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# // Competitiveness

## *The Catalan Clothing Industry\**

*\*The opinions expressed are those of the authors, the consultancy Competiveness ([www.competitiveness.com](http://www.competitiveness.com)).*

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## 1. Objectives of the case studies

### **Why the Catalan clothing making example can be useful**

The increased participation of low cost labour economies has affected the way industries shape their value systems. Industrial sectors in which labour is a big proportion of the per unit production cost have been the first to suffer these changes resulting in a significant employment loss and negative trade balances. Does this mean there is no role for medium and high cost countries in sectors such as textile, toys, manufacturing, etc.? The textile and clothing industries in Catalonia seemed to have no future, if we followed the statement of a high rank official from the regional government in the mid 90's. At the same time, we see in Catalonia the birth of Mango, an apparel designer, outsourcer and retailer. Mango opened its first shop in 1984 and now has around 900. It has had sustained double-digit growth to reach Euro 1.257 M turnover in 2006 operating in over 80 countries (the total turnover from apparel manufacturing in Catalonia is 1.989 M<sup>1</sup>). Mango is the second largest textile exporter from Spain (after Zara). This is the most significant but not the only success story. Today there are 38 companies in Catalonia that have established themselves opening their own routes to market. Most of them have been created in the last 20 years with innovative strategies ignoring the ill fate that was forecasted and, most important, many with support policies that were in the beginning irrelevant to their success. Policies were centred in promoting productivity and quality, product design and exports with trade fairs and fashion shows. The Catalonia region was pioneer in establishing a programme that, through a series of dissemination seminars and supporting tools, fostered the creation of the manufacturers own routes to market. It also started working throughout the entire value system and the technologies that were involved to foster faster response to market and it was the first region in Spain to help companies set up manufacturing plants in low cost countries as a means of survival.

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<sup>1</sup> IDESCAT on Encuesta Industrial de Empresas

Today EU does not have yet any specific programmes to support retail, outsourcing or logistics, critical not only for textiles but for many other industries and services.

“The **distribution sector** constitutes the last element of the so-called "textile and clothing chain" and is therefore important for all T/C products which are sold to the final consumer. Although some T/C companies have set up their own distribution networks in the framework of their vertical integration strategy, the manufacturing and distribution sectors remain very different in their characteristics and nature, and should therefore be treated separately.”<sup>2</sup>

Maybe the questions are: are we using the right indicators to measure industry success? And, are we using the best support schemes to face these new challenges not based on manufacturing but on market intelligence, retail, outsourcing and logistics?

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<sup>2</sup> European Commission, Enterprise and Industry, Textiles and Clothing

## 2. Have the clustering efforts been a driver for innovation in the Catalan clothing industry?

The overall response to clustering efforts in the Catalonia clothing industry is positive although much slower than expected for some clusters. The initiatives started in 1993 and some clusters did not undertake a decided change till 10 years later. There are many factors that explain this fact:

- The Catalan textile industry has been a flagship for the region in the 19<sup>th</sup> and 20<sup>th</sup> centuries, the motor of its economy for a hundred years and the origin of bourgeois families.
- The clothing industry is a bit younger but many knitwear companies were founded in the 1920's. The influence of the founders and second generation that grew notable brands in a period of autarchy with little exposure to external competition has lasted till very recently.
- The entire cluster support institutions (from associations to technology centres) were designed and operating to support the traditional manufacturers' approach to business.
- The retail concentration for clothing in Spain (as for many other products) arrived much later than to its European neighbours and it still remains lower.
- The industry and trade department of the regional government failed to pass the message across to the pessimistic Spain and European rulers.

This panorama has now radically changed. New generations manage the surviving traditional companies changing brands and strategies, new entrants with no previous textile tradition (Mango, Custo, Desigual, etc.) have sky rocketed in few years by competing differently and, eventually cluster support institutions as Fitex are actively facilitating change in the right direction. Nevertheless, there are still many programmes, seminars, etc. that distract the fashion companies pointing at diversification strategies like technical textiles that hold little relation with the companies abilities.

## **From textile manufacturing to consumer driven fashion**

The traditional scheme, in which: 1. manufacturers present their collections, 2. retail orders months before the season and 3. remaining stocks are liquidated in sales has been revolutionised by Zara. Zara has a system with continuous design and demand based reposition that maximises the sales of the product at complete price, obtaining full margin. This is only possible by having market intelligence direct from the customer through their own shops.

The diminishing presence of multibrand retail versus total brands as Gap, Mango, Zara, etc. also meant that a product brand had fewer routes to market.

The initiatives of the Catalan government in the different knitwear and clothing clusters had foreseen these challenge at a very early stage and actively proposed to companies in these clusters to open their own retail. In this sense, it created a whole programme (Programa de Marques de Canal led by the commerce department) to smooth this transition consisting of seminars, a manual and customised assessment. This programme has been successful and it is now in its second stage more oriented towards internationalisation<sup>3</sup>.

As mentioned early, the recommendation is still remembered by many companies that, for years, acknowledged the need but did nothing. The real movement towards retail has arrived in Igualada 10 years later. On the other hand, companies in Mataró, the other knitwear cluster, that had already gone through a crises resulting in lots of dynamic spin outs led by workers was much more reactive to this suggestion. A number of small to mid size chains started its activity after the Initiative.

Today, as mentioned, there are 38 significant “total” brands<sup>4</sup> that include retail and product, on top of Mango.

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<sup>3</sup> Generalitat de Catalunya-

[http://www.gencat.cat/diue/serveis/ajuts\\_subvencions/comerc/projectes\\_individuals/nternacionalitzacio\\_marques\\_canal\\_catalanes/index.html](http://www.gencat.cat/diue/serveis/ajuts_subvencions/comerc/projectes_individuals/nternacionalitzacio_marques_canal_catalanes/index.html)

<sup>4</sup> Source: CIDEM

## **Outsourcing production to concentrate on value**

Even if this recommendation was not given in the first initiatives, it is worth mentioning that the Catalan Government was a pioneer in realising that the only chance for survival for many industries was to outsource the parts of the process that were labour intensive and concentrate on the critical ones (design, engineering, etc) and established a programme to help companies internationalise.

This bold move has had an impact in the clothing industry. Today Fitex, the private technology centre in Igualada, is running a platform in China that manages the production outsourcing for 10 cluster companies. They were supported by a government scheme.

Outsourcing production is not enough for companies' survival and ulterior growth. There was a clear need to create and train jobs in areas that were new to these clusters (outsourcing, logistics, etc.).as well as adopting new IT technologies to facilitate these processes. Both Fitex and Cetemmsa, the technology centres have been very active in this field.

## **Involving textile technology players in quick response**

Quick response to demand changes may mean local sourcing. In fact Zara still produces 40% of its units in Spain. Sourcing in the Far East implies long cycles which could lead to missing spot opportunities. The fact that a "star" appears on a magazine or on television with a certain outfit can boost sales of that particular design in the following weeks. Increasingly, delocalised production is either for basic, non changing products, or for companies that impose fashion while rapid changes demand local production to provide a response.

A critical element in textile quick response is the alignment of all the players in the supply chain. Realising this fact, the Catalan Government did an initiative to link entire supply chains of major retailers (from yarn to final product) to speed up time to market and reduce errors. Many of these programmes have been supported by European frameworks.

## **Redefining old fashioned support schemes**

Finally, in the mid eighties and nineties in Catalonia there were a series of institutions and schemes intended to promote the designer

brand as the Gaudi fashion show, collective Catalonia and Barcelona shows in New York and other trendy cities, trade fair attendance support, the Barcelona Moda Centre (building where brands exposed their products so that retailers could go and shop), etc. that were useless for the majority of companies from the cluster that had Spain as its main client and were design me too's. On top of that, these policies were not supporting the need for a real revolution and were again "distracting" the attention of the threatened clothing manufacturers to non desirable strategies.

On the other end, there were a lot of support schemes to make manufacturing excellent through the Catalan quality institution, support to machinery renewal, etc.

Until then, there was nothing on market intelligence, quick response, flexibility, outsourcing and logistics. The four cluster initiatives for the clothing and textile industry plus other that shared challenges as fashion jewellery, furniture, etc. helped the Catalan government progressively shift support from these highly visible but useless actions towards schemes that triggered real innovation.

### 3. **Successes and failures of the clustering efforts in the Catalan clothing cluster**

#### **In defining the perimeter for the clustering effort**

Geographically speaking, as seen in the annex, there is not one but several textile and clothing clusters in Catalonia, not only separated by distance (40-60 km amongst them) but also by specialisation and company characteristics (size, age, entrepreneurship, dynamism, etc.). The Catalan government, in the period between 1993 and 1997 carried out 3 initiatives in different knitwear and clothing clusters and one for the “total brands” supply chains and related technology.

These initiatives really captured the right socioeconomic groups for analysis. However, being the driving message the same one for all clusters, this fragmentation weakened its impact in broader instances such as the Spanish Government that still were heavily funding schemes for the industry.

#### **In setting the strategies to build a sustainable competitive advantage**

The strategies that were defined nearly 15 years ago have today its clear reflection in the market. The fastest growing companies with higher margins have opted for a channel control strategy that allows response to customer and higher margins.

This message, as mentioned, was clearly captured by each single company and institution in the cluster, even causing during the Initiative the resignation of a cluster association manager that was anchored in the past. However, bringing it to practice has been slower than required especially in the Igualada cluster given the aforementioned context.

#### **In managing the clustering efforts jointly**

Institutions were, in general, very traditional and posed a massive resistance. They were funded by serving the majority (laggards) and no the leader and by self generated programmes not always fulfilling companies' needs but fitting in whatever public scheme that was

subsidised. In addition, even when institutions were positive, transforming a product brand and manufacturing based cluster into a total brand and channel controlled concept was a major challenge that they did not know how to embrace and carried on with their routine activities. Today the situation is very different. New generations of company managers are driving the clustering efforts by defining different scopes for their associations and hiring open minded professionals to carry out the projects.

The Catalan Government has been very consistent in following the right support schemes and divesting in the ones that were no longer appropriate.

### **In applying the learning to the whole economy**

The shift from product to channel control is not exclusive to textile. Many other industries such as furniture, home textiles, jewellery, etc. also significant in Catalonia, were facing the same challenge, although each one with its particularities. The “Programa de Marques de Canal” helped over 50 companies from these sectors in its first 2 years of existence. The first stage finalised and it has been redesigned to help these new formulas internationalise as a proof of its success. The result is highly visible with a number of companies that are having an unparalleled success like Tous in jewellery and complements.

## 4. Learning from the Catalan clothing clustering process

### **Implications for the clothing industry**

A company's environment changes faster than ever and few managers would not be aware of the need for constant innovation. Today market intelligence, total branding, design, retailing, real state, supply chain management and logistics are indispensable success factors for any clothing company. Clothing is thus a completely new business for many that embark in this venture transforming from a manufacturing past. Although alert to new product technologies, technical textiles, etc., entrepreneurs and executives in the clothing industry should not disperse their efforts, focus on developing these skills and demand their associations and institutions to support them in these areas. The clothing industry needs to recover its lost prestige in the institutional corridors.

### **Implications for the local and regional support institutions**

In the Catalan case, the Government did the correct policies, tended to facilitate processes, offer information for strategic reflection and schemes that went in the right direction but avoided any interventionism. However, their decision on keeping such a low key approach with so much resistance from tradition and institutions from the sector and public bodies may have lessened the actual application of measures by the cluster players.

With such a strong message supported by conclusive evidence, the Catalan government should have acted in a more determined way in branding and communicating their programmes, creating flagship projects, clear and faster resource allocation and lobbying and partnering with the National Government and European Commission to align measures.

Such a major challenge needs as well building scenarios on the effect on employment and plans to reconvert workers and train for the new skills. The National Government supported such a programme on the mid 2000's demanded, many years too late.

## **Implications for the national and EU institutions**

The main implication is that there is no good or bad sector. It has taken very long to the European Union on textiles to update documents and cases on textiles and there are plenty on biotechnology, aerospace, etc. However, Zara and Mango are two of the fastest growing multinationals headquartered in Spain and they are textile companies. Only Mango employs over 1,500 people in their Catalan headquarters not having manufacturing (the entire Igualada cluster employs 3,800 mostly in manufacturing) and grow double digit every year. Although they manufacture abroad they retain the higher value added activities in Spain transforming low value added manufacturing jobs into marketing, design, retail, logistics, outsourcing, etc. high value added jobs. They also contribute to the economy being clients of sophisticated IT, retail designers, logistics providers, etc.

EU too focused on product? Trends and statistics point at another direction. Advanced economies develop around services not manufacturing. There is no doubt that textiles other than clothing (for automotive, medical or other applications) have grown in factory added value in the recent years and could be an alternative for some companies especially in yarn and fabrics. On the other hand, if we look at employment, value added evolution or trade balance in the clothing industry from existing statistics we have a crises panorama. The truth is these statistics only account for manufacturing and no longer reflect the sector reality.

There is not a single programme or funds that support retail while increasingly European multinationals are Carrefour, Tesco, Decathlon, H&M, Zara, Mango which probably do not need much support but are followed by our SMEs of the clothing cluster (Escorpion, Boboli, Desigual, Sita Mur, Custo, etc.) that do not have the same resources.

## 5. Appendix I: The clustering efforts in the Catalan clothing industry, Spain

### **Clusters' role for the regional economy**

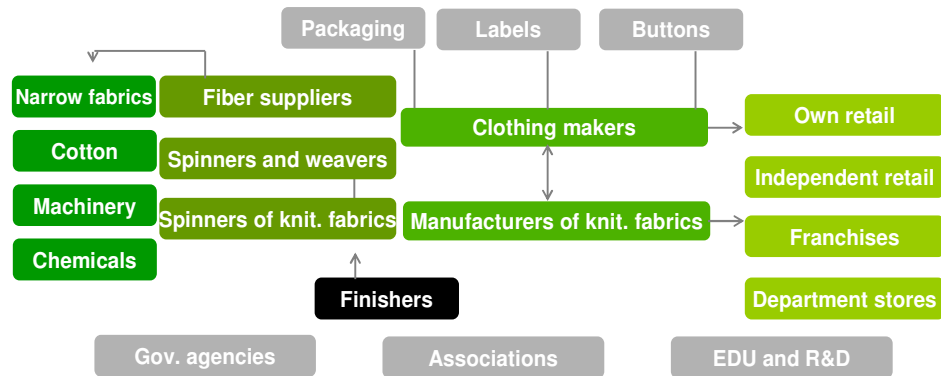
The textile sector, once the foundation of the local economy, has given way to more modern industries but is still significant. It accounts for 7% of Catalan industrial output, which represents 38 percent of Spain's total production. Catalonia is also a leader in the Spanish tannery industry, accounting for 60% of Spain's total production and 55% of its exports. During 2005 the industry generated a turnover of €4 billion. According to the National Institute for Statistics (INE) it employs approximately 94,400 people – 2,8% of total employment in the region.

The Catalan textile industry powered by the steam revolution started developing in the region in 1830. Given a high dependency on raw materials coming from America and a weak local market, made being located near a port critical, both to source and export goods.

### **Description of the cluster**

The cluster encompasses a wide range of industrial activities that include: suppliers of chemical products, manufactures of textile machinery, narrow fabrics, fiver suppliers, spinners and weavers, dyers and finishers, other suppliers and clothing manufacturers. All of which are classified based on the raw materials and technology used: cotton, knitted-fabrics sector, dyes and finishes, wool, silk, etc. (See Figure 1 debajo de)

### The Textile and Clothing Cluster in Catalonia



Source: Map of Local Industrial Production Systems in Catalonia

Figure 1 The Textile and Clothing Cluster in Catalonia

The cluster is formed by 2,600 companies, most of which are small or medium-sized and 85% are concentrated in 8 counties, each being specialized in specific processes: **Anoia** – Knitted Fabrics and Bovine Leather, **Bages** – Narrow Fabrics and Cotton Spinning, **Berguedà** – Cotton Spinning, **Osona** – Cotton Spinning and Sheepskin, **Garrotxa** – Recycled-Cotton Spinning, **Vallès Occidental** – Sheepskin and Wool Spinning and **Barcelona** – Clothing.

These are surrounded by numerous agents that act as clients, suppliers, subcontractors and service providers, such as logistic providers, marketing agencies, specialized printing companies, etc. This concentration has promoted complementary relationships between the cluster’s agents. According to INE the cluster’s demand is distributed in three major groups of products: **clothing** – 55% of total consumption, **house furnishings** – 30% of total consumption and **technical and industrial textiles** -15% of total consumption.

Driven by its proximity to the consumer market, the central-core of the clothing manufacturing cluster is located in Barcelona and surrounding areas. In the early 60’s, foreign companies made investments in the region and are now the biggest employees in the area.

Main industries located in the region include: Burberry, Grup Ermenegildo Zegna, Twenty and Punto-Fa (Mango). There are numerous suppliers within Barcelona, but major improvements in distribution channels worldwide and overall reduction on tariffs, have foster the cluster to source from textile companies from the rest of Catalonia, Spain and other countries.

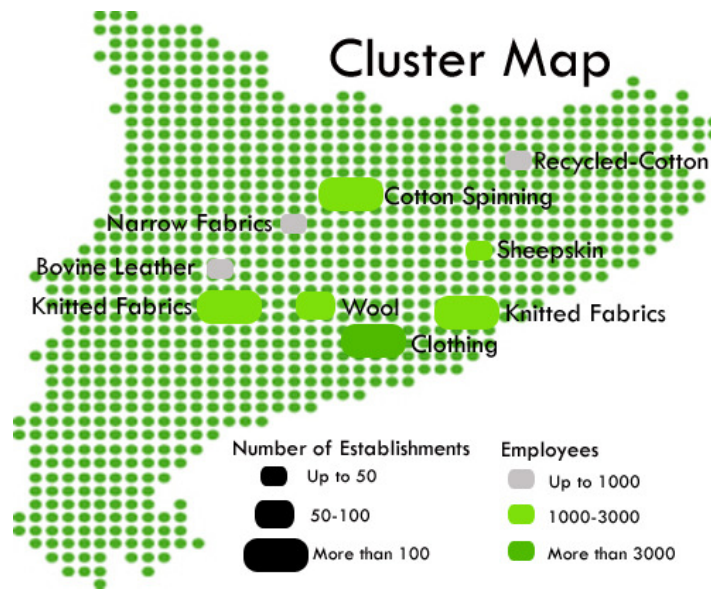


Figure 2 Cluster Map (Source: Map of Local Industrial Production Systems in Catalonia)

Local subcontracting is estimated to account for over 40% of total production, demonstrating the high degree of interrelationship among the companies in the cluster. Distribution is dominated by retail stores, which account for over half of the sales. However, in recent years, organized distribution (chains, franchises and hypermarkets) has significantly increased its market share. For example, Punto-FA has open 900 Mango stores in 72 countries (either owned by the Group or by a franchising model), having in this way total control of the distribution and commercialization of their products.

The cluster includes major companies that integrate production and distribution. In fact, the success of the cluster, as we will see in subsequent sections, is strongly related to the integration of distribution with the production system.

### The industry challenge

In the early 90's, like many other sectors, the textile and clothing industry was greatly affected by the phenomenon of globalisation. The Catalan textile cluster started facing fierce competition from developing countries that had become very competitive in textiles and cloth-

ing, as they combined low wages costs with high-quality equipment and know-how imported from more industrialised countries.

Having benefited from a wide range of quantitative restrictions “quotas” for many years, the WTO agreement on Textiles and Clothing posed a serious threat to the cluster, as it aimed for a progressive reduction of these quotas.

At the same time, new technologies for production and ICTs were flooding the market. These technologies not only provided a means to increase productivity, but offered new distribution possibilities for reaching the final market. The cluster was characterized by a weak distribution sector, formed mainly by SME retailers that could not meet the growing retailing trend of rapidly filling store shelves with a steady stream of merchandise adjusted to consumer’s demands. A change in consumer trends was taking place, consumers were paying more attention to the design of the garments and its ability to adapt to the latest fashion tendencies.

New information systems and the growing popularity of market studies, made it possible to gain better insights on consumer needs. Companies like Zara, H&M, etc. that were giving consumers what they wanted, were rapidly becoming the most successful companies in the textile industry. The industry had changed from being production driven to being market driven, simply because companies now had the information systems to know better what their customers wanted and had now the logistic and distribution channels to deliver them in time.

These formats have had a sustained growth while traditional multi-brand formats have suffered a dramatic decrease as shown by the following figure.

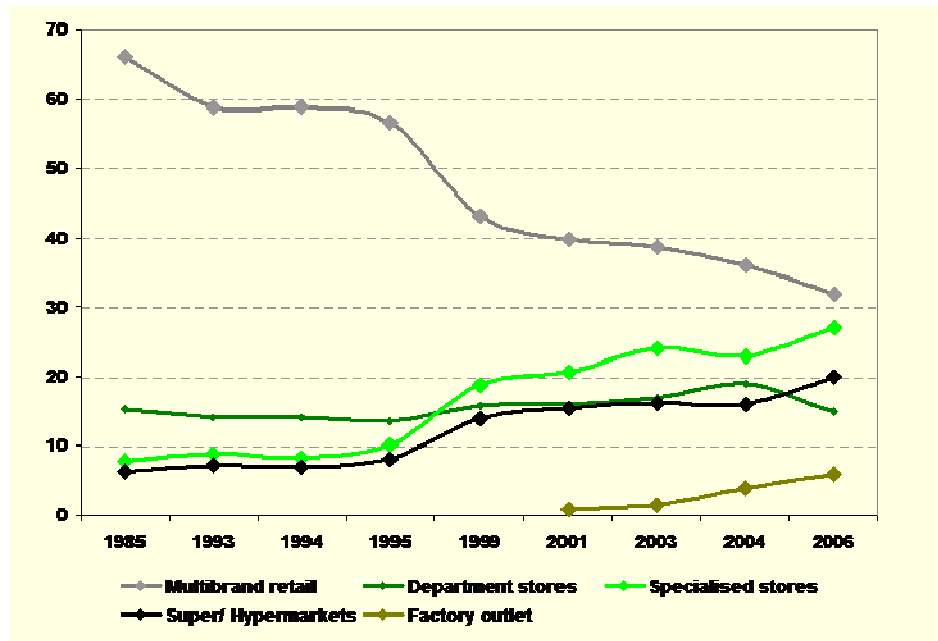


Figure 3- Evolution of textiles sales per channel in Madrid

Source: ACOTEX Asociación Empresarial del Comercio Textil y Complementos

In order to speed up the cluster’s reaction to market fluctuations and to cut distribution and stock management costs, the interaction between all parts of the chain by means of electronic exchange of information was essential.

The cluster needed to learn to benefit from the new opportunities created by new information and communication technologies, which required an adaptation of the way in which business had traditionally been done, especially within SMEs. This adaptation was not restricted to internal management techniques and procedures, but it also included the way in which an enterprise organised its production, and its logistical systems.

It was clear the cluster needed to make significant restructuring and modernisation efforts in order to remain competitive on international markets.

### The challenge for the public sector

The changes taking place in the textile and clothing industry worldwide were always important to both the European Union and the different National Governments. Between 1990 and 1996, more than a

quarter of textile related jobs were lost in the European Union (EUROSTAT). European governments were faced with the daunting task of promoting the adequate policies to smooth the transformation taking place in the sector and improve its competitiveness.

At the economic development level the main challenges were:

- The drive towards modernisation in an increasingly competitive international environment had meant a considerable reduction in the number of jobs.
- Promoting a favourable environment for business as to facilitate structural adjustment.
- Promoting market access and internationalisation of firms.
- Structural changes in the textile/clothing sector, in particular the increasingly widespread use of information and communication technologies, meant that the workforce required new types of qualifications.
- Maintaining a competitive edge by constantly improving production technology and distribution methods and by designing new innovative products.
- Investing in innovation and R&D, and the rapid adoption of state of the art ICTs were critical factors for success.
- Complying with technical requirements and regulations to meet certain quality standards.
- Increasing production flexibility to easily adapt to market conditions.
- The cluster faced demand with low income elasticity, meaning that consumption was growing more slowly than the standard of living and wealth.

### **Actors**

The Catalan textile cluster is characterized by various local producer associations and guilds from different counties, each one of them responsible to support and promote their local industry, serve as lobbying platform, and establish partnerships between companies.

Among these different roles, looking up after the company's interests was the most important, through them most of the subsidies available to the cluster were negotiated and agreed.

Alongside, industry associations, both the Barcelona Chamber of Commerce and The Service Centre in Catalonia for the internationalisation of companies (COPCA) played a dynamic role in supporting companies and promoting the internationalisation of Catalan companies and their adoption of the new guidelines of the global economy respectively.

In 1989, Antoní Subirá, a textile engineer and academic from IESE, was appointed regional Minister for Industry. As he says, retrospectively, 'There was no real industrial policy at the moment, beyond subsidies and some public services' In 1991 he commissioned the Monitor Group (Michael Porter) to conduct a study on the competitiveness of Catalonia that would help them to develop and carry out specific industrial policies adapted to their concrete regional industries.

Based on these study and in the light of the increasing impact of globalisation in the cluster and the possibilities presented by new ICT technologies, in 1993, the Catalan government, through the Directorate for Industry and Regional Development Agency – CIDEM (further: RDA), launched a series of micro-cluster initiatives among different textile and clothing industry sub-sectors: Centre for Textile Innovation, Knitwear in Maresme and Anoia, Dress making in Barcelona and Textile technology in Catalonia.

The cluster initiatives were at the local-municipality, district or comarca level, in collaboration with local industry associations. In many of the initiatives, an institution for collaboration was suggested or promoted. This institution could be the existing industry association of the localized industry, a sector of Spanish or Catalan industry association, or an associative organization created ad-hoc.

The initiatives focused mainly on restructuring (vertical integration), improving productivity, increasing product diversification and most importantly developing distribution and marketing networks closely integrated with production. The RDA contracted a consulting company from Catalonia specialised in improving company's competitiveness by fostering collaborative relationships among the different agents. Throughout the initiatives the consulting company had to

report directly to the RDA on the developments and findings of the project, so this information could feedback directly to policy makers.

## **Actions**

The methodology used was based on a process of interaction, meetings and collective reflections that involved all relevant actors in the strategic analysis and decision making processes, including SMEs (primarily), universities, research centres, government, industry associations, etc. By involving the actors throughout the initiatives the identifies action lines were not only the result of a collective understanding of the challenges faced by the cluster, but helped comprehend the role of each actor during the implementation of the resulting action lines.

Based on the success of American apparel stores like Gap, Structure, Banana Republic, Abercrombie & Fitch, etc, in 1994, the Catalan Government organized a benchmarking trip to the United States to gain insight how these were reacting to the new challenges the industry faced. A small group of government representatives (economic development area) accompanied by some cluster companies visited some of these companies. The main take out points from the trip were: consumers were paying more attention to the design of the garments and its ability to adapt to the latest fashion tendencies, in a market that was becoming increasingly buyer-driven, it became imperative to develop mechanisms to rapidly adapt to buyer's demands.

In order to tackle these challenges, producers had to be in closer contact with their client base. Alternatives the initiatives would contemplate included: developing own chains and use a franchising model. Based on a series of interviews, work groups, strategic analysis, and international benchmarking conducted by the consulting company, many of the launched micro-cluster initiatives focused on creating / strengthening brand positioning and developing new commercialization channels. The need for long-term linkages through the different levels of the value chain in order to coordinate operations from production and distribution, made the cluster approach used by the initiatives a perfect fit.

Ideally each action line would be financed though a public-private contribution. The proposed cluster actions resulting from the textile and clothing micro-cluster initiatives were:

- Integrating production with distribution through the creation of chain stores.
- The creation of a Centre for Textile Innovation.
- Reinforcement of the informal collaboration with the traditional national, regional and local associations.
- Promote needs-based innovations projects linking providers and innovative clients.
- Encouraging innovation and product design by training human resources.
- Setting up a B2B online marketplace
- Implementing the ISO 9001 as a means to certify the quality of the cluster's products.
- Pointing out to different funding instruments available for acquiring technological equipment and facilitating the process for obtaining it.

### **Integrating production with distribution through the creation of chain stores**

The need to rapidly respond to what the textile and clothing market was demanding had completely changed the way in which companies had to compete for them to be successful. In order to be in closer contact with consumers and gain better insight on what the market demanded, it became obvious that producers had to establish mechanisms that foster this approximation.

The analysis conducted during the micro-cluster initiatives showed that the distribution sector in the cluster, formed mainly by SME retailers, did not have the capacity to meet the growing retailing trend of rapidly filling store shelves with merchandise adjusted to consumer's demands. As a result, the micro-cluster initiatives develop specific workgroups to analyse how the cluster could strengthened its distribution sector.

Using the "Zara" success story (a vertically integrated business model embracing design, just-in-time production, marketing and sales) as reference and benefiting from new ICT and production technologies it was concluded that producers were the ones with the

size and capacity better suited to carry out the distribution for the sector. The initiative proposed changing from a PUSH production strategy, where producers push their products into the market (production driven) to a PULL production strategy, where customers pull production to meet their demands (market driven).

### Integrating production with distribution (PULL Strategy)

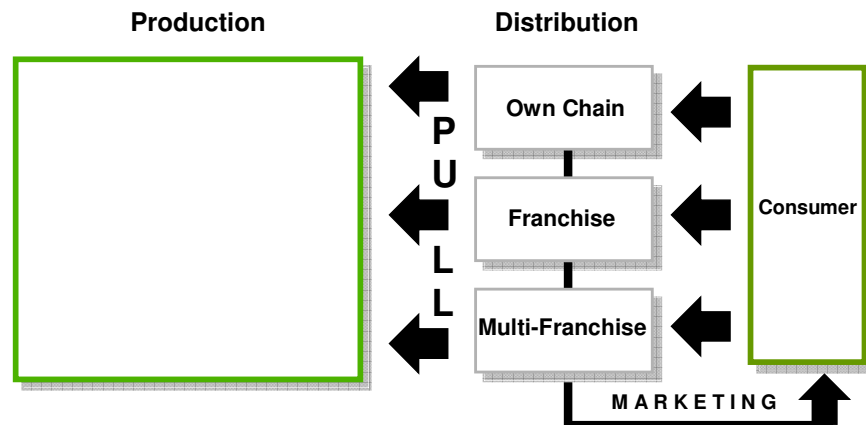


Figure 3 Integrating production with distribution (PULL Strategy)

Today many companies have set up their own distribution networks in the framework of their vertical integration strategy. Using information systems to know, which items are most in demand, has eliminated considerable the need for warehouses and keeps inventories low. This strategy has drastically reduced the time needed for a product to be put in the market (time to market), quickly adjusting to market trends and thus giving companies a competitive edge over competitor with low reaction times.

### The creation of a Centre for Textile Innovation

During the initiatives it was agreed that the vision for the future of the cluster to remain competitive would be by means of higher productivity, and through competitive strengths such as innovation, quality, creativity, design and fashion. For this reason in 1999, the government financed the creation of a Centre for Textile Innovation to offer permanent support in technologies innovation to the textile companies.

The Centre would work for textile companies and suppliers to implement the most advanced technologies in computer science and

communication networks in the textile field. Today the Centre offers a platform to be up to date with the latest textile technological innovations and a unit of specialized technicians to implement them.

### **Reinforcement of the informal collaboration with the traditional national, regional and local associations**

During the micro-cluster initiatives a strong emphasis was paid at strengthening the linkages between all the cluster agents. Several actions emerged in this direction. A University-Firm program was created to incorporate college trainees and specific sector courses were launched. The Consortium for the Commercial Promotion of Catalonia was involved in the program and was asked, together with industry associations, to carry out actions aimed at fostering associative relations between the cluster agents, both formal and informal.

### **Promote needs-based innovations projects linking providers and innovative clients**

Under the program “Profit Textile/Confección 2007” (2005-2007) launched by the Spanish Ministry of Industry, Tourism and Commerce the Technological Innovation Centre (CTF) participates in the research project on textile technology “Nanoalgodón”. The CTF was established in the campus of Terrassa of the Polytechnic University of Catalonia with the support of the Generalitat de Catalonia and CIDEM<sup>5</sup>. The objective of the project is to investigate nanotechnologies applicable in textile for UV protection. The project is carried out by joined efforts of CTF, Technological Centre LEITAT, the Spanish International Textile Association (AITPA) and the Catalanian Institute of Nanotechnology.

### **Encouraging innovation and product design by training human resources**

Given the fierce competition brought by Globalisation, the initiative detected that the cluster could no longer compete in prices and had to focus in quality and specialized in high-value added type of activities, such as innovation and specially product design. The adoption

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<sup>5</sup> Xarxa de centres de suport a la Innovació Tecnològica

of new equipment required a different set of skills. The pool of specialized human resources was not sufficient enough to feed the entire cluster. Taking advantage of the participation of several universities in the initiative, several training courses were launched. The objective was to encourage innovation and product design, up skill the human resources pool and strengthened the linkages among the cluster agents.

### **Setting up a B2B online marketplace**

This action consisted in analysing the cost/time inefficiencies that resulted from the weak linkages among the cluster agents with the objective of setting up a virtual marketplace to carry out product transactions. Functioning as a Business to Business (B2B) portal, the system aggregated demand so companies had access to better prices. The marketplace included strategic products like yarn, cotton, paper, pallets, etc.

Advantages for producers: reducing purchasing costs, accessing new qualified providers, speeding up the product development processes, better coordination with providers and reducing administrative paperwork. Advantages for providers: Increasing client base, increasing volume sales, improving transportation shipments and consolidating orders.

Despite the novelty and advantages of the B2B marketplace, the project never took off, due to a high reluctance to carry out online transactions associated with cultural issues. However the action serve to coordinate both the supply and demand of the cluster and to up date the directory of companies belonging to the cluster.

### **Implementing the ISO 9001 as a means to certify the quality of the cluster's products**

Competing on prices with developing countries was impossible, for this reason the micro-cluster initiatives focused on remaining competitive by means of competitive strengths such as quality and innovation. Several sub-sectors were encouraged to implement ISO 9001.

**Pointing out to different funding instruments available for acquiring technological equipment and facilitating the process for obtaining it**

At the beginning of the 90's the textile and clothing sector worldwide was going through a modernisation process. New technologies were flooding the market and it was important that the Catalan Clothing and Textile Cluster, which was highly protected, to invest in these new technologies as a means to increase productivity and remain competitive.

Also, in order to achieve the integration of production and distribution proposed by the initiatives, the investment in technology that allowed performing such integration was required. The micro-cluster initiative helped the Catalan Government have a better coordination of the different funding instruments available to the sector at the national, regional and local level. Several potential sources of funding were identified and the project served as platform for obtaining them.

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