# 'BORN' EXPORTING IN REGIONAL CLUSTERS: PRELIMINARY EMPIRICAL EVIDENCE

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## INTRODUCTION

Only in the last decade did International Business research start to address a long ignored issue: why a growing number of firms are international from the moment of birth or in the very first years of activity (Ray, 1989; Mc Dougall, Shane and Oviatt, 1994; McDougall and Oviatt, 1996; Oviatt and McDougall, 1997; Westhead, Wright and Ucbasaran, 1998; Burgel and Murray, 1998). In the case of International New Ventures[ii] (INV) from small countries the major research question is how is early internationalisation possible rather than why. Even the less sophisticated mode of entry into foreign markets, exports, usually requires a minimal knowledge of foreign languages and external trade techniques. Plus, exporting firms will generally be in a disadvantageous position in relation to local competitors that benefit from better information about buyers' tastes and preferences and potentially enjoy higher credibility near local customers. These are likely to be especially important advantages when products sold are customised, technically complex, and require frequent contacts between the buyer and the supplier.

Another emerging issue in international business research has to do with the role of location (namely location within regional clusters) in internationalisation strategies (Dunning, 1997; Oviatt and MacDougall, 1997; Enright, 1998; Anderson, 1999). Therefore, this paper focus on INV located within a cluster, that is, on 'interdependent' INVs[iii]. As far as internationalisation

modes of entry are concerned exports and Exporting New Ventures (ENVs) are analysed. More specifically research is based on case studies of companies located in the plastic moulds cluster of Marinha Grande, Portugal.

While collecting information about this cluster a series of short articles about member firms of Cefamol - Portuguese Association for the Mould Industry - published in its quarterly magazine 'O Molde' between 1988 and 1999 were gathered (Cefamol, 1988-99). Geographic concentration around the area of Marinha Grande, a pattern of start-up through spin–offs, strong and early export orientation and the supporting role of relations with customers (including several large MNCs from different industries and countries), suppliers and peers seem to be common features of these 37 reports. A series of question on the role of location within clusters in early export strategies emerged from a thorough review and analysis of these reports: How do mould makers from Marinha Grande manage to start exporting so early after foundation?; How does location within a cluster influence early exports?; What is the role played by customers, suppliers and other firms in the process?; How does location within a cluster influence relations with other local firms and relations with customer firms located outside the cluster?

This paper presents the preliminary results from an on-going research project and is organized as follows. In the first section a short review of the existing literature on INVs is presented. Since 'interdependent' ENVs introduce the concept of location into the research on international entrepreneurship, a brief survey of cluster theory and its potential contribution to the explanation of INVs is also made. The main goal of this summary of literature is to guide the design of the research project (Eisenhardt, 1989, Yin, 1994). Therefore, the research design and the method for information collection and analysis are presented in the methodological section that follows. After a short introduction of the basic characteristics of

mould production, preliminary findings are disclosed. In the concluding section implications of major findings are discussed and questions for future research are identified.

## LITERATURE REVIEW

Borrowing from concepts of entrepreneurship and strategic management literature to explain INVs, McDougall, Shane and Oviatt (1994) argue that the founders of INV have unique competencies that enable them to detect opportunities for operating in foreign markets. Networks, knowledge and background, namely international experience, are referred to as key competencies of these entrepreneurs. In addition, these entrepreneurs tend to choose hybrid forms of governance in order to preserve scarce resources. Internationalisation from the inception is further justified as a way to avoid 'path dependence' on domestic competencies.

Placing the focus of their research on the competencies of the entrepreneur, Oviatt and McDougall (1997), tend to downplay other potential explanatory factors of the process of INVs. For example, location, industry and value chain linkages receive no more than a brief reference as potential explanatory variables in the case of 'interdependent' INVs. Even there it is simply suggested that location in geographic clusters or networks results in economies and internationalisation for all participants. Moreover the mechanisms through which this happens are not demonstrated and empirical research on different types of INVs is called for (Oviatt and McDougall, 1997: 93).

Organizational and sociological research into entrepreneurship has been arguing that a detailed explanation of entrepreneurship should start by recognizing that it is 'embedded' in the social context and that entrepreneurs obtain information, resources and social support through social relationships (Granovetter, 1985; Aldrich and Zimmer, 1986; Starr and MacMillan, 1990; Smilor, 1997; Baker, 1999). Empirical research has revealed that entrepreneurship is related to relationships external to the working place and to the previous working career of the entrepreneur. In the specific case of spin-offs it is shown that during

their previous working experience entrepreneurs have not only acquired practical knowledge about the product and the business but have also established personal relations with specialised suppliers, potential customers, other producers, specialised institutions, skilful employees and even potential partners (Lipparini and Sobrero, 1998: 204; Saxenian, 1990, 1994). These former business connections contribute to the development of reputation, foster mutual understanding and trust, and enhance early sharing of information (about opportunities, the locus and quality of resources) and inter-firm co-operation (Dubini and Aldrich, 1991; Lipparini and Sobrero, 1998). Other researchers applying network theory concepts have investigated specific aspects of network structure – like size, reachability, density, and diversity- that benefit entrepreneurial activity and success (Aldrich and Zimmer, 1986; Burt, 1992; Nohria, 1992; Baker, 1994; Smilor, 1997). Aspects of geographic location and their impact on networks have continued to be largely neglected.

Cluster theory attempts to address this gap. A cluster was recently defined as 'a form of network that occurs within a geographic location, in which the proximity of firms and institutions ensures certain forms of commonality and increases the frequency and impact of interactions.' (Porter, 1998: 226). Combining concepts from both network and competition theories, recent theoretical developments view entrepreneurs and firms located within clusters as 'embedded' in networks of personal and inter-firm relationships in which 'strong ties' and 'weak ties' coexist (Granovetter, 1973; Granovetter, 1985; Porter, 1998). Hence, the mechanisms through which the social structure of networks within regional clusters produces benefits for a particular firm have just started to be explored. Porter argued that clusters contribute to stimulating new business formation. Entrepreneurs within clusters benefit not only from better information about opportunities but also from lower barriers to entry. Furthermore, the presence of other successful firms/entrepreneurs contributes to lowering the perceived risk of entry and stimulates other start-ups through imitation (Porter, 1998).

Clusters influence business opportunities through a variety of forms. First of all, knowledge spillovers are likely to materialise in spin-offs. Also, persons working and living in a limited geographic space tend to be involved in a dense web of personal relations, fostering trust, which enable rich information flows. As a result, gaps in products, services or supplies are quicker and more likely to be identified. Furthermore, clusters constitute a significant local market for firms supplying specialised inputs or related goods and services. Finally, by comprising a significant number of successful firms in a particular field, clusters attract new entrants, both domestic and foreign (Porter, 1998). As far as resources are concerned, besides the traditional external economies underlined by Marshall (1920/1890: 221), the emergence of specialised institutions within clusters reduces the need for specialised investments. Local financial institutions familiar with the cluster may require a lower risk premium on capital (Porter, 1998).

Empirical research focusing on the potential impact of location within clusters on the internationalisation process of firms is still scarce and INVs are not at all mentioned (Porter, 1990; Porter, 1998; Enright, 1998, Porter and Solvell, 1998; Andersen, 1999).

This review of the literature has enabled the identification of potentially important analytical dimensions of the entrepreneurship process. The specific contributions of different relations to motives behind start-up and to the process of opportunity recognition, risk evaluation and resource gathering should be examined. The influence of location within a cluster on the composition (actors, content of ties) and structure of the personal network of an entrepreneur constitutes another dimension of analysis. As a consequence, research questions presented above may be rephrased as follows: What are the mechanisms through which location within a cluster influences the network of personal relations of local entrepreneurs?; What are the main consequences for the entrepreneur's personal network? How does the network of personal relations of the entrepreneur contribute to: -identification of opportunities in foreign

markets soon after start-up?; -finding the resources necessary to be able to sell in foreign markets?; -managing the risk normally associated with selling in foreign markets? These questions suggest a hypothetical casual chain that runs from location within clusters to start-up exporting passing through the network of relations of the entrepreneur. Nevertheless, the mechanisms of the causal chain remain largely unknown and will be the aim of this research project.

## RESEARCH DESIGN AND METHOD

Like almost all the other empirical research on INVs and clusters our study is based on case studies, in this case of exporting companies located in the plastic moulds cluster of Marinha Grande[iv], Portugal. Case study methodology was chosen since it has been considered the adequate strategy for research on process, that is, when how and why questions are being asked (Yin, 1994) or when little is known about a phenomenon (Eisenhardt, 1989).

As regards the operational definition of International New Ventures a firm qualifies as an INV if it has a significant percentage of sales coming from foreign countries (export intensity) within the first six years of activity (Oviatt and McDougall, 1997: 91-92).

Identifying and selecting the cases

Since research focuses on plastic mould exporters located in Marinha Grande, both mould makers and mould traders are included in the population. The unit of analysis is the 'embedded' firm, that is, the firm within the cluster (Grabher, 1993; Granovetter, 1985). The unit of observation is the 'embedded' entrepreneur, that is, the entrepreneur within his personal network of relations.

As a complete list of mould exporters is not available, cases were identified through the list of members of Cefamol, which includes the great majority of mould exporters. This on-line database comprised 60 mould making firms and ten mould trading firms located in Marinha Grande at the beginning of 1999. All these firms were contacted and asked whether at least

one of the founding partners were still active and how significant were direct exports as a percentage of total sales within the first six years of activity. Twelve firms were excluded since information about the start-up process was no longer available. Because most firms were no longer able to quantify their export orientation during their early years of activity, the identification of foreign customers within the six-year period was finally taken as an indicator of early involvement in foreign markets. The research project is still under way but until the present 25 manufacturing and eight trading firms have agreed to participate in the research. The relatively large number of case studies with a moderate level of detail aims at uncovering the relationships between location within a cluster and early exports.

Data collection: instruments and protocols

Data was collected through semi-structured interviews of at least one of the founders of the venture who was still involved in the management of the company, complemented by archival data (company financial reports, internal memoranda and articles in newspapers and magazines). Interviews of founders of 33 firms were conducted by the same researcher and took place in the two different periods - the first in February/March and then in June/July 1999. An interview protocol was prepared for the effect. First entrepreneurs were asked to make a brief description of the start-up process. This was followed by more focused questions on the reasons for start-up, the process of identification of the business opportunity and access to the necessary resources and competencies. Relations among partners and between partners and other actors they considered relevant for start-up were carefully explored.

All except three interviews were recorded on tape and later used as the main basis for the interview report organized according to the above-mentioned protocol. Written notes were the basis for the report of the other three interviews. The case studies' database is composed of tapes, interview reports and the archival data collected (Yin, 1994).

Method for data analysis

Within case analysis followed by cross-case analysis based on tabulation of the evidence available for each case was used (Eisenhardt, 1989; Miles and Huberman, 1994; Langley, 1999). Analysis of trading and manufacturing firms was done separately in order to enable inter-group comparison. Within-case analysis was based on the interview reports. In each case the process of export start-up was analysed carefully, emphasising the major factors that intervened. Patterns were investigated and a short summary was produced. Cross-case analysis began by the organization of evidence along the following dimensions: opportunity identification, main reasons for start-up, resource gathering process. This was followed by comparison between cases along each dimension aimed at detecting similarities and differences. The importance of different types of personal relationships was explored with regard to both start-up and the beginning of direct exports.

## MOULD-MAKING: A RELATION-INTENSIVE ACTIVITY

Neither consumer nor equipment goods, moulds are essential tools for the operation of injection machines. Every product incorporating plastic- a car, a washing machine, a container, a doll – requires one if not several moulds. In fact, each different plastic part requires one mould in order to be produced. As a consequence, moulds are customised, made to order products. Plus, the customers for moulds belong to different industries. Also, moulds are in general unique products. Each mould can be used to inject millions of identical plastic components or products. Often, even after the product is off the market its moulds are still capable of injecting many more plastic parts. Moulds are also technologically complex. Mould making involves the knowledge of many different technologies from mechanics to electronics, including materials technologies, optics and information technologies, just to mention a few.

These characteristics explain why quality is such an important feature of moulds and also why these are relatively expensive goods that take a long time to manufacture. Nowadays delivery time is on average 12 weeks. Customisation and technological complexity require frequent

and wide-band information exchange between the mould maker (MM) or the mould trader (MT) and each customer. Even though communication is likely to be more intensive at the beginning of the process, it varies throughout the process from daily to once per week or every two weeks and it may continue after delivery. Therefore, one can say that moulding is a relation-intensive activity.

Established payment conditions -1/3 after the preliminary design is approved, 1/3 when first samples are sent and 1/3 before the mould shipment – also contribute to the creation of a bond between both parts of the transaction. Buyer and seller have to trust each other. The customer because he makes an advance payment and relies on the supplier(s) to deliver the mould(s) on time and according to specifications; even if just one mould fails, it may well compromise the introduction of the product in the market according to schedule. On his side, the mould seller has to believe the customer will pay the remaining 2/3 of the price since it is not easy to find an alternative client for such a highly customised product. It is understandable then that both customers and suppliers value stable and long lasting business relations. Moreover, through repeated transactions MM learn the technical procedures and specifications of buyers and become familiar with their equipment (where moulds work). Technical staffs from both sides of the transaction meet, learn to communicate and to work together when necessary. This contributes to a reduction of misunderstandings and to ease communication and problem solving, resulting in improved quality and quicker delivery time.

A final note is due regarding the different average size of MM and mould buyers. Due to limited economies of scale, MM tend to be small and oriented towards manufacturing, employing few designers and with only one or two persons in charge of the commercial department. Customers of moulds include different types of firms, including multinational companies (MNC), with or without injection facilities, and trading firms. Both of these generally have several people in charge of procurement. Communication between the buyer

and the seller takes place essentially through persons in charge of the purchasing and the marketing departments, respectively. These are the ones most likely to develop a personal relation overlapping the business tie. Sometimes engineers involved in the conception of the product and designers of the mould are also involved. Manufacturing workers are far from the border of the firm and, hence, are only likely to meet employees of local contractors.

## ANALYSIS OF PRELIMINARY FINDINGS

Eight mould traders (MT) and 25 mould makers (MM) that have up to the present agreed to participate in this research constitute a diversified group of firms with regard to age, number of partners, current size and export intensity (Table A.1 and A.2). Their stories reveal multiple ways through which location within a cluster influences personal and inter-organizational network of relations of entrepreneurs and how these contribute to new business formation and especially to early internationalisation.

Opportunity detection: local market versus foreign markets

The majority of MMs interviewed started-up producing moulds for a variety of local customers. Since around 90 per cent of Portuguese mould production is normally exported this means many firms were working as subcontractors (ISTA, 1980-98). Local MTs were the most popular type among MMs' first customers and other local MMs (sometimes including former employers) followed. Local procurement offices of MNCs like Hasbro or Matchbox were also frequent among the group of first customers while local injection-moulding companies (IMs) were almost residual. Finally, it is worth noting that seven MMs mentioned foreign customers among their very first clients. All- MMs interviewed acknowledged having some prior relation with their first customers. Except in the case of one firm whose first customers were identified through a common friend, in all the other cases there was a direct tie with the buyer and this relation was established during the former working experience of at least one of the partners of the venture.

As far as the beginning of the export process is concerned, all MMs confirmed having exported within the six years deadline, including sales to local purchasing offices of MNCs (five MMs) and to local traders (two MMs) but only when technical details were discussed directly with foreign customers. First exports resulted from previous direct ties with foreign customers (the great majority of cases) or from relationships established through a third party or simply benefit from location within the cluster. All direct relations were developed during the former working experience of partners. Emigration contributed to firm internationalisation both in the case of two MMs whose relations with foreign customers were established during the time the main partner was an emigrant and in the case in which exports went to an IM owned by a Portuguese emigrant in Latin America (previously an employee of a MM's Portuguese customer). Typical examples of foreign customers that came through third party contacts are the ones that once bought moulds through trading firms but either by their own initiative or answering a contact of MMs managed to establish direct trading relations. Additionally, two MMs mentioned the reference from common friends, suppliers, or other customers as the main link between them and their first foreign customers. Location within a cluster facilitated random contacts since the geographic concentration of specialized firms attracted customers. Four MMs acknowledged to have been found by their first foreign customers while these were visiting Marinha Grande. The first contact happened just by pure chance (while driving around the area the customer happened to pass by several MMs and decided to visit some firms) or because buyers and sellers accidentally met in local IMs where moulds from several MMs were being tested side by side. Even if the MM was not present at the site of the test, it was not difficult for the customer to find out his name and address. Additionally, local institutions in cooperation with national ones periodically planned a series of initiatives aimed at promoting Portuguese mould exporters both in Marinha Grande and abroad. Some examples are the organization of trade missions and the presence of Portuguese

mould exporters in the main international fairs, the preparation of export catalogues, and the publication of the Directory of Portuguese MMs and MTs. All of these schemes facilitated the establishment and development of relations with foreign customers. It is important to recognize, however, that some (though few) MMs took active steps to enter into foreign markets. These firms sometimes benefit from the support of local and national specialized institutions. Moreover, the fact that other local firms were already exporting provided role models to new entrants. Self-organized visits to customers previously identified through mailing lists were among the most frequently mentioned actions. Finally, the small number of hotels in Marinha Grande further facilitated the contact with foreign customers while these were visiting the area.

As regards MTs, all firms started up selling to foreign customers. In all except two cases at least one of the partners of the MT had a previous direct or indirect relation with customers that once more could be traced back to the former working experience of the entrepreneur. One of the exceptions is partially explained since it corresponds to a MT founded by MMs with the specific aim of sharing the costs associated with the enlargement of their portfolio of customers. The other case corresponded to a MT whose partners have very limited previous experience in the mould making business; actually only one of them supplied design services to some local MMs and to a few foreign customers. Both start up exporting through trade fairs, direct mailing and telephone calls followed by personal visits to targeted customers.

New customers

As regards new customers, MMs and MTs alike used a variety of means to establish contact including classical marketing strategies. Still, the majority of firms stress the importance of customers' reference as the best way to get new, reliable and faithful customers in this process. When customers appear through recommendation both parties of the transaction have some information about each other. Being present at international fairs was considered useful

by almost all firms questioned but even here a reference from customers that were present played a decisive role in securing orders. New customers also appeared through the job mobility of customers' procurement staff. The latter often contacted the mould suppliers they were used to working with even though this did not necessarily mean they interrupted relations with usual suppliers of their new employer. Likewise, some customers were lost because personal relations with customer's staff were broken. Personal relations with MTs were also considered as potential sources of new customers. The importance of relations in the moulding business suggests that the more direct customers a MM has, the more requests for quotations it is likely to receive[v]. Hence, getting the first direct customers seems to be the main difficulty. Nevertheless, self-organized trips to foreign markets scored highly as an effective means of finding new customers. Still other firms hired administrative staff speaking foreign languages, collected official lists of potential customers, sent mailings followed by telephone contacts and invited customers to visit the firm. Finally, a reference to the case of Tecmolde, since some of its first new customers came through the foreign partner. This underlines the benefits of jointly analysing external trade and foreign direct investment.

Reasons for start-up

As regards MMs, the experience of founding partners in mould making was the most often mentioned reason for start-up. Within-case analysis was followed by cross-case comparison in order to look for patterns. It revealed that the majority of partners interviewed attributed start-up to several reasons, the most frequent combinations being 'own skills and competencies' coupled with one of the three following reasons: achieving personal goals/improving living conditions, exploring a surplus in demand, or solving a somehow unsatisfactory professional situation (Table A.1). The fact that other colleagues had already succeeded as entrepreneurs provided an additional incentive to start-up. Demand was generally taken for granted since most entrepreneurs stated that as long as someone was locally recognized as a skilful mould-

making worker, this person could be sure to receive orders. Besides, while working for other local MMs employees easily became aware of demand for moulds and of one another's competencies. Sooner or later groups of workers started to talk about the possibilities and advantages of starting their own firm and after some time spin-offs were likely to occur.

With three exceptions MTs identified the existence of a surplus in the external demand for moulds coupled with the local capacity to make but not necessarily to export moulds, as an opportunity to start-up a trading firm. Two exceptions correspond to MTs founded by MMs that stated as main goals: i) to split the costs of entry into foreign markets; ii) to achieve a size to be able to quote large orders from multinational customers (several moulds to be delivered at the same date) or to negotiate with official procurement offices of central planning economies. The final exception is explained by the very particular historical context that followed the April Revolution when orders from foreign customers were cancelled and local MM were in a difficult situation. Two workers of a MM spotted the opportunity to use their personal credibility with foreign customers to export moulds produced in Portugal or Spain.

Resources

Besides opportunity (and incentive) entrepreneurs need resources to start-up a venture. In the case of trading firms financial resources did not seem to be a problem since a rented room with some basic furniture and equipment was enough. As a result, main financial sources were derived from individual and family resources, in some cases supplemented by personal credit and by the up-front payment of customers. Some MTs benefited from the resources of partner-firms. Personal credit and individual resources were also the most important means of financing for the majority of MMs. Nevertheless these firms required more significant investments, especially in specialized machinery[vi], which justified the use of more diversified sources of finance. Equipment rental is not common due to the rapid pace of technological change but equipment suppliers supported start-ups by granting special payment conditions or

credit schemes or even by guaranteeing bank loans. MMs generally asked for this type of support from suppliers they already knew from their experience in the mould business. Customers also helped both through cash advances and by confirming orders with local banks. Finally, the need to pool personal and family savings to finance the venture was one of the reasons for the high number of partners found in many MMs. In one case even former employers became partners of the spin-off.

As regards human resources, partners constituted the main working force sometimes complemented by some apprentices and ex-colleagues. This guaranteed the quality of the work and labour flexibility, avoiding the need to pay high wages. And, while family owned MM were mainly able to provide specialized services or components, MMs founded by several partners with complementary specializations were able to start producing whole moulds. MTs naturally considered personal ties with other local MMs of key importance. These relations provided first hand information about who could do what and how well, contributing to the identification of the most appropriate subcontractor(s) for each order received, simultaneously guaranteeing access to the firms and reducing coordination problems when several subcontractors were involved in the production of the mould.

As for the kind of competencies more specifically required to export – such as the knowledge of foreign languages and external trade techniques- these could either be obtained through the partners' former experience in sales, specialized employees that were hired, or though learning by doing. Location within a cluster helped in a variety of ways. First MMs could start selling to local MTs and experienced MMs, which then took care of exports. Second, foreign customers were attracted to the cluster, making contacts easier. In addition, proximity enabled firms to split marketing costs and to learn from other firms. Finally, geographic concentration of firms induced the establishment of specialized institutions (namely training centres) and focused the attention of public policy makers assisting the external promotion of the cluster.

Risk evaluation

The higher uncertainty associated with entering into foreign markets is pointed to as a powerful obstacle in the internationalisation process (Johanson and Vahlne, 1977). MMs face a relatively higher risk than MTs when selling in foreign markets. Both receive 1/3 of final price as cash advancement but costs incurred are quite different. Hence, it came as no surprise that interviewees underlined former relations with customers as contributing to reduce the perceived risk of entry in foreign markets. Furthermore, the presence of local suppliers and institutions in the cluster lowered the level of initial investment necessary for start-up and, along with other local firms (like MTs), provided privileged information about foreign customers' credibility, contributing to reduce the perceived risk of entry. Finally, the simple presence of other exporting MMs created through spin-offs reduced the perceptible risk.

The impact of location within the cluster on the personal network of the entrepreneur

The role played by location within the plastic mould cluster of Marinha Grande is explored further through the analysis of the personal network of relations of the entrepreneurs.

Most MMs studied were either founded by fellow workers (16 firms) or were family-owned (eight firms). The only exception corresponds to a firm founded by an individual partner and an industrial group involved in the plastic and injection molding business. The high number of founding partners in several MMs founded by workers is one of their most striking characteristics: 12 firms had more than four partners and seven firms had even eight or more partners. As regards family-owned MMs all except one firm (founded by four brothers) had two partners, most of the times a couple. MTs were founded by a relatively small number of partners and can also be organized in two groups. Half of the cases studied are independent MTs that were founded by two individual partners with no connection to MMs at the date of founding. Dependent MTs have among their partners one or more MMs. The latter cases indicated the existence of cooperation among MMs, at least regarding sales.

As in several other regional clusters (Saxenian, 1990, 1991; Enright 1998), spin-offs were the dominant form of business creation, hence, the large majority of partners had previously worked for at least one but often several other local MMs and in some cases for a rather extended period of time; major exceptions correspond to wives in firms owned by couples and two partners with a background in administration and finance in two different MTs.

A background in the moulding business did not mean that all of the partners from one firm worked in the same MM or that all of them knew each other previously to start up. Even though seven MMs are spin-offs from one single firm, in seven other cases a core group of partners came from one firm and other partners either came from different firms or were connected to at least one of the core partners by some kind of relation (kinship, friendship, neighbourhood, business, former acquaintances during school or military service). Also, many of the firms interviewed have partners who once worked in one of the oldest mould makers of Marinha Grande and among more recently founded firms there were already spin-offs from some of the older firms included in this study. Once more the fact that partners from two different firms had once worked in the same firm did not imply they were contemporaneous. Nevertheless, certain older firms have the habit of organizing events (like dinners) open to all present and ex-employees. This, coupled with the high rate of job mobility within the Marinha Grande cluster and with the fact that most employees and entrepreneurs have always lived and worked in the region, increases the probability that two people working within the cluster have either met or have common acquaintances. As a result, the local personal networks of entrepreneurs located inside a cluster tend to be large (number of people each focal actor has a direct relationship with), dense and thick (business and working relations overlapping social ones).

Working experience of MM's partners was mostly in manufacturing and in the case of firms with a large number of partners each one seemed to master a specific manufacturing

operation. Partners with design or marketing experience were less commonplace: only seven MM included designers among partners and six firms partners with commercial experience. MT's entrepreneurs presented a more diversified set of competencies since almost all of them included partners with a direct experience in manufacturing along with other partner(s) with experience in design and/or sales. The only exception was a dependent MT founded by MMs. Different functional experiences of partners contribute to explain why the personal networks of business relations of MM's entrepreneurs were mainly rich of links to other local actors: employees of mould making firms they had worked in, workers of local suppliers of services or materials, workers of main local contractors – MTs and MMs- of former employers. Only a few partners from MMs included in their personal business network a significant number of relations with foreign customers. Naturally, personal networks of partners from all independent MTs and some dependent ones were simultaneously rich in relations with local firms, namely MMs, and final customers. These were mostly foreign ones since the majority of moulds produced in Portugal were exported every year.

## CONCLUSIONS AND ISSUES FOR FUTURE RESEARCH

The cases of Export New Ventures located in Marinha Grande reveal the impact of location on personal networks of relations of entrepreneurs and, hence, on early internationalisation of start-ups. It appeared from the analysis made above that entrepreneurs located within a cluster were likely to have large, dense and thick local networks of relations. In addition several, but not all, entrepreneurs presented personal networks that were rich in ties with actors located in foreign markets and this seemed to be partly related to functions performed in past jobs, to the cluster's area of specialization and its degree of openness[vii]. Moreover, location within a cluster facilitated the establishment of relations with outside actors, namely with foreign customers either when these were visiting the cluster or abroad. Entrepreneurs with personal networks that combined ties with local and foreign actors obtained information about

opportunities in foreign markets, could generally access the necessary resources and attributed a lower risk to entry into foreign markets (precisely because barriers to entry are lower and other local firms are used as role models). As a consequence, early internationalisation was facilitated.

As regards local relations, entrepreneurs located within Marinha Grande benefited from dense networks similar to those found in ethnic groups or immigrant communities (Aldrich and Zimmer, 1986). This resulted from the positive effects of proximity on the frequency of (often unplanned) face-to-face contacts, on the overlapping of business and other kinds of ties and on the average number of years of relationships. Spin-offs were frequent and during their working career entrepreneurs enlarged their local networks of relations. Since these entrepreneurs were also living in Marinha Grande, kinship, neighbourhood, and other kinds of ties overlapped. As a result even if two people living in Marinha Grande did not know each other personally they most probably had common acquaintances that acted as brokers. Densely connected networks facilitated entrepreneurship by guaranteeing the access to a variety of local buyers (namely MTs and MMS) and resources necessary for the new venture (Aldrich and Zimmer, 1986). The existence of previous relations (and, hence, trust) with buyers was of key importance for start-ups due to the relation-intensive characteristic of the mould making business as mentioned above. Also, relations among partners facilitated the start-up of integrated MMs. Within clusters support was provided both at the informal level from friends and relatives of entrepreneurs and through local specialized institutions and suppliers.

The impact of location within a cluster on the number and depth of international ties within the entrepreneur's personal network of relations has just begun to be demonstrated. First, success and critical mass naturally attracted foreign customers, suppliers and competitors. These foreign firms came for different reasons. The large number of foreign suppliers' representatives located in Marinha Grande were attracted by the significant potential local

market. More recently a few foreign competitors acquired local MMs to benefit from innovation and productivity benefits commonly associated with clusters. Foreign customers have been attracted for quite a long time by the existence of a large number of competitive suppliers. In second place, outward oriented clusters (like Marinha Grande) include a substantial number of international competitive firms able to sell their products in foreign markets and even to invest abroad. In the mould making business those persons in charge of sales and (to a lesser extent) engineering met foreign customers frequently and repeatedly. Meanwhile, workers in manufacturing dealt mainly with other workers from the same department, with workers performing up-stream and down-stream activities, as well as with employees of main contractors (MTs and MMs). Also, the more export oriented the firm, the more personal networks of its sales persons were likely to include links with foreign customers' procurement staff. Thirdly, clusters often included specialized institutions supporting internationalisation either on their own or in liaison with national institutions. More and more clusters are drawing the attention of national policy makers. In the case of Marinha Grande, Cefamol and ICEP have been jointly supporting internationalisation efforts at the level of the firm and also at the level of the cluster. Finally, some MMs took active steps to establish their first contacts with foreign customers in outside markets. But even these proactive firms recognized themselves as having benefited from role models present in the cluster and from some minimal institutional support. To sum up, several factors contribute to increase international contacts in personal networks: i) location in an outward oriented cluster; ii) whose main area of specialization is relational intensive (plastic moulds, for example); iii) the entrepreneurs having previously performed boundary spanning activities; iv) in outward-oriented firms operating in the cluster. This does not mean that all new ventures within an outward oriented cluster will be born international. Location within a cluster does not automatically lead to internationalisation. The fine division of labour characteristic of most

clusters favours the emergence of specialized new ventures aiming primarily at supplying other local firms. Only those firms selling moulds are likely to get the full benefit from international contacts and, thus to internationalise earlier.

This study has potential implications for entrepreneurs, policy makers and existing theories. Entrepreneurs located within cluster may well take advantage of a clear understanding of their networks of personal relations and from an active management of these relations. As it was shown above, when formulating internationalisation strategies entrepreneurs frequently leveraged on their network of personal relations to access opportunities in foreign markets at a lower cost, simultaneously limiting the risk generally involved in international transactions. Public support to internationalisation and cooperation may be more effective if it takes into account the specificities of networks of relations operating within and across clusters. For example, evidence presented above pointed out that inward foreign direct investment appears to facilitate the export development process of a firm. This may suggests the need for an effective articulation between foreign investment and external trade policies. Incentives to cooperation at the local level should be aware of the benefits associated with a certain degree of diversity and redundant ties within networks of relations. This study also intends to be a contribution to fill the gap in empirical research on the role of location within clusters and the internationalisation process. By bringing together concepts from international business, cluster and network theories, it aims at a better understanding of the process of INVs.

There are several aspects that still need further investigation. The relationship between local and international ties is far from being fully understood. If there are cases in which the link between a MM and a foreign customer was established through a reference from a local firm, in other cases a long lasting relation between a MM and a local MT made the former unavailable to accept direct orders from certain foreign customers or, alternatively, reduced business with local traders. Trade-offs between local and international relations need to be

examined. Another issue that has still to be investigated corresponds to the consequence of clusters both on the balance of 'strong' and 'weak' ties within the personal networks of relations and on the diversity of networks (Granovetter, 1973; Burt, 1992). A regional cluster is expected to raise the salience of group boundaries and identity, hence contributing to the emergence of strong ties (Aldrich and Zimmer, 1986). Nevertheless, the net effect of strong ties on entrepreneurship may be difficult to predict. On the one hand, strong ties carry with them a history of past dealings in or out of a business setting that can form a basis for trust. On the other hand, strong ties are less effective than weak ties as regards access to business information and to potential customers (Aldrich and Zimmer, 1986). Weak ties corresponding to non-redundant contacts may constitute key sources of information about persons and firms located outside the cluster. An obvious example in the case of Marinha Grande is the relation between some entrepreneurs and firms with highly export-oriented local trading firms that are regarded as an important and constant source of new customers. The fact that MTs are considered customers and/or competitors by different local MMs is something that has to be further investigated. Finally, the role of local specialised institutions deserves a more detailed study. How do these institutions contribute to international and local relations? How can they improve this contribution?

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[ii] Defined by McDougall and Oviatt (1994) as "a business organization that, from inception seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries".

[iii] Defined by (Oviatt, McDougall, 1997: 93) as 'entrepreneurial start-ups … located in subnational geographic clusters or networks'; two other types of INVs were named 'dependent' and 'independent'.

[iv] Marinha Grande area corresponds to the place were moulds for plastic injection were first produced in Portugal in 1946. It is still the location of at least half of all Portuguese mould makers. The plastic mould cluster of Marinha Grande was identified within the project Building the Competitive Advantage of Portugal coordinated by M. Porter (Monitor Company, 1994). Barbosa de Melo (1995) identified a Marshallian industrial district in the area of Marinha Grande.

[v] A Portuguese MT had a customer in the US whose employee in charge of acquisitions had a brother who owned a mould injection firms in the United Kingdom. Through reference of the former, the latter became the first European customer of the MT and has recommended the MT to several other customers in the UK.

[vi] A recently established firm estimated the minimal initial investment in the equipment necessary to make a mould to be between 150.000 and 200.000 Euros. Other firms confirmed these values.

[vii] External trade flows and foreign direct investment stocks eventually complemented by immigration and emigration movements measure the degree of openness of the cluster.

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*Table A.1* Main reasons for start-up

| *Mould-makers* | *Founded* | *Partners* | *Main reasons for star-up* |
|---|---|---|---|
| Somema | 1958 | 5 I | demand for moulds + experience in Mm |
| Irmãos Gomes | 1966 | 4 I | experience in Mm |
| Molde Matos | 1968 | 2 I | experience in Mm |
| Novateca | 1968 | 8 I | experience in Mm + profitability of Mm/ new entrants |
| Geco | 1969/75 | 1 C | experience in Mm + employer in the UK placed order |
| Planimolde | 1978 | 9 I | experience in Mm + succession problems in previous job |
| Inpomoldes | 1979 | 3 I | experience in Mm + aim at a better future |
| Famplac | 1980 | 10 I | experience in Mm + aim at better future/others 'made it' |
| M. Catarino | 1981 | 2 I | experience in Mm + local demand/MT |
| Rosagui | 1982 | 1 C | experience in Mm + ambition |
| Famolde | 1984 | 4 I | experience in Mm + wish to have own firm. |
| Plafam | 1984 | 9 I | experience in Mm + aim at a better future |
| Socimoplás | 1984 | 7 I | experience in Mm |
| Virmolde | 1984 | 8 I | experience in Mm + ambition / will to own something |
| Efemoldes | 1985 | 7 I | experience in Mm + aim at a better future + demand |
| Celmex | 1986 | 5 I | experience in Mm |
| Socém | 1986 | 5 I | own views of business (different from former employer) |
| I.T.M. | 1987 | 8 I | experience in Mm |
| Moldegama | 1987 | 11 I | experience in Mm + demand surplus |
| Ribermolde | 1987 | 1 C | former employer had shut down |
| LN Moldes | 1988 | 1 C | partner had experience in Mm + will to win / ambition |
| UPM | 1988 | 2 I | experience in Mm + acquisition of former employer |
| RAPIDTOOL | 1993 | 1 C | partner had experience in Mm + his trading firm closed |
| MGM | 1996 | 1 I + F | partner had experience in Mm + invitation to start-up |
| Fozmoldes | 1996 | 2 I | experience in Mm + will to work for themselves |
| *Mould-traders* | | | |
| Tecmolde | 1968 | 2 I | foreign customer of ex-employer hired Mr.S. to supervise acquisitions and then referred Mr S. to other foreign customers, encouraging establishment of MT |
| SETSA | 1975 | 2 I | demand for moulds made in Portugal crashed after April Revolution; partners quitted jobs and leverage on contacts with foreign customers to secure orders |
| Mouldexport | 1983 | 4 F | four MM joined efforts to achieve the size necessary to negotiate with procurement units of ex-URSS |
| Europlaste | 1985 | F + 3 I. | an American agent of a firm in Marinha Grande had excess demand + direct subcontracting by the MM was considered difficult so MT was established with agent. |
| Cemo | 1986 | 3 F + 1 I | three MM wanted to develop the commercial function + split the cost of entry into foreign markets+ achieve the size necessary to answer large orders. |
| Deltamolde | 1987 | 2 I | former jobs did not fulfil the ambitions of partners+ complementary skills: Mm/drawing and finance |
| Helomoldes | 1991 | F | commercial department of a local MM that had excess demand and decided to improve subcontracting |
| F.R.CAD | 1994 | 2 I | former foreign customer of drawing started to place orders for moulds and the firm developed into a MT. |

I = individuals; C=couple; F=Firms; Mm = mould making; *Source*: author.

*Table A.2* Size and export intensity in 1998

| *Mould-makers* | *Workers* | % Exports |
|---|---|---|
| Somema | 75 | 100 |
| Irmãos Gomes | 26 | 80 |
| Molde Matos | 100 | 90 |
| Novateca | 38 | 65 |
| Geco | 250* | 100 |
| Planimolde | 75 | 95 |
| Inpomoldes | 58 | 100 |
| Famplac | 50 | 90 |
| M. Catarino | 30 | 80 |
| Rosagui | 10 | 98 |
| Famolde | 60 | 100 |
| Plafam | 30 | 70 |
| Socimoplás | 37 | 60 |
| Virmolde | 24 | 100 |
| Efemoldes | 35 | 75 |
| Celmex | 25 | 100 |
| Socém | 35 | 93 |
| I.T.M. | 40 | 70 |
| Moldegama | 58 | 95 |
| Ribermolde | 35 | 95 |
| LN Moldes | 50 | 95 |
| UPM | 35 | 90 |
| RAPIDTOOL | 17 | 100 |
| MGM | 42 | 90 |
| Fozmoldes | 11 | n.a. |
| *Mould-traders* | *Workers* | *% Exports* |
| Tecmolde | 36 | 100 |
| SETSA | 50 | 95 |
| Mouldexport | 7 | 100 |
| Europlaste | 10 | 95 |
| Cemo | 3 | 100 |
| Deltamolde | 12 | 100 |
| Helomoldes | 6 | 100 |
| F.R.CAD | 4 | 100 |

* group of firms
Source: www.cefamol.pt/directorio and author.