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BORN GLOBALS VERSUS DOMESTIC VENTURES:

An Exploratory Study on Opportunity Framing Differences

Competitive Paper

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Abstract:

International entrepreneurship is generating an increasing stream of research. However, this is mainly concerned with the description of strategies used by born globals and with the comparison between their behaviour and that of traditional exporters. The study of the very early stages of the entrepreneurial process as well as the contrast with purely domestic ventures has been neglected. This exploratory paper, based on case studies of two pairs of high tech firms (ICT and biotechnology), focusses on the differences of opportunity framing processes between born globals and domestic ventures. Empirical evidence shows that born globals' entrepreneurs frame their opportunities with no geographic boundaries, show higher-levels of self-perception, master deeper and more complex knowledge and are more involved in international networks than the founders of domestic ventures.

Keywords: born globals, domestic ventures, international entrepreneurship, opportunity framing

INTRODUCTION

International entrepreneurship (IE), as the interplay between entrepreneurship and internationalization (Zahra and George, 2002), is becoming one of the most attractive fields of research in the last few years (Dimitratos and Jones, 2005; Oviatt and McDougall, 2000).

The emergence of a new breed of firms, addressed since inception to international markets, exploring global niches and extensively using cooperative entry modes challenged the traditional stages approach (Johanson and Vahlne, 1977). Such firms – called born globals (Rennie, 1993) or international new ventures (McDougall, 1989; Oviatt and McDougall, 1994) - became the focus of a promising strand of research. Their behaviour incorporates characteristics associated to an international entrepreneurial orientation (Dimitratos and Plakoyiannaki, 2003), such as innovativeness, pro-activeness, risk taking, learning propensity and networking orientation.

However, in spite of the contributions by Crick and Spence (2005) and Spence (2003), research has, to a large extent, been concentrated on the description and analysis of the content of new ventures internationalization strategies rather on the process of designing those strategies (Zahra *et al*, 2005). Research has been focussed on issues such as the speed of internationalisation, geographical diversification of activities, entry modes and the role of relationships and social capital (Dominginhos and Simões, 2004; Rialp *et al*, 2005). In contrast, there has been a dearth of research on the differences between this new type of firms and ‘born domestic’ companies¹.

¹ We are aware of the literature comparing born globals and traditional exporters (Chetty and Campbell-Hunt, 2004; Karagozolu, N., and Lindell; Keng and Jiun, 1989; Madsen *et al*, 2002; Moen, 2001; Preece *et al*, 1999). However, our concern here is about differences between born globals and domestic firms. We thank an anonymous referee for calling our attention to this question.

McDougall (1989) and McDougall *et al* (2003) have studied the differences between domestic and international new ventures, but concentrated mainly on strategic issues and industry structures.

We argue, however, that this just corresponds to deal with the explicit consequences of differences, overlooking key issues leading to differences in the way how opportunities are framed. In other words, there is a need to look at how entrepreneurs conceptualise the competitive terrain, as Zahra *et al* (2005) have underlined. This requires a stronger focus on opportunity framing, understanding how international business opportunities emerge through processes of recognition, search or discovery (Dimitratos and Jones, 2005; Zahra and George, 2002), as well as how entrepreneurs' attitudes, competences and cognitive skills influence such processes. Further attention should therefore be paid to the early phase of the entrepreneurial processes – opportunity framing.

The present paper is aimed at understanding how opportunities are framed in born global firms compared to domestic new ventures, on the basis of case studies contrasting pairs of firms in two industries (ICT and Biotech). Our main argument is that different internationalization strategies and patterns are rooted in the early phases of firm configuration, mainly in opportunity recognition and/or enactment, when firms' may still be envisaged as an expression of entrepreneurs' egos and mindsets (Zahra *et al*, 2005). It is suggested that, since the very beginning, opportunities leading to born globals are framed in an international arena while those leading to domestic new ventures are locally bounded.

The rest of the paper develops as follows. The next chapter provides a review the relevant literature on entrepreneurship processes, focussing on the individual/opportunity nexus, on opportunity framing, and on born globals. Such a review will allow us to identify a few research propositions. The third section deals with the method followed. Then, a brief presentation of two contrasting pairs of firms is undertaken. Subsequently, propositions are assessed and a discussion is provided. The paper closes with a section on conclusions and suggestions for further research.

LITERATURE REVIEW

Entrepreneurial Processes

Framing and exploitation of opportunities has been outlined as the distinctive domain of entrepreneurship (Kirzner, 1973, 1997; Shane and Venkarataman, 2000; Stevenson and Jarillo, 1990; Venkarataman, 1997). They may be envisaged as the result of perceptions, conjecturing processes and actions undertaken by people (Caraça and Simões, 1995). Entrepreneurship is, therefore, understood as a process, which is translated into entrepreneurial projects aimed at the creation of new firms.

A common thread in the literature is that opportunities correspond to something that has not been, so far, detected by others (Gaglio and Katz, 2001; Shane and Eckhardt, 2003; De Bono, 1978). Entrepreneurial ideas can arise from systematic search, either proactively or reactively, or emerge fortuitously (Ardichvilli and Cardozo, 2000; Chandler *et al*, 2002; Gaglio, 1997). Such ideas need to be further developed and assessed to become opportunities. Martello (1994) postulates that this development is based on intensive and rational working on the field, stressing the relevance of entrepreneurs' interpretative schemes on the information provided by their action space. Other researchers have argued that opportunity recognition is a cognitive process where

alertness plays a decisive role (Kirzner, 1973). Opportunities may be envisaged as objective realities that pre-exist the entrepreneurial process (Kirzner, 1973, 1997; Shane, 2000, 2003). From this perspective, they are ‘there’, just waiting to be discovered.

This approach has been strongly criticised. Gartner *et al* (2003) and Sarasvathy (2001) consider that opportunities are enacted by the interaction between entrepreneurs and the environment. So, each opportunity is specific and builds on entrepreneurs’ knowledge, competences, attitudes and cognitive processes. Sarason *et al* (2005) argue that one can not separate opportunities from individuals: opportunities are seen as individual idiosyncratic conceptualizations of an instantiated social and economic system. Agents have to select ‘facts’ from the environment, in order to make judgments about them. But only the ‘facts’ known by each individual can be selected, which means that opportunities are based on specific knowledge possessed by people. Thus, the interplay between entrepreneur and the environment leads to the enactment of opportunities. In this view, opportunities emerge from individuals’ daily activities and from their capability to make sense of future actions (Gartner, 1993).

Such a sense-making process (Weick, 1995) is influenced by contexts, competences, attitudes and cognitive mechanisms of individuals. Information is often sticky, which means that it is available only to those individuals who are involved in specific types of inter-action (Von Hippel, 1994), but only a few of them will translate it into entrepreneurial opportunities. Under these conditions, opportunities are not ‘just there’, waiting to be discovered. In fact, opportunities are generated in entrepreneurs’ minds through a process of conjecturing (Caraça and Simões, 1995), either self-conjecturing or as a result of interactions with others. Based on their previous knowledge trajectories and on their present interactions, individuals develop an understanding of market

demands and technological applications which lead to the framing of entrepreneurial opportunities. Such a conjecturing process requires market validation. Therefore, relationships are activated, to assess the feasibility and desirability of those opportunities (Shapero, 1975; Van der Veen, 2004), as well as to mobilize the resources required for their implementation.

Several theoretical models of opportunity recognition have been developed (Ardichvili *et al*, 2003; Bhave, 1994; De Koning, 1999; Sigrist, 1999). They highlight three distinct features of entrepreneurs: attitudes and motivations; knowledge and experience; and social networks.

Individuals' personal traits and attitudes have long since been used to explain entrepreneurial behaviours: creativity (Schumpeter, 1934), need for achievement (McClelland, 1961), alertness (Kirzner, 1973; Ray and Cardoso, 1996), risk taking (Brockhaus, 1980), internal locus of control (Schere, 1982), and imagination (Shackle, 1982). An association between creativity and opportunity recognition (Hills *et al*, 1997; Lumpkin *et al*, 2003; Schumpeter, 1934) has been identified. Alertness has been envisaged as driving individuals to interpret facts and informations in a way leading them to opportunity recognition (Ray and Cardoso, 1996). Similarly, a positive self perception is connected to the capability of identifying opportunities where others perceive risks, and to strongly commit to the successful accomplishment of planned tasks (Krueger and Brazeal, 1994; Krueger and Dickson, 1994).

Shane (2000) found that entrepreneurs identify opportunities that are closely related to their knowledge base and prior experience. Puhakka (2002) stressed the role of formal knowledge (education and technical skills) on opportunity recognition. Additionally, Orwa (2003) concluded that alertness capability is related to entrepreneurs' work experience and networks. Previous

knowledge and experience lead people to develop mental models that guide them in interpreting the reality. Information asymmetry implies that each individual develops a specific “knowledge corridor” (Hayek, 1945; Ronstadt, 1988), which may be used for opportunity identification. Three types of knowledge seem to be particularly relevant: prior knowledge of markets; prior knowledge of customer problems; and ways to serve markets (Orwa, 2003; Shane, 2000).

The literature has also shown that entrepreneurs’ networks are very important for opportunity recognition (Hills *et al*, 1997, Orwa, 2003). Drawing on Granovetter’s (1973) work, De Konning (1999) suggested that entrepreneurs’ networks encompass four levels: inner circle (long-term and stable relationships); action set (people recruited for opportunity development); partnerships (start-up team members); and weak ties (used to gather general information that could be used in testing an opportunity or in answering a general question). This is consistent with Singh’s (2000) finding that entrepreneurs use different types of contacts in the process of framing opportunities: weak ties for technological information, and familiar contacts for feedback. In the same line, Birley (1985) found that entrepreneurs tend to seek advice and suggestions for their core ideas and business plans from their families and from other formal ties. It was also found that the use of social networks increases the number of opportunities identified, and that these grow with the breadth of the social network (Singh *et al*, 2000). The exposure to different contexts and different realities allows entrepreneurs to gather additional information to be taken into account and interpreted according to their daily activities. Besides this role as a source of information and knowledge, social capital may also be used to reinforce the desirability and the feasibility of the opportunity, since ideas and their commercial and industrial applications may be scrutinized by experts in their communities of practice. Membership of international networks provides the access to, and the development of, new knowledge, while enabling the test of envisaged

commercial applications (Dominginhos and Simões, 2005). Such benefits are restricted to network members, incorporating some advantages of newness and innovation.

International Entrepreneurship and Born Globals

IE is obviously very closely linked to the literature on entrepreneurship in general, reviewed above. The definition of IE provided by Zahra and George (2002: 261) – “the process of creatively discovering and exploiting opportunities that lie outside a firm’s domestic markets in the pursuit of competitive advantage” – is strongly influenced by Shane and Venkataraman’s (2000) definition of entrepreneurship. McDougall and Oviatt (2003: 7) considered IE as “the discovery, enactment, evaluation, and exploitation of opportunities – across national borders – to create future goods and services”. From our perspective, the key feature common to these definitions, besides the obvious reference to crossing national markets, is the emphasis on opportunities. It should be noted, however, that while Zahra and George (2002) appear to rely on the discovery approach, McDougall and Oviatt (2003) introduce a reference to the process of enacting opportunities, being thereby closer to the understanding of opportunity framing developed in the previous subsection.

As mentioned above, research in IE is strongly focussed on the characterization of a new type of firms, usually labelled as international new ventures or born globals (Dimitratos and Jones, 2005; Zahra and George, 2002)². Entrepreneurs’ networks and social capital, as well as learning have emerged as key elements in explaining the phenomenon. There has been, however, little research on the process of opportunity framing by born globals entrepreneurs.

² In the present paper, we will use the two terms interchangeably, although we prefer the label born globals for being more sharp and concise.

Focussing now on the comparison between born globals and other types of firms, two main strands of research may be identified: (1) born globals *versus* 'ordinary' exporters (Aspelund and Moen, 2001; Chetty and Campbell-Hunt, 2004; Knight, 1997; Moen and Servais, 2002); and (2) born globals *versus* new domestic ventures (McDougall, 1989; McDougall *et al*, 2003).

The first strand of research indicates that one of distinctive characteristics of born globals is their knowledge intensity (Luostarinen and Gabrielsson, 2002). These firms tend to be more common in industries where products have short life cycles, demanding continuous innovation and calling for specialised and difficult-to-imitate resources. They sell unique and specialised products or services (Oviatt and McDougall, 1995), often anchored in leading edge technologies. In this vein, they frequently follow international niche market strategies (Andersson and Wictor, 2003; Aspelund and Moen, 2001; Oviatt and McDougall, 1995). These involve product differentiation (Bloodgood *et al*, 1996; McAuley, 1999; Oviatt and McDougall, 1995) and a strong customer focus (Aspelund and Moen, 2001), thereby requiring a good understanding of their needs while using them as a source for continuous innovation.

Born globals tend to be launched by entrepreneurs with strong technical, scientific, managerial and marketing competences (Andersson and Wictor, 2003; Crick and Spence, 2005; Jones, 1999; Oviatt and McDougall, 1995). International operations are often supported by a complex network of partners along the value chain – or else, based on the vertical segmentation of businesses. In sectors demanding continuous innovation, a considerable investment in R&D is undertaken, often in the context of international cooperative projects. In fact, partnerships play an important role in enabling born globals to obtain complementary resources, to spread costs and to get access to

international markets (Autio *et al*, 2000; Coviello and Munro, 1995; Madsen and Servais, 1997; Zahra *et al*, 2000). Strong and weak ties are mobilized by entrepreneurs to design, manufacture and market distinctive products or services. Social capital is often assimilated to a resource, providing the young firm the credibility needed to get the 'right' to enter strategic international networks, making possible to overcome the liabilities of newness and smallness.

The second stream of research is more limited, broadly corresponding to the research undertaken by McDougall (1989) and McDougall *et al* (2003), contrasting international and domestic new ventures. From this research, one may conclude that the main discriminatory factors concern the following: (i) international as well as industry experience of entrepreneurial teams; (ii) focus on globally integrated industries; and (iii) strategic variables, including strategy aggressiveness, product innovation, service and marketing intensity, use of a larger number of channels of distribution, and especially an emphasis on quality (McDougall *et al*, 2003). However, contrary to most research in the first stream, McDougall *et al* (2003) found a negative association between technical experience and international new ventures; as the authors recognise this may be due to the characteristics of the sample used.

One may conclude, therefore, that extant literature on international *versus* domestic new ventures is scarce and focused on strategy and industry structure issues, with an inroad on the experience of the entrepreneurial team. It is mostly concerned with experience, positioning and behaviour of firms, and not so much with the early phases of entrepreneurial processes. In fact, the issue whether the framing of opportunities in international new ventures is different from the similar process in domestic ventures has received scant attention (George and Zahra, 2002). In spite of the existence of a few papers dealing with the international orientation of entrepreneurs as a

distinctive feature in born globals, there is a need to understand their mindsets, trajectories, experiences, and relationships (Zahra *et al*, 2005), and on how these influence the opportunity framing process.

PROPOSITIONS

The research by Chandler *et al*. (2002) suggests that the design of the organization, and of their products and services, as well as the selection of the markets to serve, are closely linked to the opportunity framing process. Kobrin (1994) proposes that managerial mindsets have a strong influence on the geographic scope of firms' activities. Entrepreneurs' international orientation has also been identified as a distinctive feature of born globals (Aspelund and Moen, 2001; Harveston *et al*, 2000; McDougall *et al*, 2003; Moen, 2002; Oviatt and McDougall, 1995).

It has been argued that, in born globals, entrepreneurs provide the visionary thinking, define the business concept, possess the innate desire to implement it through the launching of a new company, and are able to mobilize a team of people (Oviatt and McDougall, 1995; Sharma and Blomstermo, 2003; Simões and Dominginhos, 2001; Wakkee, 2004). Case studies suggest that born global entrepreneurs have, since the very beginning (i.e. opportunity framing), seen the world as the natural place for doing business, and have never considered another possibility (McDougall and Oviatt, 1995; Phiri *et al*, 2003; Sharma and Blomstermo, 2003) .

We propose, therefore, that,

P1: Born globals are associated to opportunities framed without reference to geographic boundaries, while in domestic ventures opportunities are designed, prima facie, taking into account a domestic market context

It is widely acknowledged that international new ventures often follow innovative approaches, offering novel products or services, aimed at creating new niche markets. Those products or services may be the result of specific R&D activities conducted at Universities or public laboratories (Andersson and Wictor, 2003; Sharma and Blomstermo, 2003; Wakkee, 2004). They may also stem from a distinctive interpretation of emerging market features (Simões and Dominginhos, 2001).

Born globals usually compete in industries where short life cycles compel them to go abroad to rapidly exploit opportunity windows (Knight, 1997; Oviatt and McDougall, 1995). Often, such firms do not possess neither the knowledge about external markets nor sufficient financial and other types of resources required to compete in the global arena. Besides this liability of smallness, there is no track record on international market to convince potential customers. Under these conditions, it becomes very difficult to assess the feasibility and desirability of entrepreneurial ideas in international contexts. This means that entrepreneurs have to take decisions based on very incomplete information. Therefore, framing opportunities for international markets demands high risk taking propensity, commitment and self-confidence.

This was already mentioned in entrepreneurship research, where high levels of self-efficacy and optimism were found to be associated with opportunity recognition and implementation (Krueger and Dickson, 1994; Shane, 2003). It may, therefore, be argued that born globals entrepreneurs

strongly believe in their capabilities to design firms operations with an international scope. Entrepreneurs with lower perception of self-efficacy hardly take the challenge to start their operations in unknown and risky international environments.

Based on the above discussion we suggest that,

P2: Born global entrepreneurs show high risk taking and self-perception levels

As it was mentioned above, knowledge and experience are key sources of opportunities. Research on born globals confirms this contention, showing that firms are often an extension of entrepreneurs' previous activities. In the early stages of firms, entrepreneurs and resources may be difficult to disentangle, a substantial part of firms' competitive advantages being rooted in entrepreneurs competences (Kummerle, 1999). As Hayek (1945) and Ronstadt (1988) pointed out, entrepreneurs have specific "knowledge corridors" which broadly define the scope of their objectives and initiatives. Further analysing this entrepreneurs/knowledge nexus, one may distinguish between two different perspectives of using knowledge as a basis for framing opportunities and launching a business venture: knowledge depth, and knowledge complexity. Knowledge depth corresponds to the level of knowledge mastering of a given scientific field, while knowledge complexity involves the combination of different disciplinary knowledge streams to build up higher level syntheses, eventually generating new concepts and solutions designed for business application.

Extant literature suggests that born globals tend to be created by entrepreneurs with higher levels of knowledge depth. Such entrepreneurs often have post-graduate education, being examples of excellence in R&D (Beibst *et al*, 2003; Bell, 1995; Bloodgood *et al*, 1996; Burgell *et al*, 2001; Dominginhos, 2002; Jones, 1999; Phiri *et al*, 2003; Sharma and Blomstermo, 2003) or

mastering specific knowledge about particular industries or activities (Andersson and Wictor, 2003; Evangelista; 2003; McAuley, 1999; Sopas, 2001). This advanced and novel knowledge allows them to design innovative products and, in extreme cases, create new global markets. Therefore, they enjoy international competitive advantages, which may enable them to overcome the liabilities of foreignness and newness. As Autio (2005:15) suggests, “internationalisation may not always be an uphill struggle ... it may also constitute a crucial condition underpinning the firm’s *raison d’être*”.

The distinctive implications of knowledge complexity for opportunity framing were not, as far as we know, specifically tackled in the literature. Zahra *et al* (2000) remarked that technological learning is associated with the exposition to international environments, while Autio (2005) suggested that such exposition might encourage knowledge regeneration processes, leading to further competitive advantage. Both contributions are, however, concerned with later phases of born global activities – not with opportunity framing for company creation. Furthermore, they do not exactly address knowledge complexity as it was defined above. Yet, it is not difficult to understand how the innovative combination of disparate, ordinarily unrelated, knowledge streams may provide a capability to frame leading edge opportunities. Higher levels of knowledge complexity mastering may lead entrepreneurs to make sense of ‘new combinations’ as business opportunities. Such opportunities are usually perceived as geographically unbounded. They demand an international setting in order to create value. Sometimes there is no internal market for such products and services (Fontes and Coombs, 1997). In other cases solutions have the potential to attract global customer because they fill a gap in the market, or create an entirely new one.

Following this discussion, we propose the following:

P3: Born globals entrepreneurs' have higher levels of knowledge depth and knowledge complexity, gearing them to frame opportunities with an international scope, while domestic ventures entrepreneurs' have lower specific competences or pursue knowledge applications which are not fully innovative in international terms

Most research on born globals has recognised the relevance of personal relationships, and more specifically of business and academic international networks (Andersson and Wictor, 2003; Bell, 1995; Coviello and Munro, 1995; Oviatt and McDougall, 1995; Sharma and Blomstermo, 2003; Wakkee, 2004). Such relationships allow entrepreneurs to gather more information for their judgments. The involvement in academic networks enables not just getting new insights from inter-action and problem solving, but also the submission of own ideas to judgement, the feedback from experts and the identification of suitable partners. Business networks may provide a better understanding of international markets, and the identification of 'holes' and neglected areas which may provide new business opportunities. Such relationships are also important for opportunity assessment, since they may be activated to validate ideas and to assess the possibility to mobilize additional resources and/or partners (Sharma and Blomstermo, 2003; Singh *et al*, 2000; Wakkee, 2004).

The exposure to international contexts allows people to develop international learning capabilities (Autio *et al*, 2000). Such capabilities facilitate the framing of opportunities for international markets and reduce the perceived risk, because international networks may be mobilized to evaluate opportunity feasibility and desirability, as well as to provide additional resources for project implementation.

In contrast, a person who studied and worked in a single country is more likely to concentrate their relationships there, framing opportunities in the context of domestic geographic boundaries. In this case, envisaging opportunities in international markets becomes more difficult, because information sources are limited, including finding the right people to assess opportunities from an international perspective.

In line with the previous arguments we propose that,

P4: Born globals entrepreneurs have international social and/or business networks which lead them to frame opportunities with an international scope, while domestic ventures entrepreneurs' networks are less dense and/or more focussed on the national territory.

METHOD

This paper is addressed to the identification of the factors discriminating business opportunity framing in new international and domestic ventures. It was shown above that this issue has been neglected by extant literature (Dimitratos and Jones, 2005; Zahra and George, 2002). Therefore, an exploratory approach seems to be the most appropriate. So far, we are not interested in defining a set of constructs to be submitted to a multivariate analysis. We want to undertake a first assessment of how entrepreneur-related drivers of opportunity framing may lead to born global firms or, conversely, to purely domestic ventures.

Case studies are an appropriate method for answering *how?* questions, and for studying recent and under-researched phenomena (Eisenhardt, 1989; Ghauri *et al*, 1995; Yin, 1994). Since opportunities are part of a process, the option for case studies, based on histories and experiences of entrepreneurs and on the evolution of their interaction with environment is warranted (Gummerson, 2000). Our approach also responds to Coviello and Jones (2004) quest for developing further case studies to interpret and understand social phenomena in the field of IE.

Our purpose is to compare opportunity framing in born globals and domestic ventures. Thus, our procedure will be based on contrasting pairs of both types of firms, using a polar strategy (Eisenhardt, 1991). We are essentially interested in what can be learned (Tellis, 1997) from comparing polar situations, and in analytical generalization based on the propositions developed (Yin, 1994). Two pairs were selected. They were arranged with a view to provide a deeper knowledge about the subject under investigation. Two technology-intensive industries were selected (biotechnology, and information and communications technologies), having in mind their international orientation. Our purpose was to avoid the possible bias coming from considering industries with different global integration levels (McDougall *et al*, 2003).

Born globals are defined as companies which have reached a share of foreign sales of at least 25% within three years after their birth and, from inception, seek to derive significant competitive advantage from the use of resources and the sales of outputs in multiple countries (Andersson and Wictor, 2003). Domestic new ventures are firms that in the same time frame generate all their turnover in the domestic market.

Information was collected through semi-structured interviews undertaken with the members of entrepreneurial team. In fact, having in mind the focus of our analysis, key informants should be members of the initial entrepreneurial team with a significant role in the opportunity framing process. Interviews were also carried out with companies' CEOs (in three cases, these were among the entrepreneurial team). The interviews lasted between 90 and 120 minutes, and were undertaken between February and June 2005; in three companies, there were two rounds of interviews. Broad questions about firm antecedents, start-up and development were asked to key informants. Closer attention was paid to idea generation and opportunity framing, as well as to new venture creation motives. More specifically, entrepreneurs' previous experience, knowledge levels, and personal and business relationships were key issues for information collection. Additional elements about international activities were also collected, such as geographic range of activities, entry modes, strategy formation, and the time frame for entering international markets. Recognising that assessing attitudes such as risk-taking and self-efficacy becomes difficult and hard to measure (Zahra *et al*, 2005), and the application of psychometric scales to four cases does not seem to be appropriate, we attempted to overcome these by closely looking at entrepreneurial teams' life, academic, and business trajectories, the challenges faced, and expressions used by entrepreneurs to describe their intentions and behaviours, related with those questions proposed by Markman *et al* (2002) and Jackson (1994). There was also recourse to secondary sources, mainly from websites, internal magazines and the press.

CASES

As indicated above, two pairs of contrasting cases were developed. Since we were not allowed to disclose the names of all firms, broad labels were used. The key descriptive elements of the cases

are presented below: first the two cases on information and communications technologies (ICT 1, and ICT 2), and then the cases on the biotechnology industry (BIOTECH 1, and BIOTECH 2).

ICT 1

This company combines marketing solutions and information technologies, being active in four areas: internet, multimedia, mobile communications and consultancy. Originally launched by the end of 2000, by two young students, with no previous managerial experience, but with some technical knowledge, the company was originally focussed on the design websites for local companies. One year later, the founders sold a majority stake to two newcomers: an Italian, with a MBA from Bocconi University, with experience as consultant in a well known international company, and a Portuguese with a degree in Economics and experience of implementing e-commerce projects in a commercial bank.

This operation led to strategic reorientation³, positioning the company as a marketing solutions provider: strategic consultancy services as multimedia and mobile marketing solutions were added to the original activity of website design. The new business model was mainly the result of the Italian partner's prior knowledge and work experience, accumulated in ten years as international consultant. The business idea was fine-tuned by the contacts developed mainly with his former colleagues, specialists in the field, as well as by a process of formal search where market trends were incorporated. For instance, offering services connecting SMS and marketing was based on market trends identified in reports produced by a well known company in the field. So far, the company faces no competition in this niche in domestic market, and their main clients

³ Our analysis will be mainly focussed on opportunity framing in the context of this strategic reorientation.

are located in Portugal. The company was originally addressed to serve the Portuguese market, and this orientation was not changed by the strategic turnaround.

ICT 2

This firm develops georeferentiation multimedia information systems, and interactive entertainment software. Created in 2000, it had a turnover of around 5 million €, in 2004, from customers in Portugal, Spain, Holland, the United Kingdom, France, Germany, China, and Brazil. It has undertaken projects for large multinationals, such as Vodafone, Siemens, General Electric, Alcatel, and Nokia.

The roots of ICT 2 are based on a University research group, which, in the period 1993-1998, worked on geographical information systems. The knowledge in this field was also applied to virtual reality and environmental systems multimedia screening. Several of these projects were undertaken in cooperation with other European universities and led to papers published in scientific journals. In 1998, the present CEO of ICT 2 had the opportunity to work at MIT as visiting professor. During his stay there, it was possible to benchmark the research undertaken by his group in Portugal with that performed at MIT. This led him to a surprising conclusion: his group was carrying out pioneering projects at world level.

One of the leading areas was the exploration of urban spaces through mobile tools, while another was the interaction with videos. In this field, another founder of ICT 2, during a scholarship at MIT MediaLab, realised that he had worked, in Portugal, for a same project (a video for the National Geographic), and that the Portuguese group had progressed further in the interaction between the audience and the movie.

The experience of these two members of the entrepreneurial team at MIT convinced them that their academic research might be translated into promising business opportunities. In 1999, when he came back from the United States, the present CEO of ICT 2 decided to invite four colleagues to launch this new firm.

BIOTECH 1

This company was founded in 2002 by two young graduates in Biology. After getting their degree, they worked for an 18-month period at a public laboratory, as research assistants. It became clear for both that employment opportunities in universities and research institutions were very limited, providing them almost no chances to follow a research career. Therefore, the idea to set up a firm to apply their technical knowledge gradually germinated, and by the end of their job in the laboratory, they decided to create their own firm.

The idea was to exploit their knowledge in the fields of biology and biotechnology. Initially, they considered launching a lab to analyse water properties and bacteriologic characteristics, but a quick search in the internet revealed a strong competition and a need for high levels of investment. Then, the attention turned to birds, since they had already worked on the application of the Polymerase Chain Reaction (PCR) technique to birds. PCR enables, through ADN analysis, to identify the sex of each bird, a key issue for creators of exotic birds as well as for zoological parks. This was envisaged as a business opportunity.

A search in the internet allowed them to make an estimation of the investment needed in machinery and equipment for applying the PCR technique, as well as to screen competing techniques for identifying bird's sex. A former professor at the University of Évora was

contacted to help them to assess the idea. This conversation convinced them that that technique was really suited for the purposes envisaged, and that the feasibility of the project was high. Then, birds' creators were contacted by e-mail to further evaluate the desirability of the idea. Soon, it became clear that there were no other firms applying this technique in Portugal, and that bird's creators were very interested in having access to these type of services. The two entrepreneurs decided, then, to set up the firm, offering sex and disease tests as their main services, based on the PCR technique.

Since inception, their main target was the domestic market. Such a focus was further enhanced when they discovered that there was a lack competition in the domestic market, while the services they intended to provide were already available in other countries at lower costs. Now, three years after launching the firm, 100 per cent of the turnover is still derived from the domestic market. The firm entered a new market segment, concerning disease tests in other animals, but the geographic market remains limited to Portugal.

BIOTECH 2

In 1996, after a getting a B.Sc. and a PhD. in biotechnology from Kings College (University of London), the founder of BIOTECH 2 returned to his home country and realised that that were almost no employment opportunities there. Biotechnology companies were few and small, and most pharmaceutical multinationals had no R&D activities in Portugal. The alternative, thus, was to return to England or to move elsewhere to profit from the knowledge acquired.

The decision, however, was to launch his own company. His PhD research, in the area of biotechnology, had been undertaken in the context an international project involving several companies and other Universities and research organizations, including partners in the United

States and Denmark. During the scholarships there, the entrepreneur became more aware of the biotechnology market boom. In his conversations with partners from pharmaceuticals companies, he realised that a market for cheap copies of therapeutic proteins – called biogenics – was about to be created, because the validity period of some key patents was about to expire. The perception of this opportunity led him to contact a former PhD colleague and to convince him to join the entrepreneurial team. This colleague's knowledge in molecular biology was envisaged to be an asset for the new firm. At the end of the day, he joined the venture, to become Chief Scientific Officer (CSO) and responsible for intellectual property.

BIOTECH2 main mission was defined as to provide generic pharmaceutical companies with the biotechnology know-how needed to produce specific new products in the area of recombinant human proteins. The firm positions itself in technology development business, licensing its know-how and/or patents to manufacturing and marketing partners (Bommer *et al*, 2002).

Initially, a consultancy contract with a German company was established, mainly in the fields of intellectual property and market research. This contract allowed the entrepreneurial team to confirm that the idea was feasible. Simultaneously, there was a bet on the development of own technology. This was undertaken in close cooperation with leading international universities and laboratories, mainly through research projects aimed at developing new patents. The network behind the PhD project was used to mobilize people and/or organisations holding specific knowledge deemed to be relevant for the development of the company, as well as to forge contacts with potential partners. Simultaneously, there was a policy of attending international conferences to present research results and to strengthen personal networks. International

expansion was developed in close cooperation with pharmaceutical companies, getting access to new markets.

DISCUSSION

In order to make an inter-case comparison easier (Yin, 1994), the main features of the pairs of cases studied are presented in Table 1.

***** **Table 1 about here** *****

The first proposition suggested that, in born globals, opportunities are framed without reference to geographic boundaries, while domestic new ventures are, since inception, designed for the domestic market. In information and communications technologies, ICT1 perceived the opportunity as a ‘hole’ in domestic market, waiting to be exploited. A specific package of business services concerning the application of internet and mobile communication technologies to marketing was specifically designed to ‘fill’ that ‘hole’. The international experience of one member of the entrepreneurial team was used to gain advantage in the domestic market, not as a leverage to a broader definition of the opportunity in geographic terms. In contrast, the very framing of the opportunity in ICT 2 required a worldwide perspective to make its exploitation feasible.

With regard to the biotechnology start-ups, BIOTECH 1 perceived the opportunity as strictly domestic. The absence of national competitors, together with entrepreneurial team’s limited scientific, managerial and financial resources, led to define clear geographic boundaries.

Conversely, the way how BIOTECH 2 opportunity was framed required the targeting of international customers (the generic pharmaceuticals firms). It made no sense to focus on a domestic, very limited market, where the main players are subsidiaries of multinational firms.

Looking at ICT 2 and BIOTECH 2 together, there are striking similarities. Both were designed to operate internationally. The way how the opportunities were framed only made sense for global markets; for instance, providing know-how and technology for biogenerics producers and offering games for mobile phones or virtual effects for cinema requires a capacity to compete globally. In both cases, the world was the firm's *raison d'être* (Autio, 2005). Not surprisingly, the CEO's of both firms converged in stressing that "*the world is our natural place*".

Our findings indicate that being a born global or a domestic company is strongly related to the opportunity framing process (Chandler *et al*, 2002). Therefore, Proposition 1 is confirmed.

The comparison of the ICT pair has not shown a clear difference in risk-taking levels. As far as one can judge, the risks entered by ICT 1 entrepreneurs were even higher than those faced by ICT 2, since for the last the launching of the firm did not imply the abandonment of their University careers. In the case of the biotechnology firms, there was a common root behind the creation of firms: scarce employment opportunity prospects. Again, however, we were not able to find any difference with regard to risk-taking.

Both entrepreneurial teams in ICT 1 and ICT 2 have shown high levels of self-perception. However, while for ICT 1 the benchmark was consultancy firms in Portugal, for ICT 2 the references were the leading researchers worldwide. The difference in self-perception is more

striking in the case of biotechnology firms. While the founders of BIOTECH 2 strongly believed in their capabilities to develop patentable knowledge, the entrepreneurs of BIOTECH 1 had a clear awareness of their knowledge and experience limitations.

The comparative analysis of the two pairs suggests that there were no major differences with regard to risk-taking characteristics. Conversely, in each pair, born global entrepreneurs perceived themselves as more knowledgeable and close to world's leading edge than their counterparts in new domestic ventures. It seems that Krueger and Dickson (1994) and Shane (2003) arguments about higher levels of entrepreneurs' self perceptions are correct, but need further qualification: self-perception levels of international new ventures entrepreneurs tend to be higher than those exhibited by the founders of domestic new ventures. Born global entrepreneurs are very optimistic about their knowledge bases and their capabilities to overcome global business challenges. Thus, Proposition 2 got partial support, on what concerns entrepreneurs' self-perception.

It was argued in Proposition 3 that, compared to domestic new ventures, born global entrepreneurs had higher levels of knowledge depth and complexity, gearing them to frame opportunities with an international scope. The evidence provided by the two pairs fully supports that proposition. In the biotech pair, both the depth and the complexity of BIOTECH 1 founders' knowledge were much lower than those of BIOTECH 2. While the entrepreneurial team of the last firm melded biotechnology, genetics, molecular biology and data mining to develop therapeutic solutions, the knowledge base of BIOTECH 1 was just anchored in the mastering of a not very complex nor difficult to learn technique, without relevant interdisciplinary connections.

Similarly, the comparison of the ICT cases confirms that ICT 2 founders have higher formal qualifications, and master more complex bodies of knowledge. In fact, while ICT 1 embraced the application of communication technologies to marketing, those were based on well-known international protocols. In contrast, the body of knowledge mastered by ICT 2 combined different streams of knowledge, namely geographic information systems, video and image processing and virtual reality, at the edge of scientific research. ICT 2 was even able to create new global market niches, regarding the development of mobile video games taking into account players location, as well as the application of virtual reality to entertainment. Simultaneously, both ICT 2 and BIOTECH 2 confirm Zahra *et al* (2002) and Autio (2005) suggestions that exposure to international environments encourages learning processes.

In the ICT pair, both entrepreneurial teams had international social and professional networks, although in ICT 1 these were specific to one member of the team only. In this case, the network was mainly used to collect information and to assess feasibility, further stressing the risks of international competition and the advantages of focussing on the domestic market; therefore, the international network did not become a lever for internationalisation, but rather as a ‘filter’, strengthening the commitment to the domestic market. In ICT 2, the social and professional network, strengthened by the scholarship in the USA, was instrumental in motivating the entrepreneurial process, and in confirming the desirability of framing the opportunity as global. As one of the entrepreneurs remarked, *“if professors at MIT become successful entrepreneurs why at home we can not do it, having the same scientific knowledge?”*

The contrast of social networks’ density and international width is very striking in the biotechnology pair. While in BIOTECH 1 the network was strictly Portuguese, in BIOTECH 2

the wide international nature of the network, encompassing academics and industry professionals from both sides of the Atlantic, was instrumental in encouraging the main founder to frame the opportunity with an international scope. Such a network was mobilized very early in the process, to attract a colleague with strong research skills. In both cases, personal networks were used (remember the recourse to a former professor in BIOTECH 1), but the differences in density and international scope were clearly translated in the way how the opportunities were framed.

One may conclude, therefore, that international networks are crucial to understand the emergence of a firm as born global, although the very existence of an international network does not necessarily lead to an international opportunity framing, as ICT 1 has shown. For both ICT 2 and BIOTECH 2 international networks were central in the process of making sense of, and identifying, an international business opportunity. Consequently, Proposition 4 is broadly confirmed, although the case of ICT 1 suggests that entrepreneurs' international networks *per se* do not imply that the opportunity would be framed as international, irrespectively of the characteristics of the underlying knowledge base.

CONCLUSIONS

The rationale behind this paper was the need for further research on the opportunity framing process to fully understand the differences between born globals and new domestic ventures. While McDougall (1989) and McDougall *et. al.* (2003) identified several key discriminating factors between these two types of firms, they *did* not relate them to the opportunity framing process. From our perspective, the study of such process is essential to grasp the very roots of the differences between new international and domestic ventures. Opportunity framing is central in

designing new firms business concept, product and geographic market scope, and competitive positioning. It should therefore be granted further attention to better understand the new breed of firms often called born globals.

We argued that opportunity framing involves a conjecturing process, where the attitudes and motivations, the competences and the cognitive processes of the members of the entrepreneurial team play a key role. In the present paper we concentrated just on a few aspects, namely entrepreneurs' risk-taking and self-perception characteristics, knowledge depth and complexity, and social networks. The research had an exploratory nature, since it was just aimed at taking a first inroad into the subject, and not at providing a quantitative testing of hypotheses. Two contrasting pairs of case studies were undertaken, to generate specific knowledge about the relationships between opportunity framing and firms' competitive scope.

This work confirms several perspectives common to born globals literature, namely on what concerns the relationships with knowledge intensive landscapes and the importance of social networks. Our findings on the role of entrepreneurs' international experience as a discriminating factor are generally convergent with those of McDougall *et. al.* (2003). It seems, however, that such experience should not be taken in absolute terms, but rather be related to the depth and, especially, complexity of the knowledge held, as the comparison of the two cases in information and communication technologies illustrates. Similarly, the role of international social networks in encouraging born globals should not be considered in absolute terms: while, in general, they tend to lead to born globals, such influence seems to be contingent upon the complexity and specificity of the knowledge held. Our findings also suggest that self perception, rather than risk taking as such, may be an important factor in discriminating the way how opportunities are framed (and exploited) by born globals.

More than providing answers, the present paper was aimed at exploring an under-researched area on the study of born globals. The results clearly show the existence of promising issues that need further research. The analysis of opportunity framing processes is relevant, since it goes into the 'heart of the matter' of entrepreneurial initiatives and suggests the existence of clear differences between born globals and domestic new ventures. Further case study research is needed, following the same path, in order to better identify possible discriminating factors. In this vein, another promising field is the improvement in the conceptualization of opportunity framing, to investigate other possible factors; for instance, we did not consider entrepreneurs' innovative attitudes nor cognitive processes. Simultaneously, further work is needed on the operationalisation of some concepts, such as risk-taking, self-perception, or knowledge complexity. This will be essential to enable, at a later stage, the undertaking of quantitative research on opportunity framing factors discriminating between born globals and domestic new ventures.