

IN-DEPTH ASSESSMENT OF THE SITUATION OF THE T&C SECTOR IN THE EU AND PROSPECTS

TASK 7: SYNTHESIS REPORT FOR THE
EUROPEAN TEXTILE AND CLOTHING SECTOR

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FINAL REPORT ENTR/2010/16
PREPARED FOR
EUROPEAN COMMISSION
ENTERPRISE AND INDUSTRY DG

DECEMBER 2012

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LIST OF ABBREVIATIONS

ACTE	European Textile Collectivities Association
AUTEX	Association of Universities of textiles
B2B	Business to Business
B2C	Business to Consumer
CEDEFOP	European Centre for the Development of Vocational Training
CMT	Cut make trim
EFTA	European Free Trade Association
EIB	European Investment Bank
ERDF	European Regional Development Fund
ESCO	European classification of Skills, Competences and Occupations
ETP	European Technology Platform
FP6/FP7	Sixth and Seventh Framework Program of the EU for Research and Development
FYROM	Former Yugoslav Republic of Macedonia
HLG	High Level Group on textiles and clothing
ICT	Information and Communication Technologies
IPR	Intellectual Property Rights
NAFTA	North American Free Trade Agreement
NUTS	Nomenclature of Territorial Units for Statistics
SME	Small Medium Enterprise
SSC	Sector Skills Councils
TRIP	Agreement on Trade-Related Aspects of Intellectual Property Rights
Textranet	European Network of textile research organizations
VET	Vocational Education and Training

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EXECUTIVE SUMMARY

This final report of the in-depth assessment of the situation of the textile and clothing sector in Europe draws on the key findings of six independent reports and highlights major conclusions in order to describe the situation of the textile and clothing industry and the way forward for the sector. The findings in the six reports have been analysed in connection with the developments following the recommendations drafted by the High Level Group on textiles and clothing ¹(HLG insofar). The developments are then analysed in terms of transferability of practices and partnerships. With this background a picture on the situation of the textile and clothing sector is presented, with detailed analysis of the different subsectors and of the main textile regions.

The HLG in his vision for 2020 presented the sector as “a strong, flexible industry which has responded to the challenges of a globalised economy and in so doing has obtained the co-operation of the public authorities at all levels. It has notably reformed its structures by creating larger groups and taken greater advantage of standardization opportunities. It has turned even more towards specialty products, new applications and mass customization, using its Strategic Research Agenda and the opportunities offered by FP7. In addition, the breakthrough in clothing technology will have helped to shift apparel manufacture back towards the EU. The latter development goes hand in hand with the crucial need to maintain a lead in fashion and image and creativity, in the defence of which a range of IPR initiatives are set out aimed at combating counterfeiting and piracy in the industry within the EU, at its borders, and in third countries (TRIPs agreement, codes of ethics, more branding, enhanced co-operation with third countries and an increase in the number of national multi-sectoral anti-counterfeiting cells)”.

Although the HLG could not forecast the impact and the consequences of the financial crisis the vision is still actual at the light of the present study. But the constraints to overcome, to achieve that vision have become tough.

Developments in key competitiveness areas

We analysed the main developments of the key competitiveness areas considering the methodology used in the structure of the six reports: Survey on the situation of the T&C sector, Research and development, Innovation, SME, Restructuring and Training.

In research and development, many activities and initiatives fulfilled the recommendations of the HLG; however when looking at the relations between research centers and industry we see that only in the area of technical textiles the dynamics are successful. Looking outside technical textiles large section of the industry, especially SMEs are not connected with any dynamics of research and development.

¹ http://ec.europa.eu/enterprise/sectors/textiles/documents/high-level-group/index_en.htm

Most of the ideas within the vision for 2020 proposed by the HLG are in line with the trends found in the report on Innovation (task 6) and still actual: growing importance of innovative specialty fibres, required sustainability of cotton supply chain, in particular dyeing and finishing, importance of internet and ICT solutions.

The HLG has put forward a range of recommendations regarding technology and innovation. In the context of technology and innovation the uptake of the HLG's recommendations by the European Commission was high; uptake by member states and the regions was also considerable. This is mainly the result of the establishment of the European Technology Platform on Textiles and Clothing, the development of a Strategic Research Agenda and the institutionalization of a learning experience. The European Commission has proposed more than two action lines for textiles and clothing but has each year from 2007 proposed several action lines in which textile research and innovation can be funded.

Most of the "unfinished business" in the 2006 HLG report related to what constitutes non technological innovation. Investments of companies in this kind of innovation, that in the textile and clothing constitutes the more relevant form of innovation, should not be treated any different than other forms of R&D investments.

The report on innovation also acknowledged the importance of non-technological innovation, in particular commercial innovation, which covers a wide range of subjects such as design, organization and technologies applied to retail and logistics. The interaction between non-technological and technological innovation is complex and intense in the sector; examples in this area are design, differentiation, fast fashion logic, new ICT retail technologies and mass customization. While public funding is of major relevance for supporting R&D and technological innovation related activities, there is still not enough attention in supporting non technological innovation.

The report on innovation highlighted a number of success stories and it is possible to identify common critical factors which are considered relevant when it comes to innovation performance. The strong link with suppliers (raw materials, chemicals and sometimes technologies) is present in every success case and particular for SMEs this is a very relevant input for innovation. The engagement of the client (in both business to business and business to consumer cases) through more or less formal methodologies it is also a common factor which is present in every success story, with particular relevance in the case of business to consumer (B2C) relationships regarding incremental product innovation or non technological innovation strategies. Interaction with users has been mentioned several times as one of the richest information sources for innovation.

Talking about SME situation, the HLG referred to them in particular with reference to the difficulties the industry experiences in attracting financial capital and credit. The report on SME went further in the analysis highlighting the major difficulties and challenges. SMEs in the textile and clothing sector are very diverse in their structure and organization, especially for the ones that are not subcontractors carrying out clothing production on commission with the materials supplied (so called Cut-make-Trim or CMT) , making it difficult to highlight best practices. Human capital is the key asset that shapes their business, as people have different sets of values, competencies, energies and attitudes. However SME subcontractors are the main contributors to the image of a low-profit, low innovation together with low salaries industry. This situation makes it difficult to access key resources such as young professionals, skilled workers and credit, hampering the development of the sector. The solution of this problem is a prerequisite of any public support intervention.

The HLG addressed the urgency of restructuring in relation to the phasing out of quota, in view of the full reintegration of textiles and clothing in the WTO rules. The impact of this driver was lessened or at least prepared since the beginning of the 1990 with the gradual liberalisation of trade with accession countries or partners in the

Mediterranean zone. However many companies, especially in the member states accessing the EU in 2004 and 2007, were not prepared to respond to this driver.

The report on restructuring confirms this analysis and presents a larger picture by describing additional drivers of restructuring also specific to different regional cases, company responses in terms of business models and the strategic responses of stakeholders.

With regards to training in 2006 the HLG point of view was similar to the present situation of the industry, except that all issues have become somewhat more acute as the industry had to bear a long ongoing crisis. The need “for better trained and more highly skilled employees at all levels, and at attracting the younger generation towards a career in the industry” raised a broad consensus among most stakeholders as mentioned in the 2006 HLG report. Some key projects had already been launched regarding the establishment of Observatories, the development of common qualification standards and the enhancement of social dialogue at all levels. Among the “unfinished business” and the measures still to be adopted that were presented in the HLG’s report were mentioned :

- surveys to ensure better match between qualification supply and job demand
- the establishment of media/information pools to make the industry better known and more attractive to the general public and potential recruits
- the development of high level specialised training institutes capable of sustaining expertise in areas where demand was only sufficient at EU level, open to multinational students with good language skills gained from an early age
- the organization and co-ordination of training through programmes

The situation of the textile and clothing sector

The textile and clothing sector presented in the report highlights an industry that shall be probably substantially smaller in 2020 than in 2010. This smaller size can be first attributed to the limited growth or even stagnation of the European market. Second, it is likely that import penetration will grow. There is a potential in innovation, especially in proposing textiles as a material of choice in technical textiles. There is also a potential of expansion for export especially capitalizing on the design and quality leadership in which Europe is still unmatched. However, only few companies are already in a position to grasp the potential of innovation and export markets. Despite stagnating markets, the resilience of the industry is still substantial as many companies incrementally adjust to changing market conditions, being able to control costs, make production more flexible in response to uncertain markets, and relying on a conservative financial management.

There is anecdotal evidence of relocation of production that cannot possibly be quantified. Issues of long lead times of production but immobilization of working capital and lack of differentiation associated with large production volumes in Asia have been mentioned. A changing parity of the EURO to other currencies may also affect localization of production. This is likely to stabilize or slow down delocalization of production. However, as growing markets are no longer in Europe, larger firms shall expand their production close to the Asian markets also for reasons of lead times.

The regional cases present overall an image of two Europes. In the North-Western part of the European Union the conditions are rather positive to continue on the track of innovation and exports, leading to growing numbers of companies, consolidation into larger companies and growing turnover. However it is unlikely that this uptake leads to growth in industrial employment in these regions. It may lead to strengthening of design, research, development, marketing and logistical functions and companies may increasingly integrate retail functions. There

might be a spin off through increased subcontracting to the eastern and southern member states. Italy has a special place in the European textile sector: it has a systemic position in the industry with leading brands in luxury clothing, leading suppliers to this segment, a commanding position in interior textiles and strong presence in some niches in technical textiles. It hosts also niche-subcontractors that empower clients in other EU countries to capitalize a legacy of image, quality and creativity. Finally, leading firms from Italian regions are important in subcontracting production to other states especially in Eastern Europe.

In South and Eastern Europe few companies display a leadership in design/branding or in innovation. Their ability to attain a commanding position in global niches is limited. Even in Italy many firms are not yet in those niches. Besides an adversity in production structure, these regions also lack the production environment to adhere to the promising trends. At best companies can connect as specialty suppliers or subcontractors to the core of creative and innovative firms. The ability of subcontractors and co-contractors to connect, learn and grow with leading exporting firms or innovative firms is then quite essential. But this is not reciprocal; except for specialties, leading exporting brands or innovative firms can rely on a wider circle of interchangeable suppliers and subcontractors. Few are the segments (e.g. lace or specialty technical yarns manufacturers) in which sub/co contractors have a commanding position. It is thus a challenge to connect subcontractors to creative or innovative customers.

Way forward

The way forward for the industry will not be based on EU consumption but rather on export and innovation. Enlarging the number of companies directly or indirectly engaged in export or innovation should be a priority of all stakeholders and policy makers. Especially involving subcontractors and companies in the eastern and southern member states in exports and innovative value chains is urgent in order to maintain companies and jobs. Member states have an important role in fostering export orientation of their industry, together with industry associations.

Developing a road map to a sustainable industry, with a reliable supply base in Europe for raw materials in natural fibres and biopolymers is a long-term challenge that the European Commission should pick up. Its implementation can take the form of research projects (Horizon2020) as well as initiatives in member states where agriculture and industry can be associated. In each challenge improving the dialogue in the supply chain has to be aimed at. Industry associations should take the lead, especially EURATEX but financial and logistic support is often needed to engage in such process. The European Technology Platform on textiles has proven to be a successful forum, to federate innovation capacities in the industry and to reach out to adjacent sectors. Its governance could be strengthened, including direct membership of large companies and research centres.

In addressing these challenges the industry has to overcome two main constraints. The financial crisis has put roughly one third of surviving firms in a vulnerable situation. Only one third of the firms has the means to sustain a longer recession. However access to export credit and to financial instruments enabling to industrialize and commercialise the fruits of innovation is essential. Member states and regions with competences and expertise in financial instruments should take the lead, with the coordinating role of the European Commission. The skills shortage is a second important constraint. In most countries the educational system is engaging and graduating less young people than people are retiring or made redundant. Especially in Southern and Eastern Europe these shortages in skills are serious. These constraints have to be addressed at national and regional level first. Sectoral skills councils have proven to be successful and could be set up at national level by social partners. In higher education AUTEX could play a stronger role. However, the reform of higher education towards more autonomy and involvement of stakeholders in the governance is a prerequisite for which the member states are responsible. We have seen throughout the study best practices in terms of business models and strategic responses of collective bodies. However the organization of the industry is fragmented, compounding the fragmentation of companies

themselves. Industry associations should consolidate at national level. This is primarily the responsibility of the industry itself, but members states can promote the process and foster consolidation by granting subsidies for industry wide representative bodies. Cooperation among associations towards the development of competences and services is also a national responsibility. However EURATEX could develop itself more towards a forum to promote higher professionalism in industry associations.

More social dialogue is required at all levels to address the skills shortage. More cooperation, endurance and realism is needed in the dialogue between industry and research in setting road-maps for innovation and action plans. This can be largely done at regional level, but exchange of practices and strengthening of innovative capacities shall require intense European networking. Social dialogue works best when institutionalized in labour law or in the governance of social organizations (e.g. industry pension funds). In general trade unions should implicate itself more in higher education, since the quality of management is of importance for the competitiveness of the industry. For lower and medium skills levels employers should be more involved, either at regional or national level depending on the geographical structure of the industry. Since endurance is required Leonardo-type projects could be assistance. AUTEX could play a role a coordinating more exchange at higher education level, but it should transform as a single body for all higher education in textiles and acquire the means to scale up its outreach.

1. ANALYSIS OF THE KEY COMPETITIVENESS AREAS

1.1 INTRODUCTION

The in-depth assessment of the situation of the European textile and clothing sector is composed by six independent reports with a close focus on key aspects useful to understand the dynamics and the development of the textile and clothing industry, drivers of change – most notably the impact of the financial crisis – and identification of policy responses and best practices. This has been done in six specific tasks leading to the six reports:

Task 1 Survey on the situation of the EU textile and clothing sector

Task 2 Report on research and development

Task 3 Report on SME situation

Task 4 Report on restructuring

Task 5 Report on training and Education

Task 6 Report on innovation practices

The reports present detailed assessments of the industry and a specific analysis of selected regions of the European Union. The survey (task 1) is based on a questionnaire with industrialists and industry organizations and gives an overview of the trends and drivers shaping the sector. The survey was carried out in 2011 through a questionnaire. Tasks 2, 3, 4, 5 and 6 are based on a general consolidation of trends at EU level and regional case studies. The regional cases were selected taking into account the relevance of the textile industry in the territory and keeping a geographical balance in EU. Some cases transcended the standard nomenclature of territorial units for statistics (NUTS) and in some cases two or more regions were grouped or only a part of the region was considered; in few instances the case focused on the whole country. Overall the study covers 20 NUTS regions, of which 6 regions have been addressed in two reports. The regional cases are mainly based on interviews; in total more than 300 interviews have been carried out by phone, at trade fairs or in company during field trips. In addition written documentation has been consulted and integrated.

This final report draws on the key findings of each independent report, highlighting major conclusions in order to describe the situation of the textile and clothing industry and the way forward for the sector. In line with the terms of reference the findings in the six reports have been analysed in connection with the developments following the recommendations drafted by the High Level Group on textiles and clothing (further referred to as HLG), installed in 2004 as a response to the European Commission Communication of 29th of October 2003 on the textile and

clothing industry. The HLG was composed of leading personalities representing stakeholders in the textiles and clothing industry and issued two reports entailing a vision and recommendations²

1.1.1 STRUCTURE OF THIS REPORT

The first chapter presents all the developments in key competitiveness areas following the structure of the independent reports and analyse them in the light of the results and the developments of the implementation of the recommendations drafted by the HLG.

The second chapter describes how practices highlighted in the six independent reports at level of companies or cluster of companies can be transferred pointing out the conditions for the success. Collective practices are analysed separately under the section Partnerships.

The third chapter builds up on the findings to propose a picture of the current situation of the EU textile and clothing sector. In this context a detailed analysis of trends and positioning is presented within different subsectors and EU macro regions.

The last chapter presents the way forward for the textiles and clothing industry with reference to the challenges and constraints; it takes into account the economic and financial crisis and it highlights policy recommendations.

1.2 THE HIGH LEVEL GROUP ON TEXTILES AND CLOTHING

The High Level Group (HLG) for textiles and clothing had a mandate to formulate recommendations on concrete proposals and measures to improve the conditions for the competitiveness of the European textiles and clothing industry. In their latest report in 2006 the HLG reviewed the status of the recommendations from the first report, and attempted to draw up a credible vision for the future and made further recommendations on the unfinished work.

The HLG formulated recommendations and follow-up actions in six areas:

- Competitiveness and Internal Regulatory and market issues
- Education, Training and Employment
- Intellectual Property Rights (IPR)
- Regional Aspects
- Research and Development, Innovation
- Trade policy

Compared to the present study the approach is only partially comparable. Some areas are directly covered in the reports of this study: Education, Training and Employment area is covered by the report on Training (task 5) and, partially by the report on Restructuring (task 4) with regards to employment dynamics; Research and Development, Innovation are covered by the report on research and development (task 2) and the one on Innovation practices (task 6); the situation of intellectual property rights was analyzed in the task 2 report only with regards to patents, trade marks and designs. Trade policy, Regional Aspects and Competitiveness, Internal Regulatory and market Issues were analyzed in terms of general trends in the preparation of the single reports and

² http://ec.europa.eu/enterprise/sectors/textiles/documents/high-level-group/index_en.htm

addressed in task 3 and 4. This study dedicated separated reports to the situation of SMEs (task 3) and to the situation of restructuring (task 4).

Moreover inside the same areas the approach of this study and the one of the HLG has been different. The analysis of the HLG was based on contributions of experts and on insights of the participating stakeholders. It focused mainly on policy impact and policy recommendations. The present study presented an in-depth analysis of the sector, describing the trends, processes, business models, relationships and best practices in relation to different trends based on regional cases and an extensive survey derived from direct interviews to the industry.

The vision for 2020 as made by the HLG, consider the necessary changes that have to be made by that time and the new form the industry will have taken.

The image given by the HLG is one “of a strong, flexible industry which has responded to the challenges of a globalised economy and in so doing has obtained the co-operation of the public authorities at all levels. It has notably reformed its structures by creating larger groups and taken greater advantage of standardization opportunities. It has turned even more towards specialty products, new applications and mass customization, using its Strategic Research Agenda and the opportunities offered by the European Research Area. In addition, the breakthrough in clothing technology will have helped to shift apparel manufacture back towards the EU. The latter development goes hand in hand with the crucial need to maintain a lead in fashion and image and creativity, in the defence of which a range of IPR initiatives are set out aimed at combating counterfeiting and piracy in the industry within the EU, at its borders, and in third countries (TRIPs agreement³, codes of ethics, more branding, enhanced co-operation with third countries and an increase in the number of national multi-sectoral anti-counterfeiting cells)”.

The HLG Vision recognizes too that none of the preceding achievements will prove possible if further attention is not given to skills and training in the sector to build on what has already and is currently being done at all levels. This will be accompanied by enhanced environmental and social standardization, the latter linked to an increased awareness of issues generally subsumed under the designation “Corporate Social Responsibility”.

In the attempt for a vision for the industry by 2020 the HLG could not consider the impact of the financial crisis that started in 2008 that severely impacted all industrial sectors, including textiles and clothing. The globalization of the industry was properly integrated as a key driver, as were the technological changes. The impact of the 2001 recession, following the burst of the internet bubble and the terrorist attacks on the USA, was well acknowledged by the HLG. But this crisis of 2001/2002 had not the length, depth or magnitude as the financial crisis unfolding from 2008 onwards.

However the vision drafted by the HLG is still actual at the light of the present study. In the following sections we will report the major developments in the key competitiveness areas analyzed in the present study comparing, where possible with the analysis presented in the report of the HLG.

³ Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS). It is an international agreement administered by the World Trade Organization (WTO) that sets down minimum standards for many forms of intellectual property (IP) regulation.

1.3.1 SURVEY ON THE SITUATION OF THE EU TEXTILE AND CLOTHING SECTOR

This Study for the European Commission started with a general survey (Report 1) into the trends and drivers of change in the textile and clothing industry and a questionnaire with industry, industry associations, research and education centres and trade unions on their apprehension of changes over the period 2000-2010.

The first section provides an overview of the main trends and drivers in the European textile and clothing industry based on the literature review, interviews and data analysis. We have identified and described five key drivers of change: industrial and consumer markets, globalisation, knowledge and technology, policy and regulation as well as the financial crisis. The main findings in the trends and drivers point to trends in demand, trends in industrial strategies, trends in technology and trends in financial and human resources.

In 2010 the textile and clothing industry realised a turnover of € 172 Billion and employed 1,9 Million people in more than 127 000 companies. The industry is highly export oriented since it represents a total value of € 34 billion. The size of the industry declined substantially between 2000 and 2010. The turnover of the industry declined by 25% (slightly more in textiles) while employment declined by 50% (equal in textiles and clothing the number of companies declined by 27% between 2000 and 2010. This also means that the average employment and turnover by company declined. In clothing the turnover by companies remained almost stable. Nevertheless the T&C industry is more fragmented than it was in 2000. The financial crisis starting in 2008/09 accelerated the decline on all indicators. In 2010 there were some signs of recovery in some member states.

In terms of demand the clothing and home textiles market in Europe is by and large slowly growing in volume and stable in value. Overall retail demand for textiles and clothing grew by 28% between 2000 and 2010. Demand for technical textiles grew by 10% a year between 2000 and 2007 but was stable after 2008. Decline in the northern and southern member states is only partly compensated by growth in the eastern member states. The financial crisis led to a sudden drop in demand for textile and clothing products, followed by a small recovery only in Northwest Europe and Poland. In general changing consumption patterns and the impact of imports leads to a favour for lower priced items. While the luxury and high end section performs rather well, there is mainly a squeeze in the middle of the market. Technical textiles has been growing since 2000 at an average pace of 10% a year, and technical textiles is a growing part of the industry. This growth has not compensated the decline of clothing and home textiles and this growth is often driven by other companies.

The European industry is at a disadvantage when it comes to supply lower and middle parts of the market. Cost competition favours third countries (especially China) and the European industry is no longer competitive in volume markets, also because of fragmentation of the industry. In the middle market Europe is still competitive when small batches or a very flexible response to the market are demanded. In the high end and luxury markets Europe still has a strong potential, but the skills required in design and branding as well as in manufacturing are barriers (as well as protection). Especially the luxury segment has showed excellent export potential; however, the speed at which third markets are being exploited is much lower than the speed at which import volumes increase into the European markets. Besides the organizational difficulties in developing markets, the difficulties created by trade barriers restrict exports to the most enduring firms with clear assets such as a strong brand appeal. Hence

while globalisation is a threat and an opportunity, the period 2000-2010 has mainly unleashed for textiles and clothing the threats, while the opportunities, though certain and demonstrated take more time to take up.

The period 2000-2010 also demonstrates the potential of new technology. The textile sector is well aware of new opportunities presented by new material technologies, new process technologies and ICT. These technologies offer new opportunities now that the advances of organic chemistry and mechanisation are being industrialised. In addition, and more recently, there is the perception among industrialists of the potential of a more sustainable industrialization based on materials made from bio-resources and processed with biotechnology. The consumer is more and more conscious of the environmental footprint and specific industrial markets are pulling innovation, also as a consequence of European regulations. However, the paradigm change in technology and sustainability is still in an early stage. Breakthrough is hampered by the major costs of commercialisation and industrialisation, high standards demanded for product quality, fragmentation of supply chains and initiatives and ultimately lack of financial resources from the financial crisis onwards.

The financial crisis is indeed a break and possibly a catalyst of change in the industry. Especially in 2009/2010 the crisis was seen as a temporary set back. It led to a decline in consumption, a substantial drop in profitability and a general weakening of the financial reserves of companies. It led to shake out of companies. The 2008/2009 crisis led to a strong reduction in the number of companies and employment, and an erosion of financial position. The recovery in 2009/2010 was beneficial to the more progressive part of the industry, such as export oriented luxury fashion manufacturers (and their suppliers/subcontractors). But companies remaining in commodities and acting as subcontractors remained vulnerable. By mid 2012 the crisis is lasting too long and the perspective on new opportunities is less clear. European demand is not picking up, exports are growing but are hampered by trade barriers and difficult access to export credit or insurance. The potential of new technologies is hampered by reduction of public budgets for research and innovation and also pressure of demand in industrial markets. The financial crisis is also limiting the resources available for mid-term and long-term innovation. The problem of fragmentation is compounding a more structured approach towards sustainability. The potential still stands, but the uncertainties in the business environment limit commitment and may lead many industrialists to withdraw to markets offering a sure cash flow in the short term.

A second section analyses the results from five surveys, dedicated to five different types of stakeholders in the European textile and clothing industry, including companies, research centres, educational centres, business associations and trade unions. The main purpose of the survey was to get a solid insight into key issue in the T&C industry from the key stakeholders. The survey was conducted in the second quarter of 2011. We analysed answers received from 135 respondents, of which more than 76% were companies. Among the respondents, clothing companies were somewhat under-represented, whereas technical and home textile companies were over-represented. Furthermore, most of the companies that responded to the survey were medium- to large companies, while the T&C sector is mainly made up of micro and small companies.

A majority of companies, in particular in Southern and Eastern European countries, have undergone major restructuring over the period 2000-2010. Modernization of equipment and strategies was also recorded. The most significant change identified by companies is the development of new products. Other important changes during the decade include the introduction of new strategies, improvements of productivity and finally access to new markets. Accordingly, adjustments in the business areas have mostly focused on new products and markets as well as on cost and resource management.

The main impact of the economic and financial crisis was, as stated by companies, an increased competition in the market as well as the difficulty to develop new markets and products. The crisis had an important or even very

important impact on the business strategy of companies located in southern member states and eastern member states. A decrease in human resources was also mentioned by Business Associations and Trade Unions as having an important effect on companies. According to trade unions, the main cause of restructuring in the companies during 2000-2007 was competition from low-cost countries outside Europe, followed after 2007 by financial issues and loss of markets share. In addition, the main human resources response to restructuring was employment reduction and redundancies. Flexibilisation of employment was much less applied, mainly in the Netherlands and Scandinavian countries.

During that period, companies made use of the available supporting services, in particular from the business associations, in developing and implementing new business areas. Besides, there is large regional variations between EU countries concerning which types of support are used in addition to the support of business organisations. Despite the services provided, business associations witnessed a decrease in the number of member companies in the period 2000-2010 (between -10% and -25%). The associative system has been rather weakened by the crisis.

In the financial area, the main economic challenges for companies during the crisis have been the access to working capital (credit line, short term loans), and the insurance guarantee and collaterals required to acquire capital or loans. In the production processes area, companies have felt the crisis most strongly through its impact on the prices of raw materials and energy. Another important challenge for companies was the problem of accessing raw materials and the changes in customer behaviour. Finally, research centres have set up new services and improved marketing and communications actions following the crisis.

Over the decade, companies stressed that the EU27 has been the market showing the strongest evolutions and that Asia is an increasing market. From the Business Associations' point of view, Asia is the most strongly increasing market, Latin America is slowly increasing while, NAFTA and EFTA zones are seen as stagnating or decreasing markets. Furthermore, markets such as the Balkans and Russia are considered as increasing markets from both sides. Administrative procedures and customs and additional standards and regulations (i.e. environmental, consumer protection, labour market, safety) have been highlighted, by companies and associations, as the most significant trade barriers to enter third markets.

The survey revealed that the largest share of companies have no protection of their intellectual property rights, particularly in non-EU countries. Long and complex procedures and high costs for registering trademarks and designs especially in third countries remains also one of the key concerns for T&C companies (non-tariff-barriers). In addition, the fact that some T&C companies are still using no protection of their IP rights reveals that there is a lack of knowledge among them regarding the various possibilities and the risks to which such non-protection exposes their businesses. Nevertheless, T&C companies are more sensitised by the protection of trademarks than of other rights such as patents, design/models and copyrights.

As regards the framework conditions, energy costs are perceived by companies to have the highest negative consequences on their competitiveness. Regulations impacting on international competition, access to raw materials and to capital-finance/credit are also seen as having an adverse influence on the companies' competitiveness. Business associations had a bleak view on the access to finance during this period, but most expected it to improve in the future. Likewise, most of them expected that access to third markets and international competition is likely to improve. Some companies expressed the opinion that national governments and regions in some EU Member States are creating an uneven playing field within the EU 27 by not ensuring compliance with different types of regulation, for example environmental regulation. On the contrary, the policies

assessed by companies to be most beneficial to their business are policies within the fields of research (R&D coordination and innovation efforts) as well as education and training.

The survey's section on employment/education and training demonstrated that the match between the supply of lifelong learning offers and their company's requirements improved during the 2000-2010 period, but also outlined that there are still gaps. In general, companies intensified their investment in human capital as well as life-long learning and increased the workforce flexibility over the decade. These trends are generally also in line with the business associations' views, which are also much concerned by "*flexicurity*" to enhance flexibility and security in the labour market.

The composition of the workforce is changing in order to adapt to the increased competition and changes in the market. The share of employees with higher levels of education is increasing, whereas employees with lower levels are decreasing. Companies have seen a decrease in low-skilled workers and an increase in the staff with a university degree, technicians, and skilled workers. According to Trade Unions, the highest growth is in employment categories such as marketing and sales as well as research and development in terms of fashion, design and style, whereas the number of general production worker declined over the period.

As a consequence, shortages of staff with the right qualifications are a growing issue for the companies. The most pressing shortages are experienced in relation to skilled workers. However, companies have also experienced or expected to experience a lack of technicians and shortages of graduate staff. Hopefully, the educational centres mentioned that graduates at all levels (Bachelor, Ph.D. and Master) are expected to increase, either slowly or strongly in the next five years. According to them, the type of graduates that companies have most difficulty recruiting is textile technology (i.e. finishing) and advanced materials.

The majority of business associations pointed out that the level of cooperation between themselves and education and training bodies either increased or remained on a high level over the period. On their side, educational centres indicated that they are collaborating with T&C companies, especially through *ad hoc* consultation on educational issues and regular dialogue with companies through student work placement or internships. Labour unions seem to be less implicated with education, especially higher education. The main type of training is tailor-made courses or seminars of a few days length and the most requested topics is advanced materials, textile technology and product development. In addition, educational centres are engaged in collaboration on research with T&C companies, and this collaboration is mainly funded from own budget or national public funds. Finally, competence development was indicated by most companies as the most important human resource strategy area within business plan of the company, followed by raising the company's attractiveness to employees (i.e. by creating economic and social incentives).

Almost half of the T&C companies increased their involvement in innovation between 2000 and 2010. The most important areas of innovation are related to market development and R&D/product development, followed by R&D/process development. However most innovation is of an incremental nature and not science based. Substantial investments in optimization of internal process and work organisation have also been made over the period. The case studies in others tasks show that the markets are the driver of innovations and that the research centres and universities are rarely drivers of incremental innovation. Lastly, the use of ICT in business processes has been increasing either strongly over the period 2000-2010.

There has been a medium level of collaboration between research centres and companies, which has been increasing over the last 10 years. The main objectives of collaborations, listed by research centres, are the

development of new products to enter new markets or to improve existing products for existing markets. Business associations noted that it is the area of product innovation which has seen the biggest increase over the period.

Most of the respondents from research centres indicated that they receive public funding (collaborative research) to help support the companies with their innovation activities. Most of public funding is received from national funds, while local/regional funds are generally rather limited. However, it is important to point out that there can be large regional differences within countries. The survey for research centres emphasised that lack of human and financial resources of companies is the main barrier for collaboration. However, research centres see an opportunity for the future to increase the collaboration with companies regarding innovation activities. In relation to the expectations for future innovation plans of the companies, implementation of new technologies is listed, by business associations, as the most important.

If we consider the external factors, companies' responses are overall quite pessimistic about the future, as the external influences coming from markets and resources are mainly expected to present threats rather than opportunities. One of the most negative expected effects for business comes from the access to financial resources. For the remaining types of resources (human resources, energy and raw materials), a larger share expected no significant impact in the future, but those who do expected the resource availability to have an impact, most expected it negative. Considering business associations answers, access to resources is expected to act as a restraining factor together with energy costs, which are expected having a negative impact. A large majority of Trade Unions also expect that energy costs and access to raw materials will have a negative impact in the future and expect a decrease in the number of companies over the period up to 2014. Nonetheless, the most striking difference is the fact that access to finance is perceived as positive for about half of the nine Trade Unions respondents.

On the market side, respondents are somewhat more optimistic as a large share of companies assess that the increased access to new customers will have an overall positive effect on future competitiveness. This is particularly true for companies in Eastern Europe. Overall, trade unions and industry associations expect market conditions to facilitate improved competitiveness. Within the market conditions however, global competition is seen as having a negative impact by more than half the associations.

Considering the internal factors, the most important focus for companies appears to be initiatives that can enhance productivity followed by investments in technology and process development (i.e. investments in new production equipment). Business associations also assessed new product development as being of high future importance. Similarly, the internal drivers of highest importance according to trade unions were new product development, but human resource development is ranked higher than for business associations.

1.3.2 RESEARCH & DEVELOPMENT

The HLG reported many initiatives fulfilling their recommendations in the area of Research and Development and Innovation. The project LEAPFROG with its breakthrough technology together with a number of FP6⁴ projects were expected to finally deliver automation in clothing manufacturing. This would have removed the wage – cost advantage from which many Asian (and other) nations have benefited. This shift would have moreover have a

⁴ Sixth Framework Program of the European Union for Research and Development

positive effect in sustaining demand for yarn and fabric which has been spun and woven in EU. The use of this technology also link to mass customization. The HLG noted that most of their recommendations for these key development areas were in fact implemented. However an important issue was the facilitation the access to research funding for smaller and medium enterprises, within the context of the 7th Framework Programme (FP7). Moreover it takes in to account the effort made by the textiles and clothing Technological Platform in drafting a Strategic Research Agenda (SRA) pinpointing the research and development industry needs over the next decade. The SRA shall be further disseminated among all the stakeholders.

The project LEAPFROG, that ended in 2009, has not succeeded to this date to attain a breakthrough in automation of the clothing process. The HLG has also advocated a stronger partnership with the machine building industry under the ManuTex initiative. We have not detected in our study tangible results of ManuTex. Despite both limited results of these initiatives, LEAPFROG has been one of many projects promoting the industry of going towards the mass customization of apparel products and developing more dedicated production technologies such as digital printing.

The report on research and development (task 2) analyzed mainly how specialized research and innovation centres collaborates with textiles and clothing firms transforming research outcomes into marketable products; moreover it presented an assessment of the evolution of the Research and Innovation practices and technological breakthrough was made. It presented an R&D landscape in Europe in relevant transformation.

The background of the transformation process is that leading suppliers to the industry are no longer the powerhouses of innovation: fibre companies no longer have the scale they had in the 1970s. Chemical companies and machinery producers, which still have a considerable scale, are more interested in the big volumes produced in Asia. In private research, end users have become important players. Airbus is for example an important actor in driving research on composites. Textile companies have to rely on internal knowledge resources, which they do in traditional niches (wool, lace) or they have to relate to public research, but with substantial in-house development and engineering skills. This happens especially in technical textiles. The report showed that still a very small minority of firms have strong links to research: altogether there are less than 1000 companies in an industry counting over 100.000 firms.

This appears to go against the HLG that expected more involvement of SME. However far more SMEs have been involved in EU funded research in the period 2005-2010 than in the period 2000-2005. Hence the involvement of SME has improved but larger companies in textiles have been less engaged in EU funded projects after 2005. Also national and regional funding focuses on SME involvement in projects. The largest companies do also carry out more focused contract research together with research centres, and are in some countries involved in the governance of research centres.

Research tends to focus on technical textiles. This is the section of the industry with most interest for research, with most skills in planning research and protecting intellectual property. In fact 85% of all patents in textiles are in technical textiles, and this contributes to the global leadership Europe has in this segment. Technical textiles segment is organized in rather large companies, with a high level of organization and the necessary skills to compete worldwide. For Universities and research centres this industry offers stable source of funding for programmatic research or for commercial services. In addition research in technical textiles enables to publish in journals with high impact and contribute to excellence.

All funding systems, regional, national and European collide in funding research in technical textiles however many innovations took place also without public funding. In fact technical textiles are always at the core of European,

national and regional road maps and this attracts a large majority of funding of research. More focused inside technical textiles is the focus on composites: this sector only represents 2% in volume of the textile industry but attracts between 30 and 40% of funding. Unlike the textile system which is made up of a large number of medium size companies and SMEs, research in composites is driven by the aerospace sector and increasingly automotive companies.

Commercial research from companies have also a considerable role and especially applies to technical fibres, such as aramides (discussed in report 6 on innovation) that were developed in the 1970s by Dupont (USA) and Akzo (NL) as well as other strong fibres developed by Rhone-Poulenc (F) and DSM (NL). These companies have been also active in fostering the applications of these fibres in the value chain and have adopted an active technical marketing. The application of technical fibres has been promoted by higher security needs (e.g. in personal protective equipment) or regulation in fuel efficient mobility. Public procurement is also an important element in market adoption. Hence public authorities have been rather present, but more in a regulatory than in a funding role. The same applies to composites, geotextiles, filtration materials for which innovation is largely driven by higher regulatory demands.

Another case is the uptake of ICT and Internet (E-Commerce) in the sector. This uptake has taken the form of adoption of enterprise resource planning systems from the 1990s onwards. Research was mainly carried out in the ICT sector, with large industrial groups such as Siemens and Robert Bosch. These systems were transferred to textile and clothing industry from 1990 onwards. The drivers were largely the complexity of logistics associated with subcontracted and/or delocalized production, increased diversification and differentiation in products and a pressure on lead times because of increased competition. Market pressures is a leading factor and innovation was mainly the adaptation and adoption of software platforms developed for other industries. The implementation of ERP systems was largely assisted by informal and formal networks and activities of industry associations. The adoption of ERP was needed to take a second step: to engage into e-commerce strategy. Public intervention was also limited, other than in creating general framework condition. The main motivation for an e-commerce strategy was to bypass retailers and to reach directly to consumers.

Research infrastructures when well connected to technical textiles and able to create connections with the industry their research funding goes up and they contribute to the development of a vibrant innovation system. This might lead to spin offs to more traditional segments, although we have found little evidence of it. The major effect would be that well funded research centres are important providers of graduates, but the most research oriented centres are small in training graduates and contribute little to education of potential researchers in industry.

Looking outside technical textiles large sections of the industry are left on their own, although they also abandon themselves the realm of research. The more traditional textile sectors and the clothing industry are unable to articulate a research demand, and the research community does not engage fully in this process, most often because the research volumes envisaged are small. This may not be a substantial problem in regions with a vibrant technical textile sector, since there is critical mass for R&D. But in regions with mainly a clothing industry and especially subcontractors, the companies are not included in the research arena, hence the research system is disconnected to industry and also small in size and in impact.

The difficulty of liaising between the majority of the industry and research is compounded by a gradual reduction or disappearance of levies and in general less attention for collective research. This happens notwithstanding that for the clothing industry a number of trends may need more attention for research or at least structured innovation processes. The first one is that if one aims to attain more environmental sustainability in the supply chain, the impact in volume shall be in clothing and home textiles. This is certainly of relevance for mainstreaming the use of

biopolymers and to come to processes with a lower carbon footprint. The second one is to maintain a skill base for high quality traditional luxury products that requires a good skills base. In the third place with changing retail behaviour, focused on mass-customisation and production close to the market, there is a need for developing new business models and working at operational excellence. This is especially true for the eastern member states, where the R&D infrastructure is very weak.

Indeed one of the striking elements is that research infrastructure is strong where there is only a modest industry left, and where there is still a substantial industry left the R&D infrastructure is weak. Scandinavia, the Benelux, Germany and the UK host the best research centres but they have a small industry, albeit heavily oriented towards technical textiles. The southern states and the eastern member states have a sizeable industry but lack a strong R&D infrastructure. The most striking case is Italy, still the largest textile and clothing producing country in the European Union but has a very modest and fragmented infrastructure. The industry has relied too long on technology push by its suppliers combined with fostering tacit knowledge in companies.

1.3.3 INNOVATION

The HLG report analysed Innovation together with Research and Development. In comparison with the report on Innovation (task 6) most of the ideas within the vision for 2020 proposed by the HLG are in line with the trends found in the report on Innovation and still actual: growing importance of innovative specialty fibres, required sustainability of cotton supply chain, in particular dyeing and finishing, importance of internet and ICT solutions.

The HLG has put forward a range of recommendations regarding technology and innovations. In this area the uptake of the recommendations by the European Commission especially but also by member states and the regions has been further than expected. This is mainly the result of the establishment of the European Technology Platform on Textiles and Clothing, the development of a Strategic Research Agenda and the institutionalization of a learning experience. The European Commission has proposed more than two action lines for textiles and clothing and each year since 2007 several action lines were targeting textile research and innovation.

Most of the “unfinished business” in the 2006 HLG report related to what constitutes non technological innovation. Investments of companies in this kind of innovation, that in the textile and clothing constitutes the more relevant form of innovation, shouldn’t be treated any different then other forms of R&D investments.

Our report on innovation also acknowledged the importance of non-technological innovation, in particular commercial innovation, which covers a wide range of subjects such as design, organization and technologies applied to retail and logistics. The interaction between non-technological and technological innovation is complex and intense in the sector; examples in this area are design, differentiation, fast fashion logic, new ICT retail technologies and mass customization. While public funding is of major relevance for supporting R&D and technological innovation related activities, there is still not enough attention in supporting non technological innovation.

The report on innovation highlighted a number of success stories and it is possible to identify common critical factors which are considered relevant when it comes to innovation performance. The strong link with suppliers (raw materials, chemicals and sometimes technologies) is present in every case and particular for SMEs this is a very relevant input for innovation. The engagement of the client through more or less formal methodologies is also a common factor which is present in every success story, with particular relevance in the case of business to consumer (B2C) relationships rather than business to business; in fact it regarded mainly incremental product

innovation or non technological innovation strategies. Interaction with leading clients and end-users has been mentioned several times as one of the richest information sources for innovation.

The importance given to marketing and communication specificities, when it comes to present an innovative product, within or not the usual markets, has been underlined in almost every case as having a critical influence on the “new product” success. This factor is even more critical when the innovation strategy addresses non-traditional markets. Here specific regulation, such as in medical textiles, or procurement systems, such as in protective equipment, have been pointed out as one of the critical common innovation barriers. The importance of industrial know-how is present with higher or lower intensity in every case, directly or indirectly. The role of innovation centres and R&D centres in the innovation pipeline, beyond the latest stages of the development processes, which is more relevant in the case of SMEs, seems to be connected to a role of information providers acting sometimes as hubs to reach less known application sectors from the companies' point of view.

The future outlook for innovation drafted in the report is rather positive as many companies are focused on it. Most of the innovation will be in incremental product development and process innovation, much less is in non-technological innovation or in radical innovation. Innovation processes are rather strong when a leading customer takes the lead. The Spanish retailer Inditex has emerged as a leading player in fostering fast fashion. This is an important stimulus for incremental innovation in products (in new designs) and processes (quick response production and ICT uptake). Even if a technology push is manifest, such as in digital printing, the breakthrough of this technology since 2008 is driven by the demand of luxury brands in faster product development and smaller runs.

Competition between retailers, clients and suppliers also will foster innovation, when these retailers (such as Inditex) provide a critical mass. It seems that a cooperative approach, across smaller retailers and manufacturers is harder to organize. Innovation requiring the organisation of the supply chain such as ICT standards or adoption of biofibres will remain fragmented. Institutional barriers such as difficulties to cross-border cooperation because of differences in education systems, in innovation funding, or public procurement, still enhance this fragmentation. The lack of regional funding for innovation or severe cuts in funding for innovation is also a barrier to innovation.

1.3.4 SMALL AND MEDIUM ENTERPRISES

The HLG referred to Small and Medium Enterprises (SME) in particular with reference to the difficulties the textile and clothing industry experiences in attracting financial capital and credit; this point was high on the agenda of the HLG and was translated in a range of recommendations such as working on the image of the sector and improving access to funding of the European Investment Bank (EIB). We have not found evidence of EIB involvement in textile firms. The particular difficulties and challenges of SME are also addressed. Nevertheless the ongoing financial crisis came as a surprise and whatever recommendation of the HLG was not at the level to absorb the impact of dramatic decline in orders, loss of profits and erosion of the capital base of the industry occurring since 2008-2009 across the entire Europe, and in several other countries.

The task 3 report assessed in detail the main difficulties faced by SMEs and the prospects to overcome these difficulties keeping in mind that they represent the majority of the textile and clothing companies in Europe. Globalization (liberalization, delocalization, international outsourcing) and the development of internet-based communication technologies have had a major impact on the structure and dynamics of the T&C industry in Europe, and in particular on T&C SMEs. The openness of the EU market combined with a distribution/retail

structure increasingly dominated by very large corporations which consider price as the main competitive factor, generated a major wave of imports from low cost countries, in particular China. As well, delocalization, international subcontracting and outsourcing by large European T&C brands contributed significantly to the increase in imports from low-cost countries.

As a result the relative competitiveness of the EU-based T&C sector quickly declined causing extensive restructuring and downsizing. The general reshaping of the European T&C industry had, and is still having, a strong impact especially on the larger part of the sector that is the one composed by SMEs, in the EU T&C specialized regions and their clusters. The value chain of the local T&C industrial systems (be they T&C clusters or specialized areas or regions) based on the territorial proximity of cooperating contractors/subcontractor companies has been disrupted or substantially restructured. The density of internal and short linkages in the clusters has been partially substituted by external and long linkages along the supply chain due to the internationalization of contractor/subcontractor relationships.

SMEs access to supporting services is broadly correlated to the stage of development of the cluster. Clusters characterized by a high degree of external independence register an intense flow of relations with local service centres. Access, use and relevance all depend on the quality of service centres and their coherence with both established and emerging needs of local SMEs. While the degree of access might be satisfactory in terms of quantity, the kind of services and assistance required, and valued as useful by SMEs, greatly varies from cluster to cluster.

Across the reports on SMEs (task 3) and on restructuring (task 4) cases we found a high level of services in the Netherlands but almost absent services in Bulgaria, Slovakia and a declining level of services in Northern Greece. In Slovakia there are some general services offered by chambers of commerce while the Greek business services move towards lobbying. In Northern France and North Portugal the focus is very much on R&D support. In Prato (IT) the cluster mainly organizes networking and access to quite generic services. In Catalonia (ES) the association maintains some market information and export promotion, but services offered by research centres are better funded but seem not to adhere to industry needs.

Except for North Portugal, R&D services are reported to be too much oriented towards fundamental innovation and less on the incremental innovations, productivity increases and more day to day production management issues. For the sake of comparison, during the restructuring in Belgium, UK, the Netherlands of the 1970s and 1980s substantial public resources were engaged by member states in setting up very practical technical services. These consisted of assistance to increase productivity, quality control, manage small orders, flexibilise production and multiskill workers. Companies could often get a subsidy to use those services. We did not find this type of assistance in this study.

The focus of regional strategies on innovation may possibly overfund research centres but underfund other services. More business oriented services such as market information, credit services, IPR support, are, if provided, offered at a national level and often based on a commercial model of retributions (e.g. in the Netherlands). This requires that company fully pays for services. In smaller clusters the critical mass is not present to develop these services. In Italy (e.g. Prato) there was also since 2000 a phenomenon of regrouping of fashion and fabric fairs at a national level. Milano Unica was created by merging many regional fairs. As a consequence, export support services also moved to the national association.

Europe is not homogeneous and this is not due, as in the past, to regional technical or product specialization, but mainly to different levels of entrepreneurship in different regions and areas. In areas where entrepreneurship is

well developed such as Flanders, Nord Pas-de-Calais, Prato, North Portugal, attempts at changing the T&C SMEs sector are underway and seem successful even in the presence of downsizing and consolidation resulting in fewer but stronger enterprises. Where entrepreneurship is not well developed, SMEs are struggling for mere survival and often unsuccessfully.

Excluding technical textiles, the overall image of a low-profit, low-innovation industry coupled with low-salary and working conditions for SMEs subcontractors generates a low attractiveness of the industry. Key resources such as young professionals and skilled workers, as well as credit, are difficult to find in particular where the T&C sector presents a weak structure. This problem hampers development of the sector and its solution appears as a pre-requisite for any public support intervention. Shortage of skills in both textile and clothing industry industries affects all regions surveyed. Even in regions where trained workers can quickly find employment, enrolment of students in specialized schools and recruitment of young workers remains problematic. While larger companies can organize training in-house, SMEs need to rely on external training facilities.

According to the size parameter SMEs are generally considered a homogeneous segment of industry. However the findings of the report on SMEs indicate that this very large part of the T&C industry, comprising about 130.000 enterprises in the 27 countries of the European Union, encompasses an extremely wide array of different situations among firms that generate a corresponding diversity in needs, opportunities and business potential.

A more refined segmentation is needed to design targeted and effective SMEs support action. We identified four main segments according to different business models and degrees of entrepreneurship.

1. CMT Subcontractors
2. Co-contractors (Evolved subcontractors)
3. Hybrid businesses including both subcontracting and own branded production
4. Own-Product Enterprises and SMEs with brands

In general the theme of SMEs difficulties is linked with restructuring of the sector: trends such as globalisation of production and the impact of the financial crisis.

Report 3 on SMEs covered eight T&C clusters/regions, some of them joined in a trans-border region: North Portugal (PT) and Galicia (ES); Central Macedonia (GR) and South Bulgaria (BG); Nord-Pas-de-Calais (FR) and Flanders (BE), Prato (IT) and Eastern Slovakia (SK). By applying this segmentation the main findings and conclusions are:

South Bulgaria and Galicia are mostly characterized by CMT subcontractors; South Bulgaria is largely a subcontractors' cluster with many SMEs serving another largely subcontractors' cluster in Northern Greece.

Northern Greece and North Portugal are in a medium stage of transformation and many local own-product SMEs are still at a low/medium degree of specialization. The two regions also host many hybrid businesses. Northern Greece has the advantage of geographical proximity with possible delocalization areas in South Bulgaria, FYROM and Albania. North Portugal has a significant number of own-product enterprises and small medium brands.

Eastern Slovakia is characterized by few, large, evolved subcontractors to leading European businesses that use a number of small or micro local workshops to ensure capacity flexibility. Low-cost, next-door Ukraine is competing with such local workshops but due to its high instability and unsure rule of law, only few Eastern Slovakia

companies have de-localised production there. In Eastern Slovakia there are only few SMEs and all of them have a significant degree of specialization.

The Prato and Flanders/Nord-Pas de Calais cases present high level of entrepreneurship and specialization. While SMEs in Flanders and Nord-Pas de Calais were quick to strengthen the technical and functional performance of their output, Prato is still very much focused on the fashion business and only few examples of technical textiles have emerged in recent years. In Flanders/Nord-Pas de Calais part of the industry has scaled up losing its SME status, the other part has retrenched in areas of high technical specialization such as lace, jacquard, home textiles and technical textiles.

Diversity is a major characteristic of the SMEs sector, especially for those SMEs which are not CMT subcontractors. This high degree of diversity makes it difficult to identify good cases or best practices that can be easily duplicated. Personal leadership skills play an important role in the success of some SMEs.

When considering SMEs we have to bear in mind that human capital is their key asset, the more so since they are almost always family businesses. Human capital directly shapes their businesses and persons have different sets of values, competencies, energies, wills, attitudes. For example: the current success of Sarti Faliero (Prato) in the development of an SM Brand in the accessories business is mainly due to the fortunate encounter of a grandfather, extremely experienced in carded technology, with a granddaughter who has outstanding attitude for design, sense of beauty combined with education and skills in marketing and communication. This can only be a good example, not a best practice. We came across a similar case with Atak (Eastern Slovakia); a company in the sportswear business where the two sons of the founder play in the local basket team and they appear to be natural promoter of the brand.

1.3.5 RESTRUCTURING

The HLG addressed the urgency of restructuring in relation to the phasing out of quota, in view of the full reintegration of textiles and clothing in normal WTO rules. Although the bulk of phasing out of quota was planned for 2005, the impact was lessened or at least prepared since the European textile and clothing industry was faced since the beginning of the 1990's with a gradual opening up of its market because of liberalization of trade with accession countries or partners in the Mediterranean zone. Before 2005 a substantial number of qualitative limitations had been removed and the remaining quota had been expanded significantly.

Hence this process was announced and many companies had experience with the impact of globalisation. Many companies had also engaged in exports or delocalized production in order to enter new markets. However many companies were not prepared to the liberalization of trade. Especially in the eastern member states the companies and the (sectoral) institutions were not well prepared to assume a new round of restructuring. What came as a relative shock though was the effect of increased imports on prices. In 2005 and 2006 prices were under pressure and the relative good market situation across Europe benefitted mainly retailers and imports, or the high end of the market (and through this segment European production).

Report 4 on Restructuring analysed the drivers and outcomes of restructuring more in detail, highlighting business models from companies and strategic responses from stakeholders.

Restructuring is an ongoing process in Europe. While some textiles regions did most of the restructuring in the past, like in the Netherlands and Denmark, many regions are facing several challenges in responding to the drivers of restructuring. The report confirmed globalization as an important driver together with changes in demand and distribution channels, political and regulatory change and in limited cases, technology. In addition the financial crisis hit the T&C industry as a whole and resulted in a significant decline in employment and production in parallel with drops in imports (11% down from 2008) and exports (17% down) starting in 2008. Both the textile industry and the clothing industry were affected, however the textile industry experienced a more significant decline, just like intermediate products in other industries did.

Restructuring is visible in different dynamics. In the first place an important dynamic of decline is related to the reduction in the number of companies. In our analysis the number of companies declined in Catalonia, Lithuania and in Northern Greece. It explains a large part of restructuring in terms of turnover and production value as well as employment. In the Netherlands, the number of companies has increased slightly, but even with a stable number of firms there is job loss. Companies closing are on average larger than start ups. Examining the impact of business demographics on employment, company closure is the largest factor contributing to job losses in the textile and clothing industry.

In the second place restructuring entails a downsizing of surviving firms partly by reduction in production volume and sales and partly by rationalizing employment at stable production output. The first trajectory is one of decline, the second one of resistance; however, growth or recovery is also possible. What is clear is that almost all companies were hit by the 2008/09 crisis, in most instances after years of stability, sometimes after years of growth. The crisis led to a reduction in turnover, employment, profitability, financial assets and ability to resist. What is striking is that the capacity to resist of a majority of firms is still good. Nevertheless, the potential job loss resulting from the closure of the 30% weak firms is considerable. In the third place restructuring may entail initiation or acceleration of consolidation processes. Consolidation enables companies to maintain a position in a shrinking market by taking over competitors and combining increased market share with economies of scale; it is a relevant trend in general in Europe, and it has been confirmed in the Dutch case. In this case we see clear consolidation amongst the largest firms in textiles, especially carpets, and we see leading players in the top 20 in clothing and textiles. In all other cases no company is present in the top 100 of the industry and there is almost no consolidation, not even among SMEs.

Companies that successfully overcome a restructuring process often change their business model. In our report we identified five relevant business models in connection with restructuring:

- **Changing role in the value chain** – companies change, reduce or expand their core activities along the value chain, for instance by changing from being a production company to outsourcing production and focusing on design, logistics, and marketing.
- **Specialization and niche products** – focusing on products and/or production methods that increase the added value and are (to the same extent) less subject to competition from manufacturers using cheap labour to produce for the mass market. Examples are high-quality or environmentally friendly products or use of specialized sewing techniques.
- **Two string strategy** – combining two production locations, usually producing large volumes in Asia with longer delivery times (and lower costs) and small to medium volumes in Europe (or Northern Africa) with shorter delivery times, allowing for just-in-time delivery (and often higher costs) e.g. bespoke curtain production in Europe and ready made curtains in India.

- **Co-contractors, hybrids and new distribution channels** – finding new ways of selling products. Co-contractors add services to the sub-contracting work such as co-design; hybrids operate their own label while at the same time acting as sub-contractor to another branding company. For example new distribution channels may include setting up own shops or selling on-line.
- **Consolidation** - maintaining a position in a shrinking market by taking over competitors and combining increased market share with economies of scale. This is sometimes accompanied by rationalization in the direction of reduction of capacity or improvement of productivity.

The strategic responses of stakeholders like public authorities, associations and research and education institutions have been limited, in particular in the role of anticipating restructuring. This anticipation could have been done by stakeholders such as public authorities or business/sector associations. Although the financial crisis could not be anticipated, structural drivers such as globalization, changes in consumer demand, distribution channels, technology and regulation could have been addressed. The ability to sustain a prolonged financial crisis is severely curtailed by a growing number of firms in a weak financial position, lacking the means to redeploy. In addition, skills shortages are also inhibiting repositioning in other market segments with higher added value. The responses to restructuring have been mainly the initiative of individual companies, with little anticipation or support by industry associations, with the exception of the Netherlands, or by regional/national authorities. Although the types of responses and the constraints on restructuring is not new, as many European countries have experience with restructuring in the textile and clothing industry since 1958, the collective learning inside regions and between regions is limited. Promoting exchange of practices across regions, but also fostering regional institutions that can facilitate restructuring is as important now as it was in the 1970s and 1980s; learning initiatives of this type could be organised thematically or as cross-regional initiatives.

We feel that there is a lack of actual understanding of mechanisms of restructuring. Studies on industrial restructuring were largely made in the 1970s and 1980s. Consultancy firms assisting restructuring processes have largely diversified to other services. Especially for those countries engaged in restructuring for the first time, a pooling of research and assistance could be proposed. Whereas textile technology research is bundled thanks to the AUTEX network, such a bundling does not exist in economic research disciplines in textiles in Europe. The only established network of research on economic changes in textiles is animated by Duke University in the United States. The Textile Research Group within the International Geographical Union has been discontinued as was the economist group within the Textile Institute. The last academic conference on restructuring in the textile industry was in 2004. It would be advisable to promote networking of economists and associated researchers; this could start at the initiative of the European Commission and could be integrated into AUTEX.

In none of the regions there has been, after 2008, a strategic and comprehensive approach developed by associations nor policy makers. In none of the regions have we found a comprehensive strategy developed by stakeholders or policy makers.

Actions taken were often independent of restructuring, prepared before 2008 and implemented from 2008 onwards. The flexibilisation of labour in the Netherlands was a response to the 2001 recession, and worked well in 2008/09. The efforts on research and innovation in Catalonia and the Netherlands was a strategy developed in 2006/07. The policy in Catalonia to assist clothing manufacturers to develop retailing was a response to changing retail structure that could be effective after the financial crisis. In Lithuania the industry association had invited banks as associate members but this invitation was made before the financial crisis. Similarly the credit information services in the Netherlands proved their worth at times of a credit crunch but these services were developed in the

1930s. In Greece the financial crisis even weakened the ability of response to the crisis. The only clear action related to the financial crisis was the mobilization of the European Globalisation Fund to accompany workers made redundant by the textile industry in Lithuania and Catalonia. However these actions were oriented to workers and not to companies faced with restructuring.

1.3.6 TRAINING

In 2006 the High Level Group's standpoint was basically similar to the present situation of the industry, except that all issues have become somewhat more acute as the industry had to bear this long ongoing crisis. The need "for better trained and more highly skilled employees at all levels, and at attracting the younger generation towards a career in the industry" raised a broad consensus among most stakeholders as mentioned in the 2006 HLG report. These findings are confirmed by this study, by companies, industry association and labour unions. All stakeholders acknowledge that the alignment of skills needed by industry do not match well with education curricula. In addition all stakeholders acknowledge that they are insufficiently involved in education and training. All stakeholders do agree that deeper involvement is needed and that education and training should be a core issue in social dialogue.

Following the HLG report some key projects had already been launched regarding the establishment of Observatories, the development of common qualification standards and the enhancement of social dialogue at all levels. Among the "unfinished business" and the measures still to be adopted that were presented in the HLG's report were mentioned:

- surveys to ensure better match between qualification supply and job demand
- the establishment of media/information pools to make the industry better known and more attractive to the general public and potential recruits
- the development of high level specialised training institutes capable of sustaining expertise in areas where demand was only sufficient at EU level, open to multinational students with good language skills gained from an early age
- the organization and co-ordination of training through programmes like e-VITA⁵ or TEXTAG⁶

The report also highlighted the crucial importance for Europe and for Textile and Clothing industry to maintain a global leadership in fashion and fashion design thanks to an elite of European star designers.

Since then the development of T&C Sector Skills Councils (SSCs) in western member states of the EU with this specific mission of observation and anticipation, and the surveys they could carry, has certainly been a major step forward for the industry. Since December 2011 the establishment of the network of those SSCs provides a support structure to foster the emerging of new SSCs in particular in the member states that accessed EU in 2004 and 2007⁷.

⁵ The e-VITA project promotes and investigates pedagogy-driven innovation, and facilitates knowledge-transfer mechanisms with intergenerational learning concepts. The e-VITA project is co-funded by the Education and Culture DG under the Lifelong Learning Programme. <http://www.evita-project.eu>

⁶ TEXTAG project is one EU Leonardo da Vinci project to develop interactive learning tools. It builds on previous experiences of the universities involved of developing top level CD ROMs for the industry.

⁷ Since December 2011, these national observatories are supported and linked together by the first European Sectoral Council on Education Training and Employment. This move, an initiative from the European Social partners - ETUF: TCL (dissolved since

The 'New Skills for New Jobs' initiative launched in 2008 set out the Commission's agenda for better skills upgrading, anticipation and matching. Many of the conclusions and recommendations made were actually taken up and implemented within the framework of this initiative, even though its mostly cross-sectoral approach tends to disregard the specific needs and conditions of each individual industrial sector. In parallel the EU Commission is developing a European Skills, Competences and Occupations taxonomy (ESCO), which will describe occupations in all EU languages and thus bring benefits to both jobseekers and employers. Various other ongoing measures and organisations have also been implemented in this framework but they mostly tend to cater to cross-sectoral issues and do not provide much light or help to meet T&C challenges, even though they can be very efficient tools for broader policy issues. Among them one can mention the forecasts and analyses published by CEDEFOP, the European Centre for the Development of Vocational Training, the European Framework for key competences for lifelong learning, which defines the eight key competences that everyone should have to thrive in a knowledge society, the European Qualifications Framework, some publications like Monitoring the Job Market in Europe or the European Vacancy Monitor. One can also mention the work done on the international scene by the European Training Foundation, which contributes, in the context of EU external relations policies, to human capital development, i.e. to the lifelong development of individuals' skills and competences through the improvement of vocational education and training systems.

The need for high level specialised training institutes capable of sustaining expertise in areas where demand was only sufficient at EU level, was taken up by the Horizontal Education Group within the already existing T&C Technology Platform. It has led, with the support of AUTEX⁸ network, to the creation of high quality course contents mostly in textile technology fields, the development of collaboration between technological institutes and multiplied students and teachers exchanges. The report on training highlighted how despite some progress made, some major weaknesses still jeopardize T&C industry. While the survey of this study points out that there is growth in employment in non-technical functions, the education on marketing and design is not well integrated into the AUTEX system.

The issue of education and training in the T&C industry has been investigated through the in-depth analysis of three areas where very good practices were known to exist and could actually be observed and documented, i.e. London, North Rhine Westphalia and the West of France. More general data, with a wider geographic scope, has also been integrated in the report on training, to take into account many other situations that can presently be found in the European industry. Among them, VET players also have to face difficulties that derive from other causes than in the three regions analysed, in particular the weaknesses of local industries not positioned yet on high value added segments and in direct competition with foreign low cost manufacturers. Both angles of analysis shed light on the different causes why VET is difficult to implement successfully in Europe. They also suggest a number of good practices that could possibly be disseminated to other regions.

May 2012 and now part of industriAll European Trade Union), EURATEX and COTANCE, the European Confederation of Leather and Tanning, will receive support from the EU Commission. Based on a networking of the existing national observatories and other key players (national sectoral organisations, universities, research centres, companies, public authorities, trade unions, technical institutes...etc.) the EU textile Clothing and Leather Skills Council aims at improving the quality of the European labour force, and to assist enterprises to be better prepared in meeting changing competitive demand.

⁸ Association of universities of textiles

The report on training identifies four fundamental lock-ins that do account for a large part of the problems met in the realm of VET. These problems already existed when the HLG produced its report and could not be, at least totally, solved since 2006 even though large progress has been made in some areas.

First and foremost, a lack of shared vision and anticipation strategy is the rule and not the exception in EU T&C industry. This was the case 15 years ago in the three regions covered and in each of them local industry had no common vision regarding competitive outlook and the principles of viable strategies for local firms. The progress made in all three regions has required a more fluid circulation of information, more open discussions, the destruction of political barriers between players and the implementation of collaborative decision-making processes. In two regions it has been largely accelerated by the implementation of SSCs and of their observation capacities, as advocated for by the HLG.

A second remaining lock-in is the difficulty to bring promising youths and talents to the T&C sector, because the image of the industry is not very attractive: the reality of the sector and of the VET systems is darkened and blurred so that existing bright sides and aspects remain largely hidden to outsiders. To give a clearer and more accurate picture, better transparency in positions, careers and studies has to be brought. Youths should be able to choose universities and schools on the basis of the competences they provide and their actual level of consideration among professionals and business employers. This phenomenon has consequences in two correlated directions: it works as a deterrent from technical fields and as an emotional stimulus in favour of fashion design. In Nordrhein-Westfalen this transparency objective set by the HLG has been largely met by private and public local initiatives such as information meetings about the sector and available careers, advertisements about companies, visits by company staff to schools to spread a motivating and realistic vision of T&C industry.

Thirdly one can mention that at numerous education levels and particularly in the field of specialised higher education, a great majority of players are still crucially lacking in critical size. Here fragmentation tends to lower the grade of quality of clothing and textile VET in the EU and its chances of further successful developments. With decreasing numbers of jobs and even more sharply decreasing cohorts in technological fields, classes shut down and specialties disappear. Despite a rising degree of cooperation between institutes a lot of work remains to be done to fight negative consequences : insufficient promotion and back-up functions, weak market position and relative importance to employers, underdeveloped international cooperation practices and outdated equipment for technical labs or clothing workshops.

Finally another remaining key lock-in lies in the lack of attractiveness of technological studies and careers. This issue is particularly concerning for EU students as students numbers are well below necessary replacement needs. Limited grants and traditional contents of education do appeal much more to non-EU students than to those from EU member states with higher standards of living and higher technological expectations. The problem is that many of those foreign students leave the EU after graduation and that their competences are lost to and missed by the European industry.

The survey (Report 1) in this study clearly points out to the need for higher and multi-skilled trained technicians and a growth of non-technical professions in logistics, administration and commerce. Also the demand of graduates with design and marketing skills is demanded. The demand of low production staff is declining and even deskilled to general process operatives (in textiles) or low skilled workers (in clothing).

But the T&C sector transformation is particularly hard to achieve and the present recession tends to worsen the European situation. An ageing workforce with a majority of low qualifications and very little multi-skilling, the high risk of losing technical knowhow with retiring cohorts, constitute a major structural difficulty. Geography

represents another difficulty with reference to specialized areas offering little reconversion possibilities for workers and the predominance of a female not mobile workforce. Another factor is that industrial downsizing negatively impacts the education and training local capacities; in fact in many areas vocational schools or classes have closed or are on the verge of shutting down. In addition to these elements the sector in many member states suffers for a negative image – with the exception of fashion design and luxury - that deters promising youth from joining it.

Moreover, the motivation for up-skilling are particularly low among workers or employers, which makes it harder to upgrade the average qualifications of the workforce. Finally, in many regions with a predominance of small SMEs the industry sees training and education as a public service, which would demand strong collective arrangements that do not exist. The present recession tends to aggravate these weaknesses as the uncertainty and anxiety regarding the future work is a strong deterrent against investing in training, both for workers and for employees.

Even for higher education the future prospects are concerning. Around 10,000 students are currently enrolled in higher textile education. The total number is not sufficient and it also hides a significant deficit in technology fields, be it for textile or clothing. Based on an assessment of 250,000 staff with a higher education presently working in the T&C sector in Europe, T&C education lies far below the necessary replacement rate, which would require approximately four times as many students as there are now. The projected situation is evidently much worse if one takes into account the future needs for more qualified people evidenced in all CEDEFOP anticipative works. The situation is clearly perceptible to education players, as shown in the survey results⁸ presented in this report. More than 50% of T&C technology students going to Universities or other higher education institutes are currently studying in 3 EU Member States: Germany, the UK and the Netherlands. In Italy, France and the eastern member states, cohorts have shrunk and the number of students is now by far below a minimum replacement rate.

Both the report on education and the survey amongst stakeholders point to institutional factors that need to be overcome. In the first place there is in general an erosion or even disappearance of statutory training boards. In Eastern Europe there is even no formalized social dialogue and curricula development. In Northern Europe textile training boards are amalgamated in broader industrial boards. Industry associations, trade unions and education centres all acknowledge insufficient social dialogue on training. Industry associations are becoming less engaged in lower qualification levels, while labour unions show little engagement in higher education. Employers are rarely (allowed to be) involved in the governance of schools or in the definition or validation of curricula. In most countries schools have little autonomy in setting the curricula. Whereas the labour market demands often combinations of technical, design, commercial and social skills, education maintains strict boundaries between these disciplines. Finally incentives for dual learning systems or funding schemes for training activities are under pressure and considered a cost for enterprises.

The three regional case studies are therefore to be considered as few exceptions to the general rules, and are truly best practices.

2. TRANSFERABILITY OF PRACTICES AND PARTNERSHIPS

Across the study we came across practices regarding technology/innovation and business models at company level and at strategic responses from associations, research/education institutes and regional authorities. Practices regarding technology and innovation have been highlighted in reports 2 and 6. Practices at the level of business models have mainly been covered in reports 3 and 4. Strategic responses at the level of associations have been described in all reports, but the regional cases on training and education in report 5, mainly highlight partnerships and the way companies were involved in them.

Transferability of practices is the ability to transpose a successful practice of a company or a group of companies, or support measures across the EU. It is a learning process, which in order to be effective should sometimes be actively promoted, although the reading of a practice could stimulate the transferability. Collective practices, such as support instruments of industry associations, clustering policies, or public funding instruments can also be transferred.

In this section we shall address transferability of practices at company level and at collective level. We shall define the collective practices as “partnerships”.

2.1 TRANSFERABILITY OF PRACTICES

Across the 23 regional cases we identified a number of best practices with reference for example to innovation practices, technology adoption or business models. However, in order to export best practices to different contexts, the conditions of transferability shall be examined.

2.1.1 TRANSFERABILITY

Transferability is relevant at three levels: at the level of company strategy and practices, at the level of collective initiatives and at the level of policy. The question of transferability can be addressed at the level of the practice itself and the conditions of the initiator or at the conditions to be met by the recipient or adopter. The adopter is of essence since the transferability of a practice depends of the management skills of the adopter, the financial position of the adopting firms and the ability to set up a network of relations especially with clients providing an impetus for adopting and improving a best practice.

The collective or policy framework in which practices can be transferred is also relevant. Practices at company and regional level can be transferred independently of the regulatory conditions, while others are highly dependent on them. Transferability in the former case can be organized in the market with learning effects occurring from competitor to competitor (e.g. through a fair or through the labour market), in a supply chain from a client or a supplier. Transferability in the latter case shall rather be mediated by institutions such as a social dialogue, a cluster or via an education or research centre.

Two extreme situations make the issue of transferability clearer:

In the case of Northern Greece in Report 4 on Restructuring we highlighted the successful strategy of Hellenic Fabrics that is somehow less vulnerable to the crisis because of a combination of vertical integration and international leadership in the niche of high-end denim. The success is clear but the transferability is very low. The practice requires a very solid financial position because of the considerable investments and integration costs. The difficulty in transferring the practice also means that Hellenic has truly developed a niche with high barriers of entry. The role of collective bodies or governments is limited; the transferability depends not on the story being told but on the capacity of the adopter to take up the practice. In this study vertical integration either pre-existed the financial crisis or was a defensive step needed to assure access to raw materials and often made easier because assets became available at a lower price.

In the case of Eastern Slovakia in Report 3 on SMEs we highlighted the company Gemor as a good practice. Gemor successfully downsized, transferred production of less complex products to Ukraine and focused in Slovakia on making products with a more technical content. The policy was enhanced by close involvement of a shareholder/client based in the Netherlands (although a good client base may be a sufficient condition) and enabled step by step investments in CAD/CAM and special equipment. Herewith the story being told, the success of the strategy depends on the quality of implementation, hence of management and of a financial base that enables a gradual reduction of capacity and of re-investment. The company did not develop a niche, but engaged in a story that is likely to offer new opportunities if external conditions improve (e.g. with better credit conditions the company could become a co-contractor or hybrid).

To overcome constraints two conditions are essential. The first one is leadership. Faced with comparable constraints, in each region companies stand out because of their leadership skills. This leadership can be of an individual owner/ manager or of a group of managers. Their features are quite comparable: a good external orientation and network (supported by language skills) a realistic vision accepting constraints, perseverance in the execution of strategy and patience in reaping its financial fruits, motivational skills towards workers with a fine understanding of alignment of marketing, production, finance and human resources.

The second condition leads to the first condition. Competitive firms have a strong external orientation and management with multidisciplinary skills. Competitive firms acknowledge that the world, or at least Europe is their competitive arena and they strive at being associated to competitive and growing value chains. Luxury fashion, fast fashion, technical textiles are such value chains. Competitive firms involve themselves in networks, preferably of an international dimension. They are partners of knowledge centres. An important condition is foremost the creation of such networks. Several European funding programmes enable these networks. Service oriented industry associations are also a condition. Management education combining design, technology, marketing and general management is important. In some EU countries such interdisciplinary textile education exists and is successful. When they are part of larger Universities they also train research skills; this type of cross disciplinary education is often made difficult because of rigid boundaries in accreditation rules in some member states. Schools already offering multidisciplinary curricula are not yet organised and are not eligible for AUTEX membership. It is advisable that AUTEX broadens its scope to all textile education and research.

2.1.2 EASE OF TRANSFERABILITY

A large number of practices have been presented in the reports. For highlighting the ease of transferability we shall select some practices in technologies and in business model. Easily transferable and implementable practices are indeed easy to adopt by a large number of companies, but they also give less lasting competitive advantages. Practices that are difficult to transfer and implement are indeed more complex but do also offer longer lasting competitive advantage. The table below gives an overview of them.

Table 1: Transferability of technology and business models

	<div><div>Easy</div><div></div><div></div><div></div><div></div><div></div><div>Difficult</div></div>						
Technology	CAD/CAM	Digital printing	E-commerce		Mass customization	Technical textiles	Biopolymers
Business Models	Two string strategy	Delocalisation	Co-contracting	Specialisation	Export	Consolidation	Verticalisation Value chain control

In terms of technologies the introduction of computer aided design and manufacturing (CAD/CAM) or any other mechanization or automation of production does often only substitute less modern technologies. They might improve operational performance of the company (e.g. ability to respond faster to the market, reduce lead times) but it does not impact on the entire industrial organization or the business model. Their implementation does require less than a year. Further modernization of equipment is essential for increasing productivity, shortening lead times especially in eastern member states. The transition of companies in Eastern Europe from subcontracting and /or commodity producers towards co-contractors or specialized companies is important. Across the study, the Lithuania case in the report on restructuring (task4) has shown a wide range of companies making successfully a transition from simple subcontracting to more sophisticated models assuring more durable competitiveness and higher value added. These practices can be transferred to other eastern member states.

The development of specialized technical textiles in highly regulated markets or the introduction of sustainable products made from biopolymers affects often the entire industrial process of the companies, needs alliances with new suppliers. It involves substantial market intelligence and understanding of the regulatory framework. Because of the complexity of implementation it requires leadership and strategy and a good dialogue inside the company and outside with key stakeholders. By and large the companies in the northern member states have taken the lead in these types of practices. Baden-Württemberg hosts a number of companies that have successfully adopted more comprehensive innovations (see Report 6) and is an example region.

In terms of business models the same logic applies. Delocalization of production is a relatively simple strategy. Companies engaging into it by 2012 can learn from 40 years of experience in delocalisation starting with German firms. Moreover delocalization does not fundamentally alter the business model. It reduces production costs, slightly extends lead times, and often no longer confers European origin to products. Further delocalization is

hardly anymore relevant for companies in North-Western Europe. For companies in eastern member states increasing industrial efficiency is a viable alternative to delocalization of production.

Verticalisation of firms into retailing is a more complex strategy, although it is not new. Leading European brands have engaged into retailing from the 1980s onwards. However the investment needed into brands, retail outlets, the specific skills required and the establishment of consumer recognition is a complex process. However at times of crisis control over retailing may have important benefits in terms of control over added value and working capital. Verticalisation is also an important condition to open up emerging markets. Verticalisation is an essential strategy for companies in the northern and southern member states. In Catalonia (see report 4) promoting clothing companies to engage into retailing has even be part of the official regional industrial strategy.

2.1.3 TRANSFERABILITY AND LOCK IN FACTORS:

To assess the transferability of practices the ability of understanding, willingness in understanding or ability to implement change has to be highlighted. Change is a cognitive, behavioural, strategic, operational and political phenomenon acting in combination and in time. Competitiveness or survival of companies, industries and clusters depends on the ability to grasp the different dimensions of change.

Grabher⁹ refers to the phenomenon of lock-ins in industrial change respectively as *functional lock-ins* (inherent in the production structure of capital and supply chains), *cognitive lock-ins* related to the inability to understand changes because of tunnel vision or lack of exposure, and *institutional lock-ins* due to a political setting that resists change. The lock-in theory takes the inability to change as the key concept; the ability to respond to change requires only mirroring the concept.

Lock-ins need to be identified at a sectoral level in specific behaviours. The concept has been applied to textiles by Hassink¹⁰ and Scheffer¹¹. We have defined functional lock-in as constraints in technology both in their qualitative (the type of products) and their quantitative output. It could be operationalised as significant specific assets compared to turnover, a low solvability of assets, and a high gearing, hence a limited financial capacity to absorb redeployment. Functional lock-in can be relatively objectively assessed as they relate to technical rigidities.

Cognitive lock-ins are related to the exposure to change and the ability to change the organization. A broad outlook on the market through diversification, export and control of the supply chain (e.g. through branding and design)

⁹ Grabher, G. (2003) "Switching Ties, Recombining Teams: Avoiding Lock-In Through Project Organization?" In: Fuchs, G. and Shapira, P. eds., *Rethinking Regional Innovation and Change: Path Dependency or Regional Breakthrough?* Dordrecht: Kluwer.

¹⁰ Hassink R, 2007, "The strength of weak Lock-ins: the renewal of the Westmünsterland textile industry" *Environment and Planning A* 39(5) 1147 – 1165

¹¹ Scheffer, M. (2009) *Fatal Clusters Tilburg The Evolutionary Pathway of the Tilburg Wool Industry*, In: H. Mommaes e.a. (2009) *Comeback Cities*. NAI Uitgevers Rotterdam.

leads to low cognitive lock ins. High lock comes through a limited exposure to different markets and low control of the supply chain. Cognitive lock-ins are related to mindsets and skills and are harder to apprehend.

Institutional lock-ins are determined by the constraints in the external environment determining either the cost and revenue levels or redeployment of assets. These constraints can be in social relations between capital and labour (often at local level) or in government regulations such as trade regulation.

Lock-ins are also period specific as they are related to available technology, consumer preferences and political context. In analyzing competitiveness and industrial change, the nature of the changes is not essential; it is rather the ability to respond to them. For the sake of this study the capacity in the industry, in companies or clusters to perceive and act on changes is the key element.

2.1.3.1 COGNITIVE LOCK-INS

Cognitive lock-ins limit transferability. These lock-ins are either in the skills, attitudes and competence of existing management and personnel, in resources available in the region (universities etc.) and in the availability of skills in the regional labour market. For the following strategies cognitive lock-ins are important:

- ☐ Delocalisation
- ☐ Co-contracting
- ☐ Specialisation
- ☐ Export

The strategies above require knowledge of markets and marketing, language skills, and innovation management. This kind of background is usually not present with subcontractors or in regions with a dominance of subcontractors. Moreover overcoming these lock-ins require to identify launching customers, to contact them and to create engagement and trust. This requires also substantial management skills that are new to subcontractors. Besides this, it requires investment in travelling and time. The lead time of entering into more complex markets is long, hence patience and endurance is required.

This is feasible as long as the basic business is running well, hence a period of growth is ideally suited to cream profits in order to develop new opportunities. In a period of recession, the cognitive lock-in is reinforced by a functional lock-in. Management has to choose between resisting with the current business at the expense of new ventures (e.g. most examples in Eastern Europe) or to sacrifice the main business and downsize the company to only emerging or still marginal new business (some cases in Spain). The transferability of a practice thus becomes an existential dilemma for the company management. Sitting management often prefers a policy of resistance hoping for a conjunctural upturn. It often requires a change in management to make more radical choices. A change in generation, a downsizing with a spin off or a consolidation may help.

2.1.3.2 FUNCTIONAL LOCK INS

Functional lock-ins are dominant when transferability depends on substantial investment in acquiring equity, equipment or in working capital. Export requires more working capital, innovation may require substantial investments and new markets may impact on working capital. Verticalisation requires very substantial investments (in equipment or acquisition) while consolidation also requires a substantial capital base. Besides that the development of new production methods also requires adequate skills in the company or in the regional labour market.

For the following strategies functional lock-ins are important:

- ☐ Specialisation (if new equipment is required)
- ☐ Supply chain control
- ☐ Verticalisation
- ☐ Consolidation

The functional lock-ins are more urgent in a period of recession, since the capital base is eroded because of declining sales, profitability and the costs of restructuring. Functional lock-ins are enhanced by difficult access to capital markets and costs related to the institutional constraints on restructuring. These last factors are in fact institutional lock-ins. From several cases, especially those in Northern Europe, it emerges that these more sustained strategies were already fully engaged before the financial crisis, and possibly speeded up if the acquirer could get assets at depreciated prices, or/and had build up a strong financial basis before 2008.

The functional lock-ins weight again strongly against those countries with a small local market, with a low export performance, poor access to financial markets and outdated equipment. This lock in applies to almost all eastern states and southern members states, albeit with some companies being exceptions in Italy, Portugal, Lithuania and Slovenia that had engaged in proactive strategies before 2008. In general the transferability of practices of entering in complex markets has declined. The transferability of practices from countries with relatively positive macro-economic conditions to countries with relative negative conditions has also declined.

2.1.3.3 INSTITUTIONAL LOCK-INS

Institutional lock-ins, in terms of market structure, of regulations, organizations and policies, can moderate or aggravate the impact of lock in factors. Institutions can support processes of change or reinforce functional or cognitive lock-ins. In particular labour relations, specific market regulations on processes or products and industry organisation are factors to take into account.

Various institutional methods can address cognitive lock-ins which are a constraint to change. Across all interviews the primary factor of transfer of best practices is through the client base. Specialisation, diversification in technical textiles, export and mass-customisation, but also the shift of subcontracting to co-contracting require launching customers. As we have seen in Western European companies, the launching customer or lead market is often in the same or adjacent region. At least the Benelux, Northern France and parts of Germany are closely integrated, with cross-border connections in value chains. Emulation, observation of possible clients, recruitment of middle managers, cross-industry events all enable to bring about transferability of practices within a region.

This approach does not work in Eastern Europe where demanding and launching customers are not present. Hence no regional network fosters relations and insights into potential clients.

Since regions are also labour markets, a rather dynamic labour market is of importance. Critical mass is important, indeed in regions with a large textile industry there is a broader skills base and a basis for education centres. But also a company structure open to outsiders is required. In the Northern and Western European regions, where the industrial base is characterized by many entrepreneurial and managerial companies and less family owned companies, the labour market is more dynamic than in Southern Europe where family owned companies and family relations in business are dominant.

Overcoming those barriers can be achieved by organizing clusters. Clusters can organize events to exchange experiences, they can attract prospective clients, they can act as brokers, organize outgoing trade missions or representations at trade fairs. Clusters can also perform activities to strengthen human capital. Clusters we have seen are sometimes formalized (e.g. Uptex) or informal. There is possible meeting at a university (e.g. in Baden-Württemberg) a network of alumni (e.g. in Northern France). In the most vibrant regions transferability of practices are reinforced by formal and informal networking in a region. Clustering plays often an important role when these clients are present in the same region. We have seen the success in Northern France, Germany and the Netherlands.

Clustering is far less successful in Southern and Eastern Europe. The methodologies involving policy makers, universities and industry (triple helix) are new. The interests of industry, research and public authorities are less aligned and a process of alignment is often not well managed because of lack of clustering skills and resources than in Western Europe. The costs of clustering are also higher since expertise, market intelligence has to be brought from outside. Free riders are prevalent, as many companies are not member of associations. The few companies that have successfully found new market opportunities do not want to share their contacts and expertise with second movers.

Also those players with a European network such as universities and research centres may behave as gatekeepers (keeping contacts for their own interests) or as brokers. We have seen in Report 2 on Research that universities in eastern member states are less capable or willing to bring in SMEs into European research consortia. Most SMEs in FP6-FP7 were brought into consortia rather despite than because of the intermediation of universities and research centres. This is partly explained because of the constraints faced by textile research groups. Faced with dwindling resources and benchmarked through publications rather than cooperation with industry, there is little incentive to make the triple helix working. Finally, while the triple helix may address challenges in the technical domain, this approach does not cover challenges in export, branding, value chain management.

Also mentioned institutional barriers (e.g. in Report 6 on Innovation) are associated with the costs of restructuring. These can be related to the costs of contract resilience, to the changes in skills and competences, to cost associated with disposal of buildings and plant as well as with the costs of investments in new plant. In general besides the legal conditions, the quality of social dialogue in the firm of the region mediates in getting a consensus on the strategy. The number of cases addressing these issues is too small to enable general conclusions. Although our cases in the various tasks is far from exhaustive, public authorities, national or regional tend to focus on quick wins and easy to implement measures (collective stands at fairs, seminars) or prefer to foster horizontal measures not customized to the industry.

2.1.4 ORGANIZE TRANSFERABILITY

Good or bad company practices are not transferable simply because we think they are. Transferability is a social process. As we have seen practices are most effectively transferred inside a region or across a supply chain. In a region, market mechanisms of emulation, cooperation, copying, poaching of workers play a role. These are clearly visible in regions with a critical mass of similar firms. This is e.g. the case in districts of Prato, or Como and in Calais/Caudry. The transferability is embedded in the ecosystem of a cluster, eventually (but not necessarily) assisted by institutions. We have seen in Baden-Württemberg and North Portugal and Galicia a logic where end users create the conditions of transfer of best practices. This is also sometimes facilitated by institutions in the region.

Transferability across a supply chain can be organized at a European scale through European organizations. The most used are trade fairs: for example Techtextil is the meeting place for the technical textile sector, JEC for composites and A+A for protective equipment. Trade fairs are the most accessible and used platforms for transferability, also because of the combination of fair and congress. Specific congresses are also playing that role. These can be regular events or project base: the yearly conferences of the European Technology Platforms or final conference of EU funded projects can have a significant role in enabling transferability while formalized thematic innovation platforms do not exist. European industry association focus on lobby and less on networking, and those associations with an active networking role (e.g. EDANA, Composite Valley) are not oriented to SMEs.

Although there are good examples of platforms organizing transferability of practices at the European level, most are associated with technical textiles and with innovation. Hence they address a minority of firms in Europe. Techtextil has around 1000 exhibitors, which is a substantial share of the technical textile sector but less than 1% of all textile firms. For issues related to export promotion, marketing, supply chain management, development of strategies for subcontractors, no substantial European network or forum for transferability exists. There are some fairs for subcontractors such as Fatex in Paris, but it has e.g. only 30 exhibitors from Romania and 7 from Lithuania. Fatex is also only a fair and not really a forum for exchange of practices. Some transferability is done by consultants, but their rates are often beyond reach of SMEs. Finally some associations work together in temporary networks or projects (e.g. in Interreg IVB or IVC) but they also often focus on research and innovation and do not reach the majority of less innovative firms. They are not permanent and not always relying on a sustained structure in each member state.

Once more the lack of platforms enabling transferability is missing most in those subsectors needing it most (clothing and home textiles) those firms needing it most (SMEs) and those countries needing it most (South and Eastern Europe).

2.1.5 TRANSFERABILITY OF COLLECTIVE PRACTICES

The presence of forms of self-organisation in regions seems to be an important factor of competitiveness. Especially the lack of self-organisation in eastern member states reinforces the adverse impact of other factors. Hence the transferability of collective practices is a highly relevant issue in which the European Union has played an instrumental role.

Especially under Interreg IVC program and the Coordination and support actions under FP7, transferability of policy instruments has been made possible. Their focus is however on being exposed to best practices, possible limited experimentation, but the level of sustainability in implementing practices is very different. This is possibly because

“network type projects” are often only at the level of civil servants and not adopted by the political decision makers. It is also possibly of limited success because lessons are learned without adopting the necessary institutional conditions.

Policy actions are successful, mainly when integrated in the normal functioning of economic institutions. Policy actions are thus aimed at fundamentally strengthening the competitiveness of the industry. This means that these actions do not necessarily take the form of a project but create conditions for sustained innovation. Institutional reform is often a preliminary condition. The education system for textiles and clothing in the Netherlands, the U.K. and Germany is strong because of the autonomy of institutions and in strong financial incentives to increase student intake. We believe, but this is a judgment, that providing autonomy to education is a more potent factor of growth of education than issues of image. It is also relevant that in Germany industry is represented in the governance of education and of research, aligning industry needs to research. Projects fostering the triple helix, are useful but only attain sustainability of the triple helix is transferred into the governance of institutions.

The second important success factor of policy actions is stability in instruments. In the report on research and development (task 2) the R&D funding mechanisms in Lombardia and Germany were appreciated because of their annual recurrence and predictability. The funding instruments were also not focused to specific technological issues or in the case of Northern France and Germany they were even horizontal. In both regions the industry and research centres learned (after initial problems) to submit excellent proposals. But besides horizontal instruments, the clustering of innovative capacities (e.g. Uptex and ZiTex) was a necessary condition to overcome the problems with setting up successful projects. We believe that the combination of horizontal funding instruments and additional efforts of enabling conditions is in the long term more effective than short term oriented industry specific programmes.

In Report 5 on Training (education) the role of Forthac¹² was highlighted in fostering or retraining of workers and managers in the Choletais area. Besides a collective will in the region and a strong commitment of workers and employers and the availability of ESF funds, the existence of Forthac funded through collective levies is of relevance. Forthac could organize a focal point to ensure additional funding and provide a quick training offer. The pre-existence of levies assured a good practice, and it is likely that the practice is better transferred if such levies exist. This means that the practice is “easily” transferred to countries with a collective training body and levies. In countries without these conditions it shall be less amenable and more lengthy to develop such a practice. Similarly the credit information services in the Netherlands are embedded in regulation and a well established organizational practice.

However the setting up of light clustering such as NWTexnet in Northern England does not demand high investments. This practice is easily transferred provided that a funding model is being developed either on the basis of collective levies (e.g. the Netherlands), commercial services (e.g. around technical centres such as Citeve or Denkdorf) or public funding (e.g. the poles de compétitivité in France). However while easily set up, they are also easily closed down if they do not become self-supportive. The German quasi-clustering around schools and research centres is more robust than the government led clustering. In the German case the clustering is embedded in social relations, while the French clustering is rather the emanation of a political vision.

¹² Forthac is the French *Organisme Paritaire Collecteur Agréé* (Bilateral Certified Collecting Organism) in charge of the collection of levies from industrial companies for the organization of professional training for the sectors of textiles, clothing, leather and footwear.

2.2 PARTNERSHIPS

Across the 23 case studies in this study we have come across several forms of partnerships to address competitiveness issues. We have identified three types of partnership logics:

- Market intervention
- Collective intervention
- Public intervention

More models can be present in the same region and strengthen or weaken each other. Moreover collective or public intervention can be limited to one aspect, in the case of the study the focus is often on education or innovation. We have found little intervention specifically oriented towards restructuring. Actions towards SMEs are rather horizontal in nature and have only been covered edgewise.

In the model of market intervention, the dominant pattern shows linkages between players in the value chain (with launching customers or machine suppliers), in emulation amongst competitors and in alliances between textile firms.

In the model of collective intervention the focus is on self-organisation of the industry, through industry associations or through social dialogue. This model also extends to clusters or to self-organisation within a broader body. This case also extends to bodies set up by the industry but with an autonomous standing (e.g. schools or research centres). The self organization is often reinforced by mechanisms of public regulation and/or intervention.

The model of public intervention is one where political leadership (by regions or member states) has created conditions for competitiveness. However as in all these instances the instruments have been horizontal they often depend on the level of self organization for their legitimacy and effectiveness.

2.2.1 OVERVIEW OF THE PARTNERSHIPS

The table gives an overview of the partnerships we have encountered in the regions of this report. In the first place we assess the nature of the partnership. In all but one region we did find some partnership at the level of the region examined. If partnerships were informal they were no longer or not yet formalized, did not have a clear leadership and secretariat or address. If they were fragmented, several partnerships existed, with generally covering different sectoral or regional entities. If names are mentioned we could clearly identified a formal partnership.

The sectoral scope indicates a specialization. Most partnership cover the entire sector, the most focused address only technical textiles. The thematic scope is relevant for the nature of activities. Most clusters are oriented towards innovation. They liaise with research, develop sometimes a road map, offer matchmaking and dissemination activities. Many are only oriented towards exchange. They are a forum for discussion without an action plan.

Legitimacy indicates the political embedding of the partnership. If industry is indicated the partnership is initiated from the industry itself. This may entail the setting up of research or training centres that become the hub of the partnership. When the region is associated, the partnership is often established or supported by a regional clustering policy. When the partnership is tripartite, labour organizations are involved in the partnership.

Finally the degree of success is measured as an overall assessment by the editor of this study. Limited often implies that the partnership only entails exchange activities and a limited secretariat. Moderate means that the partnership offers services and activities. Good implies that there is a strategy, a comprehensive organization and the initiation of complex projects and services.

Table 2: overview of partnerships

Case	Structure	Sectoral Scope	Thematic Scope	Legitimacy	Success
Report 2 on Research and Development					
Nordrhein-Westfalen	ZiTex	Technical Textiles	Innovation & Education	Tripartite	Good
NPC	Uptex	Technical Textiles	Innovation	Industry and Region	Good

North-West England	NWTexnet	Technical Textiles	Innovation	Industry and Region	Good
Lombardia	Fragmented	Several	Several	Industry and Region	Moderate
Lodz	None	None	None	None	None
Report 3 on SMEs					
Prato	Unione Industriale Prato	Textiles and Clothing	Exchange	Industry and Region	Moderate
North Portugal	Regional Pole of Competitiveness	Clothing	Exchange	Industry and Region	Moderate
Galicia	None yet (Interreg project starting)	Clothing	Setting up of cluster	Industry and region	Limited
Nord-Pas de Calais	UPTEx / Forthac	Textiles	Innovation, promotion, training, exchange	Industry and region	Good
Flanders	Fedustria, Centexbel	Textiles	Innovation, promotion, training, exchange	Tripartite	Good
Greece	SEPEE	Clothing	Promotion	Industry	Limited
South Bulgaria	Members of former Association	Clothing	Exchange	Informal	Limited

Slovakia	Members of former Association	Clothing	Exchange	Informal	Limited
Report 4 on Restructuring					
Lithuania	Latia	Textiles and Clothing	Export	Industry	Moderate
Denmark	DTMF	Textiles and Clothing	Services	Industry	Moderate
Catalonia	CIE	Textiles and Clothing	Services	Industry	Limited
Netherlands	Modint	Textiles and Clothing	Services Technology Roadmap	Industry	Good
Northern Greece	SEVK	Textiles	Lobby	Industry	Limited
Report 5 on Training					
London	Skillfast	Clothing	Education	Tripartite	Good
Choletais	Forthac	Clothing	Education	Tripartite	Good
Nordrhein-Westfalen	ZiTex	Technical Textiles	Innovation & Education	Tripartite	Good
Report 6 on Innovation					

Baden-Württemberg	SWDT, Zukunft Initiative. Dialog Textil Bekleidung	Technical Textiles	Innovation	Industry and Research	Good
Lombardia-Piemonte	Fragmented (by subsector and by province)	Several	Innovation	Industry	Moderate
North Portugal	CITEVE	Textiles	Innovation	Industry and Region	Moderate
Galicia	Informal	Clothing	Exchange	Industry	Limited
Slovenia	Informal	Technical Textiles	Innovation	Industry	Limited
Romania	Fragmented (Astrico, FIT,)	Mainly clothing	Innovation & Education	Industry	Limited

2.2.2 MARKET LOGICS

In a large number of countries market mechanisms dominate the logics of competitiveness. This is certainly the case in almost all eastern member states, but also in the UK and even for some trends in Lombardia. The dominant logic is the effect of clients on subcontractors. In Norte-Portugal and Galicia the dominance of Inditex is a positive factor in fostering the competitiveness of subcontractors and co-contractors. The automotive industry has had a positive impact on subcontractors in Slovakia, Poland and Slovenia. Innovation in technical textiles (in France, Germany, and the Benelux) is also predominantly driven by clients. However the lack of innovative impetus of clients also has an impact. In Romania, Bulgaria, Catalonia market stimulus for innovation has been weak. In the Greek cotton case the market pull is also weak. Lombardia and Baden-Württemberg are the only cases where the relation between machine suppliers and textile industry is relevant.

The market pull is a positive effect when the clients act as launching customers and actively organize the supply chain. This is often strengthened by nearness and by a real and perceived mutual dependency of clients and suppliers. The luxury industry and those firms actively fostering a European identity are depending on a European supply base. Some retailers with a quick response philosophy cherish a local supply base, but these are rather exceptions. In technical textiles, the combination of tight specifications and quick response logics also creates a mutual dependency. However, this logic is clearly visible in several regions but not dominant in Europe. The

majority of retailers do not perceive the strategic importance of a local supply base. The majority of the textile industry is not present in technical textiles where strategic partnership is sought after. In particular companies making commodities, subcontractors without specific skills are considered dependable and are rarely the object of care of their customers.

The public framework is not absent in this equation. In the UK the NWTexnet assists in connecting textile firms to non-textile potential clients. In Nordrhein-Westfalen ZITex helps in creating connections between sectors. In Lombardia the breakthrough of digital printing and mass-customisation might have been fostered by research projects funded already decade ago. However the further perfecting and adoption of this technology is guided by market mechanisms. The innovation in automotive suppliers and in aerospace materials is partly driven by regulation, but it is well internalized in the behaviour of economic actors. In general a light role of matchmaking between sectors is appreciated and effective. We have seen several models of this type of interventions: through private initiatives (trade fairs, conferences), collective bodies (associations) and publicly funded bodies (clusters).

These light interventions are often good practices, but work well when end-users are indeed involved. This is more likely to happen with geographical nearness of end users. In eastern member states this is an action demanding more effort and continuity since end users are often not nearby and subcontractors lack the skills to reach out to new markets.

2.2.3 COLLECTIVE PARTNERSHIP

Collective intervention is engineered through forms of self-organisation. The most common form of self-organisation is the industry association. This is a membership based organization with membership fees, offering a range of services. Associations can be regional (e.g. Germany) or national (e.g. Netherlands). The strength of self-organisation is in their legitimacy and continuity. The weakness is in its voluntary character and the risk of having an agenda close to the lowest common denominator of all the members. The latter point limits associations in playing a role as agent of change. However collective partnerships can also be organized in clusters. Or, it can be structured in bodies with a specific aim but having an associated form. In Germany research centres have often the form of association with industrialists active as clients and as members of the governance structure.

The collective form of self organization is very strong in the Netherlands (covered in Report 4), and extending through the internationalization of Modint into other countries. It is also strong in Germany, although fragmented between federal states and complex because of the structuring of research centres as associations. It is also strong in Belgium and Portugal around Centexbel and Citeve as industrial research centres. In France, Spain and Italy it is fragmented with associations by product group and by region. In the Italian case the regional association provide effective platforms for exchange but less so of collective action. However in some instances, often with institutional backing of imbedding in a social dialogue or tripartite governance, regional clusters can become very effective such as Forthac in Western France and Uptex in Northern France.

Collective organization is very weak in the eastern member states. In general industry associations are tainted by a legacy of linkage to centrally planned economies. Initially they started with compulsory membership and as remnants of a department of light industry within ministries. They were often the instrument of state owned firms. When compulsory membership was abolished, the membership levels declined. Because of their past these associations were rarely rallying points for a new generation of entrepreneurs. Lithuania is the sole exception. In most eastern member states industry associations miss the institutional embedding, the critical mass and the competences to be actors of change.

2.2.4 PUBLIC INTERVENTION

Public intervention is rather the exception than the rule. Since 2000 no single member state has adopted a textile plan or made an approach for the industry within horizontal instruments. Three countries come close to a comprehensive intervention. Germany and the Netherlands stand out because of a wide range of institutional mechanisms to foster collective arrangements. These are publicly collective wage agreements with levies for training, covenants on energy management, the obligation to consult employers in the definition of education programmes, a policy on priority sectors on innovation, a comprehensive and continuous (in the Netherlands till 2011) framework for collaborative research. This is complemented (in the Netherlands since 2011) by an active regional policy. All these mechanisms contribute and are effective because of a strong collective organization of the industry.

In France public intervention is strong but through the imposition of taxes/levies to fund collective research and training. In addition the French government has set up a policy of “Poles de Compétitivité” and has also fostered more recently with reform an increased autonomy of universities a stronger orientation of research towards industry. This is reinforced by specific funding mechanisms of the regions to foster research centres to work together with industry. However the French case is successful because collective bodies took the relay. We saw this with Forthac in Western France and with Uptex in Northern France.

In all other countries public intervention is discontinuous, punctual and partial. Public intervention has largely been taken at the regional level, and not by member states. ERDF has been an important source of funding. The intervention is done often through the temporary instrument of the “project”. The project often does not always contribute to capacity building and is only a useful policy tool when capacities exist. Hence in some regions projects were successful when collective bodies existed. But projects have rarely contributed to the setting up of lasting innovation skills. In Italy the innovation projects in Lombardia the Metadistretto policy generated a range of initiatives but did not lead to a strategic alliance between industry and research. In Piemonte the regional policy created a pole of innovation, but with lack of institutional reform, the University could not expand its research and education capacity. In Catalonia public funding enabled the establishment of strong research capacities in Leitat, which is hardly connected to industry needs.

The HLG advocated in 2006 an active promotion of national and regional action plans towards the industry. In general, national action plans have been lacking. Only in some member states established regional or sectoral bodies could take up horizontal policies in an effective way. Regions have by and large most active and used ERDF tools to develop projects, mainly in R&D infrastructure. However we have found no comprehensive approach on behalf of regions. Research and innovation is the main theme covered, while measures to accompany restructuring have been rarely identified. The most active regions in terms of projects were those with established organizational capacities (e.g. in Spain, Portugal and Italy). The regions in Eastern Europe have been not very active, possibly as a result of limited capacities of self-organisation.

The period after 2006 has also seen more networking between regions using instruments in FP7 (e.g. ERANET), ERDF (Interreg) and CIP (e.g. Europa Innova). However, southern regions took often the lead, but it enabled to take regions in eastern states along. This happened often as a consequence of contacts made within ACTE, the European Textile Collectivities Association or through the European technology platform on textiles. Strong networking activities already existing amongst research centres (AUTEX and Textranet) may also have been of help. National industry associations were much less active in fostering networks, possibly because of less experience with project

instruments. However the partners from the eastern member states rarely play leading roles in those projects. Getting them fully involved demands efforts of the coordinator of these projects.

2.2.5 SCOPE AND LEGITIMACY

Regions with a working system fulfil a number of conditions. In the first place there is a working triple helix. The triple helix implies a partnership between industry, education/research and public authorities. The triple helix is either formalized (Northern France) or embedded in a culture with overlapping or complementary arrangements (Netherlands). In the former case the relations between actors is structured in a regional action plan covering several themes within the sector. In the latter case a network sets up a range of actions in different strategic alliances. In the Northern France regional public authorities have fostered a sectoral strategy or organized a sectoral coordination of horizontal policies. In the Netherlands the industry is able to use several horizontal policies to the sector. Hence the first model requires substantial effort on behalf of public authorities while the latter demands good organizational skills in the industry organizations.

In the second place working innovation systems seem to emerge from a blend of financial incentives. Legitimacy is required by having substantial membership fees (for associations) and commercial services (for associations but also research centres). In some instances funding through statutory levies (e.g. Forthac in France, social funds in Netherlands, Belgium and Germany) help in avoiding free-riders; however if statutory levies are too high in relation to services offered, legitimacy is contested (or avoided). Project funding helps in developing future oriented activities that do not have full adhesion of the industry (e.g. support to young designers, environmental projects, research, etc.).

In country with a Rhineland capitalistic model, the arrangements inside the industry and between industry and social partners, and between industry and government or industry and research/education are complex and diversified. They also have sufficient mechanisms for alignment of interests and compromise. In the Anglo-Saxon model instead the focus is too much on projects and commercial revenues hence do not foster strong institutions and a long term perspective. In Southern Europe the logic of alignment and compromise is too weak. Organisations are regionally or subsectorally fragmented. Finally in the eastern member states the collective basis (membership and fee level) is too limited to create critical mass.

2.2.6 ACTORS INVOLVED

Industry associations play an important role in the ecology of the industry. In the textile industry their existence goes back tot the 19th century. In the clothing most have emerged after the Second World War. In the new member states industry associations existed before 1990 as instruments of central planning, but many have downsized or disappeared after 1990. In textile industry the associations are rooted in a tradition of cartels and lobby. In the more fragmented clothing industry the role in wage negotiations and collective promotion formed a basis for developing collective services and activities. The textile and clothing industry associations have also been the founders of allied institutions such as industry schools and training boards, social funds, research centres, trade fairs.

This comprehensive structure has been put under pressure from the 1990s onwards. This has led in general to a restructuring at regional and national level, to the federation of sectoral associations and to the amalgamation of different functions in single organizations. If well managed, financial resources could be used to develop new

activities. In some countries consolidation extended over the boundaries of the industry. In Belgium the textile industry merged with the furniture industry. In the Netherlands as in many other EU countries the design, wholesale and textile industry merged into one body.

A second trend described by Greenwood (2003)¹³, Scheffer (2003)¹⁴, and WRR (2012)¹⁵ is the changing role of associations. Initially the mediation between industry and (national) governments was the first function, the second being the mediation with labour unions. After 2000 the functions of service providers, of networking and clustering becomes more important, followed by public relations and project generation. The latter trend is described by Greenwood (2003) as a turn from being passive to an active player in the debate about competitiveness. WRR (2012) also highlights the trend that industry associations become responsible for setting the standards in the industry. They are doing so not only on product and process rules (e.g. the energy covenants in the Netherlands) but also become parties in voluntary codes, codes of conducts and sustainability agendas.

The case studies in the tasks point to examples of associations taking up a role as described by Greenwood. However this requires institutional conditions. In the first place it implies that progressive companies take the lead in the management of associations. It requires recruitment of staff with adequate competences and networks. It requires also an adequate political framework. In many countries the political framework is better at the regional scale than at the national scale. In most member states technology and innovation policy has been taken up at the regional level, often because of more commitment of regional authorities and access to ERDF programs.

In few countries do associations fit in the ideal model described by Greenwood. The Netherlands and Germany come close to the ideal model. France and Belgium come close as well. In Spain and Italy the associative structure is still fragmented with also major companies being outside of the system. In the eastern member states no organization fits in the transformation of Greenwood.

Other important stakeholders are labour unions. They are essential for setting up a social dialogue in an industry dominated by SMEs and with only few companies with well established workers councils. With the decline of the industry in size, also labour unions have lost members and power to represent the workers interest. In the survey labour unions complain to lack the resources to engage fully in subjects like education and training. Representativeness of labour unions is lowest in those countries where the industry is most affected by restructuring.

¹³ Greenwood, J (2003) *The Challenge of Change in EU Business Associations* (Basingstoke, Palgrave Macmillan).

¹⁴ Scheffer, M. (2003) Textiles. In: Greenwood, J (2003) *The Challenge of Change in EU Business Associations* (Basingstoke, Palgrave Macmillan)

¹⁵ WRR (2012) [Publieke zaken in de marktsamenleving](#). Wetenschappelijke Raad voor het regeringsbeleid, Den Haag.

3. THE SITUATION OF THE TEXTILE AND CLOTHING SECTOR

The situation and the way forward can only be based on the findings of this study. There have been quantitative forecasts and qualitative scenarios on the future of the sector before 2008. The financial crisis and its impact made the analysis of different future developments for the industry problematic. Scenarios developed before the crisis are no longer valid, since the crisis has the character of a break between growth models. The sense of discontinuity because of the financial crisis was often brought forward in the interviews.

In view of the recent past, most studies older than three years are of little value since they do not account for the 2008/2009 crisis. This crisis is not a normal cyclical crisis and cannot be accounted for in most models. These years present a strong deviation from the normal pattern. Extrapolation of past trends is unreliable.

Sectoral studies are also not present since 2008/2009. We have not found any study commissioned and available in the public domain. Scheffer has made a scenario post-crisis for the clothing and textile industry in an overview book on future technology trends by Shishoo e.a. (2012)¹⁶. This work is speculative and based on an analysis rooted in the regulation theory and evolutionary economics. The approach takes into account the regime change of the 2008/09 crisis which leads to a fundamental change of regulation of modern capitalism, but also to a stronger confrontation between capitalism and growth with scarce resources. He argues that the growth model of the post 2009 shall be rather one of intensive and integrated accumulation, whereas the period before 2009 was one of extensive and flexible accumulation.

Scheffer considers a scenario of low growth in developed countries and high growth in developing countries; another element is that also the textile supply chain will face a shortage of raw materials, which will partly be covered by alternatives, although the build up of development of biopolymers, alternative natural fibres and recycling is too slow to avoid a substantial increase of fibre prices. Moreover the costs for water and energy are likely to go up which in turn will force a better use of these resources. The availability of labour is less assured than over the last decade; higher wages will be a result and also a new drive towards higher productivity.

¹⁶ Scheffer, M. in R. Shishoo (2012) The global textile and clothing industry: technological advances and future challenges. Woodhead Publ. Cambridge UK

3.1 INTERNATIONAL MARKET TRENDS

This study enabled through the more than 300 interviews to assess a number of trends. However, as the interviews were qualitative in nature and conducted amongst a wider variety of operators of different size in different sectors and member states it is not possible to quantify these trends.

3.1.1 EUROPEAN CONSUMPTION

Consumer demand in the EU and USA is likely to stagnate or even decline under the impact of higher unemployment, fiscal measures (e.g. VAT increase), limited credit and higher savings. European consumption is likely to be depressed in all main segments: clothing, interior textiles and technical textiles.

Clothing markets are often the first to adjust downward at time of crisis, as it has happened in 2008. It is also the first market to pick up when signs of recovery show up. After a pick up in the second half of 2009, this market is now very fickle. In 2010 clothing markets recovered only in Northern Europe. In 2011 and 2012 clothing markets declined in almost all EU countries.

Most EU countries have depressed housing markets, which has an impact on interior textiles. Building volumes have dropped significantly in almost all EU countries. The mobility of households has declined as well. Only in those countries where incomes remain stable, there might be a replaced demand for interior textiles such as carpets and furnishing. Furniture, also a market using textiles is also likely to stagnate over next years

Weakness in consumer demand also affects textile components in other sectors as in automotive. Cars have become important users of textiles. The automotive market is currently volatile, with some countries being stable (e.g. Germany), other in decline (e.g. Italy) and some very changeable (e.g. France).

Industrial demand and public demand for textiles is also likely to stagnate or decline under the impact of budget austerity. Office building is likely to remain depressed, which has an impact on interior textiles such as carpets. Demand for protective clothing is likely to stagnate. Also infrastructure projects are subjected to budget cuts, leading to less use of geotextiles. Only medical textiles are likely to grow as health budgets are the only ones still growing.

Opportunities for growth in textiles might be found in offering lower cost solution/substitutes to other materials/solutions. We expect that the share of textiles in automotive and air transport is likely to grow. This is also the case in markets where total cost of ownership is relevant and advanced procurement methods are used (Design Build and Maintain -DBM- or Design Build Finance and Maintain -DBFM). In workwear (PPE) for example, integral contracts combining design, supply, maintenance and repair are gaining market share. In many technical textiles markets but also in interior textiles for projects, these kinds of product service systems are increasingly in demand.

The stagnant domestic market is a significant challenge for the European industry. The overwhelming majority of European firms do only cater for the EU market. A significant number of firms do not even export to other EU countries. However many companies are exporting indirectly as suppliers or subcontractors of exporting brands.

Further restructuring is likely to affect mostly companies only oriented to their national market and firms only exporting to some EU countries.

3.1.2 EMERGING MARKETS

The importance of emerging markets as vector for growth has been mentioned in the report of the HLG and is a consistent strategy of the European Union, both in opening up third markets (since the Marrakech agreement in 1994) and in fostering conditions for export. Member states have also played their role in fostering export promotion and improving export credit.

Demand in emerging markets is likely to grow although the global economic uncertainty will possibly lead to lower growth figures (rather near 5% than near 10% of growth). Many economic projections point to growth through consumption in emerging markets, like in China, India and Brazil. The composition of growth in demand is of relevance: Europe is still a global leader in luxury and premium products and profits mainly from the transition from middle to high income social groups and less of the transition of low to medium incomes. In fact in China the middle class will represent the major part of all consumption in 10-20 years.

However, protectionist tendencies have been reported in some of these emerging markets during the interviews (especially in Report 1 Survey). Some emerging markets have still very high import tariffs (i.e. 35% for some products in the Mercosur); also technical barriers are often mentioned in relation to consumer protection and safety: many emerging market are adopting regulations with high standards comparable to EU (which is a benefit for EU companies; however the enforcement procedures still requires physical inspection or even laboratory tests at import (e.g. in Brazil and India). Some countries have a still very long import procedure (Russia and Brazil) which is a relevant problem for seasonal products such as fashion items. Technical textiles export to emerging countries is hampered by public procurement regulation demanding local content (mentioned for India and China); moreover in countries where the expanding infrastructures create a potent new market for technical textiles, a thorough understanding of the institutional context is demanded. In medical textiles understanding of product admission and re-imbursement is required, which demands a local presence.

Therefore export to emerging markets can be replaced by direct investment as market entry approach. Moreover, high end brands may have less hindrance of high import duties, since their brand proposition is strong. However, for SMEs with less established brands, high import duties may be prohibitive.

Europe also profits from growth in products requiring textiles as components. The demand for technical textiles is also growing on a global scale. For demand of technical products in niche markets with high competitive barriers of entry, demand in emerging markets may benefit production in Europe. However, in more bulk products demand can or shall be covered by local production (possibly made by subsidiaries of EU firms). We have found several cases where growth in emerging markets was met by larger companies by setting up production in the local market (e.g. carpets in China and Brazil) or close to sources of raw materials (geotextiles in the Middle-East). The first trend leads possibly to additional capacities. The second trend goes at the expense of production in Europe.

Export performance is also related to the exchange rate relation between the Euro and major markets. Whereas the Euro/USD ratio was far a long time the only relevant factor, the exchange rate between the Euro and currencies of emerging markets is increasingly important. A weak Euro compared to the USD and to currencies of emerging markets might foster exports in the coming years.

Export to emerging markets has been reported as an important factor of growth. At this moment a small minority of (larger) firms do export outside the EU. Based on presence on trade fairs we estimate this number as far below 5% of all firms. Slightly more firms are possibly indirectly exporting as suppliers or subcontractors to exporting firms. Enlarging the circle of firms involved in exports should be an important objective to limit the impact of restructuring. Over the last years companies have reported tightening of export credit as a factor limiting the ability to tap their export potential.

3.1.3 RELOCALISATION

If it is unlikely that demand (all other factors being equal) in industrialized countries will act as a leverage for growth and/or recovery, relocation of production has been mentioned as a possible trend. Regular anecdotal evidence from the cases suggests that "production is coming back to Europe". It is also striking that only very few companies mentioned that they were considering a further delocalization of production. In most instances companies were justifying further delocalization in order to be close to emerging markets rather than reducing costs.

The trend of relocation is, when mentioned in policy documents such as the vision of the HLG, rather wishful thinking. It did not happen between 2004 and 2009. The HLG did mainly relate a possible relocation of production to a breakthrough in automation of clothing production. This has not occurred over the last eight years, mainly for lack of progress in automation of sewing. We have, however, witnessed a relocation of printing because of digital printing (in Report 6 on innovation) as well as a breakthrough in mass-customisation concepts in menswear, which also has an impact on weavers (also addressed in report 6 on Innovation). These are as yet niches, but proof of the argument.

In many cases in the reports of this study textiles companies in Italy or Portugal reported the trend of receiving orders that were in the past placed to Asian producers. In most instances the shift was led to generic factors such as uncertain demand, keeping stocks low and constraints of retailers in working capital. Some clothing subcontractors in Lithuania, Romania, and Bulgaria also mentioned an increase in orders. However, some did also mention that stability and sometimes increase in order books was the consequence of the shake out of weaker competitors in 2008/09. In Report 3 on SMEs the growth in Prato of a dense network of Chinese subcontractors also was a response to growing demand of fast fashion, partly based on processing of imported fabrics. The Prato case is the only reported case in this study where demand for fast fashion is met by a sweat-shop sector operating at the edges of the formal economy.

Also companies subcontracting their production (based in Denmark or the Netherlands) reported (Report 4 on Restructuring) to increase their sourcing in Europe inside their so-called "two-string strategy". This business model combines production in Asia with production in Europe. This was also reflected in the Romanian, Lithuanian and Portuguese case where subcontractors sensed that orders were placed since 2009 for products that were before sourced or subcontracted outside Europe. In all the cases the relocation seems to point to a better use of existing or remaining production capacities. We have found no single indication of production growth by relocation of factories, by creation of new production capacities or by expansion of productive capacities. In some instances, e.g. in the Dutch carpet industry, the resilience of production and in some instances a growth in production was combined with a rationalization of the number of plants.

The relocation (or a slowing down of delocalization) of production at times of economic crisis is not a new phenomenon. Scheffer (1992)¹⁷ pointed to a similar trend in 1980s: in that case relocation or resilience of European production was mainly associated to a lack of commercial credit available to retailers, uncertainty in the market and hence a wish of retailers to keep working capital low, lead times short and stocks low. This leads to an acceptance of rather higher prices associated with EU production in which retailers accept lower profit in relation to turnover, in exchange of a higher profit ratio in relation to working capital.

A second important factor is the exchange ratio of the Euro against other currencies. The resilience of the 1980s was also associated with a high dollar value against European currencies. A new phenomenon is also the increasing costs of manufacturing in China because of gradual appreciation of the Yuan against western currencies. In addition labour costs as well as other production costs are increasing in China. This leads on behalf of large retailers and brands to a search for alternative production locations as China is seen as a less sustainable source. However, while the Chinese manufacturers competing only on costs are weakened, those evolving out of the subcontractors trap by engaging in design, adding service are more resilient and able to compensate for increasing costs.

The eroding cost competitiveness of China leads to a search for alternatives in Asia – mainly when cost factors are dominant and when the buyer can sustain rather long lead times. When cash flow is essential and when more design involvement or service is demanded, manufacturers in the pan-European zone are more in demand. However in that instance the subcontractors have indeed to offer more services especially in design and logistics. We have found that subcontractors in

France, Spain, Portugal, Lithuania and sometimes Slovakia have been able to develop these services and have managed to position the business model into a more hybrid model, where private label coexists with own brand production, profiting from design and trend analysis skills. However, in Romania and Bulgaria many clothing firms have more often remained pure cut-make and trim operations and can not service without further investment and learning these “re-localising clients”. Hence, the two-string strategy rather benefits those firms that have developed into co-makers before the 2008/09 crisis.

3.2 TRENDS IN BUSINESS MODELS

3.2.1 VALUE CHAIN CONTROL

Increased competition inside the EU and the commercial innovation required to tap into the potential of emerging markets, point to a trend of vertical integration. This trend was mainly identified in the reports on SMEs (Task 3), Restructuring (Task 4) and Innovation (Task 6).

A successful business model is indeed to aim at controlling the value chain. This strategy has taken shape in clothing by downstream investment into retailing, whereas retailing is closely associated with branding strategies. Verticalisation, as it was called, had become a significant strategy by 2000 and is a dominant strategy for brands in 2010. The strategy of verticalisation had strategic and financial motives and was enabled by technological factors

¹⁷ Scheffer, M. (1992) Trading Places, Fashion, retailers and the changing geography of clothing production. KNAG, Utrecht.

and regulatory factors. Strategically retailing was motivated by creating a reliable turnover growth and controlling the value of the brand as well as stimulating faster feed-back from sales into product development and production.

Verticalisation was also a defensive strategy as brands were faced with retailers not communicating sales information, not optimizing sales and price integrity and eroding the brand equity. The financial consequence is closely related, by integrating into retailing the clothing firms could control more value added, working capital could be lower and turnover time of capital could be shorten. Finally besides shorter payment lags, retailing offered better control over credit. At times of tighter access to credit, vertical integration combined with quick response production is a successful formula.

The strategic and financial benefit of retailing was most relevant in countries without a well developed retail structure, such as Southern and Eastern Europe. It is also an instrumental part of a strategy to open emerging markets. Indeed leading European brands combine the development of exports with opening stores. A new addition to verticalisation is to open an internet sale channel, which is a feature of most European brands. As was addressed in the report on Innovation (6) a strategy of vertical integration and of internet retailing requires an adequate ICT backbone and excellent logistics. This is still a challenge for most SMEs in Europe.

A possible consequence of verticalisation is that it is weakening the position of smaller brands without owned stores that rely on multi-brand retailers. Hence, verticalisation by brands and on the other hand the increasing market share of large retailers makes the potential market share for smaller brands much smaller. Manufacturers having a distinct style or offer service or being specialist in a niche may survive. Manufacturers unable to keep a foothold in the market may transform into co-makers or subcontractors, but in view of the difficulties of subcontractors this is probably not a potent strategy.

The relative success of vertical integration in the textile industry over the last ten years is in countertendency with the past. Interviews pointed to the increased benefit of vertical integration after the 2008/09 for reasons of financial independence and control over working capital. We have witnessed vertical integration in the carpet industry in Flanders (Report 3 on SMEs) and the Netherlands (Report 4 on Restructuring) but also in technical textiles in Reports 2 and 6 (Germany and TenCate) and in Greece (Report 4 on Restructuring) and in Italy (Reports 3 and 6).

Vertically integrated textile companies have been more resistant in the financial crisis than single stage firms. However, the number of vertically integrated companies has not grown. It is rather the number of single stage companies that has declined. Some companies have indeed taken over suppliers, mainly for defending their business as a crucial supplier was at risk of disappearing. The takeover of distributors has been noticed in a few cases, e.g. in North Portugal, also for strategic reasons, as a way of controlling the access to final consumer. Sometimes several clients of a textile firm engaged themselves in assuring the survival of a strategic supplier. This occurred in 2008/2009 when the Pratese spinner Linea Più (Italy), came into financial difficulties.

Even if the process of acquiring assets out of a bankruptcy or of companies is now lower than before 2008, the costs of acquiring a company and the costs of integrating are substantial and can only be borne by the few companies maintaining a healthy financial position. Hence, the strategy of backward vertical integration is hardly transferable or replicable in different contexts. In France and Belgium government took a very active role until the 1980s to support such restructuring, often supporting a restructuring of debts or by providing bank guarantees. This type of intervention is rare since 2000, also due to a stricter state aid framework. The limits to this intervention were seen for Klonatex/ United Textiles in the Northern Greece case presented in Report 4.

Forward integration is also a trend in the textile industry. However, it does not lead as much to engaging in retailing but more of supplying components rather than materials as roll goods. TenCate (Report 2 on Research) is for example taking stakes in tufters of synthetic grass mats and engaging in alliances with installers of artificial turf fields. It is also acquiring manufacturers of ballistic products. In the Baden-Württemberg case (Report 6 on Innovation) we saw a number of automotive suppliers (interior parts) that took over textile suppliers, indicating a reverse form of vertical integration.

3.2.2 NICHE MARKET CONTROL

The niche market control logic was mainly analyzed in the reports 2, 4 and 6. In the report on restructuring (task 4) it has been referred as specialization and niche market control business model. Specialization into niche markets is the dominant and successful strategy in companies in the northern and southern member states. Through research and/or innovation companies develop specific technologies and skills, protect their intellectual property and carve for themselves a market niche with high barriers of entry. This is typically a strategy followed in technical textiles. But also in industries with very specific technologies and engrained skills; the difficult transmission of tacit knowledge creates the conditions for niches. A gradual shake out has led to the survival of a limited number of specialists that have become survivors in niches with high entry barriers; examples are the printers in Como, or the wool weavers in Biella (See Lombardia and Piemonte case in Report 6 on innovation), the lace makers in Caudry (northern France, Report 3 on SME), or the interior textile firms in the Benelux and Herning, Denmark (see reports 3 and 4). These firms often represent a unique cultural heritage rooted in centuries of industrialization. The preservation of those types of industries is not only a challenge in terms of jobs, but also the defence of an artistic and industrial tradition and the availability of specific products is at stake.

The niche market logic is a strategy ideally suited for SMEs. However it is also a strategy that demands a long term strategic commitment, the development of specific skills, a deep embedding in demanding markets and an active policy in developing and protecting intellectual property rights. In general a niche market strategy requires a dynamic export policy since a niche is usually (too) small at the level of one single country to attain critical mass. Niche players have had over the last 15 years the benefit of a deepening and widening internal market. If niche players had attained a commanding position in the enlarged EU, they could leverage their lead to a global market.

However if, at first sight, the strengthening of a single market seems to foster these niche players, fragmentation also has protective benefits. The cultural diversity in Europe but also the fragmentation of markets fosters small scale production and thus creates niches for SMEs. Harmonization of norms and convergence in procurement rules may foster niche players in attaining critical mass but may also lead to consolidation favouring the development of large companies.

In the sector of personal protective equipment, the terms of reference for police and fire-uniforms differ widely between member states and often also within member states. However some SMEs have mentioned that a thorough understanding of these differences and a strong embedding in the end-user community is a source of competitiveness compared to large global players. In Report 6 on Innovation, the example of the medical and health care market barriers to entrance, is also a good example on how legislation, differences in health insurance and procurement systems and specific demands can have a protective effect on a niche market.

In some sectors it is the fragmentation of distribution and differences in taste that create niches. The companies in interior textiles point to a very fragmented distribution system, the prevalence of bespoke (made to order) sales

model in the upper middle and high end of the market that protects jacquard weavers (addressed in Denmark and the Netherlands cases in Report 4 on Restructuring and Flanders in Report 3 on SMEs) as well as printers in Italy (Report 6 on Innovation). The same logic is also to be found in the luxury clothing sector where a high level of customization is demanded. However, luxury markets can be very cyclical and a downside of the high barriers of entry.

A growing niche segment is mass-customization (analysed in Report 6 on Innovation in the Lombardia and Piemonte case). This segment has developed a new generation of start ups especially in Italy, the Netherlands and Belgium (see Bivolino company case in Report 2 on Research) but is also mainstreaming in the clothing industry. It has possibly a positive impact of clothing subcontractors – especially in the eastern member states- that specialize in made to measure production. Also the wool weavers and the shirting weavers are adjusting their service to this niche. We expect this niche to grow partly as an effect of growing dissatisfaction of ageing consumers with the too narrow offer of retailers, especially regarding fit. P&R, a case in Report 6 on Innovation on North of Portugal, shows the importance of body scanning in fitting, not only as a service, but also as an important way towards improved fitting performance in clothing for sports application sold on regular retail channels. In such a case the niche is all the more potent that the sector as a whole is unable to improve its sizing system.

Ultimately the perspective for the entire industry is to become specialized in niches. This means however that the industry withdraws from commodity markets and this segment is left to imports. This is for financially solid firms a gradual redeployment of assets and personnel. For less solid firms this may imply a restructuring with in the short term a job loss.

For subcontractors we consider the evolution into co-contractors as an intermediate step. Getting integrated as a subcontractor into specialized value chains is a step towards niche market positioning. This is also a strategy requiring years of implementation and learning.

3.2.3 NETWORK BASED PRODUCTION

The network based production model is epitomized in the regional districts with intense subcontracting relations. In this study we have found district type structures in Italy, both in Como (Report 6 on Innovation/digital printing), and in Prato (Report 3 on SMEs/SMEs), but also Cholet (Report 5 on Training/training) in Portugal/Galicia around Inditex and even for other business models in Baden-Württemberg (Report 6 on Innovation) around the automotive industry. However, regional clusters can be a source of resistance and innovation, but emulation in clusters can also be conservative and protectionist.

Networks are stronger when end-user involvement is sought after (and organized), when end users take the lead (as Inditex or Airbus does), and when these networks have an international outlook. Networks are often reinforced by activities (e.g. the Zukunftwerkstatt at ITV Denkendorf as mentioned in Report 6 on Innovation) or organizations (the pole de compétitivité UPTEx mentioned in Report 2 on Research) or programs to strengthen human capital (e.g. Forthac in the Choletais/Report 5 on Training). It seems to be that networks with an external orientation or with a service base are stronger than the more classic districts based on socializing practices.

Some networks also have intensive relations but are not limited to a region. An example is the Composite Valley which is located near Hamburg but encompasses companies and research centres up to the Netherlands and Austria. In very specific segments this is likely to become a more pervasive form of organization that can be boosted by thematic networks or initiatives under the umbrella of the lead market initiative (e.g. in Personal Protective Equipment). These networks seem to be stronger when a strong leading customer is present (e.g. EADS

for composites). At the moment only composites have such a launching customer. Other sectors are too fragmented to deliver strong networks. In general, the challenge of the industry, with a declining number of companies, is to organize specialized networks at a European scale rather than at the regional or national scale.

Some districts are showing geographical nearness without intensive input/output relations. In Belgium and the Netherlands the concentration of carpet and interior textiles is probably more related to external economies of scale or an appropriate competitive environment. Education or research institutes or industry associations (e.g. in Belgium) often perform the role of linking pin. It can also be a common institutional framework such as a sectoral pension fund or an energy covenant (in the Netherlands). Common institutions and regulations can be a source of resilience, as the flexibilisation of labour law in the Netherlands does. It can also be a source of rigidity, as the rules for paying cotton growers and the mode of application of the Common Agricultural Policy in Greece does.

In regions with a prevalence of subcontractors such as Southern Bulgaria or Romania (Report 3 on SMEs), the concentration of companies with similar structure and strategy does not point to a district or even a cluster. It is rather the outcome of convergence in strategies because of common external constraints. Whereas networking and clustering, or the sharing of common institutions is as a positive element, the geographical concentration of companies in an identical (vulnerable) competitive situation is rather a risk. In this situation we see the combined impact of lock-in factors. Equipment and business models are oriented towards a narrow specialization.

The knowledge base and mindset can also entrench conservatism. Innovators are often operating unseen from the dominant type of companies in regions. This means that best practices are often not visible to the majority of firms and therefore difficult to emulate. Hence, institutional lock-ins enforce the functional and cognitive lock-ins. This is often reflected in a lack of full appraisal of trends in the industry (especially in end user markets) lack of vision and lack of collective action. Exceptions exist though, e.g. very much so in Cholet in Report 5 on Training. In Lithuania the industry association plays an active role, but in generally regions with a prevalence of subcontractors have weak institutional organizations.

A trend is that regional clusters exchange and develop best practices in the context of projects examples are the Organza¹⁸ Interreg IVC project, the Interreg IVA North Portugal –Galicia project Euroclustex¹⁹, the FP7 ERA-NET project Crosstexnet²⁰ or the more recently started 2Bfuntex²¹ (an FP7 Coordination Action). These transnational networks seem to focus either on creative industries, with the aim to connect designers better to manufacturing, or on technical textiles. In the latter case they seem to be fostered by transnational research funding as provided by Crosstexnet, some Interreg projects, or an arrangement of reciprocity of funding as established between the German – speaking countries Germany, Austria and Switzerland.

In some sectors private organizations have taken the lead to bring players together. A magazine associated with a trade fair (JEC composites²²) hosts the annual fair in composites and also offers networking activities the year

¹⁸ <http://www.organzanetwork.eu>

¹⁹ <http://www.euroclustex.eu>

²⁰ <http://crosstexnet.eu>

²¹ <http://www.2bfuntex.eu>

²² <http://www.jecomposites.com>

round. In technical textiles Techtextil, organized by Messe Frankfurt, is the leading networking event. However these rather more commercial approaches need to be underpinned by a business model based on subscriptions, square-meters exhibitions space or advertising

3.2.4 CONSOLIDATION

Consolidation is a trend examined in several tasks but most notably in Report 3 on SMEs, 4 and 6. It was mentioned as an important trend throughout the HLG Vision. External factors foster some scale such as the costs of development in technical textiles, the brand power to export, the trend towards verticalisation into retailing. On the other hand the complexity of some supply chains, the variability of fashion also lead to benefits of being small; especially at the level of manufacturing smaller companies are more flexible. Consolidation trends were already visible prior to the financial crisis and continued after the 2008/09 crisis.

In addition to the work done in the tasks we have examined additional data especially the top 100 textile companies of the trade magazine Textilwirtschaft. This ranking is compiled every year for more than 20 years and ranks companies by turnover. Unfortunately the ranking is not coherent from year to year and requires additional processing in order to be coherent and comparable.

In clothing the largest company has almost the same size in 2009 as in 2001. The same is true for the number 20 in the ranking. In textiles the largest and the twentieth largest company are even smaller in 2009 than in 2001. In clothing the number of companies with more than 1 Bill Euro turnover has increased, in textiles it has decreased. In 2009 the clothing industry has more large companies than the textile industry; this is not so much contrast with the situation in 2001 but certainly with the one in 1990. The leading clothing firms now have more weight than the top textile firms. This has probably an impact on the organization of the industry.

The type of companies in the top 20 is also changing. The conglomerates of the 1980s and 1990s were mainly horizontally diversified groups operating in one member state. They had limited internal synergies and were dependent on national markets. Up to the 1980s a leading trend for textile firms was to take over their clients (e.g. VEV-Prouvost taking over Rodier). In the 1990s horizontal take-overs were dominant, e.g. with a consolidation trend amongst Marks&Spencer suppliers in the UK or multibrand firms in Germany. These groups were often managed according to financial objectives, with little industrial and commercial integration. Probably the formation of conglomerates often required substantial management skills and time to achieve integration and hence growth through acquisition was rarely successful, if not followed by integration.

Diversified companies were still of substantial importance in 2001 but no longer in 2009. The larger firms of 2009 have mainly grown from internal resources albeit sometimes with external equity (e.g. Hugo Boss under Permira or G-Star with ABN-Amro Participations). In 2009 multi brand and single brand companies dominated the ranking. Especially the larger companies in clothing have grown by pursuing a policy of internal growth around brands, integration of retailing and internationalization. Acquisitions are actively integrated and managed by the acquiring firm. In textiles acquisition (but also disposals) is a more salient feature and the dominant trend is to seek market share in specific product/market combinations. This strategy is developed by TenCate.

Consolidation especially occurs in specific segments, which mainly accounts to rationalization of productive capacities. This is especially true in carpets and technical textiles. A sector with major consolidation has been the carpet industry in which Belgian and Dutch companies have played a major role (see in Report 3 and 4). Balta (taking over Domo), Desso (taking over ENIA) and Beaulieu are the clear leaders in this consolidation process. This

process also involves internationalization with setting up factories in emerging markets. TenCate, Low and Bonar (UK) and the Daun Gruppe (DE) are important players in consolidating the technical textiles sector.

Thus, in textiles more focused and more international companies at a substantially smaller scale than in the 1990s have emerged. These companies have emerged more from internal growth than through acquisitions, they are often based on a narrow portfolio of brands or product market combinations. They derive their identity from a mission and strategy rather than a national base and/or a financial management approach. They do not aim at national dominance but rather at leadership in a niche at European scale (until 2000) or global scale (from 2000 onwards). Their scale is rather between 100 and 500 Mln turnover. If larger they have clearly a global outlook and their growth is mainly in the USA and Asia (e.g. with TenCate).

In the clothing industry the major trend has been one of internal growth around core brands with a downstream investment in retailing. Only in luxury clothing multibrand companies thrived, most notably LVMH and PPR groups. This model has also inspired companies like Diesel to develop into a producer of brands. Also of relevance is that the 20 largest clothing firms in 2010 are mainly not industrial. They are large in turnover and in commercial influence, but they contract out a substantial part of production. A very large number of suppliers and subcontractors depend on them, mainly in Italy but also in the eastern member states.

Consolidation has happened and also created companies with actual or potential leadership. However, consolidation has hardly attracted new investors or reduced dependency on banks. The industry as a whole has not consolidated. The overall characteristic of the industry is to remain fragmented.

3.2.5 FRAGMENTATION

Against consolidation, which is mainly a logic amongst medium size and larger companies, fragmentation of the industry is still a salient feature. The HLG highlights fragmentation as one of the major handicaps of the industry. Fragmentation is a consequence of low entry barriers such as the occurrence of subcontracting, low capital requirements and fragmented (geographically, distribution and taste) markets. Fragmentation can only be overcome by raising entry barriers, and could go then along a major shake out of the industry.

In 2010, 197.000 companies are registered as being engaged in textiles and clothing production. The average size of companies in employment terms is below 10 people. The trends gathered out of Eurostat and Orbis data point rather to a decline than an increase in average size. Fragmentation may be the result of different trends. In subcontracting regions the average size of companies is declining, both as the sector downsizes and companies spilt up in smaller units to be industrially more flexible and to attain smaller overheads. In design/brand oriented regions also small companies dominate the manufacturing sector (as is the case in London Report 5 on Training). However, self employment also is emerging for technical specialists that prefer to work as independent contractor (e.g. in the Netherlands, rather than to be employed). Finally the Prato case (Report 3 on SMEs) gives a glimpse of marginalization as many smaller Chinese owned companies operate in a twilight zone. This situation is not unique to Prato, although it is now the most mediated.

The focus on creativity, and in some countries the large number of graduates coming out of design schools, as well as new forms of distribution constitutes a new segment of micro-enterprises often integrating design, production and distribution. In the Dutch city of Arnhem around 200 of these firms have been identified. But also in London, Porto, Vilnius, Milano, clusters of small companies are oriented towards specialised niches or try to offer products and brands that are distinct from the retail offer. These firms also try to offer customized products, for consumers not catered for by the dominant retailers (e.g. consumers with handicaps), and also for products made of

sustainable materials. In Tuscany we have also found small manufacturers that through stores or city markets stands serve directly the large segment of tourists visiting the region. This trend of small specialized firms seems to be emerging but in terms of total turnover it remains small. The life expectancy of firms is short and very few are able to grow reaching a sizeable operation especially because of a lack of management skills, lack of financial resources and often a lack of adequate production environment.

The fragmentation of the sector creates flexibility but also less transparency, difficulty to comply with regulations and difficulty to get in touch with agencies and organizations assisting in education and innovation. The degree of organization, expressed in membership of industry associations, is substantially lower in the micro-enterprises. Hence industrial organizations lose members because of consolidation at the top and fragmentation among small companies.

Fragmentation of the industry is both a cause and a consequence of difficulty in access to financial markets. Many forms of capital increase are out of reach to SMEs such as equity through stock exchange. Venture capital is only accessible for sectors with high growth potential, and textiles is not among them. Starting designers may benefit from informal investors, but their subcontractors not. Hence companies depend on the family capital base and on commercial credit. Credit is needed for financing buying of materials and credit to retailers, while machines are increasingly obtained on a leasing basis.

SMEs suffer most from the image of the T&C industry but also for being industry and SME. The transition to fact based credit system drove by the Basel accords²³ gives less appreciation for the specific niche position, skills, design or brand excellence. Alternative financial (mutual) systems have not yet been developed, or identified in the study. Forms of information exchange or collective financial services do however exist in the Netherlands and in Lithuania. Collective organization may overcome fragmentation and enable SMEs to possibly improve their standing in the financial market.

3.2.6 THE COMMODITY TRAP

One of the dangers that were highlighted in several regional cases is the commodity trap. The commodity trap is not explicitly addressed in the vision of the HLG, other than that it mentions that “not all companies shall survive enhanced global competition, only those with special skills and competitive advantages will survive”. The HLG then mentions technical and design leadership associated with specialisation and exports.

The commodity trap means being positioned in a market segment where barriers of entry have declined, opportunities of product or service differentiation have dwindled and competition on cost has become paramount. The commodity trap means that European firms are stuck in a segment where Europe has little competitive advantage. There are methods to get out of the commodity trap, mainly through design and service innovation or by vertical integration and attaining economies of scale. The carpet industry in Europe is rather successful in maintaining its position in a commodity, but indeed by combining all the elements mentioned. Hellenic Fabrics is an example of vertical integration combined with design leadership. In North Portugal, some clothing manufacturing companies had successfully evolved to a hybrid model, investing in own brands creation and production, which

²³ Global regulatory standard on bank capital adequacy, stress testing and market liquidity risk agreed upon by the members of the Basel Committee on Banking Supervision. It is now the third installment (Basel III) agreed in 2011 and entering into force in 2013.

helps to reduce the dependence on subcontracting models. Success stories of shifting into more technical products allowing market control have also been reported in Report 6 on Innovation.

A typical situation where the commodity trap applies is in the spinning sector, weaving and knitting of grey fabrics, some home textiles and also carpets. However, also in technical textiles some products present the features of commodity goods: personal protective equipment in less demanding applications and materials for these PPE such as polyester/cotton blends geosynthetics, some medical textiles especially bandages.

Commoditization also occurs when too many companies diversify into a niche. Many companies shifting from home textiles or clothing textiles into technical textiles have often the effect of increasing competition in that segment with the effect of reducing prices and profits. Established companies then seek to upgrade into sub-segments with higher barriers. One of them is the processing of advanced technical yarns such as aramides as dealt with in the Baden-Württemberg case (report 6 on innovation) or to develop into market segments with higher barriers of entry such as automotive fabrics.

3.2.7 THE SUBCONTRACTOR TRAP

The subcontractor trap means to be consigned in a position of subcontractor with little visibility on the end-user, little added value other than providing labour and a very vulnerable financial model. Subcontracting is hardly addressed in the HLG Vision. Subcontractors form a very large but vulnerable part of the industry. Subcontractors themselves acknowledge (in report 4 on Restructuring) this vulnerability and aim at developing into co-contractors (offering more services) or hybrids (developing own brands). On the other hand the design, fashion and luxury leadership of Europe depends on the basis of a vibrant subcontractors sector as we have seen in Cholet (Report 5 on Training) and Lombardia (Report 6 on Innovation). Hence, they can contribute and benefit from an export driven strategy for Europe.

Subcontractors form a large share of companies in the clothing industry and also form a majority of firms in textile finishing. The share of subcontractors in knitting has declined and the prevalence of subcontractors in spinning and weaving is low. Some subcontractors bring very special skills or equipment and can be important in an industrial district as key input for the district. For example in the Calais case (Report 3 on SMEs), the only company providing dyeing and finishing services for the lace makers is of key importance to the district as a whole. In this case but also in similar instances (e.g. in Prato clients took a share in the subcontractor in order to secure its survival).

In Report 2 on Research we reported a growing demand for specialty fibre extrusion in a subcontracting model. In some cases, like reported in Report 6 on Innovation, the supply of small quantities even by research and development centres is seen as an opportunity to provide SMEs with interesting relatively small quantities of specialty extruded fibres. One company in the Netherlands has now developed a customized extrusion production. In Nordrhein-Westfalen and in West-Sweden such an outfit is under discussion (see report 2 on Research) as a joint venture between several weavers. A specialized industry of “mini-mills” such as existing in metal production or in making master batches of plastics has yet to emerge.

In other instances the formation of a district of subcontractors around a key client (Inditex in Northern Portugal) or a set of clients with comparable requirements (the luxury clothing makers in Cholet (see Report 5 on Training) or the digital printers in Como), create a specific competitive advantage. This is not only an advantage for them but also for the system as a whole. Inditex relies on the capacities of quick response (in trend matching, design and production) of a cluster of subcontractors and their textile suppliers in North Portugal and Galicia. The luxury fashion houses in Paris and Milan depend for their creativity, quality and flexibility on subcontractors in Cholet,

Como and Prato. However for the overwhelming majority of firms the subcontracting position is a problematic position as was witnessed in several regions, as in Southern Bulgaria and Slovakia (Report 3 on SMEs).

The period between accession to the EU and the 2008/09 crisis was characterized by lower interest rates and relatively better access to credit in eastern member states. Since 1998 the import regime made selling ready made products as attractive as working on a 'Cut Make and Trim' basis. It was a period that made it possible for firms to get out of the subcontracting trap and become co-makers or even developing own brands. In Lithuania (Report 4 on Restructuring) and Slovenia (Report 6 on Innovation) we saw successful cases of companies getting out of the subcontractors trap. However the majority of firms did not develop a strategy to get out of this trap.

With rising interest rates and curtailed access to credit from 2008 onwards, a strategy to get out of the subcontracting trap has become almost impossible. The shift to work as co-maker requires to pre-finance the buying of fabrics, the granting of commercial credit to clients besides investments in design, warehousing and logistics. As expressed in many interviews, such a transition is not facilitated by banks since 2008. The internal rate of profit of subcontractors (based only on labour costs) is too low to leverage into the pre-financing of a co-maker strategy let alone a branding strategy.

3.3 POSITIONING OF SUB SECTORS

3.3.1 RAW MATERIALS

Europe as a source of materials has been addressed in several reports of this study: flax in Report 3, cotton in report 4 and technical fibres in report 6. Europe is small but still relevant fibre producer in the world. Europe produces 3,8 Mln Tons man-made fibres out of a total volume of 53 Mln Tons (7%). In natural fibres Europe produces 0,5 Mln Tons out of a global production of 20 Mln Tons (2,5%). The overall trend in fibre production is one of constant decline and rationalization of capacities. Only specialty fibres hold on, or fibres for which there is a large downstream production capacity, such as polyamides for carpets.

Europe is a minor player in the production of bulk fibres; in polyester its share is below 5% and is mainly oriented towards technical fibres (high tenacity, fire-retarding). Europe has a stronger position in polyamides (10% share in world production) in which it is a net exporter of fibres and a large end user in carpets and hosiery. European companies are also strong in cellulose fibres, but production is mainly carried out outside Europe. Europe (in fact the company Lenzing in Austria) still has a share of 15% in world production. However, overall Europe is a net importer of synthetic fibres and yarns and is no longer assured of innovative leadership except for technical fibres.

Europe is well established in specialty fibres such as aramides and carbon fibre in which it has a share of 30% of world production. However, the total European production of specialty fibres is below 0,5 Mln Tons. Production volume of specialty technical fibres is increasing and is likely to grow further. On the other hand, the production and processing of bulk technical fibres such as polyolefins are delocalized in the Middle-East as downstream linkages of oil companies.

In natural fibres the European Union is the leader in linen production with a share of 40% in world production; however, over 80% of fibres are exported to Asia for the following productions phases. Europe is also a minor

cotton producer: Greece has a market share of 2% in the global cotton production, but also in this case the fiber is exported partly in Europe (Italy and Germany) but the majority outside. Europe is still a leader in wool transformation, but imports over 95% of its needs, mainly from Australia. It is also leading in the production of alternative fibres from nettle and hemp, but production volume is below 0,01 Mln Tons. Finally, Europe plays a substantial and growing role in the production of biopolymers and fibres made thereof. Nevertheless, bio fibre production in Europe is still below 0,2 Mln Tons (share in global production is ca. 35%).

Europe is unlikely to be able to regain footing in the production of bulk fibres. There is some underutilization of existing capacities. Known expansion plans amount to 70.000 Tons in cellulose fibres, some 30.000 Tons in specialty fibres and some 100.000 Tons in bio fibres up to the horizon 2020. Production of natural fibres (cotton and flax) is likely to remain stable. A further decline in polyolefin production is expected. The balance is that fibre production is likely, to remain stable. Hence at current conditions the textile industry shall remain depending for a substantial part of production on imports of fibres from Asia, especially India and China.

Europe's dependency of Third Countries in Raw Materials is a risk factor for the future development of the industry. Since the major world producers of raw materials are also major producers of textiles and clothing their export policies are frequently conditioned to industrial policy objectives. Europe's industry might well lose access to raw materials. Moreover, as fibre properties determine functionalities of textiles, Europe lacks control over innovation. This is all the more concerning since the main Indian and Chinese fibre manufacturers are mainly interested in volume production and less in innovative niches.

Some companies in Europe have understood this vulnerability and followed a business model of backward integration in sectors as carpets and technical textiles. However the volumes involved are limited. Another opportunity is a breakthrough in biopolymers and/or in recycled fibres. However substantial investments are required such as an adequate regulatory framework, financial incentives for promoting recycling and a good alignment of several players in (cross-border) supply chains. There is room for a growth in agricultural production or regeneration of natural fibres in those countries with already a production base: especially cotton in Greece and linen in France, Belgium, the Baltic States and Poland. Also in this instance substantial investments are needed, adequate incentives and alignment in the supply chain. Due to organizational limitations of the cotton and linen supply chain, external assistance shall be needed.

The support to special natural fibres culture and production, interesting for very specific niche market applications, could be an interesting way of re-conquering competitive advantage for Europe. Indeed the so called "Green Economy" is globally growing in importance and in value. This also applies to emerging development of biopolymer based materials. Similarly the EU industry is highly depending on synthetic fibres from third countries. The development of mini-mills and development capacity of new modified fibres around public research centres (e.g. in Roubaix as addressed in Report 2) could be the basis for new business models but also the basis of alliances with bulk manufacturers. Finally recycling is also an emerging trend. A comprehensive approach may be appropriated, covering natural, biopolymer and novel synthetic materials.

3.3.2 SPINNING

Spinning is carried out as an independent activity or as part of vertical operations. Spinning can be connected to primary processing of raw materials (e.g. cotton spinning after ginning in Greece - presented in Report 4, Restructuring) or integrated with fabric manufacturing. Precise data do not exist but evidence gained in interviews points to a general reduction of spinning capacity in Europe (with imported yarns providing an increasing share of

market). An increasing share of spinning is now carried out in vertically integrated firms. However, also integrated firms source part of their yarns outside the firm. Vertical integration is dominant in the wool sector, in the carpet sector, in the home-textiles sector and in hosiery industry.

In non-vertical operations, spinners have most often shifted to more flexible value added production of specialty yarns such as yarns from fibre blends and technical yarns. Spinners making functional blends can develop proprietary IPR while companies spinning technical fibres are often linked in licensing strategies of their suppliers (see in Report 6 on Innovation). In general these specialized spinning companies have fared relatively well, but these firms are often smaller in size.

Another strategy, continuing the dominant trend of the 1990s, is to survive through increasing in scale and efficiency. Firms following this strategy have most often been caught in a commodity trap and are faced with difficult access to raw materials, rather higher energy and labour costs. In Europe the strategy of cost leadership through scale and efficiency gives a very vulnerable position.

The spinning sector is very vulnerable for further restructuring. It is faced with increased costs of raw materials, export restrictions of leading export producing countries (e.g. in India on cotton in 2010-2011) and increased energy costs. Further room for productivity increases is limited, hence labour costs are likely to remain decisive. Spinners have in general a weaker financial basis than the textile industry as a whole. This is partly since owners have carried out strategies of de-investment and sometimes of stripping assets in order to save the family capital base. It has little direct export potential, except through their clients or companies further downstream.

Exceptions are spinning units within weaving integrated firms and spinners of specialty yarns. Of relevance are also spinners using raw materials of European origin. Two ailing cases are the linen spinning sector and the Greek cotton spinning sector. In the latter case spinning close to crop cultivation (mainly North West of France) has disappeared. Some spinners survive in Italy and North East of Europe. Their financial position is vulnerable and makes a renaissance of a fibre bast spinning sector (based on hemp, nettle and comparable fibres) unlikely. The Greek cotton spinning sector, comprising more than 40 factories in 2000 has dwindled to less than 10 mills in operation in 2012.

The weakness of the spinning sector compounds the narrow fibre production base in Europe. The ability to design yarns, to blend fibres intimately to attain yarns with multiple characteristics is an important vector of innovation (e.g. in the case of TenCate discussed in Report 2 on innovation). The weakness of the spinning sector also makes a revival of natural fibres or in bio-based fibres difficult.

3.3.3 WEAVING AND KNITTING

The weaving and knitting industry remains the core of the textile industry in Europe. This industry either makes semi-products to be further processed in the clothing or furniture industry or almost end products requiring simple processing operations (e.g. carpets, geotextiles etc...). Companies are traditionally specialized in a specific fabric formation technique, but we found anecdotal evidence of weavers investing in knitting equipment in order to offer fabrics with other properties.

We shall call this group weavers, but it also covers a broader scope. Weavers can specialize in weaving alone or can be integrated with finishing of fabrics. Weavers can also be associated with spinning (e.g. Hellenic textiles in the Greek case). In very few instances, but notably in the Biella wool industry, weavers have also developed clothing

production and brands as Loro Piana or Ermenegildo Zegna. In technical textiles vertical integration rather takes the form of controlling some assembly activities (e.g. in composites making parts).

Weavers largely work on their own account, and if they are not integrated, they need the services of commission finishers. Commission weavers are a minority of the weavers and are only prevalent in Italy and Spain. Weavers can work for designers (usually called *editeurs*), but often in that case -that is common in furniture and furnishing fabrics - the weaver proposes a design to the client and manufactures on his own account. A dominant trend is that fabrics are increasingly co-developed with clients, which leads to an intensive cooperation (as seen in the case of Inditex suppliers in Report 6 on Innovation) but also in Como for luxury brands. Co-development is associated with exclusivity and protection of designs; in this situation the client often applies for the protection of the design.

The weaving sector is also gaining the most from an active export policy, either directly as suppliers of quality fabrics, or indirectly through European clothing brands and quality retailers. However, the weaving sector is also subject to the commodity trap (as highlighted in Report 4 on Restructuring, Catalonia). This is especially the case for grey fabric weaving, cotton weaving and, outside Italy, in the wool weaving sector. However, in several sectors niches (also in interior textiles) pertain. It is also weavers that have been most eager to diversify towards technical textiles. The automotive sector has been an attractive target. Weavers of complex fabrics such as velours have also developed into 3-dimensional weaves for highly technical applications.

3.3.4 FINISHING

Textile finishing, also comprising dyeing, printing, coating and lamination, is often the last manufacturing sequence in textile production. Dyeing and finishing is often integrated in weaving companies but is also operating on a commission basis. There are only few commanding finishers (Vlisco-NL is discussed in report 4 on restructuring). These companies also called converters, they buy grey fabrics, apply their own designs and sell the products for their own account and risk. As with weaving, vertically integrated mills are sustaining the crisis better than commission finishers and also commanding finishers tend to sustain the 2008/09 crisis better than the commission finishers.

Industrially it is a sector with potential, since it is a major stage of differentiation close to the consumer or end-user. Scheffer (2008)²⁴ has argued that because of the dominant model of flexible accumulation, which fosters fast fashion, product differentiation is frequently obtained by textile finishing processes. Especially when fast fashion or restrictions on working capital demand short production lead times, this sector is the main one to benefit. A substantial part of production in Europe is based on imported grey fabrics that are dyed and finished, printed and or coated in Europe. Especially imports of cotton fabrics is of relevance. Between 2005 and 2008 the finishing sector suffered from a growing share of imports of ready made products. The relocalization trend also incites to resilience in this sector.

Dyeing and finishing is probably the area with most technological dynamism and opportunities. In technical textiles but also in sport and workwear end-users demand materials with a broad range of functionalities. The application

²⁴ Scheffer, M. "Denim: Fashion Design and Technologies in a Global Context" in E. Paulicelli & H. Clark (2008) *The Fabric of Cultures* : Fashion, Identity, Globalization. Routledge, London.

of technical finishes, but also multilayer coating and lamination is area of substantial innovation. A new generation of finishes based on nanotechnology (e.g. the lotus effect) is also at a level of market introduction. Biotechnology based functionalities such as enzymes, plant extracts are being researched and developed. Alternative, more sustainable finishing processes based on digital technology, plasma or supercritical CO₂ are being explored and tested. Several of these methods are essentially oriented to functional properties, but especially Italian finishers are also exploring the aesthetic potential of new finishes and finishing technologies.

As these production phases are globally a major source of pollution, one can imagine a big niche could be created for EU “clean” producers versus global competitors, once consumers pay more attention to carbon footprint and pollution issues. Europe still has a commanding position in textile finishing world wide. Finishing is where most of the functionalization towards special properties can be applied, and therefore plays a key role when it comes to incorporate innovative properties to a textile product (see Report 6 for a technology overview). It is also the first mover in new technologies such as digital printing (see case Lombardia in Report 6). However, this sector is weakened by the limited number of commanding finishers who can effectively reap the benefits of innovation. The costs of R&D lead to consolidation, in terms of critical mass required to sustain innovation. Another trend fostering consolidation is that the environmental regulations (especially imposed by local authorities) demand increasing investments in appropriate equipment. Energy reduction might also foster a larger scale of operation. Finishing companies are often essential resources in industrial districts, the survival of these type of firms is often essential to the health of the district (e.g. the example in Calais in Report 3 on SMEs).

3.3.5 CLOTHING

The clothing industry is the largest industry in terms of employment in the T&C industry. The clothing industry is largely oriented towards fashion, though a small segment is oriented towards sports clothing and a another small section towards protective clothing.

The clothing industry is composed of three types of players. In the first place there are companies focusing on design, branding, marketing and distribution, with no or little in-house production left. This type of company is well represented amongst the larger companies, but also represents a large number of companies amongst the smaller. In the second place a very large number of companies are subcontractors operating on a CMT basis. They often depend on the first type of companies and they are sometimes foreign subsidiaries of the former type.

The integrated firm, having design and manufacturing has become a minority and is surviving mainly in the top-end of the market, in niche products demanding specific equipment and skills. The classic integrated firm operating in the mid market and supplying private labels or manufacturer labels to retailers has almost disappeared from North-Western Europe, it is under severe pressure in the southern member states and it has rarely developed in the eastern member states. However, some of these integrated companies are less visible in Europe when the production locations are outside the European Union. In a “two-string strategy” the production location can be in Northern Africa and Turkey as well as in Asia. From 2007 we have seen a reappraisal of the importance of direct production on behalf of the financial community, since it gives more control over brand identity, quality and intellectual property than sourcing.

In Northern Europe and in metropolitan regions (such as London – Report 5 on Training), but also in the Netherlands or Catalonia (covered in report 4 on restructuring) the design oriented clothing firm is a dominant model. The focus of the firm is on design and marketing, with production contracted out inside or outside the

European Union. This segment is a highly mobile segment with very entrepreneurial firms with many entrants and many failing companies. The 2008/09 crisis has hit this segment, but it has also led this segment to control cash-flow and to rely more on nearby sourcing (the two-string strategy).

The largest group of clothing firms, especially in the south and east of Europe should be classified as subcontractors. Their position is and will probably stay very vulnerable. Their strategy is highly depending on the choices of their clients, and sometimes they might have clients with a clear strategy (e.g. Inditex in Galicia see Report 3 on SMEs and 6) but others have less explicit clients or a very unstable client basis. In Report 3 on SMEs the relation between Bulgarian subcontractors and their Greek clients or principals has showed to be very vulnerable. Some companies (most notably in Lithuania Report 4 on Restructuring) have been able to escape the subcontracting trap, but this is a strategy requiring good access to credit and a healthy balance sheet.

3.4 POSITIONING OF THE MAIN TEXTILES REGIONS

The position of the main textile regions is based on the joint analysis of the regional cases in the six independent reports.

Table 3: overview of cases in the main textile regions

	Northern Europe	Southern Europe	Eastern Europe
Research and Development	Nordrhein-Westfalen, Germany Nord Pas de Calais, France North West England, UK	Lombardia and Biella, Italy	Lodzkie, Poland
SME	Nord pas de Calais, France /Flanders, Belgium	Prato, Italy Northern Greece North Portugal/Galicia, Spain	Northern Bulgaria (in connection with N. Greece) Eastern Slovakia
Restructuring	The Netherlands Herning, Denmark	Northern Greece (cotton) Catalonia, Spain	Lithuania
Education	London, UK West France Nordrhein-Westfalen, Germany		
Innovation	Baden-Württemberg, Germany	Lombardia and Piemonte, Italy North Portugal and Galicia, Spain	Romania Slovenia

3.4.1 NORTHERN EUROPE

In Northern Europe (NL, UK, DK, DE, BE, FR) the large quantitative restructuring is over and in several cases (covered in all thematic reports) we have seen a strong resistance in the 2008/09 financial crisis. Often employment declined by 10-20% over 2008/09 but largely recovered in the last quarter of 2009 and 2010. This recovery did not continue in 2011 and was at best followed by a period of stagnation.

The textile industry specializes in growth segments; most notably technical textiles and in niche markets especially in interior textiles such as jacquard fabrics. These markets may be cyclical in Europe, but this was compensated by growing exports outside the EU. The clothing industry is essentially composed of branded companies with almost no manufacturing in their region. Clothing firms (as described for Baden-Württemberg in report 6) have outsourced production, integrated into retailing and developed internet sales.

Nevertheless companies stuck in a commodity trap succumbed to the crisis, especially in textiles for the clothing market (e.g. middle market lace in Calais - Report 3). There was certainly consolidation of the industry as happened in the carpet sector in the Benelux. A shake off of SMEs was documented in Belgium (report 3 on SMEs). The smaller impact of the recession is due to the large use of outsourcing and offshore production. Hence, most impact in decline employment is borne by the subcontractors, inside and outside Europe. In Belgium and the Netherlands the brunt of the financial crisis was absorbed by labour market flexibility.

In terms of employment a large share of employees in North-western Europe are no longer factory based but involved in design, marketing, quality control, logistics. The remaining industrial employment is rather skilled, although increasingly process operators have a generic training and not a textile specific training. In most regions, the textile industry operates in regions with demographic decline and/or full employment.

The industry still has a high level of organization with a high share of companies actively involved in industry associations that organize an active social dialogue and services to industry. In most of Northwest Europe the industry still has critical mass in education in training infrastructure, it boasts dynamic research centres and is supporting good generic schemes for research and innovation. In addition, the image problem is often absorbed by redefining the industry under creative industries or advanced materials.

3.4.2 SOUTHERN EUROPE

Southern Europe (IT, GR, SP, PT) still has a substantial textile and clothing industry. Italy has a dual character, with an industry that is partly oriented to commodities and dominated by subcontractors, but also with champions in the field of luxury materials and products. The top end of textile producers for clothing and interiors are world class, and much of the European clothing industry depends on the quality and creativity of many (but not all) Italian textile firms. Italy may gain from a relocation trend, and is the first beneficiary of growing exports to emerging markets

Greek and Spanish firms are much more stuck in a commodity trap, with products with lower added value and lower export shares. Portugal is somehow stuck in the middle. Although restructuring is severe in Portugal, many firms get out of the commodity trap and are growing in the slip-stream of a fast-fashion retailer like Inditex. Greece

has a specific challenge with its cotton cultivation basin that can be a basis of renewal of the industry. The Northern Greek cotton industry has however suffered from a severe restructuring over the last decade, exacerbated by the financial crisis.

The liberalization of textile trade, i.e. the abolition of import restrictions in Europe in 2005, led to a rapid restructuring process in all southern European countries. This was exacerbated by the financial crisis of 2008/09. The restructuring affects unskilled and skilled workers with job loss because of factory closures and downsizing.

The industry in Southern Europe still has a fragmented organization, with often regionally oriented schools, research centres and industry associations. Of major concern is that the education system, in all Southern European countries is unable to recruit enough students to sustain the current need for skilled workers and managers. This is a concern for the Italian industry, and because of the importance of Italy in the European T&C system, it affects Europe's competitiveness as a whole.

3.4.3 EASTERN EUROPE

The textile and clothing in Eastern Europe (SK,SL,RO,BG,PL,LT) is undergoing a strong restructuring. Most firms have after the collapse of the Soviet Union and the collapse of consumption after 1989 withdrawn to a position of subcontractors. Also newly started companies opted for a CMT operation, as the management skills were often oriented towards production organization. However, some companies, most notably in Lithuania (covered in Report 4) and Slovenia (presented in report 6) have shifted from being subcontractors, to co-makers. But this is rather the exception with too many firms stuck in the subcontractor trap (e.g. in Romania and Bulgaria covered in reports 6 and 3). They seem to benefit from some relocation of production towards Europe, also since clients look for reducing working capital and lead-times. Subcontractors may also benefit indirectly from growing exports from European brand manufacturers.

A large part of employment in the eastern member states consists of sewing operatives, often low skilled and trained on the job. However, more skilled workers required in the textile industry, can be found in Slovenia and the Czech Republic. In general companies report difficulties in recruiting personnel because of the image of the industry but also because of low pay. Because of the focus on subcontracting there are few work opportunities for university trained engineers or designers. Many university graduates in textiles migrate for employment to North West Europe.

The weakness of institutions in the eastern member states is of great concern. Vocational training systems have collapsed after 1989. The lack of social dialogue which makes it difficult to implement training strategies. Higher education has maintained well for a while, but is now shrinking in size. Research priorities rarely reflect the needs of industry, and are also not at world class level (report 2 on Research and 6 on Innovation). What is essentially missing is a good dialogue between industry and both research and education. The weakness of industry associations (often employing only a director and one secretary) does not contribute to the development of vision, support and services for the industry. However, the research centres have, also because of European funding, found alliances in the northern member states and still have critical mass. But they often lack the skills to act as agents of change and support

The industry is more likely to become smaller rather than larger in the coming years. This is largely the impact of further restructuring associated with decline in number of firms, downsizing and consolidation of capacities. Productivity increases may also imply a reduction in employment as will a shift in business models.

Until 2008 in most regions job losses in textiles could be absorbed by healthy textile firms, other industries or was absorbed by demographic change as larger cohorts of retiring working could be replaced by smaller cohorts of younger people. This probably no longer applies except in some regions with low unemployment and demographic decline. After 2009 few textile firms are recruiting and alternative employment option are scarce.

It is likely that most job losses will occur in regions with a predominance of companies in the clothing production chain, with textile manufacturers in commodity products and with high prevalence of subcontractors. In addition, credit squeeze will affect many companies in their growth or survival. Therefore jobs will be mainly lost in Southern and eastern member states.

In North-Western Europe change will be more likely than vast reduction in number of workers. This is an effect of the main changes in business models, with more orientation on design and development functions, marketing and logistics as well as the development of retail activities. Already in 2011 a large share of jobs classified under NACE 13, clothing manufacturing are in fact jobs in retailing whereas companies are classified as clothing producers.

Overall a smaller industry requires higher skilled staff. The share of graduates in the industry is typically higher in those regions with a higher share of technical textiles and of branded clothing manufacturers (with outsourcing). Typically higher education for the industry is well developed in regions without a "classic" industry such as Nordrhein-Westfalen, the Netherlands, Sweden, United Kingdom. In contrast in regions with a classic industry, the majority of workers are low skilled (general education) or middle skilled (technical education).

The survey carried out in task 1 indicates an overall decline in unskilled workers and some growth in skilled workers. Growth is expected in non-technical functions (design, sales, logistics and administration) and in recruits with higher education. In the eastern member states the restructuring will merely affect low skilled workers, in majority clothing operatives and women. In the southern member states restructuring will rather affect middle skilled textile workers.

On the basis of the two European Globalization Fund grants reviewed (report 4 on restructuring), the prospects of re-employment after restructuring are poor. This is partly explained by age, since many workers made redundant are over 50 years of age. Skills specificity does not seem to be a problem since retraining seems to give positive results. A limitation is rather low geographical mobility, e.g. reported in Catalonia. In dense clusters such as in Flanders (see in report 3) and Lombardia (reports 2 and 6), geographical mobility is less of a problem and restructuring has less adverse effects on workers below 50 years of age. In eastern member states low pay in the clothing sector gives little incentive to seek for alternative jobs over longer distance.

Across the cases we have witnessed that specialized technicians in lace making (Calais in Report 3) and in digital printing (Lombardia in report 6) are in high demand either to be reemployed or as self-employed specialists. Their skills are all the most demanded since there is few specialized training left. The industry in the Netherlands has, prior to the financial crisis (Report 4) restructured itself around a core of skilled product and process specialists and

a shell of flexible workers with general process operation skills. The Italian industry (e.g. in Prato in report 3) rather relies on local subcontracting to attain flexibility.

4. WAY FORWARD: CHALLENGES, CONSTRAINTS AND RECOMMENDATIONS

The HLG produced two vision documents. One in 2004 that was at the basis of a wide range of recommendations and the other in 2006, which reflected on the implementation of the recommendations. The 2006 vision part is a fair and frank assessment of the situation at the time that demystifies but also confronts the industry with its shortcomings. Hence it is a realistic and open minded assessment.

The challenges for the industry are partly in line with the vision set out by the HLG on textiles and clothing in 2004 and 2006. This vision (especially in 2006 the section “an attempt for a vision for 2020”) highlights a number of trends. It clearly stresses the export potential of Europe, assisted by a light depreciation of the Euro compared to currencies of emerging markets. Export is all the more important as industrialized markets are stagnant. The vision highlights the importance of innovation, especially since China and India are catching up. There is even doubt expressed whether Europe can maintain its lead. On the other hand the vision clearly points to labour shortages, the importance of investing in productivity and supply chain efficiency. The HLG clearly addresses the shortages in fibre, water and energy and point to the growing concerns of consumers and the increasing importance of clean production and corporate responsibility. It is also expressed that new models of consumption may come up with ICT leading to new forms of communication and a more efficient supply chain.

The HLG also points to constraints limiting the take up of opportunities. First and foremost the fragmentation of the industry is an issue. Closely linked is the difficult access to credit, partly the result of image, as the HLG assesses, and part the consequence of fragmentation. Another source of concern is the difficulty to attract skilled workers, also partly due to image and fragmentation.

The HLG, hence, recommends to establish the necessary conditions to address the challenges. These conditions are partly on regulation, most notably on IPR, standardisation and fair trade. These conditions are also organizational, to put in place the structures to overcome fragmentation, to improve the image of the industry. The regulatory conditions is by virtue of the Lisbon Treaty an area where the European Commission has the right of initiative. The creation of organizational conditions is a more complex matter requiring alignment of member states, regions and social partners; stimulated, assisted and connected with European instruments such as these foreseen, i.e. in the structural funds.

The HLG did foresee neither in 2004 nor in 2006 the financial crisis. It did foresee some evolutions that could also happen gradually, also without a crisis (depreciation of the Euro, slightly improved wage parity, stagnant consumption and access to credit). In this section we shall examine the way forward, reflecting on the vision of the HLG.

4.1 CHALLENGES: FIVE PATHS FOR RESISTANCE AND GROWTH

Based on the thematic reports we identify five paths of resistance and growth.

1. Innovation led
2. Export led
3. Service led - Supply chain efficiency
4. Environmental efficiency
5. Resistance through cost-efficiency

It is hard to assess whether these are trajectories of resistance or growth. By growth we mean a clear expansion in turnover and production and depending on productivity growth a stabilization of employment. By resistance we mean a consolidation of the existing industrial perimeter with possibly a small decline in production, but with more added value and growth in turnover. With increased productivity employment could decline with stable turnover.

The two first strategies are based on a firm footing.

Europe is still the most innovative region in terms of technical textiles. There is a hard core of highly innovative companies especially in technical textiles. We have quantified this group as comprising around 1000 companies with possibly a similar number of subcontractors. The innovation potential has been covered in reports 2 and 6.

Also the export led strategy has a clear basis. Europe is still a world reference for fashion and style and has unrivalled brand potential, being the second largest exporter of textiles and clothing in value after China. However also on this mark the number of structurally exporting companies is to be counted in 1000s. But the supply chain effect on suppliers and subcontracting is potentially larger than the first strategy. This trend has not been explicitly covered in any report but has appeared in interviews across the several themes.

We are more hesitant on the three next strategies.

Improving the effectiveness of the supply chain has been on the table since 25 years, with the KSA report on Quick Response in 1985 and the rapport Jolles-Bounine in 1989. Many initiatives to improve the efficiency of the supply chain have been engaged since the mid 1990's but few had a decisive impact. Some retailers have actively oriented their supply chain on quick response and agility. But Marks and Spencer until the 1990s and Zara since 2000 are rather exceptions. This strategy has not been overall assessed, but in some cases (e.g. in Report 6 on Innovation) this strategy has been addressed.

Improving environmental efficiency has been a challenge since the 1990s but has been considered as an external demand from stakeholders demand. The paradigm now shifts towards a more sustainable material is very recent, much activated by the rising prices of raw materials just prior to the 2008/09 financial crisis. However the time to build up a bio-based material platform or a substantial share of recycled materials takes up more than a decade. This strategy is too small to be well addressed in regional cases, it transpires from limited interviews (e.g. in Task 2 research).

Resistance through Cost efficiency is for a high cost region not a sole competitive asset. It only works in combination with another asset. It is important to mention that many innovative firms are also cost conscious and invest in higher productivity. This can be part of a financial model or an answer to shortages in skilled labour.

However in some instances cost leadership may be (combined with other assets) a way to regain competitiveness. In the case of Prato flexibility and cost leadership in small volume production is a form of resistance (Report 3 on SMEs). In Report 4 on Restructuring we have concluded that a revival of the Greek cotton industry shall be based first on reduction of costs which may create the basis to reinvest in more complex and sustainable strategies.

4.1.1 INNOVATION EXCELLENCE

The HLG addresses the importance of innovation excellence and has set in motion a process of sensibilisation and structuring of the EU textiles innovation potential. Innovation is an important and potent trend, more visible in 2010 than in previous studies for the European commission as carried out in 2003 and 2006. The most innovative technical textile sector is still growing, also after the 2008/09 crisis and textiles is increasingly seen as a material of choice. Europe has a clear leadership in technical textiles and is still responsible for a large share (but declining) of textile patents filed worldwide. Besides the benefit of innovation as such in terms of immediate business potential, the window of opportunity of novel materials also has a more symbolic significance. We will mention four aspects.

In the first place the message of innovation is one of hope. More than in the 1990s the potential of innovation conveys a vision that a future is possible for the EU industry. Companies that had engaged in innovation, especially in technical textiles saw the 2008/09 as a setback but not as an existential challenge to their future. This image is reinforced, in the second place, by the vision that innovation is possible. TenCate (presented in Report 2), a 300 year old company based in the Netherlands, is currently one of the most innovative large textile firms in Europe (measured in number of patents filed) and has developed an innovative public profile and has engaged itself in supporting institution building such as supporting the establishment and leadership of the European Technology Platform.

Innovation has led in the third place to new combinations. Textiles rebrands itself as advanced materials, gets part of wider clusters of innovative industries and engages with end users. These alliances create new opportunities, in which European funding often played an instrumental role. The collaboration with end users and other industries contributes to remove cognitive lock-ins. In the fourth place innovation has been a potent theme to engage in institutional modernization in the industry by the setting up of competitiveness clusters (in France), sectoral and cross-sectoral competence/excellence clusters (in Germany, Italy, Portugal, Sweden, the UK) technology road-maps (in the Netherlands) by assuring alliances between public authorities, research and education and industry. The European Technology Platform on textiles and clothing is the rallying point for a new coalition of progress in the industry.

The importance of innovation is political as well as economic. The message of innovation is to convey hope and opportunities. But the number of countries that have well engaged in the innovative dimension of textiles is small. It is mainly in the north-western member states. Indeed the countries that usually top the cross-industry rankings lists in innovation. In South and Eastern Europe research and innovation are much less well rooted. Even in the successful countries the number of companies which engage in research and in more than just incremental innovation is very small. We have identified some 1000 companies identified in projects or having patents (out of a total of close to 200.000 firms). The majority of the industry focus on incremental improvements, towards product differentiation, are technology followers or do some non-technological innovation, mainly development of new collections. Successful cases of companies performing better than this, which have been reported in Report 6 on Innovation, usually have in common a good communication channel to final consumer and the engagement of

suppliers in the development process. The clothing industry is still passive in its involvement in technological innovation.

We have identified several factors leading to a higher innovation performance. The first one, coming out of Report 6 on Innovation, is that close links to launching or leading customers is essential. This favours indeed the industry in North-Western Europe where those customers are present. The second factor is the availability of human capital and research centres. This factor also favours North-Western Europe and to a lesser extent some member states. The third factor is the ability of industry, research and public authorities to work together (in the so-called triple helix). This ability is much better in place in countries with a T&C industries with a relative small weight in the national economy. The culture of the triple helix is less well in place in Southern and Eastern Europe. In some instances research capacities are still substantial but not geared towards the needs of the industry. Moreover the industry is often not organized in a way to be able to articulate its demands for innovation. Intervention of public authorities is not effective to bring the parties to the table.

The organization of companies in clusters either regional for less specialized SMEs or (cross-) national thematic networks for companies operating in niches seems indeed to be a positive factor. In order to be successful clusters or networks should involve end-users but certainly bring together the relevant supply chain. We have seen that successful clusters emerge bottom-up – hence they have legitimacy with enterprises. However, to deliver results a good management is needed and also a connection to other sectors and policies. Almost in all instances a supportive intervention of public authorities is needed to get a head start (either by funding a technology road-map or/and by funding a cluster management). Seed money to set up projects is seen as useful. Best practices in clustering do exist in many sectors and they are related in different networks. Support of connecting clusters by the EU, through ERA-net, Innova or Interreg has proven useful for exchanging best practices.

European, national and regional innovation programs play an important role in boosting an innovation culture and in funding an essential research infrastructure. However thematically, they focus often on similar themes. Whereas in the 1990s the focus was on process technology or the uptake of ICT in design, manufacturing and distribution, the 2000s shifted towards product technologies, most notably nanotechnology and textiles, the integration of microelectronic components and textiles (smart textiles) or the development of new textile materials or textile-based products for technical applications. Some cases show the long lead time between research and market take up, which is for digital printing or mass-customization typically 10-15 years after completion of research. However the focus on very specific themes and the duplication of priorities at different policy levels lead to a tunnelling of priorities and leaving aside issues of less political interest. Such issues are for example plant genomics and biotechnology for linen, cotton and other natural fibre alternatives; they are crucial to expand Europe as a basis of high quality biomaterials. Flax genomics is being researched in Northern France (with national funding), but not in Eastern Europe where it may have application in the agricultural sector. Industrial biotechnology is developed in Lombardia (with regional funding) but the findings are not exploited in Greece where it could boost competitiveness of the cotton industry.

Participation to European funded research is a plus but the participation of European textile firms can best be boosted by addressing the barriers we have identified in the study, most notably in tasks 2 and 6. In the first place the number of firms involved in European research is by 2012 mainly constrained by the amount of funding to textile action lines or related action lines in FP7. The number of companies possibly involved in projects and the amount of funding is thus limited. It should be said that the ability of the industry to respond to calls and to submit proposals in FP7 action lines not specifically referring to textiles has increased since 2005. Still the gap between thematic priorities, project results application and industry short term needs have been reported in several cases

within Report 6 on Innovation. Particularly clothing manufacturing companies and fashion retail companies do not easily match their R&D priorities in existing programs.

The innovation drive of the industry since 2005 is the major success of the recommendations of the HLG, as taken up by the European Commission and the economic operators, notably the establishment of the European Technology Platform. The success is mainly in the creation of organizational conditions that enable to overcome fragmentation and that lays down a vision and action plans. The success is also in strengthening the position of the textile industry in the funding mechanisms of the EU. As far more projects in textiles have been funded than that was envisaged in 2004 or 2006, the overall progress achieved in technical textiles outstrips the hope of a breakthrough in clothing technology expected through the LEAPFROG project.

The results of innovation policies have to be qualified with more precision. The gap between the leading firms and regions and less developed firms and regions seems to increase with very good advances in North-Western Europe and much less in Southern and Eastern Europe. The share of firms actively involved in innovation is small. The focus of the EU, members states and regions on participation of SMEs in textile research limits the impact of research and specifically with reference to large scale commercialization. The definition of SMEs also leaves out a large number of the more innovative textile firms in the sector that are just larger than the SME definition. It might be that some SMEs that are well connected are successfully participating in collective research. It seems further that the lead-times and mechanisms of proposal submission foster a leadership of research centres rather than assuring industrial leadership of projects. While innovation policies at all levels have sustained the existence of research centres with a pro-active outlook, even most of them are constrained by insufficient human capital. The number of graduates is in several member states even too low to sustain the research capacities. Therefore the results of R&D policies are mixed. The circle of companies engaged in R&D is too small, and the exploitable results are rarely well taken up. The focus on SMEs in funding instruments may be a cause of both limitations..

4.1.2 EXPORT EXCELLENCE

Despite restructuring and financial crisis Europe has maintained and even expanded its global leadership in quality textiles and clothing. The leadership is clear in fashion but also in home textiles and in technical textiles. With demand at best stable in Europe, growing exports in emerging markets is probably the best card for resistance or growth of the European textile and clothing industry. This priority has consistently been highlighted by the European Commission since the start of the Uruguay Round²⁵, has been reiterated by the HLG and taken up by the industry.

Europe loses and gains from globalization and capitalizes its creativity and brand leadership. Like the EU the USA T&C industry has suffered from globalisation and the financial crisis. In employment terms the impact has been larger in the USA than the EU. There is almost no clothing manufacturing left in the USA, nor an upstream supply chain in textiles. The USA has a much smaller luxury sector and its production is outsourced, mainly in Italy. In the mid market there has been more consolidation than in Europe in relation to a more homogeneous consumer taste and less fragmented retail structure. In the USA there is still a large carpet sector and a competitive technical textile sector. The USA is also not leading in innovation. Despite the overall outstanding research capacity, in textiles

²⁵ The Uruguay Round 1989-1994 led to the establishment of the WTO and the agreement to phase out import restrictions on textiles

public funding for R&D is much smaller than in the EU (estimated in about 20mIn/year). The number of patents filed by the USA industry is substantially lower than in the EU. Innovative procurement by USA agencies makes the US an attractive market for EU firms. Public Procurement rules (e.g. the Byrd amendment) prompt EU firms to set up manufacturing in the USA. This presents a barrier for EU SMEs, but it attracts investment of larger EU firms in the USA.

Export is of direct importance for firms exporting themselves to emerging markets. This is especially the case for clothing, and some finished products in home and technical textiles. Yarns and fabrics can also be exported for making up in the country of destination. Indirect importance of exports is relevant for far more companies that supply materials or textile components to clients exporting. These go from retailers to car manufacturers, including furniture brands. However also European brands with delocalized production are successful in exports. With the development of emerging markets the organization of exports shifts from sales (organized through trade fairs) to setting up of retail chains or indirectly through franchising. Verticalisation of brands into retailing is often seen as a necessary policy to keep control over export markets (in terms of brand image) but also to keep control over working capital.

The importance of brand value in emerging markets, the significant investments for setting up retail chains, the substantial working capital required to open up sizeable markets in China, India and Brazil are often beyond the financial and organizational means of many SMEs. Although many SMEs complained in general in the study about the barriers to export many acknowledged that they had not yet taken steps to operate in global markets. In the survey (report 1) most SMEs mention the need to first establish a solid basis in the EU before exporting outside. SMEs also complain about infringement of intellectual property, but the majority acknowledge that they do not formally protect their IPR. Especially the protection of designs is considered to expensive and lengthy. Many SMEs also acknowledge that they have to better understand IPR issues before engaging into exports.

This is not to underestimate the burdens of high import duties in third countries such as the Mercosur (above 30%), non tariff barriers with regard to technical standards and public procurement, the lengthy import procedures (e.g. in Russia, Brazil and Argentina). For Russia, the level of discretionary power of custom officials in determining the value of the product and the speed of custom handling is mentioned as a barrier. Striking is the transposition of many EU regulations such as REACH, but whereas in the EU compliance with regulation is a responsibility of the company putting products onto the market (with in-store control), in e.g. Brazil tests are often required in the import procedure. With regard to public procurement, the USA is a very important market for technical textiles or advanced fibres, but the Byrd amendment imposes that these products are made in the USA with home grown materials. This puts the position of EU niche-products in difficulty, even when there is no reasonable alternative production in the USA.

Internationalisation also takes other forms than outright export. Production in target markets is also often a necessary step. Desso and other carpet manufacturers consider or plan setting up production units in major potential markets such as Brazil and China. The complexity of import procedures, especially when they are lengthy is a reason to move production since they hamper a timely and reliable delivery to clients. Also the costs of transport, the flexibility of being closer to the market, the better response to local taste are reasons to invest in production in emerging markets. In the automotive market, the car makers demand of their suppliers to set up production close to their new assembly plants.

4.1.3 SERVICE-LED: SUPPLY CHAIN EXCELLENCE

Service is a potential advantage for companies nearby. In this study we have come across service innovation in many forms, either as individual strategies or as collective strategies. The former strategy is often associated with a shift from subcontractor to co-maker or by developing mass-customization or web services. The latter strategy is rather a strategy emanating from the demands of large retailers (e.g. in the Inditex case), launching customers such as EADS/Airbus or some form of dialogue in the supply chain. The HLG stresses the importance of supply chain excellence but also diagnoses that the fragmentation of the industry is a major impediment to progress. Hence we assess that progress occurs when leading customers take the lead.

As mentioned in previous studies for the European Commission in 2003²⁶ and 2007²⁷ the supply chain between textiles and clothing as well as between manufacturing and retailing can be improved. The analysis made in the 1980s that inefficiencies in the supply chain lead to duplication of costs, lack of effective customer response still holds. The share of products sold in end of season sales has remained stable at a level between 35% of sales in value, i.e. some 50% to 70% in volume terms. This means that only two thirds of products are sold at a full price giving profit to retailers and manufacturers. The wider use of ICT has not reduced the end of season sales. Delocalisation of production, with longer lead times has more than offset the impact of ICT. The ineffectiveness of the supply chain is best demonstrated by the inability of the sector since 1973 to adjust its sizing system to the reality that the average European adult person has grown by more than 5 cm on average in the last 40 years.

In the 1990s industry associations in several countries have engaged into initiatives to optimize the supply chain, often stimulated by the studies of KSA or of Jolles-Bounine in France. Advances in dialogue in the food industry and retailing also inspired initiatives such as the clothing dialogue in the Netherlands, the Dialog Textil-Bekleidung in Germany or the Apparel and Textile Challenge in the UK. It is hard to organize such initiatives in an industry with over 200.000 manufacturers and an even larger number of retail outlets, especially when large retailers and large brand organize their supply chains on their terms. The initiatives have had difficulties to develop a stable governance and funding model, and resources were often insufficient to tackle complex issues like standardization of electronic data interchange. At European level the project E-Biz TCF²⁸ on standards in E-Commerce aims at reaching a breakthrough in this area.

The issues related to improving supply chain relations and efficiency are still prevalent, but with increased verticalisation of large brands, and structuring of supply chain by large retailers, an open approach needs to reach out to the most fragmented part of the manufacturing and retail community. The organization of supply chain initiatives and dialogues with retailers and manufacturers meets major difficulties in creating critical mass, setting up an adequate governance and business models for the initiative and reaching fast results in order to keep backing from the stakeholders.

It is useful to mention that a range of initiatives may foster more dialogue in the supply chain. The implementation of REACH may lead to more traceability and dialogue in the supply chain. The policy of Modint (NL) to develop credit services not only in the Netherlands but also in other European countries creates a platform to engage in

²⁶ http://www.tno.it/tecno_it/fashion4_2_05/documenti/IFM%20final%20report%202005.pdf

²⁷ http://legacy.intracen.org/dbms/tirs/TIR_Publication_EK.Asp?DS=MONOGRAPHS&TY=P&CD=280&ID=39162

²⁸ <http://www.ebiz-tcf.eu>

wider dialogue with retailers. In Germany the Dialog-Textil-Bekleidung (report 6 on Innovation) has proven to provide a useful forum of exchange for implementation of ICT and standards of communication in the supply chain. The industry can highly benefit from the improvement and standardization of the supply chain; however, in Eastern Europe, the organizational skills are not present to engage in such ventures. Capacity building is required first in these regions.

4.1.4 ENVIRONMENTAL EXCELLENCE

The need of environmental excellence has been well addressed in the 2006 report of the HLG. It has been done here comprehensively and with more urgency than in previous visions or expressions. The HLG also points out that promising tendencies (e.g. natural fibres or bio fibres as well as more sustainable production methods as digital printing) are recognised by being taken up at a pace not matching the challenges ahead. In our study the sense of urgency was disparate with large firms taking up substantial initiatives, and also several smaller initiatives (e.g. nettle fibre as also mentioned by the HLG) but without critical mass.

The trend towards environmental excellence is emerging. The discussion now moves further than only good house keeping, compliance with legislation and adoption of environmental labels. Environmental excellence is rather a strategy that takes sustainable development as a driver of innovation. We have seen the environmental challenge expressed in attempts to maintain and develop natural fibre production and processing in Europe (Report 3 on SMEs the linen case), in developing and processing biopolymers (addressed in Report 6 on Innovation), in developing bio-based manufacturing processes (in Lombardia in Report 2 on Research) or investing in production technologies with a substantially lower ecologic footprint (digital printing in Report 6 on Innovation). It is also transpiring through the focus in Prato of processing recycled materials (Report 3 on SMEs) or in the carpet industry to develop cradle to cradle²⁹ (Report 3 on SMEs and 4) product and production concepts. A Slovenian case (Report 6 on Innovation) shows an interesting good practice regarding this concept, when it comes to reduce the dependency of imported raw materials by setting up an integrated approach to product recycling towards recycled fibre supply, without compromising material properties.

Behind these trends we have reported the concern of industry leaders about the access to raw materials. The reliance on cotton and polyester is seen as many industrialists as not sustainable. The high use of water and energy by the textile industry is also seen as unsustainable. Even further (in Report 6 on Innovation on mass-customisation) very few industrialists expressed that the dominant model of 'prêt à porter' and its end-of season sales and of fast fashion is an unacceptable burden on resources and also no longer responding to consumers aspirations. In two round table discussions the low level of recycling of textiles (probably below 20% and most of it thermally valorised – i.e. burned) was expressed as a concern.

However, the majority of interviewees do perceive environmental concerns as external to the industry. It is seen as an issue leading to an uneven playing field in the form of overregulation of the industry in Europe and as not being imposed on developing countries putting an additional burden on industrial firms in Europe. However, an increasing number of companies mentioned that environmental concerns are at the core of their strategy and hence regulation, quality guarantees and traceability enable to create a competitive advantage. In very clear instances such as textile for water filtration systems, composites for aerospace, new regulations and societal demands were creating new market niches with high barriers of entry. Hence the debate has different sides and that makes this trend rather an emerging one, than a firmly established one.

²⁹ The cradle to cradle concept implies that waste of products can be turned into new materials and products.

Indeed the shift to a sustainable strategy is a clear example where functional lock-in factors play a role. The shift to production technologies with a substantial lower footprint require considerable investment in new plants and writing off of existing equipment. In digital printing we see a successful transition but in the application of supercritical CO₂, plasma technologies or biotechnologies substantial uncertainties prevail and the way to scale up from research to industrialization is yet uncovered. This is not helped by a focus of publicly funded R&D on fundamental research and perceived absence of focus on bringing specific processes to industrial scale. The lack of financial resources in companies to commit in investments that will be paid back in over ten years is also an element to take into consideration.

The cognitive lock-ins are even more substantial. The development of an integral strategy demands years of intellectual and organizational efforts, with a dedicated management. Often management does not consider for their business the opportunity or the business case. Three companies touched in the study had made a long term choice for sustainable development, but mentioned it to be a process taking years to be implemented. But in the day to day practice the selection of bio-based materials and processes may restrict the freedom of designers and it may go against the fashion trend of the day. The proposition is hard to sell for the current marketers. In general the prices of sustainable materials is substantially bigger than the traditional non-ecologic alternative; the cost of processing may be higher (because of new settings to be developed) and the reliability of process may be lower because of more rejects. For suppliers of new bio-based materials there is often little critical mass. Suppliers of biopolymers tend now to focus on bio-plastics or on disposable (non-woven) products or on volume products for which biodegradation is a desired property. The clothing industry is the sector providing the least critical mass for applying biopolymers.

Institutional lock-ins are highly related with fragmentation. Initiatives are often regional and operating at small scale. Some sectors are structurally fragmented such as the flax industry, the hemp industry and even the cotton sector in Greece. The processing of waste materials to be recycled also demands a complex organization, going across the supply chain and outside the supply chain towards local authorities. As sustainable development is still at an early stage and fragmentation also exists in eco-labelling, labelling for organic cotton etc. However, another part of the institutional lock-in is resistance or lack of knowledge of the associative system. There is clearly no consensus on the matter and whereas institutions in some countries adopt a pro-active and supporting role, other ignore or resent the trend. In all instances the lack of mechanisms is essential environmental awareness increases when fibre prices go up. In France interest for recycling went up when a levy was introduced. In the Netherlands the energy covenants mediates effectively between the government and industry but has also created a basis for a road-map on sustainable products and processes.

Public procurement is also a factor. Procurers can demand sustainable design, production and disposal, but few have effectively developed specific terms to that aim. If procurers separate acquisition from maintenance the price of acquisition determines the terms of reference. When procurers integrate maintenance costs in the terms of reference, sustainability issues have more attention.

4.1.5 RESISTANCE THROUGH COST EXCELLENCE

The resistance and cost control model has to be assessed against the financial strength of the industry. At the end of 2011 the financial position of the European industry shows (based on an data set reported in report 4 on restructuring) that one third of companies have still a strong financial situation and can sustain a crisis and has the means to adjust its business model. An additional third of the firms is in a very vulnerable position, and is likely to close down or to downsize in order to survive. For them a retrenchment and reduction in costs are the only way to

restore a healthy financial situation. The remaining third of the companies are in an intermediate position. They have to maintain their turnover and control costs in order to sustain the crisis. If they seek to specialize in niches they have to do this gradually. If they develop into co-makership, they need still subcontracting to fund their transition. These firms tend to be cautious in approaching change and will focus first on cost control

Cost excellence is not specifically mentioned by the HLG, nor is any company explicitly following a cost leadership strategy in the cases of the various tasks of this study. The HLG in its 2020 Vision mentions elements of relevance regarding costs. In general it addresses cost issues affecting competitiveness. The HLG acknowledges that the wage level in Europe is remaining high and that social security shall remain a substantial cost factor, mainly to cover the cost of an ageing population. The HLG also highlights the costs of energy, water and raw materials as well as the costs of installations to mitigate environmental effects. It takes, however, all these costs as realities that require a radical approach. An interesting element is mentioned on page 15 "that the membership of Bulgaria, Romania and Turkey will in fact lend further competitive strength to the industry as it benefits from the skills and much lower wage costs of the former".

Regarding cost leadership many companies acknowledge that cost control is essential even if competitive advantage comes essentially from innovation, brand or service. Even niche markets are competitive. The cost aspect is enhanced as most companies, faced with harder access to credit, have to shore up their solvability and capital base. In a situation of stagnant markets, profitability is faster attained through cost control than through higher prices or sales. Restructuring, especially in the shape of rationalization is a method to control costs. The Dutch example of downsizing by reducing the flexible shell of workers is a good short term adjustment; however this requires a flexicurity framework not present in many member states. In the longer term cost reduction is better attained by the combination of consolidation and rationalization (e.g. in the case of the carpet industry).

In some instances regaining cost leadership is essential to create the basis for recovery or growth. In Spain and Greece regaining a lower cost level was often mentioned, especially since many manufacturers were stuck in the commodity trap. Greek cotton firms have responded to the high cost of energy by producing their own energy (from sun or biomass). In both countries firms mentioned the urgency of mastering labour costs. For subcontractors, e.g. in Slovakia, labour costs were also mentioned but the solution was rather found in partial delocalization to Ukraine. In other instances, labour costs could be managed by productivity increases. However in all these cases cost competitiveness should be a stepping stone to a more comprehensive strategy of smart specialisation.

The accession of Romania and Bulgaria to the EU was harder to assess in terms of the overall impact on competitiveness of the industry. In both cases firms were firmly in a subcontracting trap but tried to move to co-makers or hybrids. They are very much depending on the decision of their customers and lack visibility on the market. This lack of visibility is worsened because of the lack of strong intermediaries (e.g. associations). It was also in Romania and Bulgaria that most signals came of a repatriation of production from Asia. These two countries seem also to benefit most from the two-string strategy. The strategic benefit of two rather low cost countries has not yet been fully grasped by the European industry.

4.2 CONSTRAINTS

In terms of constraints this study, as previous assessments also by the HLG, confirm the importance of access to capital and access to skills and management. Image has also been mentioned as a constraint, but it has impact mainly in the capital and labour market. Fragmentation is finally also a constraint mentioned often by the HLG, but this is also a consequence of capital markets and management. Fragmentation of the industry has been covered above. Fragmentation in terms of (self-)organization of the industry is addressed here under organizational conditions.

4.2.1 AVAILABILITY AND ACCESS TO CAPITAL

The capital problem is of relevance for the industry. While the industry is in general not capital intensive, the access to capital is in general problematic. The latter is closely related to the performance and image of the industry. A crucial criterion for assessing the financial sustainability of a company is solvability, expressed as ratio between own capital and total capital. Before the financial crisis a solvability ratio above 35% was considered as safe for the industry. After the crisis the solvability considered healthy had increased to above 40%. The figures for clothing can be slightly lower than for textiles because of faster turnover of capital.

The solvability of a firm depends on the long run on the profitability of the firm since losses are imputed on the shareholders capital and on the policy of shareholders to keep large part of profits into the firm. Since few companies in textiles and clothing are owned by private equity funds or are publicly quoted, the pressure to pay out profits to shareholders is generally low. One should add that the number of publicly quoted companies in textiles has dwindled since 2010 and the firms owned by equity funds were most vulnerable in the 2008 crisis. Indeed companies funded in the bubble-way (low equity, high debts and hence high leverage) were much affected by the crisis. This was also the case for companies involved in management buy-outs after 2002.

The resisting firm is typically the family owned company - especially those with several generations of inheritance. One finds in these companies a tradition of low dividends paid out and a policy of preserving the capital base and of growth without relying on external funds. There is no general rule to characterize these firms. From a small sample of firms the more resisting firms operate in:

- niche markets (hence barriers of entry and exit are high) with much immobilized stock and specific equipment
- cyclical markets (hence the need to be able to absorb losses)
- a rather (but not too much) concentrated shareholder structure with a strong heritage feeling and a strong community involvement

a long term vision and value system but also a conservative management style.

These resistant firms seem to have a secure basis but also a rather low growth potential. One finds typically this structure in the Biella (Italy) wool sector (addressed in tasks 2 and 6). Against that stands a much larger number of companies with a weak financial base.

The financial crisis has reduced the potential of survival, redeployment and growth. Report 4 on Restructuring goes in depth on the financial crisis and its impact, but also in Report 3 on SMEs there was a focus on SMEs and in Report

2 on Research and 6 the consequences for innovation. Indeed financial weakness and difficult access to credit limits restructuring possibilities as well as short and long term growth.

The access to credit is one of the issues related to the financial crisis. However, decline in sales and profits also has an implication for the access to credit. Companies mentioned a wide range of problems from the renewal of existing commercial credit lines to the difficulties in financing growth in sales with expanded credit lines. Companies faced with a rapid deterioration of sales and profits had even credit lines cancelled; moreover the downgrading of certain countries/banks in the Euro zone has substantially increased the problems of access to credit for SMEs in those countries. This has a negative impact not only on Investments but also on cash-flow.

The deteriorating payment discipline of retailers is also a factor. Retailers have extended their payment delays. This was especially a problem in countries where suppliers demanded payment at delivery for fibres of fabrics (e.g. in Northern Greece – see Report 3 on SMEs and 4). Long term credit for financing new equipment or acquisitions was generally curtailed as well. Of specific importance was the difficulty to get export credits or guarantees, limiting options to expand exports (one of the promising strategies).

In the difficult relations between T&C firms and the financial community the image of the sector, reform of the financial sector and fundamentals were mentioned. The image of the sector is often mentioned as a negative factor in access to credit, but it also reflects that loans and credits were in the past often given because of personal relations with local branch managers. With the Basel 2 and 3 banking agreements with regard to clauses on credit conditions a more “fact based” credit system has been implemented, but this system is adverse to most industry, not only the textile industry. The image can be compensated by implicating banks in the industry (through industry associations as in Lithuania) or even more thoroughly by developing financial services such as Modint (NL) on credit control.

The crisis also leads to a change in the fundamentals. With a depressed real estate market the value of buildings as collaterals for a loan declines, in a situation of overcapacity the market value of equipment declines, with default and delays in payments by retailers commercial credit or factoring becomes less attractive. A major issue, affecting many firms, is that the financial crisis has locked in many firms in a subcontractors trap.

On the other hand with declining value of assets the cost of acquisitions (and of consolidations) goes down. Companies with a healthy balance sheet can gain market share by providing better payment conditions to retailers or clients. The desire to control cash flow fosters vertical integration and also fosters the rapid introduction of new technologies such as digital printing that reduce lead times and hence working capital.

The analysis in the several tasks point to the critical dimension of capital. Capital is required for financing modernization and expansion of plant, for covering the costs of restructuring and for providing working capital to tackle new markets. We have witnessed a strong erosion of the capital base and many interviewees have demanded financial interventions. In general three messages have been brought forward. The first one, clearly expressed, is that the image of the industry is a major barrier for attracting finance. This is a key message also conveyed in earlier studies. However, more forceful, in this study, was the realism that the financial sector itself has to tighten credit lines in order to comply with Basel III requirements, hence the matter is beyond image but in the realm of image. The third message, more implicit, is that restructuring (the costs of downsizing) takes up to much financial capacity and that too little financial capacity remains available for developing new products and technologies.

We have found four types of approaches in terms of finance.

The first approach is a call for improving the image of the industry. The researchers found such an open call sympathetic but not realistic. The textile industry receives much media attention because of its restructuring process, it has its share of social drama and on average the textile industry is not any more ethical than any other industry. We have seen that the mortality rate of textile firms is close to 10% a year and the majority of new firm do not survive the first five years. If image is seen as the cause of unnecessary restructuring there is a case for working on image. If image is an effect of restructuring then, image building is probably an effective strategy.

However, the image approach requires two qualifications. The first one is that successful companies suffer from the image of the industry as a whole. This is more the case when they are operating with brands or in niche markets (such as technical textiles). It is thus worthwhile to point out that export oriented companies with brands and innovative companies with patents are worth a specific assessment. However since only a little share of the firms of the industry are in these kind of exception, this is a hardly an overall recommendation. The second qualification is that organizing a better socialization of banks with the industry helps. Latia in Lithuania has offered an associative membership to banks. Modint in the Netherlands has developed a credit service that provides banks with more intelligence and guarantees on the financial situation of the industry. Modint is now rolling out its services outside the Netherlands in partnership with national associations.

The second approach mentioned was one of planned financial support to the industry in the form of rather generic balance sheet reinforcement or substantial subsidies on (labour) costs. The issue raised is that many firms do have neither the solvability nor the means to raise solvability to finance restructuring or growth and do need an impulse in equity to get additional bank loans. While not explicitly mentioned, the researchers refer to the Belgian Textile Plan (1982) or the French Plan Borotra (1997). The latter one was judged not compatible with European State Aid procedures by the European Court of Justice. The former plan has been the subject of a Court of Justice case between Germany and the European Commission. Without entering into the details, it is unlikely that the Belgian Textile Plan would be compatible with the current reading of State Aid procedures. Moreover neither the member states nor the European Union have the means to provide substantial financial support to the industry.

The third approach is to focus on the costs of restructuring. The downsizing and reorientation of industrial activities require a redeployment of assets. However firms face substantial social costs for downsizing employment, unless they have set up a shell of flexible workers. Since in most member states the financial crisis has led to a depreciation of value in real estate, there are little assets to redeploy. This call is thus for more flexibility and lower costs for social plans. On the other hand, restructuring can also occur by bankruptcy followed by a restart. In that case the cost of restructuring are effectively socialized. In contrast with the other two approaches hence it is recommended a structural reform towards more flexible employment practices and more liberty in the valuation of company assets.

The fourth approach proposed by some firms is a more selective financial support oriented to the specific investments needed for scaling up innovations in sustainable production methods or for opening up third markets. The researchers would like to propose a connection between these concerns and the challenges expressed in section 4.1 of this report or even more specifically to the great challenges of Europe expressed in Horizon 2020. This approach is compatible with instruments developed by regional development banks or funds (e.g. in Piemonte, Gelderland), or instruments offered by the European Investment Bank. Also of relevance are credit guarantees to SMEs or export guarantees. This line of thought fits with the need of the member states to balance between stabilization and growth and promote the creation of new financial instruments to foster growth and the transformation of the industry into a sustainable knowledge economy.

The former two approaches should be seen as an expression of emotion, and are quite at odds with the current political debate on relations between state and markets. Moreover, a massive financial intervention of public authorities is not within the means most member states have. The debate on the image of the industry is sympathetic but does not address the fundamental problems of weak solvency of most firms, the development of fact based credit systems, and the lack of good financial data on the industry. Relevant is the setting in place of mechanisms to improve credit information and mediation as Modint is now rolling out in Europe. The provision and deployment of these type of services, extended to export credit systems is worthwhile to examine in more detail, but is beyond the scope of this study.

The latter two approaches are more in line with the current debate in Europe on structural reform and growth. The instruments are horizontal and can be targeted to a clear framework of great challenges. However the combination of reform and targeted investment can be of help for companies with clear competitive assets but a lack of resources or faced with rigidities. The industry in Italy, an essential country for the European T&C system as a whole, could clearly benefit from this philosophy. This might also apply for Portugal, Lithuania where the industry has engaged in developing promising strategies. It is much less likely to work in Spain or Greece where the industry has less competitive assets and has almost not engaged in export or innovation based growth. Only if the development of a raw material base is seen as a strategic objective for Europe, a plan of action for the cotton sector could be retained.

4.2.2 SKILLS BASE

Skills in the textile and clothing industry are currently the main limitation and challenge to sustain this industry in Europe, and moreover to modernize or adapt it to its future challenges. Since 1994, the issue of skills gaps has been clearly pointed out as a key subject for the industry in the framework of several studies carried out by the European Commission, and this has also been highlighted by the High Level Group in 2004. As one entrepreneur expressed it in Report 6 on Innovation, *“we have neglected technical education for more than a generation”*. Almost the entire Europe is affected by the erosion of skill base at all training levels. This skill shortage is threatening not only the workers and management levels, but also the survival of Education Training and Research infrastructure itself (which is supposed to boost EU competitiveness). The fact is that, nowadays, the European industry is facing a lack of PhD students in the textile and clothing path to ensure succession of current employees of the sector and the current teaching corps.

Report 5 on Training addresses extensively the challenges in training but the issue transpires across all cases. The challenges are multiple and relate to the roughly negative image of this industry among young people and their parents, regarding working conditions and career opportunities. Perception on working conditions is often affected by noise in factories and other inconveniences of mechanical processes. Career opportunities are often limited by family ownership and fewer opportunities for outside managers. Relative low pay is also a negative impact for employment, but mainly in regions with low unemployment or generous social security systems. These aspects, as well as social dialogue on training and education should definitely be improved to tackle this issue. Sectoral training bodies should be strengthened, as well as their commitment in collective organizations (e.g. vocational training), and textile, clothing and design education should be managed in a clearer and stronger institutional framework.

Tasks 2, 4 and 5 point to existing best practices as well as to bad examples. Under comparable conditions, a good social dialogue, an adapted educational reform and modernization of curricula can make the difference. These

tasks also enabled to note a split between the North-West and the rest of Europe regarding education and training in the textile and clothing industry. Higher education has maintained its size in the UK, Northern France, the Netherlands, Germany and Scandinavia. This region is now educating more than 80% of all graduates for the industry. With Design schools included, the number of textile and clothing graduates in the UK is as large as in the rest of Europe (all other EU countries combined). The curriculum has rather evolved to an increasing focus on design and management, whereas the part dedicated to technical courses decreased. Regarding the fashion sector, the image of the industry tends to be less an issue for the young generation, as restructuring does no longer make the “head-lines”, and as a career in this sector sounds more attractive.

In all other countries textile and clothing education has downsized considerably. Image problems are often mentioned, with reference to the restructuring of the industry, the relatively low wages for graduates and the limited career opportunities for outsiders in family owned companies. Institutional or cognitive limitations of opening the curriculum to non-technical disciplines, the lack of dialogue with the industry and institutional barriers to modernization and growth are also mentioned.

Education and training at middle levels is a source of concern in all countries, except Germany which benefits from a functional vocational system for technical professions. The German system is still enshrined in the working of the educational system and underpinned by a strong social dialogue in the industry and in the companies. The German system is seen (according to the authors of the present report) as a good example for France, the UK, Belgium and the Netherlands. In each of these countries education is embedded in a good social dialogue with active union involvement. Sectoral skill councils are structures that may very well accommodate this dialogue.

However, the success of some of these good practices depends on the setting-up and/or functioning of specific national structures, such as Forthac (FR) or Skillfast Skillset (UK). In practice, in countries with still a sizeable textile and clothing industry a real functioning apprenticeship scheme no longer exists. In some smaller countries, technical textile education and training has merged with other processing industries, as for example in the Netherlands. This trend is beneficial to the labour flexibility and employability of workers, but also is leading to an erosion of specific skills to develop and produce specialty textiles.

International mobility of students and workers is often a measure to alleviate tensions in the labour market. International courses, such as the one set up by AUTEX, is successful in this matter. However, these courses are still too small in size and are mainly training students for a career in Research rather than in the industry directly. AUTEX is a successful forum for international exchange of researchers, but mainly attracts students from Southern and Eastern Europe to countries with a well funded PhD system. At the level of graduates, labour mobility also tends to lead to a shift from South and East to the North of Europe, hence exacerbating the skills shortage in those countries. Therefore labour mobility of graduates has clear benefits for the industry in North-Western Europe and the individuals, but does not foster competitiveness of the industry in South and Eastern Europe.

The issue of skills shortage has been only addressed at regional level. Report 5 on Training gives good practices of bridging the gap between training and education, most notably in France, UK and Germany. In Report 2 on Research and 6 the same issue has been addressed from a research and innovation perspective. In Report 3 on SMEs and 4 it was mentioned in the framework of restructuring processes. In general, the industrialists interviewed have merely put the subject on the agenda without coming with tangible recommendations. What comes out of the cases is that the skills issue is not a stand alone question. It is related to work conditions and social dialogue, to the institutional imbedding of education and to image. The image question is raised most often as a “usual suspect”.

However, in reverse order image is not a stand alone factor. The HLG in its 2006 Vision 2020 clearly signals that image actions are ineffective if the industry generates a stream of bad news. Image problems are clearly less present in countries without substantial restructuring in the last 10 years (e.g. Netherlands and Scandinavia). The UK and Germany have been able to expand the number of students despite restructuring, but by focusing on the growth segments technical textiles and fashion design. The question could be raised if image as an issue should be addressed in an overall media strategy? Isolated actions such as suggested in the HLG such as the media package are too timid and by now obsolete in view of the development of social media. What seems to work is a coordinated plan involving information at schools, open days, traineeships and sponsorships of projects. It also requires a long term effort of schools and companies. Probably the most important factor is to create an advantage for schools to expand their student enrolment. This is linked to the system of funding of education. We have seen many schools without a proper incentive system at the level of departments or courses to expand their enrolment. Nor have we found many schools where the process enabling the uptake of graduates in the industry was well organized. Autonomy of education is generally an important success factor behind schools able to increase student enrolment.

4.2.3 MANAGEMENT

Management is a crucial factor in taking up change in the industry. Management has not been explicitly addressed in any report, but all reports have been based on interviews with managers. Hence, this section is also a reflection of these interviews. Of the five major challenges for the industry, presented earlier, four require new skills.

Export oriented strategies require a combination of design, branding, marketing and distribution skills. Innovation oriented strategies require either knowledge of new technological domains, application areas and project management. Sustainability strategies involve the mastering of eco-design methods, and environmental management methods. Supply chain management requires knowledge of ICT and/or E-Commerce and the ability of business to re-engineer processes. Only cost control strategies are closer to current managerial competences even if it requires adequate financial management skills.

Outward orientation is always of relevance and connected to it the potential of sourcing in the company surroundings the adequate resources. In many instances we have seen - in SME's- a connection between strategic changes and a generational shift in management. The older generation brings in depth technical (craftbase) knowledge while the new generation brings about new competences. In larger companies the broadening of competences can be done by recruiting managers with a different profile. In the German (Report 6 on Innovation) case we have seen this best with the influx of specialized ICT managers. In the eastern member states we see the last generations of managers use to the centrally planned economy leave to the benefit of the a younger generation.

In general the generation shift is easier in North West Europe than in the East and Southern Europe. In the latter case family owned businesses are better embedded. The generation shift is also made easier if there are networks of managers that can share experiences. In general we have seen many shapes and forms of networks, inside or across industries, more or less formalized and more or less international. Their development seems to be rather endogenous than structured from outside.

The crisis has certainly impacted on the generation shift. It has given more urgency to transform the business but it has also reduced the resources and indeed speeded up the pace of change. The generation shift, or the recruitment of new management is a delicate process also imperilling the company or weakening it during the transition.

Throughout the six tasks we have addressed cognitive lock-ins, some are entrenched in the skills and routines of all workers and managers, but some could be related to the management itself. In Report 2 on Research and 6, the focus was on research and innovation. While textile and clothing companies excel in incremental innovation, especially responding to fashion cycles, a phenomenon also reflected as non-technological innovation, the rate of companies engaging in more radical innovation is low (probably below 1% of all companies). Both tasks also highlighted limitations in management of research and development and even more general the difficulties for many companies to liaise with research centres and to carry through multi-annual projects. This is not a generic limitation. In most companies which are successful in technical textiles, the management has mastered the skills of technology road mapping, project management, management of IPR and of relations with research centres. Best practices do widely exist, transferability often depends on the attitudes and skills of the receiver, though.

In Report 3 on SMEs, the cases highlight the difficulties companies have to get out of the subcontracting trap and the commodity trap, or even broader to grow out of the SME stage. The fact that many firms stay SMEs shall be connected to external constraints but also to limitations in the span of control or in the skills to align disciplines as different as design, production, sourcing and marketing. Report 3 on SMEs also mentions limitations in management of costs and planning – especially amongst subcontractors – but also lack of (pro-active) understanding of customer needs or negotiating skills. Also the lack of mastering foreign languages is a barrier of communication.

In Report 4 on Restructuring, the management often makes the difference between good and bad practices. As in cases in other tasks, under similar conditions companies react in a different way. Globalization, changing power structures in the value chain are comparable for all companies, but some are pro-active in front of changes and others are reactive. In Report 4 on Restructuring, the future expectations of management are also reflected in their financial strategy. Some clearly milk the profits, others reinvest their profits in the business. However, it is understandable that in a restructuring industry, many shareholders might foster an exit or a redeployment of assets into other activities. However many other industrialists are convinced that to be the “last Mohican” is also attractive. To be one of the few (excellent) survivors in a niche is also a viable proposition.

In Report 4 on Restructuring as well as in Report 6 on Innovation, involvement with end-users, direct engagement with consumers through retail outlets or online often gives new impulses to companies. In the eastern member states a foreign owner often assures the implementation of good financial management and planning and also assure a better involvement in end-markets. A new generation of managers, as experienced for example in Prato but also in other cases brings new skills and often a more international perspective and more awareness of new technologies, in particular ICT. However a younger generation is also less anxious about internationalization, with respect to exports but also with respect to delocalization.

Report 5 on Training makes in several cases the linkage between the skills of workers and managers. There is a consistent correlation³⁰ between the eagerness of managers to learn and their attitude to training of workers. There is often in a generational shift a move from more paternalistic management to collaborative management. At times that work across disciplines is increasingly important, the position of management changes to a more

³⁰ IFM study on qualification needs of 1994 for the EU Commission

facilitating style. The dialogue inside companies and the incitation towards participative management differs also widely.

In Report 5 on Training we have seen that management is at the core of modernized curricula in many design, clothing and textile schools. This means that while a generation of often technically trained managers approaches retirement age, most recently trained managers have more interdisciplinary skills. However, as we have seen specific management education towards the textile and clothing industry is more prevalent in Northern than in Southern Europe. The subcontractor trap is prevalent with companies with a management oriented to production skills. The commodity trap is more prevalent in companies with less engagement in marketing activities and skills.

The management skills and attitudes cannot be detached from the external environment. In the Choletais case (Report 5 on Training) the collaborative attitudes between companies also reflects in collaborative attitudes inside the firms. Innovative companies in Italy, Germany and North Portugal (Report 2 on Research and 6) incite a sense of curiosity and participation in innovation from management down to the shop floor. A client like Inditex, demanding very short lead times for product development and production creates a swiftness and can-do attitude down to the factory level.

A good social dialogue inside companies is more seen in countries with an effective sectoral dialogue or social dialogue at macro-level. Attitudes of defeatism and complains about the adversity of external factors is often more prevalent in clusters with less orientation to collective action. We have not found evidence that an attitude of complaining adverse external constrains, even if justified or emotionally understandable, is leading to enhanced competitiveness. As one association management expressed, entrepreneurs can not ask for a license to continue to operate as ever before.

Hence institutional lock-ins may reinforce cognitive lock-ins. However, many entrepreneurs understand the need to react to new challenges and constraints and help in developing the institutions fostering change.

4.3 RECOMMENDATIONS

In this section we highlight the main recommendations of this study that might strengthen the way forward for the industry. More detailed recommendations by policy areas may derive from the separate reports, especially when it comes to innovation, research and training. The focus in the entire study was on regions. This means that many recommendations should be addressed at national/regional level. Who should pick up recommendations is largely a political choice. Whether economic operators should pick them up or public authorities, whether the focus is at the European level or in a spirit of subsidiarity at the regional level could be seen as a political choice. If we allocate a recommendation to a specific actor, we will do this in a perspective of efficiency and effectiveness taking into account the legitimacy already established by some actors.

Export challenges. We have identified the importance of export as a key vector of resistance and growth for the European textile and clothing industry. The strategic importance that the European Union has given to opening up third markets as reciprocity for liberalization of imports into Europe is confirmed by the study. The survey (Report 1) shows that not only tariff barriers have to be addressed but also non-tariff barriers, in particular custom procedures. While the adoption of European standards by third countries regarding e.g. products safety is a positive trend, this would be beneficial to the EU exports if the means of verification are as in the EU when products are put on the market and not at the point of imports. Trade policy is the clear competence of the

European Commission, and the study confirms the pro-active line of the Commission in closely monitoring and fostering opening up of third markets.

- In addition internationalization of textile firms does not only take the form of direct exports but also of direct investment to be close of final markets, licensing and retailing. These approaches are also relevant to take into account in market access by the European Commission. As technical textiles present an important potential for the EU textile industry, the European commission should also foster access to public procurement in third countries.
- More companies have suffered from increased import pressure and more companies have delocalized production, than grasped the potential of emerging markets. Especially SMEs and especially companies in the eastern member states lag behind when it comes to entering third markets. More active export promotion at the level of member states is advised, but also assistance to companies in creating conditions for exports, such as protection of IPR.
- Many smaller member states lack the facilities to promote and support companies willing to export to emerging markets. A coordination role of the EU could be relevant, also because the EU has an expanding network of missions in third markets. In addition access to export credit and export credit insurance is at stake. Companies have mentioned differences between member states and overall a smaller access to export financing facilities in terms of acceptance and financial limits allowed.
- More important for a large number of companies –especially SMEs in textiles and clothing subcontractors in the eastern member states, is to be integrated in value chains that are export oriented such as luxury and design clothing and furniture or in technical textiles. However this is related to assuring that also the value chain in the EU is more effective. However subcontractors shall first have to fully develop exports inside the EU and assure that they are integrated in growing supply chains such as luxury fashion and technical textiles. To organise this, industry clusters and associations should take the lead, possibly with initial financial support from regions/member states.

Innovation challenges. Innovation and research has also been identified as a key area for resistance and growth. Innovation contributes to global leadership (exports) and to opening up of new areas of application. The European Commission has gone far beyond the expectations laid down by the HLG in funding over FP6 and FP7 a large number of projects. Regional funding (ERDF) has contributed to strengthening research capacities. In addition the Interreg program inside ERDF and networking tools inside the CIP and FP7 have strengthened communication and exchange of best practices. However, their contribution to longer lasting alliances has been less decisive. Universities and applied research centres have formed strong networks. The industry has set up a technology platform but due to the industrial and associative fragmentation it does only reach a small number of industrial players. In the run up to Horizon 2020 and the ERDF programming period we would like to recommend that:

- During FP7 almost all action lines dedicated to textiles were SME oriented funding instruments. This means that the most innovative companies with research capacities are at a disadvantage in EU funded research. It also means that the European technology platform, unlike in other industries, is less successful in associating innovation leaders to its work. This compounds the focus in regional/national funding on SMEs. This focus also means that the larger textile firms are less well connected to the great challenges envisaged in Horizon 2020. We recommend addressing this issue in the design of work programs under Horizon 2020.

- However the circle of companies that have demonstrated innovation capacities (in terms of patents or presence at leading fairs) is small, especially in Southern and Eastern Europe. Widening the circle of firms associated to research and innovation is hence a relevant priority for these regions and member states. Networking of clusters (through Horizon2020 or Interreg) can enable the exchange and development of good practices. However a revision of funding priorities (at all levels) is needed as well as bench marks of research institutions that focus on smart textiles, nanotechnology and biotechnology. Although these are important challenges, they are more distant concerns for the overwhelming majority of SMEs that are involved in incremental product innovation, and improvement of industrial efficiency. However more industrial oriented research, e.g. in the 1990s by the EU in the BRITE program has shown to find ultimately their way to industrial and commercial application. Especially (regions in) eastern member states should also provide funding instruments for basic industrial process research and implementation of new production processes. Continuation of bottom-up SME oriented research funding by the EU, and the wider use of Eurostars should be promoted by the EU with member states.
- In regional case studies we have seen disparities in the level of organization of the industry. The triple helix works very well in regions in North- Western Europe, but much less in Southern and Eastern. Institutional legacy plays a role. Structural reform of research and education, towards more autonomy and implication of social partners in the governance, is needed, and this should be a priority of member states. Clustering policies or networking instruments such as developed by the European Union can overcome this legacy. This takes often longer than the duration of a project. Moreover it is also important that clustering and exchange of good practices is ultimately translated in institutions, especially in the governance and funding of research centres.

Environmental Challenges. Although regulation is mentioned, without specific focus as a burden for SMEs, higher demands for products and production processes is seen as positive by innovative companies since it raises the standards and fosters the creation of niches in which European companies can be global leaders. The effect of higher standards could be, although it was not confirmed in the study, leading to a shake out of non compliant SMEs. The findings of this study do support the importance a minimum level playing field across member states that should be closely watched by member states (e.g. market authorities in PPE). Assistance to reaching higher standards can be implemented at regional level. Applied research centres can play an important role in their regions. In some countries funding instruments would help to set up these services.

- Specific attention should be given to Europe as a basis of raw materials. Europe still is a supplier of traditional fibres such as cotton and linen, and has potential to expand as supplier of biopolymer based fibres. Expansion of both supply bases could make Europe less dependant on imported raw materials, foster innovation and improve the ecological footprint of the industry. The potential of EU materials is fragmented over several member states and the alignment of agricultural and industrial actors demand a dialogue across the supply chain but possibly also a more strategic alignment of implementation of agricultural policies, industrial, regional and innovation policies. In view of the fragmentation and weak institutions in the production zones a coordinating role of the European Commission would have added value.

Supply Chain Efficiency. Subcontracting is an important feature in the T&C industry and the textile industry itself is fragmented by production stage. Fragmentation is seen as a main weakness of the industry by the HLG. Fragmentation has rather increased than decreased. At national level, dialogue in the supply chain has been effective in exchanging practices and setting voluntary standards in ICT protocols and in quality standards. However supply chains are increasingly crossing borders in the single market. Dialogues have yet not crossed borders, mainly because of the fragmentation of the industry (and its collective organization). Only where strong leading clients are present (e.g. Airbus of Inditex), standards are imposed on subcontractors.

- We would recommend to foster voluntary standards and dialogues at European level. A one size fits all approach does not always work. In technical textiles, in home textiles and in fashion different legitimacy and priorities are required. In order to organize dialogue in the supply chain competent and legitimate intermediaries at regional level are required. We feel unable to come with a generic recommendation how to set up dialogues at European level. In natural fibres and biopolymers we would recommend an initiating role of the European Commission. In fashion, the HLG has promoted a Fashion Forum, that did not prove to be effective. However the COSME and Worth initiatives may be useful. In technical textiles European technology Platforms may take the lead. On ICT in fashion a coordination action under the Framework Programme may be of use.

Financial Constraints. The financial crisis is an important driver of restructuring since 2008. But this is neither only affecting the textile and clothing industry, nor is it equally affecting the entire industry. While probably one third of the industry is conservatively financed and can sustain a prolonged crisis one third of the industry is very vulnerable to further decline in consumption or tougher credit squeeze.

-Throughout the study we have heard demands of massive financial intervention to improve access to credit or even to strengthen the balance sheet of companies. Such an approach is beyond the financial means of most member states, inconsistent with needed reforms of financial markets and distorting competition. In view of the challenges in export and innovation we would rather advise the European Commission to analysis solutions on fostering exports to emerging markets by improved export credit (guarantee) systems and assuring a level playing field inside the EU. Financial instruments to assist the industrial take up of innovations have been successfully used by regional development funds and could be expanded, e.g. in the framework of an ERANET call in the 2013 NMP work programme, for which a consortium of regions is currently preparing a proposal.

Skills Constraints. The weakness of attracting and forming human potential to the industry is the biggest long term threat to the competitiveness of the industry. In most countries in Europe the number of young people trained for the industry is beyond the medium term needs of the industry, even taking into account current and future downsizing. Both employer associations and trade unions admit that they should involve themselves more in the future of textile education.

- Countries less concerned by a lack of skilled young people, but with good policy instruments, have benefited from a good social dialogue –involving all partners-, autonomy of education institutes, modernization of curricula and image actions. At the highest level of education mobility of workers is increasing. This alleviates specific shortages of skills in countries with higher wages, but worsens the shortages in countries with lower wages. European networking at the level of higher education (e.g. AUTEX) is well established but should be boosted at raising the standards, exchanging practices, fostering pick up of education reform. However the sense of urgency can be enhanced. AUTEX could achieve this by enlarging its scope to all higher education in textiles, clothing and design. It should also fully use instruments such as available under the Leonardo program.

- At middle technical education level actions have to be taken at the level of regions, since geographical mobility of workers is lower and if occurring rather leading to an adverse brain drain. Especially in eastern member states a better social dialogue oriented towards human capital is urgently required. Sectoral skills councils have prove to be working in France, Germany and the UK. A European sectoral skill council could enable to transfer the lessons learned to other countries.

Organization constraints. The industry is confronting the challenges of the 21st century with an industrial organization and representation inherited from the 20th century. The industry has become too small to sustain a complex and fragmented representation by subsector, theme and region. Throughout the themes addressed in this

study (research, development and innovation, restructuring and support to SMEs, training and education) the fragmented organization of the industry is the solution and a major problem. What is urgently needed are organizations with a legitimacy in the industry enabling horizontal policies and able to develop actions, provide services, generate projects. This requires industry associations to transform from lobbying organisations to full service providers.

- Industry associations should consolidate at national level. This is primarily the responsibility of the industry itself, but members states can promote that industries speak with one voice, and foster consolidation by granting subsidies for industry wide representative bodies. Cooperation between association in development of competences and services is also a national responsibility. However EURATEX could develop itself more towards a forum to promote higher professionalism at industry associations.

- A better exchange and pooling of skills is needed throughout the industry to improve competitiveness and response to restructuring. Studies on industrial restructuring were largely made in the 1970s and 1980s. Consultancy firms assisting restructuring processes have largely diversified to other services. Especially for those countries engaged in restructuring for the first time, a pooling of research and assistance could be proposed. Whereas textile technology research is bundled in AUTEX, such a bundling does not exist in economic research disciplines in textiles in Europe. The only established network of research on economic changes in textiles is animated by Duke University. The Textile Research Group within the International Geographical Union has been discontinued as was the economist group within the Textile Institute. The last academic conference on restructuring in the textile industry was in 2004. It would be advisable to promote networking of economists and associated researchers, this could start at the initiative of the European Commission and could be integrated into AUTEX.

- The institutional context is an essential element in assessing the transferability of partnerships. The Rhineland model, such as existing in Germany, is especially apt at fostering social dialogue, intense cooperation between research and industry and exchange of practices between firms. The more market oriented models existing in the U.K. and many eastern member states are not fostering institutions that can be qualified as partnerships. In some member states, public interventions in fostering clusters have been successful, e.g. in France. Intermediate organizations (associations, research centres) have an essential role in promoting competitiveness and developing capacities to respond well to horizontally developed support policies. A working triple helix is an important condition at regional and national level to foster competitiveness.

- Whatever themes have to be addressed, regional clustering is important to promote innovation, to align research agendas of universities to industry needs, to develop adequate training programs and promote e.g. dual training approaches, or to promote voluntary standards in ICT exchange or quality. A European skills council, or dialogues in supply chains can only be beneficial to regions that need it most if competent regional agencies/networks exist. Member states should foster such clustering in the large textile regions. This clustering does not need to be limited to textiles but to industries with comparable challenges and structure (e.g. footwear, furniture). Strong regional clustering is also needed to organize dialogue between regions. Current networking instruments of the EU have proven useful to engage in such dialogue and should be continued.

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