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The Portuguese moulds and plastic clusters

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Before entering tonight's presentation, let me just introduce a brief note regarding the word "cluster"; a word that entered our every day vocabulary in the early 90ties after Michael Porters work became well known. Using Porter's words: "**Clusters** are geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries and associated institutions in particular fields, that compete but also cooperate."(Porter, 1998: 197).

(The two key elements in this definition are: geographic concentrations + specialization of economic activity "in particular fields")

As far as the Portuguese moulds and plastic clusters **are concerned**, I will **first** recall how these two industries have emerged in Portugal. This will help to explain why they have clustered. **Then**, I will present some actual figures and underline the main characteristics these clusters have today. **Finally**, I will discuss some of the main advantages (and disadvantages) that arise from location within clusters.

(1) A brief history

The mould and plastic industries in Portugal have their origins closely connected to the glass industry. The two traditional glass-making centers in Portugal were Marinha Grande, 93 miles north of Lisbon, and Oliveira de Azeméis, 155 miles north of Lisbon. It was in these towns that moulds were first built.

Up to the 1920ties all the moulds used in the glass industry were imported, namely from Germany and Austria. In the glass making firms there were only a few employees in charge on moulds maintenance. And, it was one of these employees, Mr. Aires Roque, who in **1924** first built a mould for the glass industry in Marinha Grande. Five years later, Mr. Roque and his brother, Mr. Aníbal H. Abrantes, founded the **first Portuguese mould making company** in this town (Aires Roque & Irmão, Lda). Shortly after, Mr. Roque opened another mould making firm in Oliveira de Azeméis.

Meanwhile, new materials (such as, urea) were being introduced in world markets and mass production of plastic products began. Some Portuguese firms started to experiment using these materials to make their products. Among the first examples are Repenicado & Bengala toy maker from Algés, Lisbon and Electrocerâmica, a manufacturer of electric material located near Porto in the north. Mr. Abrantes immediately wanted to produce moulds for this new materials but his partner and brother preferred to keep on producing mould for glass. As a consequence, they decided to cease society and in **1944**, Mr. Abrantes opened **Aníbal H. Abrantes**.

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This firm specialized in moulds for plastic materials used to produce toys, households and other objects.

The very weak local demand was a major shortcoming in the development of Mr. Abrantes business. Therefore, he went on frequent trips to Europe bringing with him many different plastic objects. He would then persuade local entrepreneurs to produce similar objects. This process triggered the creation of several firms producing plastic products around the area of Marinha Grande and Leiria. Among the first are **Nobre & Silva** and **Baquelite Liz**. That way a **plastic cluster** emerged next to the **mould cluster**.

Of course, Mr. Abrantes would produce the moulds for the plastic objects, learning by doing. Back then, several operations in the production process had to be executed manually. Therefore, training took a long time. As demand for moulds increased, Mr. Abrantes divided the mould production process in small tasks and each employee was then trained to perform a specific task. This way the training period was shortened.

In 1946 a new material entered the market, **thermoplastic**, requiring a different type of moulds, injection moulding. Once again Mr. Abrantes was willing to produce these moulds. And, in Oliveira de Azeméis the first mould for plastic was produced shortly after by Santos & Abrantes, a firm founded in 1945.

Skilled workers, coming from the local glass making firms and also from the older mould making companies, founded **several other mould making firms** in Marinha Grande and in Oliveira de Azeméis.

However, the big expansion of the mould making industry in Portugal only happened after **exports began in the mid 50s**. The first exports to the UK and the US were made possible by the association agreement established in 1955 between Mr. Abrantes and Mr. Tony Jongenelem, a US citizen living in Europe. (The two met by chance when visiting a common customer in Espinho, near Porto). Soon, Aníbal H. Abrantes was exporting its entire production.

After a while this exclusivity agreement was broken and Mr. Abrantes started to export his moulds directly. Mr. Jongenelem placed his orders in other local mould making firms, quickly growing in number in response to this strong external demand.

After a while, Marinha Grande and Oliveira de Azeméis started to be known by **international buyers of** who included these places in their regular trips. Some of these buyers have later on opened purchasing offices in Marinha Grande. (The case of the American toy maker Hasbro, for example.)

Simultaneously, some **Portuguese trading firms** emerged. In 1969 Tecmolde was founded and others followed. Mould traders worked as commercial and technical departments of mould making firms that were mainly oriented towards production.

All these factors led to a steady growth of the 2 mould making clusters - Marinha Grande and Oliveira de Azeméis.

In the case of **plastics** the story was somewhat different. First, the **small size** of the Portuguese market did not enable the achievement of scale economies that are possible in the plastic industry. Also, Portuguese plastic makers specialized in **low value added products**, namely toys, households and some electric materials. These products were not competitive in international markets, especially if transport cost were added. As a result, plastic production was oriented to the **domestic market**. And, since this was a small and low-income market, the number and sophistication of firms was limited. In short, one can say that plastics have not benefited from the external demand-pull that drove the expansion of the two mould clusters.

Nevertheless, new firms tend to locate near one of the mould clusters, where they were certain to have easier access to one of their key inputs: moulds. Several plastic makers have also established in the area of Porto and even to the north due to the industrial tradition that characterizes this area of Portugal.

(2) The Portuguese Moulds and plastic industry in numbers

Having seen how the mould and plastic industries have emerged in Portugal and the reasons why they concentrated in Marinha Grande and Oliveira de Azeméis, the 2 clusters, let's now move to present their key features. Even though moulds and plastic are two related economic activities and they concentrate in the same geographic areas, they have followed very different development paths. For that reason, I will present them separately.

Each **moulds cluster** is composed by a large number of very different economic actors- mould-making firms, engineering and trading companies, all sorts of suppliers of inputs (like Steel, Accessories and Special Components), suppliers of services (Design, CAD/CAM, programming) and local institutions. All these firms and institutions have something in common, they contribute to the same business: mould-making.

In 1998 there were between **340 and 460 mould-making firms**², depending on the source used³. These firms employed between **6.700 and 7.700 persons** and their volume of sales varied between **285 and 350 million euros** (that is, between 250 and 310 million dollars or 57 and 70.4 billion escudos). Portugal occupies the 11th place in ISTMA ranking of producing countries (18 countries are included), immediately before Belgium, Netherlands, Finland, Sweden, Argentina, Switzerland and Slovenia.

Around **60%** of the firms (in terms of employment/ volume of sales) are located in the **Marinha Grande** Area and **25%** in **Oliveira de Azeméis**. The rest are spread mainly in Lisbon and Porto metropolitan areas.

² According to the classification of economics activities (NACE Rev. 1 or CAE Rev. 2) firms involved in mold-making are classified in the category 29563.

³ Ministry of Employment (MQE, Quadros do Pessoal) versus the National Institute of Statistics (INE, Estatísticas das Empresas; INE, Belém). In 1998, the numbers of mold-making firms according to these three sources were 343, 461 and 432, respectively.

Not all these 400 firms are whole mould makers; some have specialized in the production of parts of moulds (like mould bases or cavities), others in the performance of specific operations (such as polishing or electric erosion). This explains the large number of very small firms; half of the firms have less than 10 employees.

The average size of Portuguese mould makers is a little less than **20 employees**⁴ and average sales are around **770 thousand euros** (690 thousand dollars or 155 million escudos⁵). However, there are at 10 firms with more than 100 employees and with a volume of sales higher than 5 million Euros (4.4 million dollars, 1 billion escudos)⁶.

It is also worth noticing that in 1997 and 1998 alone 88 firms were founded (48 in the district of Leiria and 25 in the district of Aveiro). This represents a 27% increase in the total number of mould-making firms. One probable cause of this increase is the number of firms opened by other mould makers that wanted to increase production capacity. Several firms believe that mould-making plants should not have more than 50 workers, so growth strategies imply the foundation of new firms. If to this trend, one adds the number of firms that were recently acquired by other mould-makers or firms in related business, the result is a **number of decisions centers** much smaller than the total number of firms. And only 4 firms were participated by foreign capital.

Nevertheless, besides these firms there are also 200 **individual entrepreneurs** that work alone or with one or two employees. In most cases these entrepreneurs work in very small shops, providing specialized services.

The co-location of so many different types of firms in Marinha Grande and Oliveira de Azeméis favored the outsourcing of parts, components, specific activities or even whole moulds. Portugal has a relatively high value of **subcontracting work as a % of turnover** -15% - one of the highest among ISTMA members (in 1999 only France and Korea had higher values). This confirms the existence of important economic transactions among mould-making firms, typical of industrial clusters.

The very high investment rate (16,6% of sales in 1999) is another key feature of the Portuguese mould industry. This figure stands out both in national and international comparisons. In international terms, Portugal has systematically presented one of the highest investment rates among ISTMA members (in 1999, only Spain has a slightly higher rate = 16.8%). The results are at sight: mould-making firms are virtual show rooms of up to date equipments (advanced CAD/CAM stations, rapid machining equipment, and so on). The significance attributed to technology is present in everyday talks of mould entrepreneurs and employees. It is frequent to hear employees from different firms discussing the best way to handle a technical difficulty, as it is frequent for one firm owner to visit a competitors' firm

⁴ Between 17 and 20 depending on the source used.

⁵ To be more specific 166 million escudos according to MQE statistics and 153 million escudos if the INE database is used.

⁶ In Marinha Grande, Aníbal H. Abrantes, Somplaste e Molde Matos, in Oliveira de Azeméis, Moldoplástico, Simoldes Aços, IMA, MDA, e Azemoldes. Near Porto, Soarmoldes and near Lisbon, A Rigorosa.

just to examine the functioning of new equipment. As a result, social informal relations between firms are strengthened.

Investments in technology and equipment are accompanied by continuous **investments in training**, since a skilled work force is a critical resource in this business.

Plus, mould makers have participated in **other types of investment projects** that will be referred to later on.

There is, however, a weak point in this picture: the **relatively low productivity levels** (whatever indicator is used). And, even though it is difficult to make a correct comparison between countries, since the composition of industries varies a lot from one country to the other, the gap is big enough to raise concerns. This is the first step to change things. And, the process of catching up has already began - Portugal's value of sales per employee have moved from 35% to 53% of ISTMA average between 1993 and 1999 (from 35% to 46% of ISTMA average in terms of value added per employee).

Statistics are not very helpful as far as **suppliers** are concerned and it is not possible to know the real number of firms. Looking into Cefamol's directory (14 members), into the yellow pages and talking to local firm it can be observed that:

- most equipment, steel and standardized components are imported. And some foreign suppliers like Thyssen, Eschmann Stahl, Hasco, Eurocumsa have opened local branches; this means a higher level of foreign direct investment in the supply sectors than in mould making (where only 4 firms have foreign capital participation).

- a diversity of other inputs and services are sourced locally. There are several individual entrepreneurs supplying mould design services and CNC machines programming, for example. Most firms I have interviewed systematically told me that they could **buy almost all their inputs locally**. And, this fact, along with the skilled workforce, was always presented as a strong reason for choosing to locate in Marinha Grande or Oliveira de Azeméis clusters.

Unlike what is typical of clusters, the **main customers** of moulds produced in Marinha Grande and Oliveira de Azeméis are **foreign**. Local injection moulders are relatively unimportant customers given that **90% of mould production is systematically exported**. In the year 2000 mould exports amounted to 270 million euros (\$ 241 million, 54 billion escudos⁷) a figure that made Portugal the 9th more important exporter in the ISTMA ranking, in front of countries like Spain and the UK, bigger producers than Portugal. With the exception of Belgium, Portugal is the ISTMA member with a higher export ration (export/production). Only Canada and Switzerland have comparable values (80,3% and 63%, respectively); the ISTMA average is only 24.3% in 1999.

⁷ Molds classified in CN code 84.80.

I will concentrate on moulds for plastic injection⁸ since these represented around 90% of total mould exports. During the period 1994-99 these moulds were exported to **105 different countries** (this does not mean necessarily every year; annually export destinations were between 62 and 70). The ten more important destinations, included only 3 non-EU Member States, USA, the most important market (17%), Brazil that occupies position number 8 (big drop in 1999) and Israel as number 10. EU member states are by order of importance: France (1st market in 1999), Germany, UK, Sweden and then, Netherlands, Spain (ascended to 4th place in 1999), Belgium-Luxemburg.

Portuguese moulds are sold to a **wide range of industries**. The industry mix changed drastically from early days. Today the most important and dynamic customer industries are the automotive industry, packaging, electronic and telecommunications. Households and toys are still losing ground.

Firms located in Oliveira de Azeméis were responsible for 28,5% of total exports of molds (CN code 84.80.71) while firms located in Alcobaça, Leira and Marinha Grande exported 67,7%; the actual figure for these 3 last municipalities is probably substantially higher since Tecmolde and Spem headquarters are in Lisbon.

Between 1994 and 1999, mould makers were responsible for nearly of 80% of exports while **engineering and trading firms accounted for 20%** (this value may be higher since some tradings are classified as producers in the National Institute of Statistics databases)⁹. As a consequence, the most important **local customers** for mould-making firms are these **engineering and trading companies**.

With the help of ICEP database, **58 trading firms** could be identified in a total of 152 mould exporters. 51 trading firms¹⁰ had their main offices in the area of Marinha Grande and 5 in Oliveira de Azeméis. Most firms (47) are very small, employing less than 10 persons and 80% of the firms were founded after 1986. The other **11 firms** employ between **10 and 49 persons**. Additionally, five of these larger firms are connected with other firms that are part of the same cluster (common partners, one participates in the capital of the other, both participate in the capital of a 3rd firm).

The **biggest individual exporter** of moulds is **Tecmolde** responsible for **19 million euros** of exports in 1999 (\$ 17 million dollars, 3,8 billion escudos=7,7% of total export of moulds). This does not mean however that industrial groups have smaller export values. For example, the 3 mould making firms that belong to **Simoldes**, a group from Oliveira de Azeméis, have exported in the same year **34 million euros** (\$ 30 million, 6,8 billion escudos =13.6% of total export of moulds. Consolidation of export figures by groups is simply infrequent.

⁸ Molds classified in CN code 84.80.71 = Molds for plastic and rubber: injection and compression types.

⁹ Helomoldes, Moldetipo, Moliporex, Mouldexport, Setsa and Vicmoldes.

¹⁰ Including Tecmolde and Spem.

Trading companies invest in **market search** and **promotion**¹¹ and **secure annually a large number of orders** from customers of a large variety of industries and countries. Orders are then placed near local mould makers, those that are essentially manufacturing firms. Some of these engineer and trading firms provide mould makers **extensive technical assistance handle all aspects of the relationship with foreign customers.**

Both mould making and trading companies have been **investing** in different types of projects throughout the 90s:

- The first type of projects corresponds to **downstream investments** in the plastic industry. This includes investments in testing facilities and/or in series production.
- **Investments in upstream activities** that is in engineering and product development were also frequent.

Through these upstream and downstream investments firms are able to offer their customers higher value added services, strengthening the relation.

- Finally, **the internationalization of mould production (OFDI)** has to be mentioned. Most of these projects have started in the late 90s and are directed towards Brazil and also Mexico, two markets with good demand prospects.

A final word goes to **specialized institution** that result from of the pool of individual firms efforts.

As early as 1969, **Cefamol** - the National Moulds Industry Association was founded in Marinha Grande. It includes all the sub-sectors of moulds industry, different sorts of suppliers, service providers, engineering and trading companies. It has presently 120 members. Its activities include the representation of industry in dealings with official bodies, professional training and provision of technical support to members. Moreover, the external promotion of the mould industry is carried out jointly with ICEP - Portuguese Foreign Trade and Investment Department, in Lisbon.

In the early 90s Cefamol was involved in the setting up of **Centimfe**, an advanced technological center for the metal and mould making industries Its headquarters are in Marinha Grande but it has opened a delegation of Oliveira de Azeméis. It is presently participated by more than 200 companies. Since you have visited Centimfe I will not go into details regarding all services this institution provides to local firms (quality control, research and training, technological development, provision of information on new technologies). I will only mention that Centimfe plays a key role by stimulating firms' cooperation in research projects and establishing relations to foreign research centers and other institutions. Furthermore, it is usual to see Centimfe and Cefamol joined in the promotion of different types of events. So, also at the institutional level efforts are pooled.

¹¹Both mould making and mould taking firms are present in trade fairs, integrate industrial missions and organize visits to customers. However, trading firms have more frequently web pages than mould making firms.

Another important local institution is **Cenfim** -is the Professional Training Center for Metallurgic and Mechanical Industries. The Portuguese Institute for Employment and Training finances it and the two delegations of Marinha Grande and Oliveira de Azeméis are naturally oriented towards the mould industry. Courses range from extensive training for apprentices to specific courses on selected topics for specialized workers and to management education for executives.

As far as the **universities** are concerned, the School of Engineer of the University of Minho, with their specialization in plastics deserves a special reference. Even though it is not located within the cluster, it was able to work closely with cluster institutions like Centimfe. At the local level, the Polytechnic Institute in Leiria has also established frequent relations with local firms and institutions. And, as far as moulds are concerned I will stop here.

The plastic clusters

Plastic parts, components and objects are produced by firms classified in a large variety of economic activities, which makes especially difficult the collection of thorough statistical data.

In 1999 there were **950 firms producing** different types of plastic products (CAE 252), namely pipes, tubes and accessories, materials for construction, packaging for different types of articles and households. These firms employed **17.886 persons** and sold 1.3 billion Euros (**258 billion escudos**). Value added is 32,5% of sales¹².

Average size of firms is **19 employees**. More than 60% of plastic-makers have less than 10 employees, and the 20% with more than 20 employees, account for 75% of total employment and 82% of total sales.

Most firms were located in **4 districts**: Leiria, Aveiro, Porto and Braga. Therefore, the 2 mould clusters are also the location of many plastic makers.

Investment rate is 9% of sales, almost the double of the manufacturing industry average but not as high as in mould making. **Productivity** is also higher (31%) than the manufacturing industry average.

The **expansion of plastic products manufacturing** can be traced back to the 80s but it proceeded during the 90s. It is generally attributed to 3 sub sectors: i) the big expansion in civil **construction works**, namely public construction (high public investments in sewage, water and electricity supply, natural gas...); ii) the change in consumer habits, namely as far as food and drinks are concerned, that led to an enormous demand increase for **packaging materials**; iii) the development of the **automotive industry** in Portugal associated with the attraction of foreign direct investment projects (FDI). Some of the early mentioned investments of mould-making firms in the plastic industry aimed exactly at supplying plastic components to the automotive industry, others at supplying construction materials.

¹² INE, Estatísticas das Empresas. Values for CAE 252.

Just to give you an idea of this industry expansion, between 1996 and 1999 the number of firms manufacturing plastic products increased 17%, employment 22% and sales nearly 26%. In the same period the correspondent values for the whole manufacturing industry were - 7% of firms, -3.7% of employment and an increase of 5% in sales.

The main problem with the above numbers is that they refer **only** to a **part of plastic producers**. For example, manufacturing parts and components for automation¹³ there were 205 firms that employed 12.00 workers. Unfortunately there is no indicator of how many of these 200 firms produce plastic components. The same problem applies to firms manufacturing electric materials, electric appliances, electronic and telecommunication products, toys, furniture and so on. There is no easy solution to solve this problem.

As far as **suppliers** are concerned, most inputs are imported. As regards plastic materials, the majority is not even produced in Portugal. Machinery is also imported as well as moulds. In fact, even though moulds imports are very small if compared to exports¹⁴ 60 to 74% of the Portuguese demand for moulds (production – exports + imports) are covered by imports¹⁵. Mould imports come from **72 countries**. The most important origins are EU countries and also the USA, Switzerland and Japan.

Mould makers are the most important importers, representing 33% of total imports, followed by the manufacturers of rubber products (18%), shoemaking firms (11,5%), producers of plastic products (11,1%¹⁶) and manufacturers of parts and accessories for motor vehicles and their engines (10,6%).

This high degree of import penetration together with the 90% export ratio confirms **that mould and plastic production have very weak economic links, even if in some cases they locate in the same geographic areas.**

External trade data reveals that the **major customers** of the Portuguese manufacturers of plastic products are located in the domestic markets. This is a common feature in plastic industries since transport costs can have an important weight in total cost. Therefore, only very technical products are usually exported or less technical products but when customers are located in neighboring countries.

Nevertheless, exports have been expanding and the cover ration in value terms= X/M) has improved from 37% to 45,6% between 1996 and 1998 (in quantity, the evolution has been from 46.5 to 59.4). This reflects some changes in product specialization towards high value added products (like, for example, some automotive components). According to ICEP database, in 1999, some 200 firms have exported plastic products.

¹³ CAE 343; source: INE, Estatísticas das Empresas.

¹⁴ Exports of moulds 7,4 or 8,7 times higher than imports, depending on total moulds (CN 84.80) or mould for rubber and plastic (CN 84.80.71) are considered.

¹⁵ Between 1994 and 1999, 18 billion escudos of moulds for rubber and plastic: injection and compression (NC 84.80.71) were imported, and average of 3 billions escudos per year.

¹⁶ Plastic producers (CAE 252) imported 2 billion escudos of moulds (CN 84.80.71) between 1994 and 1996.

As regards institutions, in the year 2000 **APIP** - The Portuguese Association of Plastics Industries- had 217 members, producing 450 different types of products covering all the plastic sub-sectors (from toys and households to material for automation and transport, packaging for all types of products). Besides the headquarters in Lisbon, the association has delegations in Leiria and in Porto, in order to be near to most member companies. APIP and Cefamol have been involved in the joint organization of meetings that bring together firms from the moulds and plastic industries. There is also the National Association of Plastics¹⁷.

Another institution worth mention is **Centimfe**. It has recently extended its activity to the plastic sectors. Firms from this industry have been involved in joint projects with mould making companies. And, the **University of Minho** was already mentioned above.

It seems, that at an institutional level moulds and plastic are starting to join efforts.

Summing up moulds and plastic constitute two very different types of clusters. The two moulds clusters are very outward oriented and characterize by dense local networks of relations. The plastic clusters have less developed internal and external networks. Moreover, relations between the moulds and plastic clusters are weak. However, there is some evidence that this might be changing due to recent firms strategies and also to the efforts of specialized institutions.

3. The clusters/industrial districts effects

But, why are clusters such important, after all? Clusters provide firms several benefits and a special type of benefits since they are not exclusive of one firm. In fact the economies available at a cluster location are **external** to firms (as opposed to internal advantages like scale economies).

On the **production side**, firms that locate in clusters generally benefit from: a **pool of specialized labor**; the presence of **specialized local suppliers** that provide them larger variety of inputs at more competitive process; **infrastructure support**. Moreover, firms benefit from **technological and information spillovers** since knowledge flows easily from one firm to the other. Knowledge diffuses fast within a cluster due to frequent, repeated and unplanned contacts between workers and entrepreneurs of different firms who live and work in the same area (go to the same places, belong to the same institutions). High labor mobility and the creation of new firms by employees of other firms (spin-offs) further contribute to the diffusion process. But this environment also benefits "learning by problem solving" and "learning from one another" or "learning through imitation and through combination of different know-how". In the case of moulds the fact that customers come from different industries and different countries favors complementary innovation and cross-fertilization. There are several empirical studies that show that firms within clusters tend to innovate more and more quickly than firms located outside cluster.

¹⁷ Source: Centimfe home page.

In addition **demand side economies** are also present, namely better **chances of being discovered** by visiting buyers. Several firms I have interviewed mentioned this had happened to them (because the buyer was driving by and decided to stop and visit the firm, because they met the buyer by accident at some testing facility); enhanced **credibility of individual firms**, since the existence of a cluster signals the presence of a particular expertise in a production sector. The cluster enhances the international reputation of a location and international buyers are more likely to turn to suppliers from that cluster. Firms can also benefit from **market information spillovers** (about international trends and conditions) provided by institutions or through contacts with other cluster firms.

All the above-mentioned advantages have a common characteristic; they are available to all firms that locate in the cluster, without the need of any conscious effort on their part. Therefore, these are called **passive (external) economies**. There is however another kind of external economies that only occur through firm action; these are **active external economies** and are the ones believed to contribute the most to the upgrade of performance. Examples of active economies are **Joint research and development projects** and **joint marketing activities**, that include joint market research, trade fair participations, trade missions, joint approaches to potential customers and firm referrals (customers that come through referrals from other local firms, being them competitors, suppliers or customers).

Active external economies are based upon **cooperation** among firms and cooperation requires the existence of familiarity and trust. Within a cluster trust is developed through experience and is backed by dense social networks. **Institutions** like Cefamol, Centimfe and other have been playing an essential role in the promotion of cooperation among cluster firms and also with firms and institutions located outside the cluster. **Exporting firms** too, have been major contributors in the process of linking local networks with other more global networks. These may be important sources of information and of resources that do not exist within the cluster. As a consequence they are vital to the competitive advantage of cluster firms.

Conclusion

Going over the main points up, the emergence of the mould and plastic clusters were closely related but have then pursued very different development paths. Accidental factors along with different strategic choices contribute to explain these differences. Nevertheless, at present the routes followed by mould and plastic clusters seem to be getting closer. Perhaps, this is the right moment to strengthened weak relations. That way each side could benefit from the potential synergies associated with deeper clusters. Lets just remember that some of these potential advantages require the adoption of specific strategies, such as **cooperation strategies**.