

Zofia Wysokińska

University of Lodz,
Faculty of Economics and Sociology,
Department of World Economy
and European Integration
ul. Rewolucji 1905 r. 41/43, 90-214 Łódź, Poland
E-mail: zofwys@uni.lodz.pl

Policy of Active Support for Modern Design and Fashion in the Textile and Clothing Sector and Its Influence on Regional Competitiveness (In the Global, European, and Regional Contexts)

DOI: 10.5604/12303666.1167412

Abstract

In order to compete on the European and global markets firms must not only offer high-quality products, they must also offer innovative and attractive designs of their products. Every firm which wishes to compete in the open, contemporary global market should focus on creating innovative projects based on creative designs and ideas put forward by their employees. The European Commission and other international organisations with a global outreach, such as UNCTAD, are concentrating on inspiring regional authorities to develop active policies aimed at assisting firms to become more competitive in this area. It is estimated that the creative sector (including modern design) is a locomotive of economic growth for the entire EU (as well as other highly developed countries), creating over 5% of the EU's GDP and systematically increasing this share. The aim of this article is to present both the global and European policies aimed at supporting modern design and fashion, as well as to illustrate how compliance with the current demands of the market can improve a region's competitiveness.

Key words: active support, modern design, modern fashion, textile sector, clothing sector, regional competitiveness.

■ Introduction

The creative sectors [1]¹ are a locomotive of economic growth for the entire EU as well as other highly developed countries, creating over 5% of the EU's GDP. Innovations in design allow for the creation of attractive and innovative products and services, giving firms in the sector the opportunity to create new sources of revenue and compete in foreign markets. This creates increased opportunities for export, reduces the per-unit cost of goods and permits competitive pricing by the internationalization of production and sales. Specialized innovative activities in clothing design are, together with the implementation of new methods of production, key factors in improving firms' competitiveness and, as a result, that of the economy as a whole. Both large firms as well as small and medium-sized enterprises (SMEs) are taking ever greater advantage of the contemporary improvements in design. In this respect it is important to combine innovative and contemporary product designs with improvements in the methods of their production and product quality, by providing policies of support for firms in the areas

of sales and cost-planning operations with respect to the products and services they offer on the market. This holistic approach requires cooperation between the scientific and higher education sectors in the area of contemporary design and the creation of production projects based on the knowledge economy and the development of contemporary methods and business models. This approach also requires support from governmental institutions at both the central and local levels, with the aim of making better use of both tangible and intangible investments, the latter of which include developing contemporary projects, marketing, improving the R&D sector, and supporting the academic community so as to enable the implementation of research results in practice in the business sector. Contemporary creative design can thus become a locomotive for economic development and improve the competitiveness of firms in both the European and global markets.

In today's economy industrial design has become universally recognised and is used as an important developmental tool in the innovative process. This is particularly true in the case of large industrial companies operating in the global market, which must invest in and take advantage of the results of developmental

research, which lays out the directions of the developmental paths with respect to the creation of new products. This process is also of concern to SMEs however, as they too take part in international trade and exchanges and face the same pressures to adapt to the changing preferences of ever more demanding clients in the marketplace.

The introduction of industrial design categories into production plans and projects has taken place in the advanced market economies of the USA, Great Britain, France, Germany and the Scandinavian countries. This has resulted in clear economic advantages, which include:

- improvements in competitiveness
- increased income from the sales of a given product or products
- an increasing level of innovation in production
- establishing a greater share of the market and positioning a country as a leader
- strengthening of a country's own brand
- improving the quality of products
- developing internal R&D units and project designs
- rationalisation of the means of production and costs

Industrial design is developing systematically, together with the sudden and rapid development of technology.

Industrial design is developing systematically. It is in the process of responding to and adapting to the sudden and rapid development – both quantitative and qualitative - of technology and its influence on markets. The development of industrial design is a visible reflection of the general level of advancement of markets and societies. It plays an active role as a separate economic sector in the liberalised global market of goods and services, and contributes to the economic success and growth of those entities actively engaged in the market processes.

■ Innovation in design

Innovations in design are a visible and obvious part not only of the entire complex of activities by innovative enterprises, but also of the economy as a whole and even the economic policies of governments. To an ever greater extent they are the result of the systemic and systematic work of R&D units of both individual enterprises as well as interdisciplinary collaboration (which includes design projects). These activities require permanence, stability and investments proportional to the results expected. Among the many innovations in design we can distinguish the following:

1. Innovations in the form, shape, and appearance of products. In this area the role of design is predominant. New or modernized products often require completely new shapes and forms which reflect their advanced functions. Such changes and adaptations may be of a 'deep' character, requiring changes in basic construction, or of a 'stylistic' nature, requiring superficial aesthetic modernisation and corrections in terms of shape, colour, etc., while retaining the same basic technical usages and functions and the same share of the market (so-called 'restyling' or 'face lifting')
2. Functional innovations i.e. changing the uses of a product based on ergonomic considerations or consumer preferences. The need for such changes may be the result of new usage concepts or means of exploitation, thinking in terms of both the life cycle of a product and encompassing ecological and social considerations.
3. Innovations which find their source in the 'discovery' of new techno-

logical possibilities, either in terms of construction or the technology of component materials and production processes.

4. Innovations resulting from the needs of the market as determined by research (closely connected with marketing and advertising). These innovations encompass diversification of products, building new markets, and creating new assortments of products on offer. Economic trade and production factors are the impulse for these kinds of innovations. To a certain extent these innovations are a sum of the various elements of the above-described types of innovation.

Besides product innovation, the next area of design activities is participation in the creation of the visual images of brands and trademarks, including the so-called 'visual identification' connected with graphics, colours and their spatial arrangement. Enterprises wishing to achieve success in increasing their market share need to introduce new products (or lines of products) while at the same time investing in their overall image, or more broadly in improving their communications with clients and the market.

Design is an inherently innovative field. Its innovativeness is connected with many, if not most, of the other fields where it is applied. Thanks to the use of innovative designs it is possible to transform ideas into marketable products (the so-called 'commercialisation of ideas'), significantly improving elements of their usage, technology and marketability, thus giving such products an advantage in the highly competitive global market.²

The development of creative sectors, with special emphasis on innovative design – the global perspective.

Creative industries are comprised of activities related to the creation, production and/or distribution of creative goods and services as well as with the integration of creative elements into wider processes and other sectors. Creative industries are sometimes referred to as cultural industries, although the two terms are not synonymous. According to the United Nations Educational, Scientific and Cultural Organisation (UNESCO), cultural industries refer to industries which combine the creation, production and commercial-

isation of creative contents, which are intangible and cultural in nature. The contents are typically protected by copyright and can take the form of either a good or a service. Cultural industries generally include printing, publishing and multimedia, audiovisual, phonographic and cinematographic productions as well as crafts and design [1].

According to the UNCTAD Global Database on the Creative Economy, world trade in creative goods and services totalled a record US\$ 624 billion in 2011, up from \$559.5 billion in 2010.

Global exports of such goods and services as arts and crafts, books, graphic and interior design works, fashion, films, music, new media, printed media, visual, as well as audiovisuals, increased in 2011 - the latest year for which figures are available -- from \$536 billion in 2009 and \$559 billion in 2010. The sector has now exceeded its pre-crisis peak of \$620.4 billion in exports in 2008. The minor decrease in the overall consumption of creative products after 2008 reflected the fragility of the post-crisis recovery in developed countries, mainly due to the rise in public deficits, currency volatility, and high levels of unemployment, especially in the most advanced countries.

The figures released in advance of the 28-29 May Global Services Forum in Beijing show that the exports of creative services (as opposed to creative goods) jumped to \$172 billion in 2011, up from \$163.8 billion in 2010, and nearly tripling the 2002 total of \$62 billion. Part of that increase reflects the fact that more governments are compiling statistics on the creative economy. The core activities comprising creative services include architecture and related services, cultural and recreational services, audiovisual services, advertising, as well as research and development services. As the knowledge-based economy expands around the globe, creative services continue to grow [2].

Overall, the global trade in creative products more than doubled from 2002 to 2011. The average annual growth rate during that period was 8.8 per cent. UNCTAD's creative-economy statistics are based on official national data provided by governments.

Design deals with the creation of functional forms and the appearance of goods. Creative design is expressed in

Table 1. Design: The top 10 exporters among developed economies. Source: UNCTAD, based on official data in the UN COMTRADE database.

Rank	Exporter	Value in millions of \$	Market share, %	Growth rate, %
		2008	2008	2003-2008
1	Italy	23 618	9.76	10.35
2	Germany	16 129	9.67	16.71
3	United States	12 150	5.02	14.25
4	France	10 871	4.49	13.11
5	United Kingdom	7 448	3.08	10.93
6	Switzerland	6 938	2.87	16.09
7	Belgium	4 339	1.79	8.72
8	Poland	3 855	1.59	13.72
9	Japan	3 783	1.56	17.21
10	The Netherlands	3 773	1.56	13.91

Table 2. Creative Goods: Exports, by economic group, 2002 and 2011 (in millions of \$). Source: UNCTAD, based on official data in the UN COMTRADE database

Description	World		Developing economies		Developed economies		Transition economies	
	2002	2011	2002	2011	2002	2011	2002	2011
All creative goods	198 240	454 019	73 890	227 867	123 169	222 597	1 181	3 555
Arts and crafts	17 503	34 209	8 256	10 653	45	172	9 201	23 383
Audio visuals	455	492	417	400	3	2	35	90
Design	14 694	301 262	60 970	127 239	362	1 800	53 362	172 223
New media	17 506	43 744	13 071	28 918	23	219	4 412	14 607
Performing arts	2 754	-	2 478	-	26	-	250	-
Publishing	29 908	43 077	26 061	33 650	690	1 321	3 157	8 106
Visual arts	15 421	31 127	11 916	21 631	31	40	3 474	9456

several ways: through the creation of decorative luxury items such as jewellery, by the uniqueness of a functional service, such as the architectural design of a building, or as utilitarian mass-produced goods such as interior objects. Design products are usually aesthetic and functional creations based on developed concepts and specifications. It should be noted that the definition of design enters into the debate over the protection of intellectual property rights [3].

Design is the largest contributor to trade in the creative industries. In 2011, some \$301 billion worth of designer goods entered into the global market, accounting for over 66 per cent of total exports of creative goods. Interior design products, fashion, and jewellery constituted the key sectors [4].

The main players among the developed market economies in the global market of design products are Italy, Germany, the United States and France, followed by the United Kingdom and Switzerland. Belgium, Poland, Japan and the Netherlands achieved the next positions among the top 10 main exporters among developed economies (see Table 1) [5].

EU policy with respect to the growth and updating of innovation in Europe

As concerns industry, the leading flagship strategic project of the European Union for the years 2014-2020 is the creation of an 'Innovation Union'. Innovation is the basic component for intelligent and sustainable economic development, encouraging social inclusion, jobs growth, and increasing the level of professional qualifications, as well as combating poverty.

The Innovation Union is based on providing support for innovation as broadly understood (improvements in the areas of technology, processing, marketing or organisational aspects), as well as for R&D activities aimed at finding solutions to the actual challenges facing the EU, which include issues such as climate change, limited energy sources and the conservation of natural resources, energy independence, secure food supplies, ageing societies, etc.

The fundamental aim of the Innovation Union project is to liquidate barriers to the development of innovation in order to realise creative concepts for products and services on the EU single market, to improve the currently insufficient level of financ-

ing innovation, and to accelerate the too-slow pace of implementing norms regulating innovation, combat the fragmentation of markets and of R&D projects concerning innovation, and to increase the unsatisfactory level of cooperation between the worlds of science and business.

Developmental plans for the years 2010–2020 concern, *inter alia*, the following activities:

- boosting investment in research and development to 3% of the GDP for the entire EU, which in the opinion of the European Commission would lead to the creation of 3.7 million jobs and increase the annual GDP of the European Union by 800 billion euro by 2025;
- the provision of systematic support for innovative ideas and projects and the creation, by 2014, of a unified European research space with the aim of providing for the free movement of scientific workers, technologies, as well as innovative practices and concepts (the so-called 'fifth freedom of movement');
- stimulating the development of innovation via the creation of a market of pre-commercial public procurements for innovative products and services;
- the development, by the European Commission, of appropriate indicators for measuring the share of dynamically-developing innovative firms in the economy;
- initiation of a research programme concerning public administration and social innovation, including the development and implementation of methods to measure the level of innovation in the public sector in the form of a table of achievements, and supporting the concept of regional development based on 'intelligent specialisations' within the Member States and regions. Intelligent specializations will help unleash the national and regional potential in the field of R&D, the development of which will enable the creation of socio-economic innovations and increase the added value and competitiveness of the economy, and will include the creation of a European Design Leadership Board as well as the creation of a 'Designed in the European Union' label;
- modernising and simplifying the legal norms concerning intellectual property in the EU. In this regard the European Commission places special

emphasis on producing norms which reduce the costs of the EU patent process for SMEs, which are in need of special support in order to effectively protect their intellectual and industrial property rights [6].

European industry accounts for one-fifth of total production in the EU and employs 34 million persons. The processing industries play a key role in taking advantage of the knowledge economy – over 80% of R&D investments in the private sector take place within these industries. The processing industry in the EU generates new and innovative products which account for three-quarters of EU exports, and 99% of the firms in the industry are SMEs, which account for 58% of overall employment in the sector. This leads to economic growth and job-creation throughout the entire EU economy. It is also strictly connected with the service sector, as it creates demand for the business services sector and lays the foundation for the development of service industries.

Fashion and design industries, including textiles and clothing, supply about 8% of the value added in the processing industry, but in recent years they have experienced a low, or even negative growth rate, as well as a relatively slow growth in R&D expenditures. It is of utmost importance that these industries engage in well-thought-out structural reforms. Improvements in innovation, protection of intellectual property, as well as increasing the professional qualifications of their employees are crucial conditions for improving the quality of products offered and diversifying their offers. It is essential that they gain better access to the currently strongly protected world markets

The textile and clothing industry in Europe is varied and fragmented. It encompasses many areas of activity – from the processing of fibres into yarn and textiles to the production of a wide variety of products such as synthetic yarns produced using new technologies, wool, bed linen, industrial filters, clothing, and so on.

This sector is an important part of the European manufacturing industry, playing a fundamental role both in the economy as well as in the social well-being of many EU regions. According to the available data for 2006, the sector encompassed 220,000 firms employing 2.5 million per-

sons and generated a turnover of 190 billion €. The share of the textile and clothing sector in the combined value added of the European manufacturing industry totalled 3%.

Following the decline in exports in the 1990s, they rose in the first decade of the twenty-first century and reached 35.7 billion € in 2008, with Russia being the main export market for EU textile and clothing (T&C) products (11.9% of the total export), followed by Switzerland (11.7 %), the USA (10.7%), Turkey (5.6%) and Tunisia (5%). Morocco and the Ukraine were also important markets for European T&C products. Altogether, 15% of EU exports are concentrated in the European Mediterranean area, where the industry is based on a well-developed outsourcing strategy. Imports of T&C products also grew, reaching 79.2 billion € in 2008. The main suppliers of imports were China (39% in terms of overall value), Turkey (14%), India (7.7%), Bangladesh (6.3%) and Tunisia (3.6%) [7]³.

Fashion & design policy in the European Union, with special reference to the modern T&C industry

The position of creative industries in Europe, including industries based on modern design, is characterised by a high level of diversity in their concentration in particular countries, as can be seen in *Table 3*. It shows that the leading European countries in this field are Luxembourg, Denmark, Holland, Great Britain, Sweden, Finland, Cyprus, and Estonia.

Below the main recommendations proposed by the Leadership Board, attached to the main documents of the European Commission- DG Enterprise and Industry, are presented, positioned across the six areas of the EU policy and **strategic design action**.

STRATEGIC DESIGN ACTION 1 Differentiating European design on the global stage

It is recommended to:

- Identify and strengthen existing ‘European centres of design excellence’ in business and industry as well as provide means for them to collaborate in open networks that drive innovation into Europe’s whole industrial ecosystem.

Table 3. Concentration index values of creative industries in the EU. <http://www.emergingindustries.eu/maps/europe/all/cre.aspx>

Luxembourg	1.71
Denmark	1.69
The Netherlands	1.64
United Kingdom	1.58
Sweden	1.52
Finland	1.19
Cyprus	1.15
Estonia	1.12
Germany	1.09
Latvia	1.05
Romania	1.05
Hungary	1.03
Belgium	1.01
France	0.97
Slovakia	0.95
Slovenia	0.94
Italy	0.93
Spain	0.92
Greece	0.87
Poland	0.84
Austria	0.81
Lithuania	0.8
Malta	0.79
Portugal	0.79
Ireland	0.76
Bulgaria	0.68
Czech Republic	0.51

- Promote the increased use of design in European industry to encourage synergies in support of economic growth, environmental regeneration, and the raising of social and emotional value, whilst respecting the need for renewable and endogenous resources.
- Create a ‘Designed in the European Union’ label in connection with the European ECOLABEL to stimulate the export of design services. The aim is to make the protection and enforcement of European design and innovation more effective and accessible, whilst at the same time raising the bar for expectations and associating excellence with sustainability [8].

STRATEGIC DESIGN ACTION 2 Positioning design within the European innovation system

These recommendations focus on supporting more effective policy development for design through access to indicators and measurements of design’s impact on the economy, on return on investment (ROI), and on the environment, through gathering valid, comparable statistics on design as an economic activity within the existing EU statistical framework. Design is to be included in the programmes of innovation and business incubators

across Europe, making them more aware of it. The opportunity to disseminate emerging design methodologies, such as Open Design, is to be supported. Design in innovative public procurement is addressed as a key strategic area and the role of design management is presented as a key management tool and process to improve the quality of design across Europe.

STRATEGIC DESIGN ACTION 3

Design for innovative and competitive enterprises

These recommendations focus on strengthening the already-existing design excellence within the large design-led companies of Europe, on maintaining Europe's design leadership where it is strong and on the ongoing development of the next generation of Europe's design-aware top leaders. They address the opportunity to support those medium-sized companies with ambitions to grow, through design innovation, into large, design-led companies. Furthermore they seek to harness the knowledge and expertise that resides in larger companies to the benefit of Europe's SMEs. The specific design innovation needs of SMEs are also considered, particularly with regard to the opportunities afforded by easier accessibility to the programmes of Horizon 2020. The contribution of design innovation to job creation and its role in light of the new forms of production, including the 'Future Factory' are addressed, as is the emergence of a next generation, 'Modern Craft' for Europe, whereby design needs to be more widely embedded in Europe's vocational education systems. The rapidly changing context for manufacturing and production is highlighted and the need for Europe to stay ahead of new and emergent processes and methodologies is emphasised as critical to its future success.

STRATEGIC DESIGN ACTION 4

Design for an innovative public sector

These recommendations call for the widespread development of more innovative public procurement through raising awareness of design in policy-makers in the public sector, including the Commission. They aim to provide more support in facilitating the better integration of designers into the public sector environments, thereby enabling them to engage more closely in public-sector policy and service development, as well as by attracting support from Structural Funds for design innovation for social change.

The development of guidelines, support materials and continuing professional and executive education in good practices relating to design, in both procurement and policy, is also recommended.

STRATEGIC DESIGN ACTION 5

Positioning design research for the 21st century

Design research is a vital strategic tool for the improvement of Europe's design innovation capacity. Recommendations are presented to embed design research and its methods and approaches more fully into the EU Research Programmes, to establish ongoing evaluation of design's value within Horizon 2020, and to create a European design research network serving the design innovation needs of business, industry, the public sector and society.

STRATEGIC DESIGN ACTION 6

Design competencies for the 21st century

These recommendations call for the development of Europe's competencies in design innovation as a key strategy for promoting growth and jobs. Within the context of continuous and life-long learning, they address the need for the inclusion of design learning in the general education of all the citizens of Europe, as well as within Vocational and Higher Education. Maintaining Europe's leadership position in the design sector is addressed through meeting the future competence needs of the design professions, as well as improving the design competence of leaders and entrepreneurs of the future.

Main directions of European policy with regard to modern design

In 2020, design is to be fully embedded in the European innovation system and recognised as a significant factor in enabling sustainable growth for increased prosperity, well-being and competitiveness. Sophisticated design innovation behaviours and practices are to be prevalent in the societies and economies of Europe and contribute at a fundamental level to the quality of life.

Ecologically and socially-responsible, people-centred products and services are a strength of the European economy. Global markets understand, desire and use products and services that are ecologically and socially responsible and

people-centred. Europe's design innovation competence therefore enhances the competitiveness of European industry in the rapidly changing and increasingly competitive markets.

The main directions of the policy are presented below:

- responsible European design plays a central role in strategic decision-making in a majority of enterprises, especially small and medium-sized enterprises and in traditional businesses that lie outside the creative sectors.
- in Europe's enterprises and organisations, the systematic and strategic use of design, anchored in principles of sustainable growth, contributes to social and environmental well-being, whilst offering them new perspectives and new market opportunities, both locally and globally.
- many companies relocate their (industrial) production in Europe, thereby fostering more highly-qualified jobs within Member States. Across all sectors, many enterprises and organisations apply innovative Open Design methods.
- design is recognised by entrepreneurs and investors as having an important intangible value as well as being a tangible asset of enterprises.
- design in the public sector contributes to the rapid development of public services that are user- and environmentally-friendly, economically responsible and accessible to all.
- design is mainstreamed into the processes of policy-making at European, national, regional and local levels in order to solve complex local and global challenges as well as contribute to the European quality of life.
- Europe is known and internationally recognised as a design economy/society.

Design and the economic development of regions, using the example of the Łódź region and its fashion and design industry in the T&C sector

Modern design can be a significant engine driving the economic development of a region and, as a consequence, of a country as a whole in strengthening its competitive position in both the European and global. During the first half of the 1990s, the textile and clothing industry occupied a prominent position in

the Łódź region, owing primarily to the engagement of firms in so-called 'refinement processing', in other words in non-brand production for Western European firms. During this time Poland became the number one supplier of men's clothing and number two supplier of women's clothing in the German market as well as maintaining a strong position on other Western European markets. However, owing to the influx of strong competition from Southeast Asia and Turkey, this branch of industry underwent a dramatic collapse at the end of the 1990s, notwithstanding having gained full access to the European market in 1996 [9]⁴.

The share of participation of the Łódź region in overall Polish imports and exports in the years preceding Poland's accession to the European Union oscillated at about 4%. However, the value of exports and imports per inhabitant of the Łódź region was significantly below the national average, at a level of approximately 555 USD per inhabitant for exports (the national average was 934 USD) and 836 for imports (compared to the national average of 1301 USD) [10]⁵.

Among the groups of goods exported from the Łódź region, the strongest position was occupied by clothing and clothing accessories (57% share in Polish exports), followed by textiles (8.2% share), aluminum and aluminum products (7.6%), dairy and other food products (6.3%), equipment, tools, cameras, optical and medical apparatuses (5.1%), iron and steel (4.4% share), machinery and electrical equipment as well as equipment for video and audio recording (4.3%).⁵ However, a steady decline in the position of light industry, including in the clothing and textile industry, was noted in the Łódź region, particularly after Poland's accession to the EU. This fact was a result of the combination of increasing costs of labour in Poland and increased competition, both from the new EU member states as well as from third countries, in particular Turkey and the countries from Asia and North Africa. These factors also caused the Łódź region to fall in the ranking of Polish regions in the first years after the accession to the EU. However after the year 2008 an improvement of this position was noticed, from 10th place in 2008 to 8th 2010.

At the same time however, global trends in the trade of textiles and clothing products clearly reflected a growing trend⁶.

Increases in both imports and exports were incrementally recorded in Poland to both EU member states and the USA. According to data from GUS (the Central Statistical Office of Poland) the textile and fashion industries both recorded systematic increases in the volume of foreign trade with EU countries from the year 2000, although their share in Poland's overall foreign trade systematically declined, both in terms of imports and exports.⁶ Overall imports in Poland in 2011 (in millions of euro) were 6,592, with imports of textile and fashion products constituting 7.5% of overall Polish imports in the year 2000, then declining to 3.3% in the year 2010 and 3.1% in the year 2011. Overall exports in 2011 (in millions of euro) were 4,375, with exports of textile and fashion products constituting 10.7% of overall Polish exports in the year 2000, then declining to 3.6% in 2010 and 3.5% in 2011.

Position of the textile & clothing industry based on modern fashion and design in the strategic documents for the Łódź region

In the strategic documents for the Łódź region and municipality of Łódź, the textile & clothing industry practically did not exist until its growing position was noted for the year 2013, when both the Aktualizacji Strategii Rozwoju Województwa Łódzkiego [Adjustment of the Development Strategy for the Łódź region] and the Projekt Regionalnej Strategii Innowacji dla Województwa Łódzkiego *LORIS 2030* [Strategic Innovation Project for the Łódź region *LORIS 2030*] (noted on pages 82 and 20 respectively) recognise the significance of 'the contemporary textile and fashion industry (including design) among the five leading branches of the region's specialisation by the year 2030.'

A recalibrated textile industry based on modern technologies, with its development supported by European Union funds, and aimed at increased innovativeness and the creation of an industry based on the latest fashion trends and most modern designs, can become a locomotive of economic development in Poland in the upcoming years. However, it must be supported by an effective innovation policy at both the national and regional levels, including in the Łódź region.

Firms in the industry should be oriented, above all, towards reducing their operational costs by increasing their scale of production and internationalising themselves in both EU and global markets. This requires that they incorporate and implement the latest technologies relating to textiles (new, innovative fabrics) and stay abreast - or better yet ahead of - the latest trends in fashion and design.

According to The Global Competitiveness Report, Poland currently occupies 42nd position in the world in the assessment of its competitive indicators [11]. It is deemed to be a country aspiring to belong to the group of leaders, but is currently separated from that group mainly owing to its low innovativeness indicator, whereby Poland ranked only 23rd among the 27 (at the time) EU member states compare [12].

Obviously the clothing and textile industry must increase its innovativeness, which is considered to be the main factor for improving its competitiveness. It can only accomplish this by increasing outlay on R&D and the commercialisation of technologies developed.

In the Updated Sectoral Overview, European Industry in a Changing World (2009) the European Commission presented a diagnosis of the situation in 32 sectors of European industry, as well related service sectors. The diagnosis of industrial sectors included an assessment of their competitiveness with respect to partners and competitors from outside the European Union. It included an assessment of Poland's clothing and textile sector, whereby Poland was included among the countries with a significant and growing sector in Europe, alongside Bulgaria, Greece, Austria, and Italy, while the positions of France, Great Britain, and Ireland were found to be declining.

A textile industry based on innovative technological components should be among the main engines of growth for the Polish economy [13 and 14]. In research based on the Delphi Method in the Programme *Foresight, Innovative Technologies for the Textile Industry*, it was assumed that the basic criteria for assessing hypotheses concerning research technology is an assessment of the chance that they will create, in the short- or long-term perspective, a significant competitive position in the international arena. The justification is that invest-

ments should be made in those technologies which can become competitive not only in the national market, but also in the international globalized market at a time of the lowering of both tariff and non-tariff barriers to international trade, and in particular in light of their total liquidation with respect to member states in the European internal market.

Hence there is a great need for the development of policies supporting innovation in Poland's domestic textile industry, as well as in the fashion and design sectors, in order to produce attractive and modern designs which will give Polish firms a competitive advantage.

It should also be added here that, according to UNTAD data, Poland attained the 8th position among the highly developed countries as a group of leaders in the global design market in 2008, which allows for an auspicious prognosis concerning the future of both Poland and the Łódź region in the global design market [15]. It is therefore necessary to develop policies with respect to innovation in the textile industry (particularly the production of innovative fabrics and modern design patterns) which are based on such instruments as:

1. The creation of national and international consortiums able to compete and obtain large international projects;
2. The creation of clusters and networks among higher education institutions and/or research institutes and companies and financial institutions capable of financing large projects;
3. Improving the regulatory framework (eliminating legal and administrative barriers for companies engaged in innovative activities);
4. Creation of trade networks and their internationalization so that they can compete in both European and global markets;
5. Development of an R&D infrastructure capable of supporting innovation;
6. Developing international cooperation and internationalising enterprises;
7. Promoting and enabling cooperation between the science and business sectors as a condition for improving the innovativeness of enterprises;
8. Guaranteeing the protection of intellectual property;
9. Improving standardization regimes and making them more transparent.

The strategic directions of future activities which result from the Developmental Strategy of the Łódź region until 2020 [Strategii Rozwoju Województwa Łódzkiego do roku 2020] (connected with the provision of support to the creative sectors and sectors based on fashion) include [16]:

- 1) The development of modern technology aimed at intelligent specialisations and regional development of R&D by, *inter alia*, the construction and development of solid foundations for scientific research into the regional economy, stimulation of applied technological research aimed at meeting the needs of the regional economy, supporting research and modern, strategic technological development aimed at the development of intelligent specialisations at the regional level, the creation of channels and mechanisms for the diffusion and commercialisation of research results, providing support for projects with a practical application realised by institutions of higher education for business entities, and propagating 'good practices' in the sphere of cooperation between R&D institutes and enterprises.
- 2) Developing new and modern technologies (biotechnology, nanotechnology and the development of advanced materials such as, *inter alia*, mechatronics, communication and digital technologies) for key regional industries (**in particular the textile industry based on fashion**) as well as the energy, medical, pharmaceutical, cosmetic, agricultural-foodstuff, furniture, construction materials', machines and electronic machinery, and **eco-industries**), by providing support to innovative enterprises and facilitating diffusion processes for innovative solutions to economic problems, initiating entrepreneurship and spreading knowledge and information about modern technologies, their significance, and their possible applications in key regional industries, and promoting entities using such modern technologies.
- 3) Development of specialised services (e.g., health services, eco-services, logistics, BPO, and IT) using modern and intelligent technology, in particular providing support for the following: development of the healing arts and specialized medical services;

development of specialized clinics, including cardiology, oncology and other societal diseases, as well as transplantology, training of specialized medical personnel for geriatrics, development of palliative and emergency medicines; the implementation of other innovative solutions in the field of public health, including supporting **the development of environmental services (e.g. recycling, services limiting environmental risk, pollution, dust, harmful waste and the depletion of natural resources)**; the development of technologies connected with logistical services, accounting and information services for enterprises;

- 4) Development of the creative industry (e.g. the film and music industries, project and design, media, etc.) by, *inter alia*: supporting the implementation of new technologies, supporting creative activities concentrated around the media, film, and music industries, promotion of industrial design projects, propagation of 'best practices' in the application of modern designs and projects related to the economy, the development of exhibitions, providing assistance to cultural organisations and institutions, extending and elaborating a material base associated with the creative industries.

Activities in support of innovation resulting from the Regional Innovation Strategy for the Łódź region 2030 LORIS [17]

Among the specialisations with the greatest regional potential the following were highlighted:

- Advanced construction materials
- Energy (including renewable energies)
- Medicine, pharmacy, cosmetics
- Innovative agriculture and agri-food processing
- Modern innovative textile industry and fashions based on modern design

The European Commission has announced that it will elaborate indicators to identify dynamically developing firms in the economy, emphasising that intelligent specializations help create both national and regional economic potential in the area of R&D – and that their development makes possible the elaboration of socio-economic innovations, thereby increasing the value added of the economy as well as improving its competitiveness.

It has created a European Design Leadership Board and initiated plans for a 'Designed in the European Union' label.

■ Conclusions

1. The creative sectors, including the fashion and design industry, are playing an ever larger role in the development of both the European Union economy and global economy, and contribute to improving the competitiveness of regions.
2. The European Union supports, in its economic policy, the development of modern design and encourages the member states to take advantage of the best practices of those countries with the most experience in this area, such as Italy, Germany, the USA, France, Switzerland, and the Scandinavian countries.
3. Poland is a country with a relatively highly developed position in both the creative industries, including modern design, as well as in the application of new designs in the fashion and design industry
4. Despite the dramatic decrease in Poland's export of textile and clothing products following its accession to the EU, the export of these products continues to be characterised by relatively high indicators of cost competitiveness, a result of both the low level of wages in Poland (compared to the EU average) as well its location as a convenient place for orders with respect to the countries of Southeast Asia, and the long experience of Polish entrepreneurs and workers in the textile and clothing sector, including the high quality of products and services they offer, which has been validated by receipt of a number of certificates of recognition. Polish T&C products fulfil, in almost all instances, the norms and standards required in the EU single market with respect to quality, ecology, and consumer safety see also [18].
5. Thus a number of enterprises have an opportunity to increase their sales in the EU single market, as is reflected in their recent sales successes in that market with respect to linens and protective clothing.
6. SMEs can count on support from EU Structural Funds, for example as oc-

curred in the Sectoral Programme "Increasing the Competitiveness of Enterprises in 2003-2006", or within the framework of the Pre-accession PHARE 2 Programme.

7. Despite the decreasing growth rate in the export of textile and clothing products in the Łódź region in the 1990s, the industry continues to occupy an important position in the industrial structure of both the municipality of Łódź and the entire Łódź region (voivodship). Good effects have been achieved with respect to the sale of electronics for SMEs, the creation of internet shops offering immediate and even one-time sales of goods specifically created for the most demanding market niches and individual clients.
8. A new, modern and innovative textile industry based on fashion and modern design is now an integral part of the current strategies for development of the Łódź region for the upcoming years, as reflected in the most important strategic documents of the region for the years to 2020.



Editorial notes

1. *According to the industrial nomenclature NACE, the creative sector encompasses 67 types of activities within the fields of creation, production, and distribution of goods and services as well as uniting these services with other developmental processes in the economic sector. One of the types of activity within the creative sector is 'Specialised design activities-NACE 7410'.*
2. *Based on fragments of works on the topic of the role of industrial design, The Academic Design Centre (ACD), Władysław Strzemiński Academy of Fine Arts in Lodz, Poland 2013.*
3. *Based on data from the Eurostat database.*
4. *Based on data from the International Trade Statistics Yearbook.*
5. *For more on the competitive position of the textile and clothing sector in the Łódź region viewed from the perspective of Poland's EU membership.*
6. *Own calculations based on data concerning foreign trade from the Ministry of the Economy.*

References

1. <http://www.emergingindustries.eu/methodologies/definitions/creative-industries.aspx>
2. <http://unctad.org/es/paginas/newsdetails.aspx?OriginalVersionID=498>

3. Creative Economy: A Feasible Development Option, *Creative Economy Report 2010*, UNCTAD, UNDP, Geneva, 2012, p. 155-156.
4. <http://unctad.org/es/paginas/newsdetails.aspx?OriginalVersionID=498>
5. *Creative Economy Report 2010*, UNCTAD, op.cit., p. 157-158.
6. European Commission Communication to the European Parliament, Council, Social and Economic Committee, and Committee of Regions. For a European Industrial Renaissance. Brussels, 22.01. 2014. COM.
8. Wysokińska Z. Analysis of the global and European markets for innovative textile and clothing products in the era of economic globalization, Chapter I, pp. 7-101 (in Polish). In: *Innovation in the Textile and Clothing Sector in the European Market*, Z. Wysokińska, ed., Monographs of TUL, Łódź, 2008.
8. *Design for Growth & Prosperity, Report and Recommendations of the European Design Leadership Board, EUROPEAN DESIGN INNOVATION INITIATIVE*, Published by DG Enterprise and Industry of the European Commission.; Ed. by Michael Thomson, Design Connect and Tapio Koskinen, Aalto University Designed by Dog Design, ISBN 978-92-79-25946; Printed by Unigrafia in Helsinki, Finland 2012.
9. Based on data from the International Trade Statistics Yearbook, UN, New York, Geneva, <http://comtrade.un.org/pb/>, for the respective years..
10. Pro-competition strategies of the textile and clothing industry in the light of trends on European markets (in Polish), Z. Wysokińska, ed. Monographs of TUL, Łódź, 2005, pp. 7-21.
11. The Global Competitiveness Report 2013-2014, World Economic Forum, http://www3.weforum.org/docs/CSI/2012-13/GCR_Rankings_2013-14.pdf
12. Innovation Union Scoreboard 2011, http://ec.europa.eu/enterprise/policies/innovation/files/ius-2011_en.pdf, p. 7.
13. *Potential areas and fields for the Polish economy to gain a competitive edge (in Polish)*, Wysokińska Z., 02.02. 2011, *Expert Report fo the Ministry of Regional Development*.
14. *National Programme Foresight: Poland 2020 (in Polish)*, Results National Programme *Foresight: Poland 2020*, Warszawa, June 2009, pp. 25-42.
15. Creative Economy: A Feasible Development Option, *Creative Economy Report 2010*, UNCTAD, UNDP, Geneva, 2012, p. 158, Table 5.21.
16. Developmental Strategy for the Łódź Region (in Polish), www.lodzkie.pl.
17. Regional Innovation Strategy for the Łódź Voivodeship LORIS 2030 (in Polish), www.lodzkie.pl
18. Marzec A. *Textiles (in Polish)* In: Warunki i zadania w zakresie handlu zagranicznego po akcesji Polski do Unii Europe-

jskiej [Conditions and challenges in the area of foreign trade following Poland's EU accession], RCSS, Vol. III, Warszawa, 2003, pp. 72-79.

Notwithstanding the references included in this article, the paper was prepared based on the following bibliography:

Bibliography

- European Industry in a Changing World, Updated Sectoral Overview 2009, Commission of the European Communities, Commission Staff Working Document, Brussels, 30.07.2009, SEC (2009) 1111 final.
- Wysokińska Z, Witkowska J. in: *Szansy eksportowe polskich przedsiębiorstw na rynkach zagranicznych- uwarunkowania globalne i regionalne [Opportunities for export to Foreign Markets for Polish Enterprises – global and regional conditions]* Wyd. UŁ., Łódź, 1997.
- Wysokińska Z, Geographical Structure of the Polish Foreign Trade in Textiles and Clothing. *Fibres and Textiles in Eastern Europe* 1994; 2(5): 16-17.
- Wysokińska Z., Competitiveness of the Polish Textile-Clothing Industry on the European Market, *Fibres & Textiles in Eastern Europe*, April/June 1999; 7(2): 14-18.
- Wysokińska Z. International conditions in the Textile and Clothing industry in the period of economic globalization and European integration (in Polish), PTE, Łódź, 2000.
- Wysokińska Z. Competitiveness of the Polish Textile and Clothing Sector within the European integration Process and the Liberalisation Procedures of GATT / WTO Agreement (ATC); *Fibres & Textiles in Eastern Europe*; October/December 2004; 12, 4: 48.
- Wysokińska Z. Intra-Industry Trade between selected CEE countries and the China Area. Position of T&C. *Fibres & Textiles in Eastern Europe*, 2010; 18, 5: 82.
- <http://ec.europa.eu/programmes/horizon2020/en/news/smart-specialisation-building-europes-strengths>.
- http://ec.europa.eu/enterprise/sectors/textiles/index_pl.htm.
- http://ec.europa.eu/enterprise/sectors/textiles/single-market/eu27/index_en.htm#h2-2.
- http://ec.europa.eu/enterprise/sectors/textiles/single-market/eu27/index_en.htm#h2-3.

Received 15.07.2015 Reviewed 04.09.2015

The Scientific Department of Unconventional Technologies and Textiles specialises in interdisciplinary research on innovative techniques, functional textiles and textile composites including nanotechnologies and surface modification.

Research are performed on modern apparatus, *inter alia*:

- Scanning electron microscope VEGA 3 LMU, Tescan with EDS INCA X-ray microanalyser, Oxford
- Raman InVia Reflex spectrometer, Renishaw
- Vertex 70 FTIR spectrometer with Hyperion 2000 microscope, Brüker
- Differential scanning calorimeter DSC 204 F1 Phenix, Netzsch
- Thermogravimetric analyser TG 209 F1 Libra, Netzsch with FT-IR gas cuvette
- Sigma 701 tensiometer, KSV
- Automatic drop shape analyser DSA 100, Krüss
- PGX goniometer, Fibro Systems
- Particle size analyser Zetasizer Nano ZS, Malvern
- Labcoater LTE-S, Werner Mathis
- Corona discharge activator, Metalchem
- Ultrasonic homogenizer UP 200 st, Hielscher

The equipment was purchased under key project - POIG.01.03.01-00-004/08 Functional nano- and micro textile materials - NANOMITEX, co-financed by the European Union under the European Regional Development Fund and the National Centre for Research and Development, and Project WND-RPLD 03.01.00-001/09 co-financed by the European Union under the European Regional Development Fund and the Ministry of Culture and National Heritage.



Textile Research Institute
Scientific Department of Unconventional Technologies and Textiles
Tel. (+48 42) 25 34 405
e-mail: cieslakm@iw.lodz.pl