



TEXTILE & CLOTHING KNOWLEDGE ALLIANCE



WP6

MULTIMEDIA DISSEMINATION CAMPAIGN

THE DECALOGUE FOR FUTURE TEXTILE AND CLOTHING SMES - MOTIVATIONAL GUIDELINES FOR COMPANIES

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1. INTRODUCTION

Nowadays, the textile sector increasingly often applies the results of research and their implementation in the strive for manufacturing hi-tech products and goes away from traditional manufacturing technologies and techniques. Changing circumstances force the businesses in the textile and clothing (T&C) sector to introduce new management methods and to take a new approach to market-related issues. The challenges facing the textile industry can be successfully addressed if we combine innovative solutions, marketing and new technologies. The future of textiles consists mainly of novelty solutions, such as, e.g. intelligent textiles and nanotechnologies.

Almost 90% of the enterprises from the textile sector introduce innovations independently, without entering into cooperation with other entities¹. In order to improve the competitiveness of the SMEs from the T&C sector, they need to collaborate with other entities, with HEIs and R&I centres in the first place.

The development of the T&C sector depends, inter alia, on the following factors:

- potential of enterprises in a given area,
- opportunities for further market expansion,
- planning of employment – increased relevance of technologically advanced occupations,
- textile and clothing production and promotion,
- activity with relatively higher value added and less sensitive to competition with other countries (e.g. making clothes for the upper market segment, introducing new materials or fashion creation),
- new organisational solutions in industry and new management techniques, which necessitate new knowledge, skills and IT tools.

In the T&C sector investing in human capital is of paramount importance.

The clothing industry is dealing with the phenomenon of offshoring (production relocation to countries where costs of production are low), while the textile industry is heading towards technological transformation. There are more and more firms in the market, which apply modern

¹ Data from Prof. Dr hab. Izabella Krucińska „Klaster zaawansowanych technologii przemysłu włókienniczo-odzieżowego. Działania podjęte w latach 2004-2007” [Cluster of advanced textile and clothing technologies. Activities over the period 2004 – 2007]

technologies and automated production lines to manufacture technically advanced, modern textile materials. More extensive involvement of entrepreneurs in practical training will familiarise them with modern production technologies.

Entrepreneurs should engage in sponsoring prizes and internships for students and purchase training equipment for schools. That would improve the attractiveness of learning.

Modern plants need highly qualified people (e.g. engineers) and well-trained technicians.

2. THE DECALOGUE OF BENEFITS

By cooperating with HEIs and research centres SMEs have a lot of benefits. The list below highlights the top 10 motivations:

1) HAVING ACCESS TO UPDATED KNOWLEDGE TO DEVELOP INNOVATIVE SOLUTIONS

Cooperation of SMEs, HEIs and research centres ensures knowledge transfer and enables research aimed at the development and implementation of innovative solutions. Partners share their resources and partnership agreements between SMEs and HEIs open the doors to research and innovative solutions that can be implemented in enterprises.

Agreements between the HEIs and SMEs list mutual benefits of collaboration and specify the expectations of both sides. Textile materials and technologies are key innovations, which may help to successfully face numerous social challenges. The sector of technical textile products supports other sectors by offering them light, durable and elastic materials, multi-functional new technologies and technologically advanced products (e.g. intelligent clothing).

Cooperating with HEIs opens the door to academic and scientific knowledge, research and facilities.

2) ACCESS TO A CREATIVE THINK-TANK

Cooperation between HEIs and companies gives access to a creative think-tank.

Collaboration in research and development includes joint R&D activities, contract research, R&D consulting, cooperation in innovation, joint publications with firm scientists/researchers, joint supervision of Bachelor, Master or PhD theses and projects in cooperation with business.

3) FUNDING INNOVATIVE INVESTMENT IN THE T&C SECTOR (FACILITATED ACCESS TO FUNDING)

Entrepreneurs appreciate financial support to innovation offered at national and EU levels as this is an effective way to encourage them to deliver innovative investments.

EU funds facilitate the investment and development of new activity areas.

In the textile industry the output of traditionally manufactured assortments, especially standard yarns, threads and fabrics, systematically drops. Therefore, enterprises are facing economic hardship. They fear losing their traditional markets, domestically and internationally, to cheap products from Asia. We observe decreases in prices and demands for goods and services. Liabilities are often paid late, there are no resources to invest and the costs of labour remain to be high.

SMEs should take part in meetings on innovations in the T&C sector and access information about the sources of funding investment. Business and science collaboration and the implementation of innovation are preconditions for applying for subsidies from the EU schemes.

4) HAVING ACCESS TO NEW MANAGEMENT IDEAS FOR ENTERPRISES IN THE T&C SECTOR

The competences of the management staff in enterprises relating to the ability to cooperate with research centres and business environment organisations need to be enhanced.

The participation of entrepreneurs in training courses in innovation management techniques (developing an innovation strategy, innovation organisation and culture, ability to manage innovation life cycle and human resources, project-oriented thinking, and the use of ICTs) is critical for building the competitive advantage of enterprises.

Incentives for research workers, transparent remuneration schemes, salaries linked with the efficiency of technology transfer, developing a portfolio of technology patents and partnership in project management will help to achieve the competitive advantage.

Enterprises should be assisted in managing the intellectual property, in particular through patents and trademarks. In the global market, European enterprises from the T&C sector often fall victim to forgery and counterfeiting. The protection of textile machinery, new fibres and processes that offer new functionalities and brands also needs to be reinforced.

Project management as a new management culture in an organisation is little known to SMEs and rarely applied. With a frequently changing market and increasing competition we need to deploy project thinking in managing a firm in collaboration with HEIs, which will provide adequate knowledge about the subject.

5) POSSIBLE COOPERATION IN JOINT VENTURES OF HEIS, RESEARCH CENTRES AND OTHER EXTERNAL PARTNERS, WHICH FACILITATE COOPERATION WITH ENTERPRISES FROM THE SECTOR

Promotion of achievements, the use of consulting services and collaboration with self-government.

Economic cooperation and the development of network links in the T&C sector may take place, inter alia, as a result of:

- setting up clusters in the sector, support to various forms of economic cooperation, improved communication and integration of the business community,
- technology transfer and exchange of knowledge, experiences and staff between science and business,
- supporting academic potential, especially unique research and teaching activities with national and international relevance, enhancing internal-regional collaboration of the HEIs and deepening the cooperation with the economy and administration,
- adjusting the structure of education to the needs of a modern labour market through, e.g., developing vocational education and lifelong learning, offering new courses and focusing on practical skills in education,
- systematic contacts among research centres and T&C enterprises to promote research achievements and to be able to take part in competitions where they can win subsidies for further research or for the implementation of results.

6) IMPROVEMENT OF KNOWLEDGE TRANSFER TO THE T&C SECTOR

In order for any organisation to effectively develop its staff, it must improve their knowledge. Training employees and giving them new skills are fundamental.

As demonstrated by questionnaire studies conducted by The Foundation for Promotion of Entrepreneurship (*Fundacja Rozwoju Przedsiębiorczości*) only one in three HEIs that were interviewed is involved in R&D projects with SMEs and/or research centres from the T&C sector. A similar answer was given by the firms included in the study. Access to specialists with skills needed in new markets, to better skilled labour and to engineers with various competences in textiles enables the innovative growth of a firm.

On the one hand, collaboration of SMEs with HEIs and R&D centres enables to train future staff for the industry in line with the expectations of the labour market and, on the other hand, the HEIs may present their training offer addressed to T&C employees to improve their professional skills and social competence. Business cooperation with vocational schools and practical training centres will help to develop valuable curricula and educational packages and acquire funding for modern laboratory equipment and practical training classes.

Such cooperation enhances the interest in lifelong learning and in attracting new staff to the T&C sector.

It is important for employers to be able to impact the teaching content and organisation of practical training and to share the responsibility for the approval of professional skills in their respective industries.

Business and education (HEI) collaboration in the organisation of practical vocational training and internships for graduates gives the opportunity to acquire work experience in the course of learning and to employ an experienced worker upon the completion of her/his education.

7) DEVELOPMENT OF ICT TECHNOLOGIES IN THE T&C SECTOR

Common application of CAD technology with 2D, 3D and 4D software in the clothing industry increasingly reduces costs of production preparation as it, e.g., simplifies designing by ensuring 3D visualisation of created shapes, design and implementation of new patterns for fabrics and clothes.

We observe the development of virtual integration of organisations, virtual businesses, innovation centres and jobs.

In the textile industry effective management of information through the improvement of supply chains and the development of virtual networks have become the key to maintain competitiveness in manufacturing small batches and reduce delays in production.

E-commerce between enterprises is in practice limited to large enterprises in the sector. This is where the main benefits of the application of ICT cumulate.

Trends force out close collaboration with the HEIs and transfer of IT innovation, in particular to SMEs, as well as promotion of products through new ICTs and social media.

8) INCREASED CORPORATE SOCIAL RESPONSIBILITY (CSR) AMONG FIRMS FROM THE T&C SECTOR

Together with increasing environmental awareness of the society requirements vis-a-vis SMEs with respect to environmentally-friendly practices increase. Customers are more and more interested in products and services that meet stringent environmental standards.

The development of finishing textiles aims at the reduction of environmental threats (reduced water consumption, less sewage and elimination of harmful substances). Protection of the consumers, their health and the environment by the SMEs contributes to increased sales.

Trainings on CSR and environmental management methods improve the awareness and efficiency of operations in the area of environmental protection.

9) MULTIDISCIPLINARY APPROACH TO COMPLEX PROBLEMS

Tomorrow's leaders must tackle challenging issues across different disciplines.

Multidisciplinary cooperation in an involved and creative team can push the frontiers of knowledge. It will be a powerful engine for innovation and economic success.

Cooperation with HEIs means facilitated access of companies to a trans-disciplinary approach. This will enable entrepreneurs to understand the complex problems which T&C companies face in a competitive market and also will provide them with innovative solutions.

For the reasons mentioned above the university-industry collaboration is tremendously beneficial to the success of companies and in a long-term perspective also for the whole economy.

It should also be emphasised that the most productive collaboration is a strategic and long-term one.

10) IMPROVED IMAGE OF THE T&C SECTOR IN THE LABOUR MARKET

Training staff in enterprises in cooperation with HEIs is an incentive when recruiting new staff. It reinforces the team spirit and helps in maintaining the required level of employment. Offers of training courses and internships improve the firm's position in the local community and its image in the labour market.

3. CONCLUSION

In the textile and clothing industries the percentage of enterprises that invest in innovation is low compared to other sectors of manufacturing.

The main obstacles to innovation (according to the data from the Central Statistical Office of Poland/questionnaire studies among entrepreneurs from the T&C sector) include:

- too high costs of innovation,
- lack of financial resources in an enterprise and lack of finance from external sources,
- uncertain level of demand for innovation and a market depending on dominant enterprises,
- difficulties in finding partners for cooperation, which were considered a serious obstacle to innovation activities.

Technology transfer from R&D centres to manufacturing enterprises facilitates the flow of knowledge, information that helps to identify areas for potential collaboration and possibilities to work towards introducing innovative solutions. Science and industry collaboration is a must to create innovations that respond to the needs of concrete operators.

Innovations can be created in the area of product innovation by the exploitation of knowledge and solutions from various industries and combining them simultaneously and skilfully with traditional and natural raw materials used so far in the production of knitted goods and fabrics. The above refers mainly to research areas, such as²:

- nanotechnology (searching for new functional materials),
- biotechnology, the use of polymers (more and more often of natural origin in medical and biodegradable materials, also in materials that enhance waste decomposition),
- microelectronics and robotics, which reinforce the development of textronics.

Based on the above areas intelligent textiles can be obtained that combine textile industry, electronic engineering and IT supported with metrology, automatics, and textronic textiles³.

Education is crucial for the development of the T&C sector: universities and higher technical institutions that offer courses in textiles, man-made plastic and elastic materials.

There is a close link between the use of skills in a firm and its productivity. Employees are not engaged enough in what their company is doing, their creativity is not enhanced and their skills and competences are not improved. To achieve the maximum effect of business benefits, trainings are needed. These trainings should be targeted and focus on the needs identified in the strategy of the organisation in question.

² Euratex, The Future is Textiles, Brussels 2006

³ <http://www.lorisplus.pl/> z dnia 2007-12-10

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