

**IN-DEPTH ASSESSMENT OF THE SITUATION
OF THE EUROPEAN FOOTWEAR SECTOR
AND PROSPECTS FOR ITS FUTURE DEVELOPMENT**

(CONTRACT NO ENTR/2010/16, LOT 2)

Task 2: Research and Innovation Centres

Final Report

prepared for
DG Enterprise & Industry

RPA

November 2011

EXECUTIVE SUMMARY

In response to the challenges it currently faces, the footwear industry needs to continuously invest in R&D, in order to use innovation to maintain and raise its market share and deal with competition.

The footwear sector can benefit from both process and product innovation. Innovation of the production process can help to improve the efficiency and effectiveness of production. It has also invested in the development of new materials, especially in the fields of protective and sports footwear. However, the focus is not just on developing new products, but finding ways to maximise opportunities to sell these goods and improving service to the market. Current research themes within the footwear sector are very varied. Key lines of research include customization, environmental aspects as well as the incorporation of ICT technology into design, sales and manufacturing.

Innovation in the sector may arise not only from manufacturers, but also from suppliers and from research institutes. Some of the leading research institutes on material and process innovation within the footwear sector can be found in Europe. A number of research and development projects in the footwear sector have received funding from EU framework programmes for research and technological development.

Intellectual Property Rights (IPRs) allow entrepreneurs and enterprises to retain ownership of the inventions they create. Currently registered footwear-related patents cover all stages of the production process, from design and material composition through management systems and technological innovation to environmental technology. While research centres and large manufacturers usually register for patent protection on their innovation, small companies are increasingly regarding patents as an ineffective way to protect research and innovation results. Footwear enterprises, especially small and medium sized enterprises indicated that they are reluctant to patent their innovations due to the high cost and administrative burden this entails and a lack of faith in its effectiveness, given the high rate of counterfeit goods.

Case Studies

In response to the challenges the footwear industry is facing, the European Commission has contracted RPA to undertake an assessment of the situation of the footwear sector in the EU and prospects for its future development. Task 2 of the study focuses on Research and Innovation Centres and aims to explore best practices in transforming R&D outcomes into marketable products, the related success factors and difficulties, as well as options for potential future development. To complete this Task, case studies were undertaken in three regions:

- *Italy: Lombardy (including CIMAC: the Italian Centre for Footwear Application Materials; INDACO: the Industrial Design, Arts, Communication and Fashion Department of the Politecnico di Milano; and ITIA: the Institute of Industrial Technology and Automation of the National Research Council);*
- *Spain: Valencia (focused on INESCOP, the Technological Institute for Footwear and Related Industries); and*
- *France: Rhône-Alpes (covering CTC, the Centre Technique du Cuir, Chaussure, Maroquinerie).*

In each region, we carried out interviews with the key research centres, to understand their approaches to R&D and the mechanisms they have in place to transfer R&D outcomes into marketable products. We also held discussions with businesses within the case study regions to understand how they make use of the Research Centres' work (the experiences of businesses with the implementation of research and development will be explored further under Task 6 of the study).

The research institutes in the three regions are quite different in the way they are structured and funded. However, all the institutes face similar challenges and have developed similar approaches to addressing these.

Transforming R&D into Marketable Products

The research institutes use a variety of different routes to transform the results of their R&D activities into marketable products. These include:

- *collaborative projects, involving industry throughout the R&D process;*
- *granting of licences to use the technologies developed;*
- *publication and presentation of R&D outcomes;*
- *training of company staff; and*
- *involvement of research institute staff in companies.*

The drivers for innovation, and hence for transforming R&D into products, are similar for all three regions. All research institutes agreed that these drivers include:

- *the need to increase efficiency to remain competitive in the face of increased competition;*
- *adapting to rapidly changing market requirements, including frequent changes in collections (fast fashion) and increased consumer desire for customisation;*
- *increasing exports, to compensate for shrinking national markets; and*
- *the growing importance of environmental issues.*

All of the research institutes indicated that a high proportion of their R&D outputs resulted in marketable products or processes, although they are not necessarily able to quantify the exact proportion. The research institutes provided examples of their success in developing successful R&D outcomes in a number of areas, including

development of specific types of footwear, improvements to materials, design and customisation and training. A significant area of success cited by the research institutes is in helping to develop synergies between universities and local businesses to the benefit of both.

Each of the institutes has been granted patents for innovations, which can then be taken up by industry. However, only a small proportion of the R&D outputs of the research institutes result in patentable intellectual property. This is primarily because of the very practical nature of the research on which the institutes focus, but also reflects concerns about the cost effectiveness of patents.

The institutes identified a number of areas of research and development which they expect to become more significant in future. These include:

- environmental aspects and sustainability;*
- supply chain co-ordination in a fast-paced environment;*
- customisation of footwear to consumers' demand; and*
- the use of information technologies throughout the supply chain;*

Key Success Factors and Barriers

Despite the differences in their structure and functioning, the research institutes cited similar success factors in ensuring the transforming R&D outcomes into products. These were:

- working closely with industry throughout the R&D process; and*
- the availability of financial support.*

A strong partnership between industry and research centres was seen as vital to encouraging innovation. Industry participants need to give guidance and set the direction throughout a research project in order for the outcome to be relevant, applicable and successful.

Different levels of financial support for innovation are available in the three regions. All of these are recognised as providing valuable assistance to companies wishing to innovate, but the research institutes identified a number of problems with existing schemes.

The institutes also identified a number of barriers to the uptake of innovation. The key ones were:

- difficulties in interacting with smaller firms;*
- a lack of finance;*
- a shortage of appropriately-trained staff; and*
- the short timescale to which companies operate.*

Most of the research institutes indicated that it was more difficult to work with smaller firms and to encourage them to adopt innovations. Small companies often

find it difficult to participate in collaborative projects due to their limited resources and time availability of their staff (they do not have specialists devoted to the area of research). SMEs do not necessarily approach research institutes for support and collaboration but rely on their own resources for innovation.

Shortage of finance affects both the research institutes themselves and the footwear companies which could potentially benefit from their R&D output. Financing new ideas is becoming more and more difficult. The availability of appropriately-trained young researchers is one of the biggest barriers to implementation of R&D outcomes.

The focus of small firms in particular is on meeting the requirements of clients for rapid delivery of new products to the market. Longer-term and more groundbreaking projects are therefore less likely to be of interest and, instead, industry will favour short timescale projects, which will deliver practical results very rapidly.

Conclusions

The key conclusions of the study are that:

- there are active programmes of research and development under way in all of the regions examined, delivering a wide range of different innovative outcomes;*
- the research institutes have different structures and models of financing. The fact that they have evolved similar ways of working with industry despite their differences indicates that this is probably the most efficient approach;*
- all of the research centres work very closely with industry partners at regional, national and, in some cases, international level. This close collaboration results in the rapid uptake of research results by companies;*
- involving smaller firms in such collaborative projects is more difficult, because of their limited financial and staff resources. Research institutes are very conscious of this problem and are seeking a range of methods to address it;*
- the increasingly short timescales to which the industry operates, and the tight financial situation, means that most of these innovations represent incremental improvements rather than major breakthroughs;*
- larger-scale and longer term projects are more difficult to finance and harder for companies (other than the largest players) to participate in. EU funding has helped to develop such projects, though stakeholders have found them difficult and time consuming to manage;*
- despite the apparent successes in transferring the results of R&D into marketable products, the industry continues to face significant challenges. The research institutes all agreed that more needs to be done to ensure the uptake of innovation by the European footwear industry, to help to ensure its long term competitiveness.*

Recommendations

The key recommendations from the study are:

- *Research institutes need to continue to work closely with industry at regional and national level;*
- *R&D should continue to focus on the range of issues of concern to the industry. This includes not only innovation in materials and production processes, but also in customer services and marketing;*
- *Collaborative projects with industry are likely by definition to be relatively short timescale and incremental. The EU should continue to focus its funding, therefore, on longer-term and more ambitious projects, including smaller-scale but still ambitious projects, involving fewer partners;*
- *Research institutes should seek further collaboration with SMEs. Approaches such as working with clusters and developing personal contacts could be explored further. This issue is explored further in our report on SMEs (Task 3);*
- *National and regional incentives for investment in R&D should be focused and simplified. For example, funds could be directed at SMEs, at particular regions or at particular problems faced by companies;*
- *Research collaborations between the main research institutes in Europe in the future could be directed at the utilisation of research results and the wider dissemination and integration of innovation into the production processes of small and medium sized enterprises; and*
- *The Commission could encourage greater exchange of experience by promoting activities such as the European Footwear Products and Processes Technology Platform, to reduce overlaps and duplication in research.*