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Electronic alliances and the (para)pharmaceutical supply chain: Identification of Risks

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Abstract: The appearance of big international Production Companies and the expected changes in the legislation have already troubled the "key players" of the Greek (para)pharmaceutical supply chain. The Greek Production Companies, mainly SMEs, should develop defensive strategies in order to avoid great losses. The paper proposes a model for the development of an electronic alliance network among the companies threatened by the advent of international big firms. This will happen through the improvement of key supply chain indicators such as the reduction of supply time and the increase of the potential market, as well as the establishment of collaborative strategies. The para-pharmaceutical supply chain is described and the risks – both negative and positive- that may affect the proposed e-alliance model are identified. Main expected benefits include: reduction of supply time, increase of the potential market and possibility of collaborative strategies. The Greek para-pharmaceutical industry was selected as, despite potential opportunities, no major penetration of e-business has been noticed in that sector.

Key-Words: E-business, E-marketplace, E-alliances, (Para)pharmaceutical Industry, Risk Identification.

1 Introduction

The appearance of big international Production Companies and the expected changes in the legislation have already troubled the "key players" of the Greek (para)pharmaceutical supply chain who seek ways that will deter great losses. The core strategy that the Greek Production Companies have to implement is to develop mechanisms that will optimise business processes. The data sharing among parties in the supply chain is crucial for carrying out an efficient transition of products. Research and development in information and communication technology made it possible to integrate the supply chains so that the links among Suppliers, producers, third parties and customers are, now, easier to be established. The most common technology for establishing electronic links and transmitting messages, with short lead times, is the Electronic Data Interchange (EDI) defined as the transmission of trade documents electronically, using standardised formatting. However, this communication technology creates barriers through which many small and medium size enterprises (SMEs) are not able to pass. The implementation cost of these systems, as well as the cost of maintenance of such value added solutions, cannot be easily covered by an SME.

Electronic business technologies, especially when applied to business-to-business (B2B) relations, can lead to rationalisation of business processes and cost

savings [1]. The aforementioned observations raised the need for a new approach towards SMEs' strategic alliances based on the new available technologies such as the Internet. On the context of this paper, the authors demonstrate a strategic internet-based model for SMEs, in order to improve their competitiveness, and examine the risks of this innovative attempt. The paper is organised as follows: In section 2 the current situation in Greek (para)pharmaceutical supply chain is presented, main players are identified and a description of their characteristics is given. The model developed for the solution of the problem, as well as the proposed methodology for a successful implementation, is thoroughly explained in Section 3. Section 4 is divided in two sub-sections. In the first one, the authors describe the opportunities that arise from the proposed e-alliance model and in the second threats that may affect the success the model are presented. Finally, in Section 5 a discussion is raised about the conclusions and opportunities for further research in the area.

2 Current Situation in the Greek (para)pharmaceutical SMEs

Three basic entities can be identified in the Greek (para)pharmaceutical industry [2]. The first entity consists of the (para)pharmaceutical Suppliers, which are small or bigger companies that provide the Production Companies with the necessary raw material. The second entity consists of small and medium production (manufacturing) companies and the last category includes all the Drugstores that buy their products directly or indirectly from the Production Companies (Figure 1). In terms of technological evolution, most of the Production Companies have implemented ERP systems in order to share the business information and facilitate better decision making based on analysis of this information. On the other hand, the Drugstores, which are very small enterprises that are allowed to sell drugs (under a strict Greek legislation) and (para)pharmaceutical products (in a more flexible way), are unable to afford any kind of ERP systems and they rely on traditional means for their business communications, such as telephone and fax.

Lately, large Production Companies have made their appearance in the Greek (para)pharmaceutical industry. These companies, using economies of scale, may offer same quality products at lower prices (Figure 1). Although, this looks like a threat to the local Production Companies and an opportunity for the Drugstores, this is not true. The fact is that it might turn out to be a threat for both of them. The Greek legislation does not permit chains of Drugstores to be created. However, this might change in the near future, especially due to the EC legislation for the so called "open markets". If this happens, the international companies may move to the buying out of Drugstores. This change obviously has a huge impact on the local production SMEs, as they are unable to compete directly with the huge buying power of the large companies, unless the form alliances of both Production Companies and Drugstores. In the Model description part, the authors of this paper present how the integration of e-business practices, along with a strategic alliance optimise the SMEs value chain, making these companies not only profitable, but also competitive.

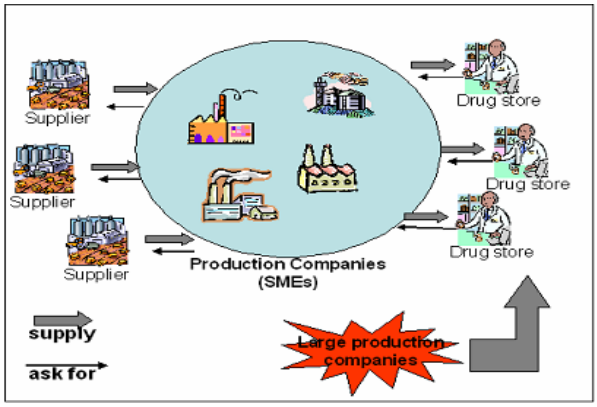

Fig.1: Supply Chain In the Greek (Para)pharmaceutical Industry

3 Model description

The model proposed here aims to provide a solution of strategic importance, along with the integration of e-business practices, for the (para)pharmaceutical small and medium sized enterprises in Greece [3]. This e-business strategy proposes, as main idea, the creation of an alliance among all these Production Companies, under an E-Marketplace (EM). For SMEs, this EM will fully integrate with their ERP systems, providing value added solutions. On the other hand, Pharmacies, which lack technological evolution, will be able to access business information through a simple "mouse click" by using the World Wide Web technology. From the strategic view, the role of the SMEs' alliance is to link the needs of the Drugstores to its offers and capacity, gaining a competitive advantage towards larger companies. An additional strategic advantage is that, within the proposed framework SMEs can aggregate their own needs for raw materials,

achieving a scale economy, when asking Suppliers for goods. Although the e-marketplace maybe operated by one of the SMEs that form the alliance, it is suggested that any SME member of the alliance should be represented in the e-marketplace's operation council.
This type of EM is called Private, since a company (or an alliance of companies, in the case presented here) installs the marketplace in order to manage its own supply processes, electronically. In these EMs the participants and their access level are defined by the company-owner of the EM.
Figure 2 summarises the concept of the model. As it can be seen, all the interactions, apart from the physical distribution, are carried out through the marketplace.

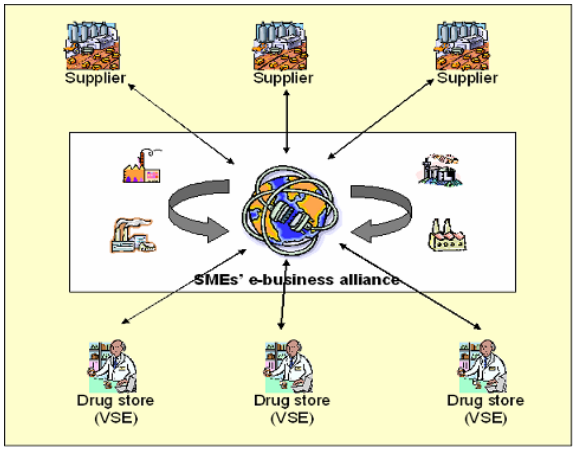

Fig 2: Proposed Model For the (Para)pharmaceutical Industry

The marketplace can be operated with two basic options, either as an open or a closed marketplace [4], [5]. A closed EM (often industry-specific "clubs") is created among a limited number of companies, the partners are known and connected and there is security through networking. It is characterised by a high degree of information sharing and collaboration. On the contrary, in an open EM the number of participants is unlimited, the network is open and unprotected, partners are not assessed and therefore security and authenticity is necessary. It is suggested that a close marketplace is better for the (para)pharmaceutical industry, since the kind of products trade does not permit low quality or non-assessed vendors.
The next step, if the closed type is selected, is the operator to find the critical mass of participants. In this case, all the participants are authorised to "trade" within the electronic market, given that the operator of the market has approved them. This authorisation is issued if the trader fulfils some criteria such as:

- Credibility
- Minimum and standard quality of product
- Conformance to the law

In general, the approval for Drugstores is far easier than for Manufacturing Companies and Suppliers. The corner stone for the viability of this endeavour is the mix of Production Companies that take part in the alliance.
The last step, which comes after the set-up of the e-marketplace, is the initiation of transactions. One of the most important aspects that has to be taken into consideration for the success of this endeavour are the so-called "success factors". Some of these success factors are [6], [7], [8], [9]:

- Support from the top management
- Right systems infrastructure
- Integration of the internet technology into the SMEs' strategy
- Customer's and partners' expectations managed appropriately
- Internet site of high quality that meets or exceeds user expectations
- Competitive advantage maintained in both operational efficiency and distinctive strategic positioning

This e-business alliance proposed here is believed to provide substantial benefits to the participants. However, there are some points that need attention and might put the strategic alliance in danger. Potential risk factors are presented in Section 4.

4 Risk Identification in E-Business Alliances

The steps of Risk Management can be summarised as in Figure 3 [10]. The first step of the process is the Development of a Risk Management Plan. This Plan sets the base for the other Risk Management steps. The second step of the process is the identification of risks that might affect the project. The third and fourth steps of the process address the analysis issue (qualitative or quantitative). Next step for RM is the Mitigation Action Plan, i.e. the definition of specific and effective response, in order to smooth or completely eliminate the risk. The last step, which is the Follow Up and Control of risks, aims to assure that the outcome from the previous steps is still valid as the time passes by, the mitigation actions defined are really efficient and

that every new risk is registered.

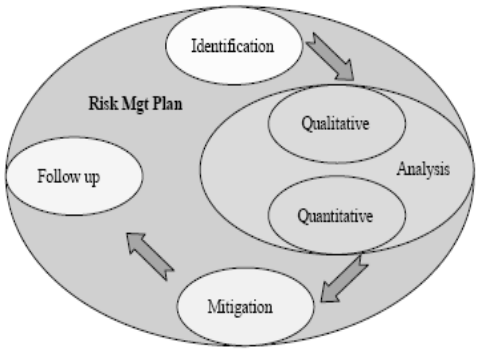

Fig.3 : Risk Management Steps

Aim of this section is to identify the risks that may effect the proposed e-business alliance, taking the first step of the Risk Management process.
Risk is a concept that is used to express concerns about the probable effects of an uncertain environment. Because the future cannot be predicted with certainty, risk managers have to consider a range of possible events that could take place. This means that the word "risk" can be used to describe uncertainties which if they occurred would have a negative or harmful effect, and the same word can also describe uncertainties which if they occurred would be helpful. In short, there are two types of risk: threats and opportunities. In the following sub-sections, authors present both opportunities and threats that might affect the e-business alliance in the (para)pharmaceutical industry.

4.1 Opportunities in e-business (para)pharmaceutical alliances

E-business alliance provides a unique opportunity for Production Companies to improve their competitiveness, speed up the transactions of the supply chain and establish collaborative strategies. They will be able to combine complementary strengths and share risk by pooling financial, physical and personnel resources regarding a specific business venture, while each company remains a distinct entity, separate from its strategic alliance partner. The main benefits may be synopsised as follows:

- ✓ Leverage core competencies by joining forces with a constellation of partner companies.
- ✓ Gain access to complementary human, physical and financial resources.
- ✓ Gain access to technical expertise, other manpower, manufacturing capabilities, raw materials and funds.
- ✓ Mitigate capital investment requirements, financial exposure and negative uncertainties.
- ✓ Strengthen technology underlying the product or service.
- ✓ Speed production and delivery to customers, lower cost to customers.
- ✓ Gain access to new domestic and foreign markets.
- ✓ Access established distribution channels to preclude market entry barriers.
- ✓ Concentrate on the firm's core competencies and outsource other functions.
- ✓ A core competency is a key competitive advantage of the firm.
- ✓ One point of access to all Suppliers and products
- ✓ Reduce cost of sales
- ✓ The “scalability” of the Internet offers small niche players many of the advantages enjoyed by large companies in terms of expanding the range of e-commerce customers and transactions. These advantages may be particularly important for small innovative firms entering the electronic market [11].
- ✓ Engaging in e-business induces SMEs to improve the overall control of their business processes. Procedures that were previously conducted informally are documented, making information transmittable and facing increased competition.

By inference, one can state that strategic e-alliances are collaborative relationships among companies that allow them to compete in ways they would not have been able to do alone by accessing resources that a particular organization does not already possess. In addition, in modern Internet economy, where speed and scale are important, e-alliances are often a faster and less capital-intensive way to gain access to products, customers and business capabilities.

4.2 Threats in e-business (para)pharmaceutical alliances

Despite the fact that alliances might be regarded as an attractive option on future strategies, relationships among companies in a joint venture are often risky

in and of themselves. In a sense, alliance strategies enable companies to gain protection from a business risk only by taking on additional "relationship" risks [12]. Usually, threats in e-alliances can be classified into two categories [13]. One category is defined as the set of all risk factors from the external environment and the other one from the internal environment. Elementary risk factors of each category as presented below:

External risks

- Demand fluctuations. The market demand diverges from prediction of alliance to opportunity products.
- The core technologies and business strategies are imitated by other enterprises.
- Financial risk. The rise of interest results in the increase of debt and cost for member enterprises.
- Market Risk. Volatility of the market may influence e-alliance performance.
- Social risk. Social turbulence results in the loss of alliance.
- Political risk. Changes in government laws, regulations and policy may influence alliance activities

Internal risks

- Relational risk. Lack of trust among partners results in increasing the transaction cost, lowering the ability of reflection to the market opportunities and influencing the cooperation and operation of alliance.
- Potential opportunistic behaviour, such as cheating and distorting information of member enterprises.
- Communication risk. Inefficient communication channel among partners.
- Organizational risk. Inadequate management structures and different enterprise cultures of partners could lead to conflicts.
- Lack of competence of a partner company.
- The member companies may not fulfil the required investment.
- Information sharing may result in the loss of information recourses and divulgement of core technologies or business secret of a participant.
- Total dependence on alliance partners could cause a member company to loose its autonomous, self-contained entity.

Forming e-business alliances is a complex strategy and companies face significant risks stemming from uncertainties in technological, market and competitive environments. In order to commit to an e-alliance, companies should develop a strong risk management strategy and examine both threats and opportunities.

5 Conclusion – further research

In order to draw some conclusion, one can state that there are several opportunities for every participant involved in the proposed E-business strategic model. The main benefit for the alliance is the development of an enhanced network that will be able to resist to the power of the large companies that will try to enter the Greek market, sooner or later. However, there are some threats that need attention and might influence the success of the electronic alliance. We have taken the first step in identifying the most common risks in e-business alliances. Further, we expect that as we improve our knowledge of factors influencing successful venture performance we will be able to address every step of the Risk Management process; Qualitative and Quantitave Analysis, Mitigation and Follow Up.

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