroneous, however, to assume that the Internet can fully neutralize the existing advantages of the larger and better established exporters. These firms tend to have more recognizable brand names, a better image, and relationships that have been developed over many decades. In addition, they continue to support and develop their non-Internet marketing activities at full force. Even their Internet-based activities are more elaborate and extensive than those of smaller firms. For example, larger firms maintain many sophisticated Web sites in several languages (Samiee, 1998b). This means that Internet is not a substitute for an export strategy. It is true, though, that under the right circumstances Internet can play a crucial role in promoting exports.

It is often assumed that using business-to-business (B2B) e-commerce will provide opportunities for producer firms in developing countries to enhance their international profile and to develop direct one-to-one trading relationships with international buyers and sellers (Benjamin and Wigand, 1995; Garcia, 1995; Paré, 2003). Citing the rapid adoption of the Internet and the World Wide Web, some analysts have even pointed toward the potential for “leap-frogging” generations of information and communication technologies (Panagariya, 2000).

The Internet is affecting most international SMEs, driving many to develop websites, even though they appear very uncertain about the future state of their industries. The firms see the web as important and they are taking steps to be in the game, even though they do not know what the rules or outcomes will be (Tiessen et al., 2001). Sometimes, organizations create Web pages simply because their competitors have Web pages.

Thus, they are utilizing a me-too approach or, at best, they are imitating the leader's strategy. As a result, these organizations are failing to have solid and clear business objectives when using the Internet (Czuchry et al. 2002). Furthermore, a company that neglects its website may be committing commercial suicide. A website is increasingly becoming the gateway to a company's image, products and services, even if the firm does not sell online. In either case, a useless website suggests a useless company, and a rival is only a mouse-click away. But even the coolest website will be lost in cyberspace if the right people cannot find it. Therefore, companies have to ensure that their site appears high up in internet search results (http://www.economist.com/ surveys/showsurvey.cfm?issue=20040515).

Today, commercial activity on the Web has increased to the point where a large number of new companies are adding Web pages on a daily basis. A significant part of international sales is being conducted via Internet. In 2001, for example, 13% of EU enterprises using the Internet declared having received electronic orders (note that manually typed e-mail are not considered as electronic orders) (Eurostat, 2004, p. 14). Larger enterprises recorded a somewhat higher proportion of e-sales (17%) than SMEs (13%), although only to a limited extent. More significant size effects could be observed at national level, notably in Spain, Portugal, Finland and Sweden, where large Internet connected enterprises were two or three times more likely to have sold on the Internet than their smaller counterparts (Eurostat, 2004, p. 30).

In terms of absolute growth, B2B e-commerce is growing faster than business-to-consumer (B2C) commerce. For the same time period, all member states of EU presented larger proportions of Internet B2B sales, ranging from as low as 51% in Germany to as high as 86% in Italy and in Finland (Eurostat, 2004, p. 15). Similarly, in a survey by The Economist (2004) it was found that high profits were not in consumer shopping but in B2B commerce, since most business transactions were already done at a distance, whether by fax, telephone, post, or private electronic links (http://www.economist.com/ surveys/showsurvey.cfm? issue=20040515).

Another interesting element regarding Internet's enlargement is the extensive increase of Internet hosts globally. Only in European Union during 1996, there were 2,993 Internet hosts while in 2003 the number of Internet hosts were 15,930, excluding hosts that belonged to Luxemburg (Eurostat, 2004, p. 103). This means that during these ten years Internet hosts in EU faced an increase of 532.24%, while the annual growth for the years 2001 and 2002 was 21.12% and 20.73% respectively. Used properly, the Internet can be a powerful source of competitive advantage in global markets and an increasing number of companies are developing Internet-based strategies to support overall business development (Hamill, 1997).

Despite the fact that Internet commerce is promoted by academics and practitioners as a major business revolution that will change the future and the nature of individual businesses, markets, and indeed of entire economies in a profound manner, many Internet companies have gone out of business, prompting everyone to treat the Internet boom with caution (Poon and Swatman, 1999). Overall, the mood in the e-business circle has swung from extreme exuberance to one of extreme caution (Biswas and Krishnan, 2004). It is therefore, imperative to develop a better understanding of the impact of Internet on business performance by examining several aspects of Internet use, such as the advantages that firms could derive from its use, the prerequisites for exporting SMEs, and the impediments to a more intensive exploitation of the Net.

The benefits to businesses of using and selling over the Internet are largely unexplored, while only a limited number of research studies refer to the advantages of Internet use as an international marketing tool (Cronin, 1994; Ellsworth and Ellsworth,

1995; Sterne, 1995; Ellsworth and Ellsworth, 1996; Quelch and Klein, 1996; Bennett, 1997; Hamill and Gregory, 1997; Hoffman and Novak, 1997; Ng et al., 1998; Hajidimitriou and Azaria, 2004). Some of the advantages are valid under specific preconditions. For example, the fact that Internet is accessible practically from all corners of the globe is valid only under the condition that the user has the necessary equipment for accessing the Internet. Another example is the fact that the Internet allows direct and immediate foreign market entry to the smallest firms only under the presupposition that small businesses have the necessary financial background to acquire the required technological infrastructure and the appropriate know-how to apply it (Hajidimitriou and Azaria, 2004).

Another important issue is that a small part of the advantages are closely related upon the size of the firm, meaning that larger firms are more likely to exploit the full advantages that derive from Internet use due to their enhanced financial and organizational power than smaller or medium-sized enterprises are (Hajidimitriou and Azaria, 2004). Meanwhile, consumers can benefit from global choice, personalized products and services, price reductions, and the ability to increase choice through exposure to wider advertising (Ng et al., 1998).

In order to develop a better understanding of the prerequisites and the impediments to a more intensive exploitation of the Net by exporting SMEs, we conducted an investigation of six relevant empirical research studies. In the next three sections of this paper, we present our investigation approach, the methodological aspects of the investigation and the empirical findings.

3. Investigation Approach

Our investigation covered the empirical research on the subject of Internet's role in exporting activities. The study covers both SMEs and larger firms from developed and developing countries. The latter enabled us to define similarities or differences on a larger scale providing results for further research. Among the researched firms, 96.3% were exporters, while 61.2% were using the Internet. Some of the firms had their own Web site and some of them were using the Internet without having a personal Web page.

The principal sources for the investigation were articles published in journals. A total of six empirical research studies, contained in five articles (Bennett, 1997; Poon and Swatman, 1997; Bennett, 1998; Moodley, 2002; Sorensen and Buatsi, 2002) were identified as appropriate for the purposes of this investigation.

Only studies for which research was based on the collection, analysis and presentation of primary data were selected for inclusion in the review process. In that way, we were able to reassure the collection of adequate information on research methodologies and empirical findings. Studies without empirical investigation (e.g. Samiee, 1998b) were not considered due to the comparative nature of the analysis pursued in our paper.

4. Methodological Aspects

In reviewing the research methodologies of the empirical studies conducted on the subject of Internet use in exporting, a number of aspects were examined. Some of these aspects are the following: focus country, industrial coverage, firm size, technological infrastructure, exporting experience, IT literacy within the firm, location of the export function, existence of web site, specific Internet use and its benefits.

In general, the studies followed the pattern of the overall stream of international marketing research and adopted a single-country orientation, with only one of them

(Bennett, 1998) researching internet use in exporting on a two-country cross-cultural basis. Half of them, focused on issues encountered by developing countries (Sorensen and Buatsi, 2002; Moodley, 2002) while the rest focused on issues encountered by developed ones (Bennett, 1997; Poon and Swatman, 1997; Bennett, 1998). The developed countries researched are United Kingdom, Germany and Australia, while the developing countries are Ghana and South Africa.

The research studies covered a wide range of business sectors and entrepreneurial activities such as manufacturing, clothing and footwear, chemicals and pharmaceuticals, food products, legal services, media and business services, consulting companies, bookshops, printing equipment suppliers, real estate firms, nonprofit organizations, and philately auctioneers. The majority of the studies seem to ignore industry-specific factors such as production capacity and cost structures. Only Poon and Swatman (1997) refer to industry and product specificity influence on how involved exporting firms were in using the Internet to support their business operations. This problem becomes more profound for studies using small sample sizes (Sorensen and Buatsi, 2002), because the total sample is not spread over many business sectors.

All the studies investigated deal with small and medium-sized enterprises, while three of them (Bennett, 1997, 1998; Sorensen and Buatsi, 2002) include larger firms to their samples. This focus is justifiable because smaller firms have to deal with much more difficulties in exploiting overseas opportunities due to a number of limiting factors, such as limited access to foreign markets, lack of skilled personnel, subdued technological infrastructure and limited exporting experience. On the other hand, larger firms a) posses a stronger financial basis, so it is easier for them to include the new technological innovations and infrastructure required by the use of Internet in exporting, b) acquire bigger production capacity in order to exploit new customers from all over the world, and c) operated for a long time in foreign markets resulting in having larger experience in overcoming barriers to exporting.

The sample sizes ranged from 19 to 210 enterprises, with two studies questioning more than 100 firms. Personal contact methods were used for smaller samples, with mail questionnaires used in large-scale studies. Overall, 1,517 firms were contacted, while 621 were researched by the studies examined, of which approximately 241 were not using Internet. The majority of the studies gave indication of the response rate. They were ranging from as low as 27% to as high as 94.6%, with an average response rate of 46.2 %.

Five studies chose the mail survey as their basic method of data collection, mainly for reasons associated with convenience, economy and time. Personal interviews were employed in half of the studies and were used more extensively for small sample sizes. Only Poon and Swatman (1997) used telephone interviews, replacing personal interviews and site visits when they were not feasible, due to distance or time factors.

The list of the elements included in the questionnaires is approximately the same in all the studies. The basic investigated elements are the following: the type, size and ownership of the firm, turnover of the firm, the export share, the exporting destinations, the exporting experience in terms of years, the location of the export function, how long on average firms had been established, whether firms employed foreign agents or other local representatives, IT equipment and access to the Internet, years on the Net, key reasons for using the Internet, use of Internet service providers, access costs, who designed and constructed the Web pages, Web site effectiveness, level of satisfaction in using the Internet, future expansion of the firms Web activities, the exporting problems they faced, contributions of the Internet in foreign operations and exporting activities, reasons for not having a Web site and perception of export barriers.

Compared to typical research in international marketing, the statistical analysis carried out on the subject of Internet use for exporting purposes was relatively simple, leading to limited exploitation of useful information. Percentage and, in some cases, absolute frequencies were the predominant analytical techniques employed by all the studies. Less extensively, mean scores were also used for analysis, particularly in relation to ordinal data (Bennett, 1997; Bennett, 1998; Sorensen and Buatsi, 2002). For scaling purposes, the studies used ordinal scales (usually Likert-type scales ranging from three (Sorensen and Buatsi, 2002) to five points (Bennett, 1997, 1998)). More advanced statistical techniques, such as factor analysis, principal components analysis and varimax factor rotation, were employed only by Bennett (1997, 1998).

5. Empirical Findings

The investigation of the empirical studies covered in the present paper, yielded the following two categories of important findings that play a crucial role regarding Internet use in exporting: a) the prerequisites of Internet use by exporting firms, and b) the impediments to a more intensive use of the Internet.

5.1 Prerequisites of Internet Use by Exporting Firms

After detailed assessment and analysis of the reviewed research studies, two dimensions were identified as crucial on the subject of prerequisites of Internet use for exporting purposes. The first dimension is the level of economic and technological development of the country in which the firm operates, in other words whether the home country is being characterized as developing or developed. The second dimension is the size of the firm. Due to the fact that both dimensions have a strong impact on the subject of prerequisites, we developed a matrix scheme combining the developing/developed and SMEs/larger firms typologies.

The resulting classification scheme consists of four groups of prerequisites: prerequisites that are valid for SMEs in developing countries, for SMEs in developed countries, for larger firms in developing countries, and for larger firms in developed countries. Note, that some prerequisites are common for all groups. The results are presented in Table 1. Due to the informative and enlightening structure of the matrix scheme, we can easily compare the four groups and deduce, for example, that SMEs in developing countries are facing more difficulties in using the Internet for exporting purposes than larger firms in developed countries. This result is totally rational due to reasons that we described in section four.

5.2 Impediments to a More Intensive Use of the Internet

The rapid spread of the Internet as a tool for the export business process and/or revenue generation is primarily dependent on the absence of structural impediments or the speed with which those impediments are removed. Much of the excitement about the Internet and its business potential would subside if authors were not discounting the importance of existing structural constraints for the use of Internet (Benjamin and Wingland, 1995; Quelch and Klein 1996; Samiee, 1998b).

All reviewed research studies are highlighting a variety of main barriers to an increased use of the Internet. While, on one hand, there are special references to impediments for SMEs, on the other hand it is clear that the list of barriers applies to varying degrees both to developing and developed countries. This conclusion is in accordance with Samiee (1998b), who states that structural constraints to a more intensive use of the Internet are present in both developed and developing export

Table 1. Prerequisites of Internet use for exporting firms

	Developing	**Developed**
Small and Medium-sized Enterprises	1. Investment in Internet infrastructure (ISP, sites) 2. Financing of equipment for getting access to the Internet 3. Development of Internet support industries 4. Shift in orientation from face-to-face to a digitalized interface 5. Level of awareness of e-commerce 6. Long-term website management 7. Ability to process electronic orders 8. Payment verification systems 9. Management enthusiasm in promoting Internet use 10. Perceived benefits from Internet use 11. Industry and product specificity 12. Availability of IT literate personnel 13. Logistics systems 14. Business systems to serve international customers adequately 15. Degree of previous experience with serving distant markets 16. Building of trust	1. Investment in Internet infrastructure (ISP, sites) 2. Financing of equipment for getting access to the Internet 3. Long-term website management 4. Ability to process electronic orders 5. Payment verification systems 6. Management enthusiasm in promoting Internet use 7. Perceived benefits from Internet use 8. Industry and product specificity 9. Business systems to serve international customers adequately 10. Logistics systems 11. Building of trust 12. Degree of previous experience with serving distant markets 13. Availability of IT literate personnel
Larger Firms	1. Investment in Internet infrastructure (ISP, sites) 2. Financing of equipment for getting access to the Internet 3. Development of Internet support industries 4. Shift in orientation from face- to-face to a digitalized interface 5. Level of awareness of e-commerce 6. Long-term website management 7. Ability to process electronic orders 8. Payment verification systems 9. Management enthusiasm in promoting Internet use 10. Perceived benefits from Internet use 11. Industry and product specificity	1. Investment in Internet infrastructure (ISP, sites) 2. Financing of equipment for getting access to the Internet 3. Long-term website management 4. Ability to process electronic orders 5. Payment verification systems 6. Management enthusiasm in promoting Internet use 7. Perceived benefits from Internet use 8. Industry and product specificity

markets to varying degrees, but are less intense and pronounced in the most developed markets. Consequently, we present in Table 2 the list of main impediments to a more intensive use of the Internet for exporting purposes based on the size of the firm, which is the only variable that differed to a significant degree.

The comparison of the two columns of Table 2, leads to the conclusion that SMEs have to deal with a much higher number of impediments in order to exploit Internet for their exporting activities. In Table 2, seven impediments from the list of the twenty five identified barriers to a more intensive use of the Internet by exporting small and medium-sized enterprises, are less clear and explained than the rest of the obstacles which are much-discussed and thoroughly described in international literature. These barriers are:

1. the change from face-to-face interaction to digitalized interfaces,
2. data flow and related regulations,
3. language,
4. culture,
5. the arms-length and adversarial nature of the relationships that currently exist between value chain participants,
6. the general absence of supplier development programs, and
7. factors, such as user satisfaction, which are commonly used to gauge the success of internal systems, but cannot be applied readily to the Internet.

A common statement among exporters is that the Internet does not replace person-to-person interaction and personal relationships, even though it seems to be limitless in terms of marketing and business potential. This might change in future years as teleconferencing and satellite conferencing become more accessible. Currently, though, it appears that a main drawback of the Internet is the lack of personal interaction. This relates to treating Internet as a complementary rather than a primary tool (Nance, 2000, p. 5).

Strict regulations that impede access to and penetration of the Internet exist both in developed and developing countries. In developed countries, such laws typically address privacy and national security issues. Regulations in developing parts of the world are broader and are motivated by such additional issues as protectionism and limiting information flow to the general public (Samiee, 1998b). In some countries, limited access is based on moral and sociopolitical grounds.

It is generally accepted that English is the global language of business. Despite this fact, customer-oriented exporting firms are obliged by the existence of keen competition in international markets to develop Web pages in several languages to successfully reach target markets. In particular, exporting retailers must be acutely aware that English fluency, even in developed nations, is not broad-based. For example, some of the most prominent and international consumer catalogue firms' web sites (e.g. Quelle, Neckermann) are in their respective local languages and, although an increasing number of sites offer online translation, only a few languages are available at present and the conversion contextual meanings will remain extremely difficult to deal with (Samiee, 1998b).

In countries with high context cultures and in cases where products are differentiated, culture has a prominent influence on the adoption of the Internet for expediting export business processes and fulfilling revenue enhancement goals. Some international transactions with certain countries involve personal contacts, while the Internet is a relatively impersonal medium that attempts to automate processes and transactions.

Thus, there is a cultural gap, which makes the online transaction hard to reach, and Internet an appropriate tool for less personal contacts. Furthermore, when the online

Table 2. Main impediments to a more intensive use of the Internet in exporting

Small and Medium-sized Enterprises	Larger Firms
1. Training of employed personnel 2. Means to finance equipment and running costs 3. Access problems 4. Speed of connection 5. The change from face-to-face interaction to digitalized interfaces 6. Data flow and related regulations 7. Language 8. Culture 9. Management's 'laager' mentality 10. The lack of adequate e-commerce infrastructures 11. The arms-length and adversarial nature of the relationships that currently exist between value chain participants 12. The general absence of supplier development programs 13. No liberalization of telecommunications 14. The belief that e-commerce has little or no relevance for their own firms and business plans 15. Unawareness of the benefits of e-commerce 16. The customer looks for the supplier, rather than the other way around (as usual) 17. Display advertising on Web pages other than the firm's own (pop ups) 18. Unsolicited and annoying mail (bulk mail, spam, junk) 19. Huge volume of information 20. Absence of sophisticated online international payment systems 21. Resistance to the changes of working methods and personal relationships that Net use implies by the individual marketing executives 22. Lack of technical IT skills 23. The complexity of operating a Web site 24. Security of payments and of transmitted data or electronic documents 25. Factors, such as user satisfaction, which are commonly used to gauge the success of internal systems cannot readily be applied to the Internet	1. Training of employed personnel 2. Speed of connection 3. Data flow and related regulations 4. Language 5. Culture 6. The arms-length and adversarial nature of the relationships that currently exist between value chain participants 7. The customer looks for the supplier, rather than the other way around (as usual) 8. Display advertising on Web pages other than the firm's own (pop ups) 9. Unsolicited and annoying mail (bulk mail, spam, junk) 10. Huge volume of information 11. Absence of sophisticated online international payment systems 12. Resistance to the changes of working methods and personal relationships that Net use implies by the individual marketing executives 13. Security of payments and of transmitted data or electronic documents 14. Factors, such as user satisfaction, which are commonly used to gauge the success of internal systems cannot readily be applied to the Internet

transaction involves commodities or electronically transferable products, like MP3s or e-books, the Internet's role in purchase decisions is less likely to be influenced by culture.

Integrated internal business processes support several integrating functions across businesses, such as workflow arrangements in a supply chain situation. In other words, sales, marketing and customer support services (front-office) and inventory, accounting, databases and order processing (back-office) of each participant in the value chain must be integrated. The adversarial nature of the relationships that currently exist between value chain participants over many industrial sectors renders the above task rather difficult to be accomplished. One problem is that the vast majority of firms in the value chain do not have integrated IT systems in operation (Poon and Swatman, 1997; Moodley, 2002). Another problem is that suppliers are totally unaware of e-commerce and Internet capabilities and uses. This problem is intensified by the general absence of suppliers educational and development programs organized mainly by governmental conveyors. Integrating the vertical and horizontal tiers of the supply chain is, therefore, very much a long-term strategy, especially in developing countries where there is a low IT base and lack of integrated intra and interfirm electronic networks (Moodley, 2002).

Last, there is a number of factors which are commonly used to evaluate the success of internal systems that cannot be applied to the Internet. It is difficult to identify and measure causality on the Internet, because the structure and dispersion of the Internet makes normal metrics of causality effectively meaningless. For example, there is a big part of Internet users which derive great satisfaction from fast response times of Web pages, while response time depends on several factors like the capacity and the number of visitors of a particular link, the time of day someone is visiting a Web site, and the hardware that he/she is using. Thus, it is really hard to objectively assess user's satisfaction from response time of Web pages. At the same time, every effort to compare among those measurements will yield unrealistic results.

6. The Current Situation of Internet Use by Greek SMEs

In Greece, according to data from the National Statistics Department of Greece (NSDG), in 1995 there were 509,837 SMEs. For the year 2003, SMEs represented 81% of the total number of firms (E-business Forum, 2003, p. 8). There are three important characteristics regarding Greek SMEs (E-business Forum, 2003, p. 9):

1. The absolute domination of very small firms (1-10 employees), which represented 97.8% of the 509,837 SMEs. Firms that employed 1 to 5 employees constituted 98% of this 97.8%!
2. The high sectoral gathering around wholesale and retail trade, which occupied 44% of the SMEs.
3. The high regional gathering of SMEs, since 59% of the total number of Greek SMEs were operating in Athens (42%) and in Thessaloniki (17%).

These characteristics, and especially the size of SMEs in Greece, must always be considered for the understanding and interpretation of all research findings because they basically reflect the situation in very small companies (1-5 employees). In order to answer if the findings are applicable to Greek SMEs, we must first describe the current situation of SMEs in Greece regarding Internet use, in order to reveal their special characteristics and overall position.

The numbers and statistical indexes that we are going to use in the description of the current situation of Greek SMEs regarding Internet use, come from a very recent research study entitled 'Market research for E-business' (2004). It is a quantitative research study conducted by the E-Business Forum in Greece, which used both face-to-face interviews and

questionnaires over a sample of 2,012 Greek SMEs from all the 52 prefectures of the country. Collection of data took place from October 13, 2003 to January 8, 2004.

As we mentioned earlier, according to data from the NSDG, in 1995 there were 509,837 SMEs in Greece. Among them (for the year 2003), 36% used one or more computers for their business activities, while another 48% declared that they had the intension to buy one. Another 9% stated that they were using a kind of network (LAN, WAN, Intranet, Extranet) in their companies, while 18.36% were using their computers for accounting applications and 10.44% for production applications.

For the same period of time, 19.8% of the total number of Greek SMEs were connected to the Internet, while the percentages for years 2002 and 2001 were 19.8% and 16.2% respectively. These figures reveal that, while from 2001 to 2002 there was an increase in the percentage of the SMEs connected to the Internet, in the year 2003 the percentage remained exactly the same. The main reasons for not having a connection to the Internet were (in a descending order): it was not required by the nature of the work, lack of training and information, absence of customized applications, lack of technological infrastructure, expensive cost of connection, lack of demand by customers and suppliers, complex use, and absence of interest. Another 6.6% expressed the intension to establish a connection in the future. The main uses of Internet from Greek SMEs for the year 2003 were (in a descending order): e-mail (70%), information acquisition (67%), transactions with the public sector – payment of taxes (33%), research (33%), entertainment (32%), transactions with the public sector – insurance payments (26%), communication (22%), information about competitors (18%), online banking transactions (13%), creation of web site for promotional reasons (11%), and e-commerce (4%). Notice that the percentages were referring to SMEs connected to Internet and not to the total number of Greek SMEs. This means that the percentage of SMEs (to the total number of Greek SMEs) that used, for example, e-mail was 16.6%.

It is of high interest to preview some statistical figures about Web sites. From the total number of Greek SMEs, only 3.1% possessed their own Web site, while its main use was the promotion of the products and the provision of information. Another 3.6% stated that they had the intention to create their own Web site in the future, while only 1.77% were applying any kind of security policy on their Web site. Last, only 0.52% of Greek SMEs were making online sales, while another 6% were participating in training seminars.

If we want to interpret all those statistical figures, first we have to note that the largest part of Greek SMEs (80.2%) were not even connected to the Internet while only 16.6% were using Internet for e-mail purposes. These figures, together with the 3.1% of Greek SMEs that had their own Web site and the 0.52% that made online sales, lead us to conclude that competition in the field of e-business and e-commerce in Greece is more or less non-existent, leaving an open market for newcomers.

The main impediments to a more intensive use of the Internet by Greek SMEs are totally in line with our findings from the papers we reviewed and they constitute clear proof that SMEs in Greece are in the early stages of Internet use at company level. At the same time the main uses of Internet by Greek SMEs prove their attempt to exploit the basic Net advantages. Based on i) the revealed impediments of Greek SMEs, ii) the fact that the most frequent form of business in Greece are SMEs, and iii) the fact that Greek SMEs are at the first stages of Internet use, we can infer that the prerequisites of Internet use for exporting purposes for Greek SMEs are very similar to the ones presented in the SMEs/developing countries category in Table 1.

7. Conclusions

The purpose of this paper was to review, assess, and synthesize the conceptual, methodological and empirical aspects of available research studies on the subject of Internet use in exporting. The empirical findings of this investigation focused mainly on SMEs due to the fact that this is the most common business form of enterprises throughout the world. The field of e-business and e-commerce has attracted, especially during the last decade, a great deal of attention from researchers, because of the crucial role that technological applications can play in international business activities.

On the conceptual side, the present research started with a short overview of the current international situation of e-commerce and Internet performance and of the advantages of Internet use for exporting purposes. Thus, by highlighting the importance of e-commerce and Internet to international trade and to exporting activities we established the bases for an in depth exploration of Internet use for exporting purposes.

As far as the adopted research methodologies are concerned, a number of aspects, like industrial coverage, firm size, technological infrastructure, and the focus country, were examined. In accordance with the different perception of exporting barriers between the developing countries and the industrialized world, combined with the different technological level and infrastructure, the majority of the reviewed studies seem to ignore industry-specific factors such as production capacity and cost structures. They focused mainly on SMEs because the latter have to deal with many more difficulties in exploiting overseas opportunities due to a number of limiting factors.

The statistical analysis carried out on the subject of Internet use for exporting purposes was relatively simple. The investigation has revealed that if the dynamic character of Internet is to be understood, more longitudinal studies are required. Future research should have a more cross-cultural orientation in order to conduct solid and more objective comparisons. Greater attention should also be given to adequate sample sizes and sufficient testing of non-response behavior. Finally, the use of more sophisticated statistical tools, such as cluster or factor analysis, will lead to better and more secure conclusions.

The analysis of the empirical studies yielded two sets of factors that play a crucial role regarding the SMEs' use of Internet use to export. They are a) the prerequisites of Internet use by exporting firms, and b) the main impediments to a more intensive use of the Net.

On the subject of prerequisites of Internet use for exporting purposes, we identified two very important dimensions. The first dimension is the level of economic and technological development of the country in which the firm operates, in other words whether the home country is being characterized as developing or developed. The second dimension is the size of the firm. The strong impact of both dimensions motivated us to present the results using a matrix scheme combining the developing/developed and SMEs/larger typologies. The resulting classification scheme returned four groups of prerequisites, which are given in Table 1. The presentation of the prerequisites revealed that SMEs in developing countries are facing more difficulties in using the Internet for exporting purposes than larger firms in developed countries.

On the very significant subject of impediments to a more intensive use of the Internet, our analysis showed that while there are special references to impediments for SMEs, the intensity of the barriers described varies between developing and developed countries. Therefore, we presented a list of the main impediments to a more intensive use of the Internet for exporting purposes based on the size of the firm. The list yielded 25 main impediments for SMEs and only 14 for larger firms. An important conclusion

is that SMEs have to deal with a much higher number of impediments, and to a higher degree, in order to exploit Internet for their exporting activities.

In the last section of this paper, we thoroughly described the current situation of Internet use by Greek SMEs. The basic results that derive from the description of the current situation are:

1. Despite, the fact that Greece is considered a developed country, research studies are revealing that the vast majority of Greek SMEs are not using the Internet, or they use it only to send or receive e-mails. This means, that the competition in the field of e-business and e-commerce in Greece is more or less non-existent.
2. The prerequisites of Internet use for exporting purposes by Greek SMEs are the ones presented in the SMEs/developing countries category in Table 1.
3. The main impediments to a more intensive use of the Internet by Greek SMEs constitute another clear proof that SMEs in Greece are in the early stages of Internet use at company level, while at the same time the main uses of Internet prove the attempt to exploit the basic Net advantages.
4. Internet is not a substitute for an export strategy, but it is true that under the right circumstances Internet can play a crucial role in promoting Greek exports.

E-commerce and Internet are relatively new fields in the international literature. This means that further research is needed in order to reach a point where interested parties will be able to build on solid and justified theoretical and practical knowledge. In Greece, the need for primary documented and substantiated scientific research studies is even greater due to the fact that there is a lack of data and statistical figures regarding a very important part of enterprises, the SMEs.

The challenges and opportunities for Greek SMEs on the subject of Internet use for exporting purposes are big and still at an early stage. There is still plenty of room for new-comers in order to gain experience, profits and the competitive advantages that the possession of these elements offers. Use of some elements developed in this study, such as the matrix scheme of the prerequisites of Internet use, and the list of the main impediments to a more intensive use of the Net, will help future research to study the subject in a more uniform and organized manner.

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